

Wildfire Mitigation Plan Independent Evaluation

Prepared for:

Lodi Electric Utility



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DISCLAIMER

This report was prepared by Navigant Consulting, Inc., n/k/a Guidehouse Inc. (“Navigant”),¹ for Lodi Electric Utility. The work presented in this report represents Navigant’s professional judgment based on the information available at the time this report was prepared. Navigant is not responsible for the reader’s use of, or reliance upon, the report, nor any decisions based on the report. **NAVIGANT MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESSED OR IMPLIED.** Readers of the report are advised that they assume all liabilities incurred by them, or third parties, as a result of their reliance on the report, or the data, information, findings and opinions contained in the report.

¹ On October 11, 2019, Guidehouse LLP completed its previously announced acquisition of Navigant Consulting Inc. In the months ahead, we will be working to integrate the Guidehouse and Navigant businesses. In furtherance of that effort, we recently renamed Navigant Consulting Inc. as Guidehouse Inc.

EXECUTIVE SUMMARY

Lodi Electric Utility (LEU) contracted with Navigant Consulting, Inc. n/k/a Guidehouse Inc. (Navigant) to engage in an independent evaluation of its Wildfire Mitigation Plan (Plan or WMP). This independent evaluation report (Report) describes the technical review and evaluation provided by Navigant. Navigant performed this evaluation in October and November 2019 and completed the Report on November 12, 2019. Navigant's project team reviewed detailed information related to the Plan and assessed LEU's procedures related to the Plan.

The Plan was prepared as a response to Senate Bill (SB) 901, which was signed into law on September 21, 2018. SB 901 resulted in a number of provisions and directives, among which includes the requirement for electric utilities to prepare and adopt Plans within 2019 and revise and update the Plan annually thereafter. These requirements are codified in the California Public Utilities Code (PUC) Section 8387 for publicly-owned utilities (POUs).

Navigant evaluated the Plan based on the statutory requirements of PUC Section 8387 as it relates to POUs. This PUC Section was amended on July 12, 2019 as a result of the signing of California's Assembly Bill (AB) 1054 into law. The POUs are now subject to the guidance provided by the California Wildfire Safety Advisory Board² and mandatory cyclical reviews. The required elements for a WMP have not been modified by this new legislation. This Report meets LEU's requirements under PUC Section 8387(c), which mandate an independent evaluation of LEU's Plan. The Report was developed to satisfy the statutory requirement for public review. This Report underlies the required evaluation by the Board of Directors at a public meeting, scheduled for November 20, 2019. The Report includes the following:

- Background of the legislative history requiring WMPs and their independent evaluations
- Approach and methodology evaluating the Plan's comprehensiveness
- LEU's Plan elements and their compliance with SB 901 and PUC Section 8387 WMP elements and directives
- An evaluation of the Plan's presented metrics to assess the effectiveness of the overall Plan
- Determinations and results

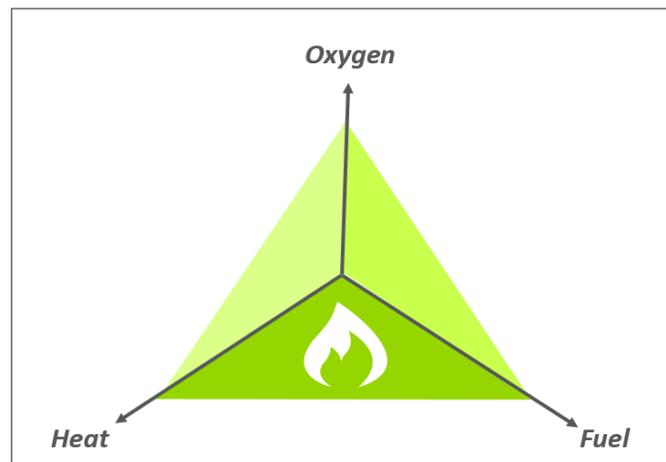
Based on relevant experience in grid hardening and resiliency, natural disaster response, prior experience in WMP development, and active tracking of wildfire legislative and regulatory proceedings Navigant has concluded that LEU's WMP is comprehensive in accordance with PUC section 8387.

² Due for implementation in 2020.

