

LODI ELECTRIC UTILITY

WILDFIRE MITIGATION PLAN

VERSION 4.0

November 16, 2022



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REVISION LOG, KEY CHANGES

Date	Location	Description
12/7/2020	Sec. III	C: Updated with current staffing levels E: Updated infrastructure status
	Sec. IV.B	Eliminated redundant map
	Sec. V	C: Updated with latest vegetation crew information and adding tree-inventory. D: Added details of in-progress tree inventory
	Sec. VI	Replaced projected progress with dates of council presentations and other events which have since occurred
	Sec. V.G	Expanded list with additional de-energization consequences
	Sec. IX	Replaced planned Audit with actual Audit dates and findings and other updates subsequent to prior year's plan
	Sec. VIII	Updated metrics
11/30/2021	Sec I.D	Created new sub. sec. "Risk Profile" & consolidated related info
	Sec. VIII	Updated all metrics, Clarified reporting dates for metrics
	Sec. V.F	Updated Reclosing section to include trial device
11/2/2022	Sec. VIII A	Updated metrics for last one year.

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 protect LEU infrastructure from wildfire impacts and 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.

This Wildfire Mitigation Plan describes the safety-related measures that LEU follows to reduce its risk of causing wildfires.

C. BACKGROUND

LEU has provided Electric Service to the City of Lodi for over 110 years with 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.

D. OVERALL RISK PROFILE

Wildfire risk is greatly reduced by LEU's topography, setting, and urbanization. LEU is located in a region of the state with a very low wildfire risk. LEU is entirely situated within the California Public

Utilities Commission's (CPUC) lowest fire-threat risk-tier (Tier-1) with no part of LEU's service territory in or near the High Fire Threat District designed in the CPUC's Fire Threat Map¹. 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 Map². The area that is categorized as "moderate" is only approximately 2% of LEU's service territory primarily along the Mokelumne river. 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"³. 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.

LEU's territory is flat, lacking any mountains, valleys, and similar hard to access locations. The City of Lodi's General Plan describes LEU's service territory as, "...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."

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.

LEU's Service Territory is limited to a dense urban footprint (approximately 13.7 square miles of land). With an estimated population of more than 68,000; this results in a density of ~5,000 persons per square mile of LEU service-territory; this density is advantages to the Utility as it provides tremendous visibility on LEU's infrastructure and any problems which arise. Problems within LEU's territory are therefore generally discovered very quickly. LEU's compact territory also allows LEU personnel to reach nearly every utility asset within a 10-minute drive from its headquarters. The high visibility and close proximity therefore generally result in quick discovery and quick addressing of problems. This is in stark contrast with utilities having thousands of miles of line traversing inaccessible areas of California's dry forests, far from urban areas, lacking any

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

² Cal Fire Map ID: FTHREAT_MAP, Oct. 20, 2005

³ Cal Fire Map ID: FHSZL06_1_MAP, Oct. 02, 2007,

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

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>

meaningful public visibility, and with potentially great travel distances required for the Utility and fire-fighting resources in responding to a problem.

As detailed extensively in the plan below, Lodi is also well-positioned with impressive water resources and fire-fighting capabilities, making for another stark contrast with utilities traversing sparse wilderness areas.

Despite LEU's low-risk profile, 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 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.

WSAB Requested Risk Profile Information

Utility Name	Lodi Electric Utility (LEU)
Size (Sq Mi.)	~ 13.7 Sq. Mi.
Assets	<ul style="list-style-type: none"> ✓ Distribution ✓ Sub-transmission (60 kV) <p>Note-1: LEU owns shares in generation plants outside of LEU service territory, managed and operated by NCPA.</p> <p>Note-2: A 27 MW Peaker-Plant, owned and operated by NCPA, is found within LEU's service territory</p>
Number of Customers Served	Approximately 28,000 active accounts, of which approximately are 22,600 residential accounts, and the balance is divided between commercial/industrial/misc. Estimated 2021 Population: 68,000+
Customer Classes	<ul style="list-style-type: none"> ✓ Residential ✓ Government ✓ Small/Medium Business ✓ Commercial/Industrial
Location / Topography	Central Valley, approximately 100% urban / Flat
Percent Territory in CPUC High Fire Threat Districts	0%
CAL FIRE FRAP Map Fire Threat Zones	Non-Fuel
Existing Grid Hardening Measures	Approximately 50% underground. Overhead hardening measures include pole-changeouts, overclassing poles, reconductoring with steel-reinforced conductors, etc.
Utility Fire Threat Risk Level	Low

Impacted by Another Utility's PSPS?	No known historical instances
Mitigates Impact of Other Utility's PSPS?	Not as LEU interprets this question
Expects to Initiate its own PSPS?	No
Prevailing Wind Directions & Speeds by Season	Low

E. ORGANIZATION OF THE WILDFIRE MITIGATION PLAN

This Wildfire Mitigation Plan includes the following elements:

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

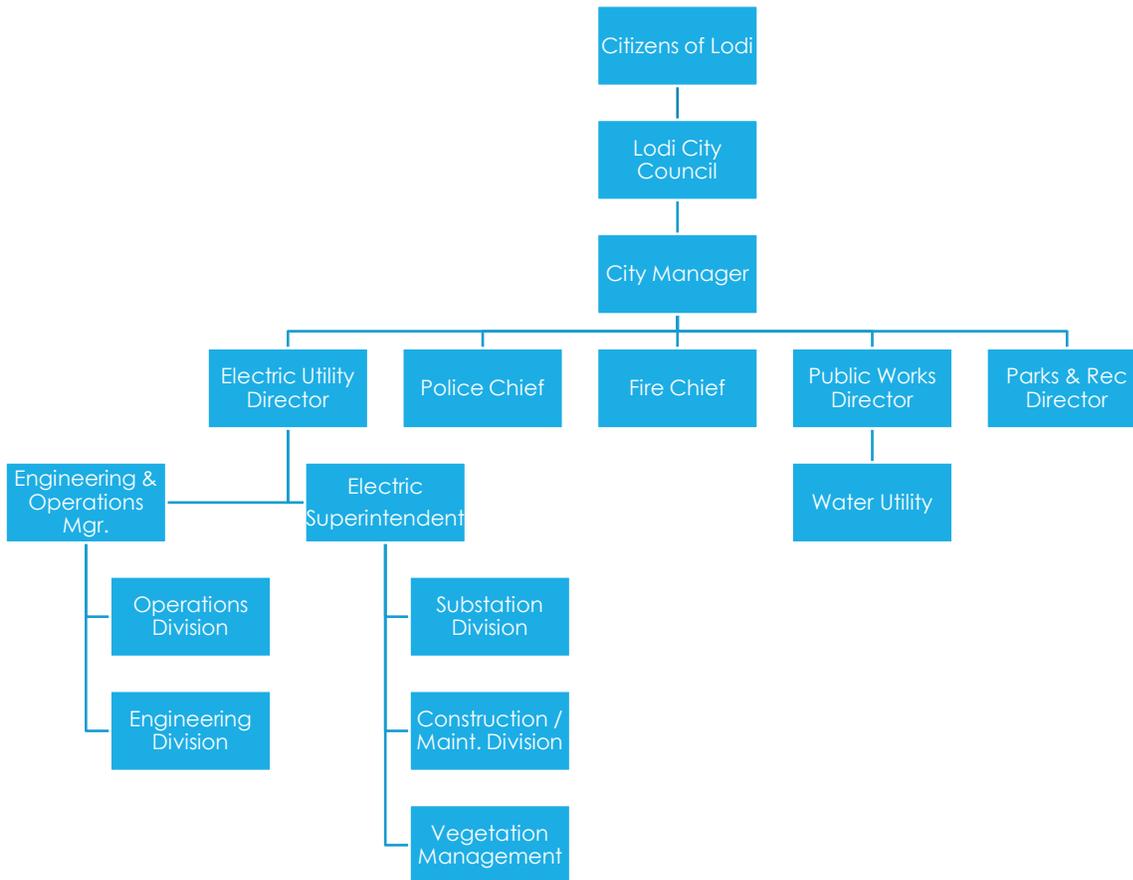
II. OBJECTIVES OF THE WILDFIRE MITIGATION PLAN

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; and in doing the aforementioned, comply with CA PUC Section 8387 and CA SB-901 2018 and its underlying goal to operate the electric-system safely when in high wildfire risk conditions. 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 this plan, LEU continues to assess and implement new industry practices and technologies that reduce the likelihood of an interruption (frequency) in service, improve the restoration (duration) of service, and increase public safety during high wildfire risk conditions.

III. ROLES AND RESPONSIBILITIES

A. UTILITY GOVERNANCE STRUCTURE



City of Lodi Organization Chart (Excerpt, 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.

Some of these positions' duties, specific to wildfire mitigation include:

- City Manager:**
 - Oversight responsibility for the underlying departments
- Electric Utility Director:**
 - Management of the Electric Utility
 - Overall implementation of this plan
- Fire Chief:**
 - Fire response
 - Medical-emergency response
 - Maintaining a high-state of readiness (including staffing, training, perpetrations, equipment status)
 - Implementation of Incident Command System protocols
 - Certain public safety functions, partly overlapping with the Police Chief
- Public Works Director:**
 - Management of the water system (including ensuring adequate supply, delivery, redundancy and back-up)
 - Maintenance of any City-Owned street trees (trimming, removal, etc.)
- Police Chief:**
 - Law enforcement
 - Certain public safety functions, partly overlapping with the Fire Chief
- Parks & Rec. Director:**
 - Overall condition of City's Parks (including vegetation management and fuel removal)
- Engineering & Operations Manager:**
 - Management of Engineering Division
 - Design practices
 - Specifications
 - Standards
 - Management of Operations Division
 - Utility Mapping
- Electric Superintendent:**
 - Management of Substation Division
 - Management of Construction Division
 - Vegetation Management program (inspections & trimming)
 - Conducting system patrols and inspections

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.

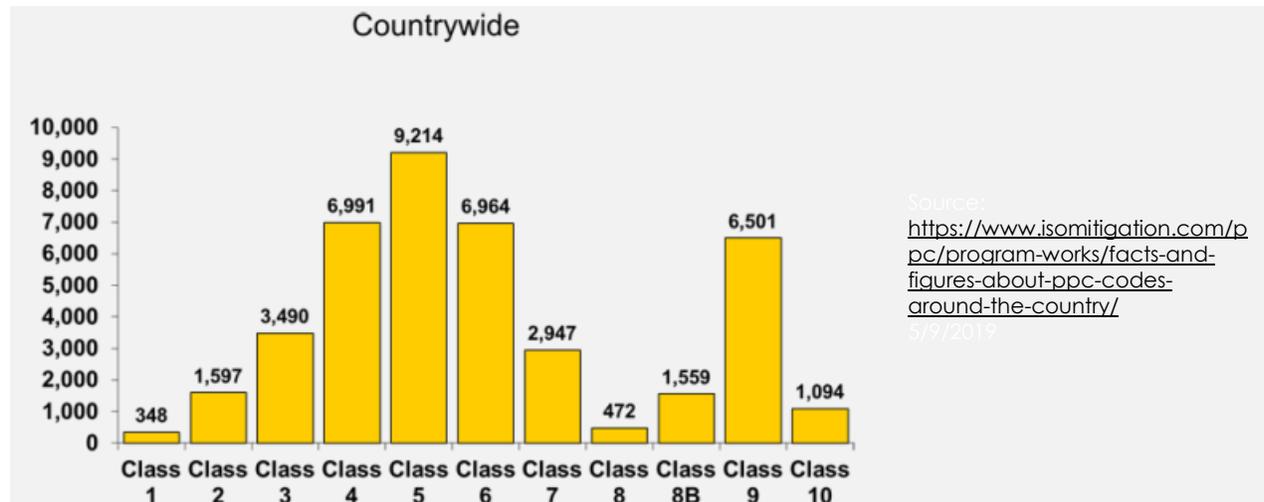
LEU staff has the following obligations regarding fire prevention, response, and investigation:

- 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.

Fire Department staffing fluctuates from time-to-time, but has budgeted approximately 54 personnel, including 48 line staff.

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



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 2021, 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 pressure during power outages...)"¹³ The City has 5 million gallons of water storage, spread

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 2021

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 2021

¹² City of Lodi, Public Works, Annual Water Quality Report For 2021

¹³ City of Lodi, Public Works, Annual Water Quality Report For 2021

across different tanks¹⁴. 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."¹⁵ The Library will also serve as a community resource center during a de-energization event.

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.¹⁶ 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.

Police Department staffing fluctuates from time-to-time, but has budgeted approximately 109 full-time employees, comprised of 77 sworn officers, 32 support staff, and various additional volunteers."¹⁷

"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."¹⁸

"The City provides street standards for all street types, thus ensuring appropriate standards for emergency access and evacuation."¹⁹

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 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

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

¹⁵ City of Lodi, City Council meeting, June-19 2019, Agenda Item C-11

¹⁶ City of Lodi, General Plan, 4/2010 § 3.3

¹⁷ PD provided info, 10/2020

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

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

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 communication channels and access exist and are available.

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 recently implemented a reverse-911 system, whereby emergency personnel can send an emergency notification message to area cell-phones, land-lines, and VOIP phones.
- LEU also provides notifications on our website www.lodielectric.com
- LEU has recently implemented an Outage Management System (OMS) and an Interactive Voice Response (IVR) system, for outage dispatch and notification purposes.

F. STANDARDIZED EMERGENCY MANAGEMENT SYSTEM

As a local governmental agency,²⁰ the City of Lodi has planning, communication, and coordination obligations pursuant to the California Office of Emergency Services' Standardized Emergency Management System ("SEMS") Regulations,²¹ 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,

²⁰ As defined in Cal. Gov. Code § 8680.2.