1. BACKGROUND

In recent years, California has seen an increase in utility equipment-involved, catastrophic wildfires. The unique geographic profile of California and the impacts of climate change, including continued dry conditions, high winds, and elevated heat index risk from global rising temperatures, have led to elongated fire seasons. The state is also experiencing increased levels of vegetation fuel due to the wet winters, hotter summers following a seven-year drought, and past fire suppression efforts. This increasingly abundant dry vegetation is the leading driver of wildfires. The levels of dry vegetation fuel have been aggravated by a destructive bark beetle infestation that continues to impact the health of the state's forested areas, further increasing fire risk. These fuel-rich environments, coupled with intensified climatological conditions with high wind gusts and natural electrical infrastructure risks, produce the conditions conducive to potential wildfire ignition. The three attributes that provide optimal conditions for a fire ignition are illustrated through the graphic in Figure 1.

Figure 1: Fire Triangle



Disastrous wildfire threat is a well-known and shared priority among electric utilities in California. The recent spike in utility-involved wildfire incidents since the 2015 wildfire season and the significant financial and livelihood impacts associated with them have led to more formalized efforts to ensure safe operations of electric utility equipment and greater investment in wildfire mitigation efforts.³ Specifically, the state has approved legislation that strengthens governmental and regulatory oversight of wildfire prevention implementation activities, utility Wildfire Mitigation Plans (WMPs or Plans), and proper dispersal of state funds to wildfire victims. In an effort to minimize future devastating occurrences through risk-driven wildfire prevention, electric utilities, including cooperatives, were mandated, by Senate Bill (SB) 901 (Senator Bill Dodd, 2018), to prepare and annually adopt a WMP before January 1, 2020. This effort is foundational to the state's prioritized goal of minimizing the potential of devastating fires in future years.

1.1 SB 901 – Wildfire Mitigation Plans

On September 21, 2018, Governor Jerry Brown signed SB 901 into law. The bill directs electrical utilities to annually prepare WMPs that include several mitigation and response elements in each utility's strategies, protocols, and programs. Each electric utility is to prepare and adopt a comprehensive WMP before January 1, 2020. The requirements for publicly-owned utilities (POUs) are presented in Public

³ California Public Utilities Commission, 2019. "Fire Incident Data Reports for Investor-Owned Utilities," <https://www.cpuc.ca.gov/fireincidentsdata/>.

Utilities Code (PUC) Section 8387. Details relating to POU requirements are discussed in Section 2 of this WMP evaluation report (Report).

1.1.1 AB 1054 Statutory Modifications

On July 12, 2019, Governor Gavin Newsom signed Assembly Bill (AB) 1054 into law. This bill was developed with the consideration of the Governor's Strike Force effort to develop prioritized strategies to help the state achieve its decarbonization goals. AB 1054 aims to mitigate the intensity of wildfire impacts through several initiatives separate from those actions required of electric utilities. SB 901 directed the Office of Planning and Research to establish a Commission on Catastrophic Wildfire Cost Recovery (SB 901 Commission) with the goal of addressing utility wildfire liability, cost responsibility and victim support, and issues with insurance availability and affordability. On June 18, 2019, the SB 901 Commission presented to the state Legislature, findings and recommendations on the issues discussed at public workshops over the course of several months. This, in part with Governor Newsom's Wildfire Reform Package, resulted in legislation that culminated in the provisions listed in AB 1054.

AB 1054 includes directives to establish the Wildfire Safety Division at the California Public Utilities Commission (CPUC) and the state's Wildfire Safety Advisory Board. POUs will their WMPs by July 1 of each year starting in 2020 for review by and recommendations from the Wildfire Safety Advisory Board. No less than every three years, POUs are required to comprehensively update their WMPs. This change is included in this evaluation as a reference for future requirements.

1.1 Lodi Electric Utility Plan Preparation

Lodi Electric Utility (LEU) is a department within the City of Lodi. Its service territory is contained entirely within the City limits. LEU's primary goal is to provide safe, reliable, and cost-effective electricity while also anticipating and meeting customer needs. As a POU, LEU has no fiduciary obligations to shareholders and its actions and decisions are governed by City Manager and the City Council and ultimately to the citizens of Lodi.