²¹ 19 CCR § 2407.

operational area, regional, and state.²² 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

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

²² 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.

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

- Extended drought
- High winds
- Low humidity

Specific risks from these risk-drivers include increased vegetation mortality, contributing dry-fuels to the region, as well as deceased vegetation in its weakened-state potentially falling into energized lines during high-wind events. As mentioned in this plan, in contrast with the vegetation encountered by utilities traversing vast stretches of the California wilderness, the vegetation within LEU's territory is much healthier, limited, less-dense, and managed, consistent with that of an urban/suburban utility; further the land-use surrounding LEU is overwhelmingly actively-managed grape vineyards extending for miles in every direction.

LEU is unable to identify any direct risks of catastrophic wildfire in LEU's service territory in connection with "dynamic climate change" risks. Indirect risks to LEU's territory include the possible reduction of local Fire Department resources at times of mutual-aid deployments including combatting wildfires in State Responsibility Areas (a 12/12/2017 News Release by Cal Fire, US Forest Service and the Tree Mortality Task Force reports 129 Million dead-trees in California, predominantly in the Sierra Nevada region of the state).

B. ENTERPRISEWIDE SAFETY RISKS

Fire risks due to drought and windy conditions are low within LEU's service territory. Lodi is a well-developed urban area with over 50 percent underground high voltage circuitry. In consultation with numerous experts and stakeholders, the CPUC created and adopted a statewide fire threat map 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. Drawing on the immense collective expertise responsible for the creation of the CPUC's map, LEU's methodology was to overlay LEU's service territory and overhead transmission lines coming into the City of Lodi onto the fire threat map and therein identify potential areas of concern. LEU's service territory and transmission all 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.

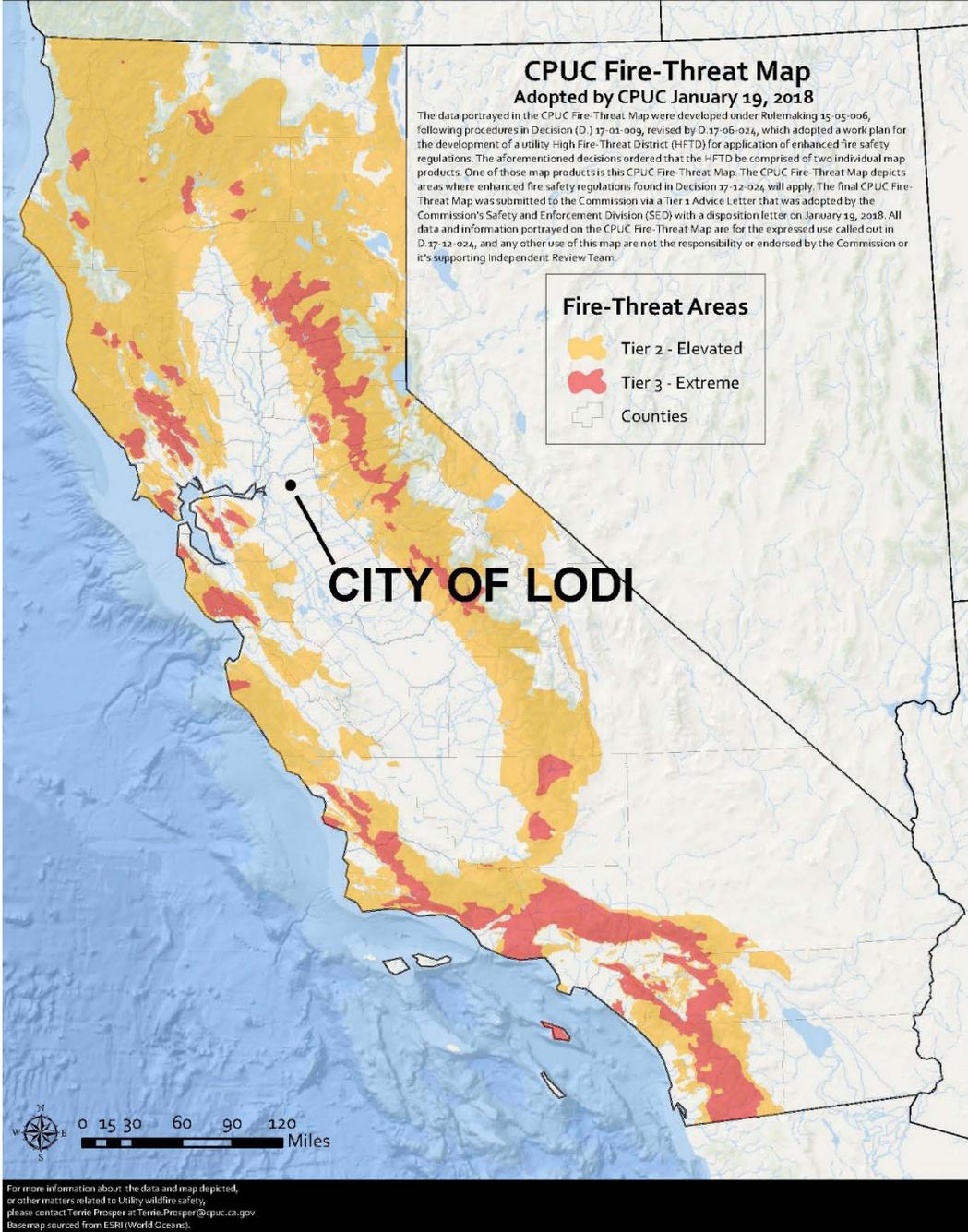
Table – 1

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



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).

V. WILDFIRE PREVENTATIVE STRATEGIES

A. HIGH FIRE THREAT DISTRICT

LEU, as a member of California Municipal Utilities Association (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.

LEU's efforts to improve this plan and achieve its goals are ongoing, including its efforts to identify existing and emerging fire threats and validate the characterization of LEU's service territory. LEU will continue to review any new information, and any future updates in the CPUC's Fire-Threat Maps, and revisit the above assessment as necessary.

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" website²³ (an aggregation of regional PSPS, wind, temperature, Red-Flag and other information)
- "PG&E PSPS Maps" website²⁴
- National Fire Danger Rating System (NFDRS)

²³ https://www.pge.com/en_US/safety/emergency-preparedness/natural-disaster/wildfires/psps-weather-map.page?WT.mc_id=Vanity_weather

²⁴ https://www.pge.com/en_US/safety/emergency-preparedness/natural-disaster/wildfires/psps-event-maps.page

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.

Additional wildfire-mitigating design and construction standards LEU employs include:

- LEU stocks a wide range of covered-wires for use as jumpers and lead-wires
- LEU has specified all overhead transformers and capacitors to have bushing covers pre-installed. In targeting the locations where distance between energized medium-voltage phases are in their closest proximity to each other (or ground potential), the combination of bushing covers and covered leads greatly reduces the ability for wildlife, foliage, balloons or other foreign objects to make contact with energized parts and potentially ignite a fire
- All new distribution pad-mount transformers and switches have their medium-voltage interfaces specified as dead-front. In contrast with live-front equipment, dead-front equipment reduces the possibility of an unintended object making contact with energized components and igniting a fire. Examples include: wildlife (snakes, burrowing-rodents, etc.), a dropped-tool or a piece of foliage or debris which blows-in while the cabinet is energized and open for servicing.
- LEU recently introduced natural ester oil (Envirotemp/FR3) into its specifications for oil-filled distribution transformers and switches. "Envirotemp FR3 fluid has exceptionally high fire and flash points of 360°C and 330°C, respectively - the highest ignition resistance of any high fire point dielectric fluid currently available. It qualifies as a "high fire point", "less flammable", "IEC Class K", and "non-propagating" fluid. FR3 fluid is FM Global Approved and Underwriters Laboratories Classified as a Less-Flammable Dielectric Liquid. FR3 fluid possesses a 100% fire safety record, and is an ideal choice for transformers positioned indoors, underground, and in close proximity to buildings and other equipment"²⁵
- New subdivisions and large commercial customers are connected by extending underground facilities, limiting the creation of additional overhead exposure²⁶

²⁵ Cargill, *Envirotemp™ FR3™ Natural Ester Dielectric Fluid Overview*, Page-1

²⁶ Very rare exceptions may exist, such as for new minor-infill subdivisions found in overhead regions and where design constraints preclude underground infrastructure

- LEU is aggressively pursuing the removal of aged small-diameter overhead copper primary-voltage conductor (specifically, #6CU solid), commonly replacing it with larger diameter, stranded conductor with a steel core. LEU believes this will provide greater safety, reliability and minimize lines-down events and in turn, fires associated with them. LEU anticipates nearly all of this conductor will be removed from the system over the next 5-years. LEU does not have robust historical data on how much has been removed from the system to-date, but has the following data-points which are indicative of LEU's efforts:

	4/28/2021	2/15/2022
System Inventory of Overhead #6CU Conductor (Approx.)	302,400 feet	217,650 feet

D. VEGETATION MANAGEMENT

LEU strives to meet or exceed 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, 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

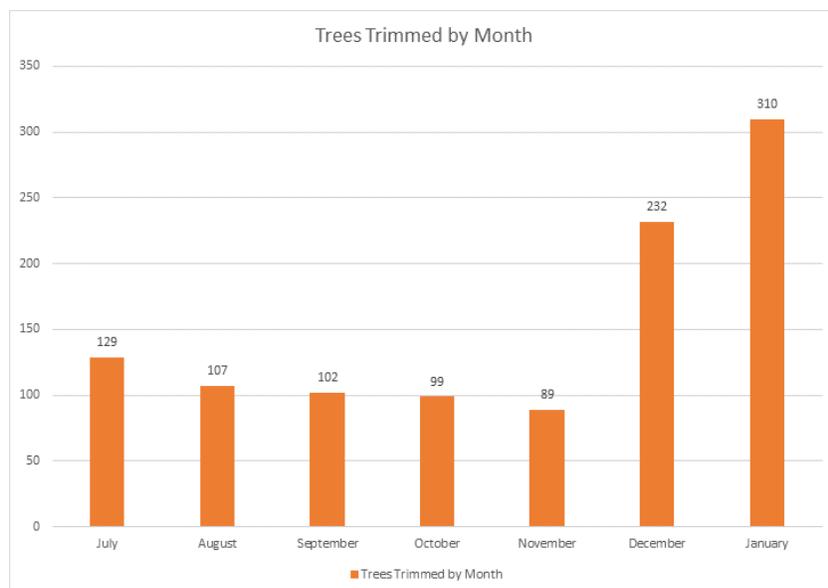
The radial clearances shown below are recommended minimum clearances that should be established, at time of trimming, between the vegetation and the energized conductors and associated live parts where practicable. Reasonable vegetation management practices may make it advantageous for the purposes of 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
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 has taken an aggressive approach to vegetation management. As many of the fires which ravaged the state from 2015-2022 appear to have included contact between power lines and vegetation, LEU believes that vegetation management is one of the most effective methods to avoid wildfires.

- LEU has greatly increased its vegetation management efforts in recent years, resulting in more frequent visits to more locations and better clearances from lines. LEU's 2022 vegetation management budget is now triple its 2020 level. This increased attention to vegetation is seen in the chart below from 2020; notice the sharp rise following the increase in LEU's vegetation budget:



- Despite the increased cost of doing so, LEU often pursues tree-removals instead of trimming; this is particularly beneficial for faster growing species which require more frequent return visits. LEU has setup a program to provide customers who undergo tree removal, with complimentary starter trees, which will better co-exist in the vicinity of power lines.
- 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 while still complying with 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 averages two dedicated tree crews throughout the year; LEU's tree contractor has over 900 employees²⁷, and offers the ability to greatly scale-up the number of crews on a job-by-job basis should a particular job need additional crews and resources.
- LEU's contractor can provide cranes, as needed.

²⁷ <https://westcoastarborists.com/>

- Every tree in proximity of electric infrastructure will be visited every 18-24-months, some even more frequently.
- LEU has surveyed trees in its service territory and collected a detailed tree inventory of all trees in proximity to power lines, collecting: species, height, GPS coordinates, imagery, health, condition, and trimming priority.
- 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.
- Minimization of fuel-accumulation by removal of trimmings and resulting wood byproducts (with rare exceptions for property owners requesting to maintain possession).

LEU's urban service territory is again distinguished from utilities having lines traversing vast, isolated, rural lands and dry wild forests. The fuel-loading underneath LEU's assets is consistent with the health, levels and species of vegetation found in other urban/suburban settings. Nearly all vegetation in the vicinity of LEU's lines and Rights-of-Way belongs to private parties or the City of Lodi. These parties bear the responsibility for the removal of any accumulation of fuels (e.g. fallen logs, dead shrubbery) on their respective properties. LEU believes that the vegetation-owning parties within its territory succeed at removing accumulated fuels at a level vastly exceeding what is seen in California's wildland areas.

E. SYSTEM MAINTENANCE AND INSPECTIONS

Periodic patrols and inspections provide the opportunity of identifying and remedying certain anomalous conditions prior to realization of any harm, possibly including wildfire.

LEU meets or exceeds the minimum inspection cycles 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 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, prior to 11/2021, LEU did not have any traditional reclosers deployed downstream of LEU's substations.