LEU prepared its first WMP pursuant to SB 901 directives. The Plan aims to address each of the required elements presented by PUC Section 8387 and ultimately reduce the risk of contributing to utility-involved wildfire events through Plan execution and metric tracking. LEU has posted its draft plan to its website for public review. LEU reserves the right to modify the WMP until it is presented to and approved by City Council in November 2019.

1.1.1 Independent Evaluation Services

PUC Section 8387(c) directs POUs to procure services for an independent evaluation (IE) of the comprehensiveness of the WMP. In January 2020, upon commencement of the California Wildfire Safety Advisory Board, guidelines and further details related to the scope and timelines of future IEs will be discussed and reviewed. In its present⁴ form, the provisions of PUC Section 8387 state that the independent evaluator shall be experienced in "assessing the safe operation of electrical infrastructure" and will perform an assessment to determine the comprehensiveness of the Plan.⁵

LEU sought out IE services to assess the comprehensiveness of its WMP pursuant to PUC Section 8387(c) prior to presenting the final WMP to City Council and contracted Navigant Consulting, Inc., n/k/a Guidehouse Inc. (Navigant) in October of 2019 to undertake an assessment of its Plan based on

⁴ The CPUC has just begun its investigation to develop a list of recognized independent evaluators by March of 2021.

⁵ It is recognized that this requirement does not yet include a clear definition of comprehensiveness.

Navigant's prior experience with assessing the safe operation of electrical infrastructure, including grid-hardening and WMPs, with an emphasis on electrical equipment, public, and personnel safety.

Emergent practices will materialize as evolving legislative action and technology advances continue to shape wildfire mitigation and safety efforts. Understanding this, Navigant performed a comparison of the wildfire mitigation investments undertaken by other utilities throughout California as well as relied on the team's experience in working directly with utilities to develop their WMPs and data collection practices along with prior experience related to grid hardening and electric safety assessments. This Report presents the results of Navigant's WMP IE. The following section describes the methodology in executing this evaluation.

Navigant Identification of Qualifications

Navigant provides IE services throughout the United States. Navigant's grid-related IE projects include storm hardening, wildfire mitigation, resiliency assessments, advanced technology suitability, among others. Our approach includes an evaluation of data considered, suitability of tracking metrics – both frequency and trends analysis - and an evaluation of key performance indicators. Navigant assesses the efficacy of tools for creating sufficient awareness and for effectiveness of understanding overall WMP's intended and actual impacts. Navigant also leverages experience developing "Metrics and Benefits Reporting Plans" to gauge cost-effectiveness of activities and alignment of plans to intentions. Navigant understands LEU's publicly-owned business practices relative to IOUs, through our experience developing WMPs for two IOUs and our continued tracking of related CPUC dockets intended to refine strategies that carry an effective Plan.⁶

Navigant continues to track proceedings, pending legislation, and other developments surrounding utility wildfire risk. Our team remains active with WMP engagements across jurisdictions and risk profiles. As part of maintaining high acumen of prudent mitigation strategies, Navigant participates in forums focused on innovative wildfire mitigation strategies—further expanding our industry knowledge. Navigant provides thought leadership and advisory services related to WMP and other resiliency innovative technologies to the California Energy Commission and has supported their system hardening and fire prevention efforts since 2008. Additionally, Navigant's reach into grid resiliency and disaster-related hardening extends across the United States including island grids, such as Puerto Rico, recovering from recent, weather-related catastrophes.

⁶ Navigant provided technical services to Liberty Utilities (CalPeco Electric) and Bear Valley Electric Service (BVES) immediately prior to and within the 2019 calendar year. The services resulted in support of the development and filing of their respective WMPs to the CPUC on February 6, 2019. Navigant continued to support BVES in development of their Data Collection for WMP report, filed on July 30, 2019.

2. EVALUATION SCOPE AND APPROACH

At the time of this IE, the guidelines and requirements were not available to POUs regarding the structure or determination of comprehensiveness pursuant to PUC Section 8387(c). In lieu of this formalized directive, Navigant completed this evaluation based on industry standard practices, our experience developing and reviewing WMPs and other grid hardening activities, our active tracking of wildfire legislative and regulatory proceedings and, most importantly, a comparison of the specific criteria in PUC Section 8387(b)(2) to the specific wildfire-related plans outlined in LEU's WMP.