In 11/2021 LEU completed installation of a single, new type of non-spark emitting protection device with limited reclosing functionality. This single trial-device was located immediately behind sidewalk deep within our urban setting, positioned upstream of a circuit-branch, monitoring various short downstream line-lengths, with trivial vegetation exposure nearly all of which is within residential private property. This device replaces a traditional spark-emitting fuse that was formerly at this location, and under standard operation this trial device should never emit sparks to the ground below. This device is designed to minimize and contain outages on the lines it monitors downstream, and prevent impacts from spilling-over and affecting other customers on the circuit. The areas downstream are unlikely to get draped with windblown vegetation due to urban environment. Prior to the installation of this device, fusing limitations would have resulted in certain mis-coordinations in the protection scheme, and created circuit-level outages affecting substantially more customers. One of the critical customers downstream of this device is a large school. The Utility's belief is that the installation of this device will provide a net benefit to life-safety by increasing the uptime to this critical customer and in minimizing the downtime to others in the wider area.

Power outages create serious adverse impacts to life-safety (find examples in Section-V(G) De-Energization), these impacts increase as outages are extended. Nationwide, momentary-faults account for greater than 70-80% of all faults²⁸. Policies which disable reclosing functionality, unnecessarily extend what would otherwise be momentary and self-clearing faults and outages, and consequently, increase the adverse life-safety impacts of an outage. Further, **undertaking such actions based largely upon weather predictions of unknown accuracy, carries the risk of doing so unnecessarily.**

The concept of disabling reclosing is predicated on the assumption that a small limited number of subsequent line-tests could possibly cause a problem not caused by the *initial* incident. In most situations (momentary self-clearing faults, urban lines not at risk of starting fires) there is no harm caused by successive tests, and no safety benefit gained by disabling reclosing, while there is potential harm caused by not re-powering lines to critical customers.

It is LEU's goal to reduce outages both in count and duration. In determining a policy for reclosing, LEU has considered its lone instance of a non-traditional field-recloser, its unique and low-risk urban setting and its beneficial service-territory specifics; LEU has additionally considered the large-scale adverse customer impacts arising from disabling reclosing at the substation-level. In consideration of the above, LEU finds that the public-interest is better served by not disabling reclosing functionality as a wildfire precautionary measure, and that doing-so would yield hard-to-identify benefits to wildfire reduction in LEU's territory.

²⁸ Cooper Power Systems, Electrical Distribution System Protection, P.7

G. DE-ENERGIZATION

While utilities in certain sparsely populated, hard-to-access wildland areas will occasionally conduct a de-energization (AKA "Public Safety Power Shutoff" or "PSPS"), the decision to do so in dense urban population centers such as the City of Lodi, introduces greater safety concerns and other drawbacks.

Some of the serious adverse impacts to life-safety include:

- During Northern California's 2017 wildfires, five persons died, unable to open their garage-doors after loss of power²⁹.
- During an evacuation or other emergency, turning off the power to streetlights, gas pumps, elevators and other equipment can compound the severity.
- 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.
- Under fire-threat conditions which 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.
- 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 is known to reach triple-digit summertime temperatures. Upon loss of power, certain vulnerable residents who depend on air conditioning can suffer heat-related medical issues.
- Critical customers such as hospitals, medical facilities rely on power in performing emergency life-saving procedures. These customers traditionally have backup generators, however, there is no guarantee a generator will work. In Jan. 2021 LEU had first-hand experience with a backup generator failing to start during an outage event.
- Some residential customers' medical conditions require specialized at-home 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 power-line under

²⁹ <https://www.sacbee.com/news/politics-government/capitol-alert/article218811560.html>

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.
- Cell phones, laptops, electric cars, electric wheelchairs, and other battery-powered objects are unable to charge during loss-of-power.
- Once the conditions triggering de-energization have passed, utilities usually 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 methodical inspection process can be very lengthy and increases each of the above impacts.

Further, **de-energizing lines as a preventative measure to prevent a potential theoretical chain-of-events of unknown certainty, in the lowest wildfire risk-tier of the state, based largely upon weather predictions of unknown accuracy, carries the risk of being undertaken unnecessarily.**

Due to minimal risk of LEU's electrical supply facilities causing a power-line ignited wildfire, LEU has taken the position that the practice of voluntarily de-energizing lines on a precautionary basis due to fire-threat conditions is not applicable to LEU's service territory and system, and as a result LEU is not adopting specific protocols for doing so. This decision is in-line with various other utilities, including Los Angeles Department of Water and Power (LADWP)³⁰. LEU will re-evaluate this determination in future updates to this Wildfire Mitigation Plan.

In the extraordinary and yet-to-occur event that an upstream feed to LEU, operating beyond LEU's control, is de-energized as part of a PSPS, LEU would utilize the communication and notification approach identified in Section III-E of this report. PG&E has never placed LEU's service lines on the PSPS list for either notification or de-energization. NCPA's backup power plant located within LEU's service territory can serve critical loads during a loss of power.

VI. COMMUNITY OUTREACH AND PUBLIC AWARENESS

LEU presented the draft version of this plan to the Lodi City Council and the public during the October 15, 2019 Council meeting and the final version of the inaugural plan at the November 20, 2019 Council meeting. In addition to having provided continuous public access to this document on LEU's homepage, LEU provided an annual revision to the Lodi City Council in 12/2020 and will continue to do so annually. As detailed further in Section IX, LEU contracted with an independent third party to perform an audit of this Wildfire Mitigation Plan. The audit findings were presented to the Lodi City Council at a public meeting, giving the general public

³⁰ LADWP Wildfire Mitigation Plan Ver. 1.1, April 17, 2020, section 4.7, pages 30, 34

an opportunity to provide comments. LEU also posted the plan and auditor's findings on LEU's website www.lodielectric.com and made both available for public review and comment.

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.

In the case of wildfires involving lines and other utility assets and resulting in outages, once conditions have been made safe to do so, LEU will visually inspect every involved asset looking for visual damage and any hazards potentially remaining. Patrols will be conducted using a combination of human resources (both internal and depending on the scale, mutual aid resources) and may involve certain technology (possibly including drones, binoculars, etc.) prior to reenergizing circuits.

VIII. EVALUATION OF THE PLAN

A. METRICS AND ASSUMPTIONS FOR MEASURING PLAN PERFORMANCE

LEU will track four metrics to measure the performance of this Wildfire Mitigation Plan: (1) number of fire ignitions; (2) wires down within the service territory; (3) inspection-cycle completion; and (4) vegetation-management cycle completion.

Assumptions underlying the use of these metrics: As catastrophic wildfires are a subset of all fires, tracking and reporting *all* fire ignitions (as defined in metric-1) will necessarily capture wildfires. As wires-down events have the possibility of causing wildfires, tracking and reporting these events (as defined in metric-2) will over-time reveal LEU's success at minimizing their occurrence and in-turn fires caused by such events. As inspections provide the opportunity of remedying certain conditions prior to realization of any harm, the successful progression of inspections is important to capturing this opportunity.

Due to the non-aligning year-to-year dates for the annual meeting where this plan is presented, in 2021 LEU added the clarification that metric-reporting for this plan covers the period of November-1 (prior year) to October-31 (current year).

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 fire³¹;
- 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.

³¹ 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.

Date Range	Count
11/1/2019 – 10/31/2020	LEU had zero known events meeting the above criteria ^{32 33} .
11/1/2020 – 10/31/2021	LEU had one known incident of fire ignition meeting the above criteria ³⁴
11/1/2021 – 10/31/2022	LEU had two known incident of fire ignition meeting the above criteria ³⁵

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.

Date Range	Count
11/1/2019 – 10/31/2020	LEU had one such documented event meeting this criteria (outage No. 83-20), due to the failure of a hot-tap. ³⁶
11/1/2020 – 10/31/2021	LEU had two events meeting this criteria ³⁷
11/1/2021 – 10/31/2022	LEU had zero known events meeting this criteria

METRIC 3: INSPECTION-CYCLE COMPLETION

The Third metric relates to the completion percentage of each system-inspection cycle. As discussed in Section V-D System Maintenance and Inspections, LEU practices the inspection

³² Data per LEU Operations, 11/20/2020.

³³ At least one known fire grew to involve LEU assets (outage 57-20), however, the fire was started by a homeless person and was not utility-caused. This incident and possibly others, were not counted in this year's metric, as their external origin did not meet the defined criteria, nor the intention of this metric.

³⁴ Data per LEU Operations, 11/16/2021. This fire is believed to be the result of an overhead transformer malfunction in an urban location, resulting in a secondary-bushing failure which emitted sparks onto dry vegetation located on customer-maintained private property.

³⁵ Data per LEU Operations. This fire is believed to be the result of an overhead transformer malfunction in an urban location, resulting in a secondary-bushing failure which emitted sparks onto dry vegetation located on customer-maintained private property.

³⁶ Data per LEU Operations, 11/20/2020.

³⁷ Data per LEU Operations, 11/16/2021.

cycles specified in GO-165. For Urban utilities, GO-165 provides a maximum detailed-inspection cycle of 5-years for overhead, underground and padmounted infrastructure.

LEU will at times shift resources to accelerate or prioritize one category of inspection over another for strategic purposes (while achieving all required inspection timelines); this has the result of making the completion percentages of the various cycles uneven.

Date Range	Cycle Type	Percent of Cycle Completed
11/1/2019 – 10/31/2020	Detailed overhead (5-year inspection cycle)	Approx. 55%
	Detailed underground (5-year inspection cycle)	0%
	Intrusive Overhead (10/20-year cycle)	0%
11/1/2020 – 10/31/2021	Detailed overhead (5-year inspection cycle)	Approx. 55% ³⁸
	Detailed underground (5-year inspection cycle)	0%
	Intrusive Overhead (10/20-year cycle)	100% ³⁹
11/1/2021 - 10/31/2022	Detailed overhead (5-year inspection cycle)	Approx. 45%
	Detailed underground (5-year inspection cycle)	100%
	Intrusive Overhead (10/20-year cycle)	0%

METRIC 4: VEGETATION-MANAGEMENT CYCLE COMPLETION

The Fourth metric relates to the completion percentage of each vegetation-management cycle. As discussed in Section V-D Vegetation Management, all vegetation within proximity of LEU assets is visited at a minimum **every 18-24 months**. LEU tracks the progress of this by dividing its service territory into sixty-six similarly sized grids, and focusing and containing vegetation-management efforts to service one grid at a time until that grid's completion, before advancing to the next grid. While the amount of vegetation needing addressing in each grid is not exactly

³⁸ Data per LEU Superintendent, 11/16/2021

³⁹ Data per 2021 Osmose inspections

equal, the metric of percent complete, serves a reasonable approximation for progress towards the stated goal.

To satisfy the above stated targets, LEU would normally complete vegetation management in approximately 50 – 66% of the system grids each year. In the 2020, however, LEU increased and accelerated its efforts on vegetation management; resulting in an increase in the number of vegetation crews and a substantial increase in utility-spend.

Date Range	Percent of Grids Completed in Date Range
11/1/2019 – 10/31/2020	100%
11/1/2020 – 10/31/2021	66% ⁴⁰
11/1/2021 – 10/31/2022	66%

B. IMPACT OF METRICS ON PLAN

A discussion of how the application of previously identified metrics to previous plan performance has informed the plan, is required by SB-901. With LEU's Wildfire Mitigation Plan having been in-place for a short-duration, metric gathering provides insufficient data points for trending and comparisons. LEU anticipates that as the data collection history becomes more robust, LEU may be able to identify areas of its operations and service territory that are disproportionately impacted and may be better positioned to evaluate potential improvements to the plan.

C. MONITORING AND AUDITING THE PLAN

The inaugural version of this Wildfire Mitigation Plan was presented publicly to the Lodi City Council. LEU will present plan updates to the Lodi City Council on an annual basis. Additionally, a qualified independent evaluator has evaluated the plan and presented a report on their findings to the Lodi City Council.

The LEU Wildfire Mitigation Plan will be internally audited for completeness, effectiveness and implementation annually by the Electric Utility Director, in preparation for the presentation to the Lodi City Council.

⁴⁰ Data per LEU Superintendent, 11/16/2021

D. IDENTIFYING AND CORRECTING DEFICIENCIES IN THE PLAN

LEU's Utility Director shall identify any deficiencies in the plan's implementation and take appropriate action to remedy any issues found.

Additionally, the third-party auditor described in VIII.C will review the plan and provide feedback to LEU and the Lodi City Council. Findings from the above audits will be recorded 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 vegetation management, (described in greater detail in section V-D, Vegetation Management). All vegetation program matters are overseen by LEU's Electric Superintendent. LEU uses contract tree trimmers who audit the vegetation in need of management and maintain the proscribed clear-zones. LEU audits the contractors and conducts Quality Assurance as to their successful implementation of LEU's requirements, by at times working directly with them, and also by conducting audits (approximately weekly) of their work.

In addition, LEU Staff performs system patrols and inspections (described further in section V-E, System Maintenance and Inspections) to identify system issues and deficiencies. The results of these patrols and the associated corrective action are prioritized based on their degree of safety-concern.

The findings of the above audits, 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) required 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 which is posted to Lodi Electric Utility's website and presented to the Lodi City Council at a public meeting.

LEU is a member of the Northern California Power Agency (NCPA). In 2019, LEU leveraged the expertise of NCPA in selecting and engaging an independent evaluator (Navigant) as required in PUC Section 8387(c). Navigant performed an audit of LEU's Wildfire Mitigation Plan and was given the opportunity to audit the LEU processes as necessary to complete the audit. Following the completion of their audit, Navigant briefed relevant LEU staff and prepared a written report of its findings. In November of 2019, Navigant provided its Independent Evaluation report, which LEU made available to the public at the November 2020 Council meeting; the Wildfire Mitigation Plan and Navigant report were also made available to the public on LEU's website where they have remained continuously since their completion. Key findings include (emphasis added):

- **“LEU’s Plan appropriately responds to each of the required elements of PUC Section 8387.”⁴¹**
- **“After internal review of the latest version of the WMP and associated data collection products, Navigant concludes this Report with the following: 1. LEU’s WMP aligns appropriately with PUC Section 8387 and includes all required elements. 2. LEU’s Plan is determined to be comprehensive as described through this Report for an electric utility operating completely within Tier 1 fire risk areas.”⁴²**

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

⁴¹ Page-14, Navigant, 2019, “Wildfire Mitigation Plan Independent Evaluation”

⁴² Page-14, Navigant, 2019, “Wildfire Mitigation Plan Independent Evaluation”

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

<p>Prioritization of Wildfire Risks</p>	<p>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:</p> <p>(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.</p> <p>(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.</p>	<p>Section IV.A Section IV.B</p>
<p>CPUC Fire Threat Map Adjustments</p>	<p>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.</p>	<p>Section IV.C</p>
<p>Enterprisewide Risks</p>	<p>PUC § 8387(b)(2)(L): A methodology for identifying and presenting enterprisewide safety risk and wildfire-related risk.</p>	<p>Section IV.B</p>
<p>Restoration of Service</p>	<p>PUC § 8387(b)(2)(M): A statement of how the local publicly owned electric utility or electrical cooperative will restore service after a wildfire.</p>	<p>Section VII</p>
<p>Monitor and Audit</p>	<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>	<p>Section VIII.C-E</p>

<p>Qualified Independent Evaluator</p>	<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>	<p>Section IX</p>
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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
Risk Profile	Section I.D
Organization of the Plan	Section I.E
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

I. WSAB GUIDANCE ADVISORY OPINION RECOMMENDATIONS

The December 2020 California Wildfire Safety Advisory Board (WSAB) Publication, “Guidance Advisory Opinion for the 2021 Wildfire Mitigation Plans of Electric Publicly Owned Utilities and Cooperatives” identifies fourteen specific recommendations that POU’s are requested to address in their future WMPs.

As specified in Public Utilities Code § 8387(b)(1), each POU is required to perform a comprehensive revision to the POU’s WMP at least once every three years. Pursuant to this guidance, the POU’s will be updating their WMPs based on the direction of their local governing boards within this 3-year cycle. Because the WSAB’s recommendations have been provided after the initial WMP submission, the POU’s will have varying capacities to fully address each recommendation in their subsequent WMP revision cycles.

This section lists the WSAB's recommendations. For each of these, LEU seeks to do one or more of the following:

- (1) Provide a narrative response to the recommendation
- (2) Provide a cross-reference to the section in this WMP where the topic is addressed
- (3) Describe why the recommendation is not applicable to LEU
- (4) Inform the WSAB of the POU's intent to address the recommendation at the point of the POU's next comprehensive revision.

WSAB Recommendation - 1: The Board requests that the WMP and Independent Evaluator Reports be prominently displayed and easily located on the POU websites. To assist the Board in its review, the WMP could also include an index or table that shows where each section of the statute is addressed in the WMP.

In the WMP update, the Board hopes to receive context-setting information at the beginning of each POU plan to help situate the Board's general understanding about each POU and Cooperative's risk profile in accordance with the statutory requirements. Public Utilities Code Section 8387(b)(2) details what risks are to be addressed including all wildfire risks, and drivers for those risks, throughout the service territory such as the utility's grid configuration and condition, climate threat and geographic location. Without this information, the Board is unable to provide an individualized response to each filing. The goal would be to provide the unique utility context in the WMP document up front with the following information:

Size of the utility territory in square miles; Asset identification including transmission, distribution, and generation; Number of customers, which may differ from the number of city or county residents; Types of customer classes served; Location and topography including percentage urban, wildland, or wildland-urban interface; Typical prevailing wind directions and speeds within the territory differentiated by season; Territory maps with CPUC High Fire Threat Districts (HFTD) or California Department of Forestry and Fire Protection (CAL FIRE) Fire and Resource Assessment Program (FRAP) Fire Threat Zones (FTZ) overlaid with distribution and transmission assets, again, considering the limitations of Federal Infrastructure Protection Protocols; Existing system hardening measures installed compared to non-hardened infrastructure such as 1) miles underground or overhead, 2) number of wooden, steel, or composite poles, 3) number of wooden, steel, fiberglass, or composite cross arms, and 4) miles of covered conductor; Impact on the POU of another utility's Public Safety Power Shutoff (PSPS) or similar wildfire related de-energization events, existing measures to mitigate the other utility's PSPS, and whether the POU expects to call its own PSPS, or engages in the de-energization of lines that are fire threatened. To simplify this requirement, the Board developed a template for its own review and asks that it be applied to the POU WMPs:

Utility Name	Utility Name
Size in Square Miles	square miles
Assets	<input type="checkbox"/> Transmission <input type="checkbox"/> Distribution <input type="checkbox"/> Generation
Number of Customers Served	customers
Customer Classes	<input type="checkbox"/> Residential <input type="checkbox"/> Government <input type="checkbox"/> Agricultural <input type="checkbox"/> Small/Medium Business <input type="checkbox"/> Commercial/Industrial
Location/Topography	<input type="checkbox"/> Urban <input type="checkbox"/> Wildland Urban Interface <input type="checkbox"/> Rural/Forest <input type="checkbox"/> Rural/Desert <input type="checkbox"/> Rural/Agriculture
Percent Territory in CPUC High Fire Threat Districts	<input type="checkbox"/> Includes maps % in Tier 2 % in Tier 3
CAL FIRE FRAP Map Fire Threat Zones	<input type="checkbox"/> Includes maps % Extreme % Very High % High
Existing Grid Hardening Measures	<input type="checkbox"/> Describes hardened & non-hardened infrastructure
Utility Fire Threat Risk Level	<input type="checkbox"/> High <input type="checkbox"/> Low <input type="checkbox"/> Mixed
Impacted by another utility's PSPS	<input type="checkbox"/> Yes <input type="checkbox"/> No
Mitigates impact of other utility's PSPS	<input type="checkbox"/> Yes <input type="checkbox"/> No
Expects to initiate its own PSPS	<input type="checkbox"/> Yes <input type="checkbox"/> No
Prevailing wind directions & speeds by season	<input type="checkbox"/> Includes maps <input type="checkbox"/> Includes a description

<p>LEU Response: LEU's WMP and Independent Evaluator Reports are prominently displayed and easily located on LEU's website; they can also be found by conducting a web-search for "Lodi Electric Utility Wildfire Plan." To assist the Board in its review, the WMP also includes an index or table that shows where each section of the statute is addressed in the WMP. LEU has provided some context-setting and risk discussion unique to LEU's territory, as well as the WSAB's requested template. Please refer to Sec. I.D "Overall Risk Profile."</p>
<p>WSAB Recommendation – 2: In the WMP update, the Board recommends utilities provide a paragraph describing the public review of the plan and how it is approved, if required. The Board requests additional data on monitoring and auditing and how that information is presented. A brief explanation on each POU's budget mechanism to be used to perform wildfire mitigation would also be helpful to the Board.</p>
<p>LEU Response:</p>
<p>WSAB Recommendation – 3: In the future, the Board recommends IEs perform a robust evaluation of the contents and substance of the POU's WMP. The Board especially appreciates evaluations of how each POU compares to the IE's assessment of industry standards.</p>
<p>LEU Response:</p>
<p>WSAB Recommendation - 4: The 2021 POU WMPs and/or updates should be based on the guidelines. It would be helpful to create a revised template that reflects the learnings from the 2020 initial effort. To develop that template in a timely manner, the Board invites the municipal utility associations CMUA, the Southern California Public Power Association, the Northern California Power Agency, and the Golden State Power Cooperative, to work collaboratively with the WSAB to identify the utility groupings and develop a revised template for 2021. The Board appreciated the discussion with the municipal utility and cooperative associations at the workshop on November 18, 2020 and looks forward to further discussion at the final Board meeting of 2020, scheduled for December 9, 2020 at 1pm. The Board will continue to work with these associations to develop future WMP guidelines within in the next 120 day or no later than March 1, 2021. Of course, feedback from the individual agencies is also welcomed.</p>
<p>LEU Response:</p>
<p>WSAB Recommendation - 5: In the next round of WMPs, utilities should provide the context-setting information discussed above. POU's should include a detailed protocol to address these concerns in order for the Board to understand the strategic direction and effectiveness of each POU and assist in furthering best practices.</p>
<p>LEU Response:</p>
<p>WSAB Recommendation - 6: For planning purposes, the Board understands that there is a distinction between being a resident of a community and being customer of a utility. The utility plan, while frequently a part of the municipal plan, should address the utility customer dimensions of emergency preparedness planning with respect to PSPS and wildfires and the unique concerns of more vulnerable customers such as: Access and Functional Needs, medical baseline, non-English speakers, and those at risk of losing water or telecommunications service. The Board recommends future WMPs continue to describe the specific methods, content, and timing used to communicate with customers. Beginning with the 2021 WMPs, the POU's should provide an evaluation of whether the current method of emergency communication appears sufficient and, if not, what can be done to improve it, especially protocols for notifying customers, essential service providers, and other critical facilities of IOU or self-triggered PSPS events.</p>
<p>LEU Response:</p>

<p>WSAB Recommendation - 7: The Board requests information from utilities on their existing and planned system upgrades. In future WMPs, the Board would like to understand the details of each utility's system hardening and grid design programs described in the WMP filing. Text of the WMPs should indicate the goals of the programs and the risk any particular program is designed to mitigate. The Board also wants to understand each POU's approach to PSPS mitigation and prevention. Finally, POUs should identify any supply shortages.</p>
<p>LEU Response:</p>
<p>WSAB Recommendation - 8: To prevent unanticipated ignitions due to our changing environmental circumstances, utilities should consider additional visual patrols on all potentially impacted circuits annually. The Board requests that future WMPs describe the unique risks a utility is inspecting for such as insect, wildfire incursion, wood split, woodpeckers, purposeful insulator destruction, termites, etc., be included in the WMP text. WMPs should also describe whether and how system inspections lead to system improvements.</p>
<p>LEU Response:</p>
<p>WSAB Recommendation - 9: The Board encourages POUs to consider different options for surfacing for further consideration and remediation, previously unidentified risks that could lead to catastrophic wildfires. POUs could work with the municipal and cooperative utility associations and neighboring utilities or create their own engineering or risk management teams.</p>
<p>LEU Response:</p>
<p>WSAB Recommendation - 10: The Board recommends the WMPs state the particular wildfire risks associated with system design and construction such as topography and location near a HFTD of another utility. The Board would also like information about G.O. 95 exempt assets and possible updates to G.O. 95 that could facilitate more resilient utility transmission and distribution assets.</p>
<p>LEU Response:</p>
<p>WSAB Recommendation - 11: To understand the engineering needs and wildfire risk, the Board requests POUs include context setting information in the WMPs including information about the prevailing wind directions and speeds, differentiated by season, along with average weather conditions by season. The Board requests information on how and why situational awareness technology is installed, and where on the system. The Board would also like insight into decisions that are made not to install situational awareness technology. Are there constraints such as budgets, availability of equipment, knowledge to effectively deploy, or qualified personnel to install and monitor effectively? The Board also requests information about whether this modeling data is received from or shared with other agencies, utilities, or fire professionals.</p>
<p>LEU Response:</p>
<p>WSAB Recommendation - 12: The Board recommends the 2021 WMP Updates describe treatment plans for all types of vegetation associated with utility infrastructure, from the ground to the sky, which includes vegetation above and below electrical lines. In order to understand current and future risk profiles for each POU, the WMPs should highlight:</p> <ul style="list-style-type: none"> □ The reasoning behind each treatment plan and the ecological impact of the treatment options chosen; □ How vegetation management in the HFTD or Fire Threat Zones differs from other areas, including within private property and urban landscaping; □ The difference between any enhanced vegetation management and the vegetation management that meets the G.O. 95 standard; □ A list of native and non-native species and describe how treatment methods vary; and □ The new growth that occurs in areas that has previously been cleared or treated, and how the POUs tracks growth.
<p>LEU Response:</p>

WSAB Recommendation - 13: The Board recommends the POU WMPs list the qualifications of any experts relied upon, such as scientific experts in ecology, fire ecology, fire behavior, geology, and meteorology. The WMPs should specify the level of expertise of the POU staff that manages the contractors performing vegetation management.

The Board also recommends the WMPs describe measures each POU takes to ensure that POU staff and contractors comply with or verify compliance with Cal/OSHA standards on Minimum Approach Distances (MAD). Ensuring that on Qualified Electrical Workers treat vegetation within the MAD of an energized utility line as required by Cal/OSHA, is critical to fostering a strong safety culture.

LEU Response:

WSAB Recommendation - 14: The Board recommends WMPs describe whether the POU has considered innovative and alternative approaches to vegetation management such as, but not limited to requiring property owners to manage vegetation a certain distance from structures or utility lines, and pilot programs in home hardening.

LEU Response:

Please note that with the 2021 restructuring of the WSAB to be under the Office of Energy Infrastructure Safety, the link on the CPUC's website⁴³ to find "The Board's Guidance Advisory Opinion is available at....." is broken as of 11/2021, as is the following page, <https://www.cpuc.ca.gov/wsab>.

⁴³ CPUC site: <https://www.cpuc.ca.gov/news-and-updates/all-news/wsab-approves-guidance-advisory-opinion-for-the-2021-wmps-of-electric-pous-and-cooperatives>