2.1 Evaluation Parameters

Figure 2 represents the attributes comprising the methodology and approach of the evaluation.

Figure 2: Contributing Factors to Evaluate the Plan



2.1.1 Provisional Requirements

As mentioned above, the requirement for electric utilities and corporations to develop WMPs emerged from the directives of SB 901 and associated statutory modifications. With respect to POUs, the nested subsections under PUC Section 8387(b)(2) outline the required elements to be included in the Plan. See Table 1 for the complete statutory compliance list.

Table 1: POU Requirements for the WMP

PUC Section 8387 <i>(as amended on July 12, 2019)</i>
<p>(a) Each local publicly owned electric utility and electrical cooperative shall construct, maintain, and operate its electrical lines and equipment in a manner that will minimize the risk of wildfire posed by those electrical lines and equipment.</p>
<p>(b) (1) The local publicly owned electric utility or electrical cooperative shall, before January 1, 2020, prepare a wildfire mitigation plan. After January 1, 2020, a local publicly owned electric utility or electrical cooperative shall prepare a wildfire mitigation plan annually and shall submit the plan to the California Wildfire Safety Advisory Board on or before July 1 of that calendar year. Each local publicly owned electric utility and electrical cooperative shall update its plan annually and submit the update to the California Wildfire Safety Advisory Board by July 1 of each year. At least once every three years, the submission shall be a comprehensive revision of the plan.</p>
<p>(2) The wildfire mitigation plan shall consider as necessary, at minimum, all of the following:</p>
<p>(A) An accounting of the responsibilities of persons responsible for executing the plan.</p>
<p>(B) The objectives of the wildfire mitigation plan.</p>
<p>(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.</p>
<p>(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.</p>
<p>(E) A discussion of how the application of previously identified metrics to previous wildfire mitigation plan performances has informed the wildfire mitigation plan.</p>
<p>(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.</p>
<p>(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.</p>
<p>(H) Plans for vegetation management.</p>
<p>(I) Plans for inspections of the local publicly owned electric utility's or electrical cooperative's electrical infrastructure.</p>
<p>(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>(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>

(L) A methodology for identifying and presenting enterprise wide safety risk and wildfire-related risk.
(M) A statement of how the local publicly owned electric utility or electrical cooperative will restore service after a wildfire.
(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:
(i) Monitor and audit the implementation of the wildfire mitigation plan.
(ii) Identify any deficiencies in the wildfire mitigation plan or its implementation, and correct those deficiencies.
(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.
(3) The local publicly owned electric utility or electrical cooperative shall, on or before January 1, 2020, and not less than annually thereafter, present its wildfire mitigation plan in an appropriately noticed public meeting. The local publicly owned electric utility or electrical cooperative shall accept comments on its wildfire mitigation plan from the public, other local and state agencies, and interested parties, and shall verify that the wildfire mitigation plan complies with all applicable rules, regulations, and standards, as appropriate.
(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 website 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.

2.1.2 Industry Knowledge and Regulatory Proceedings

The state's priority towards abating future catastrophic wildfire events is demonstrated through aggressive measures, directing utilities to enhance their protocols for fire prevention, public communications, and response. That collection of information is presented in a comprehensive WMP. While POU's are directed to develop this Plan prior to January 1, 2020, Navigant recognizes that California utilities subject to CPUC jurisdiction have filed their respective Plans on February 6, 2019. Navigant has tracked docketed proceedings and maintains a presence in state activities and workshops surrounding wildfire prevention. Understanding that LEU is not subject to CPUC regulations, the insight gained from this related experience is leveraged in assessing LEU's Plan relative to its risk profile and industry position.

2.2 Evaluation Approach

To perform an assessment of the comprehensiveness of the Plan, Navigant used the following described approach.

2.2.1 Statutory Compliance

Navigant sought to determine compliance with the provisional requirements laid out in SB901 as codified in PUC Section 8387. The Plan's alignment with the statutory requirement is presented in Appendix A. LEU's mitigation measures are not required to exceed the statutory requirements.

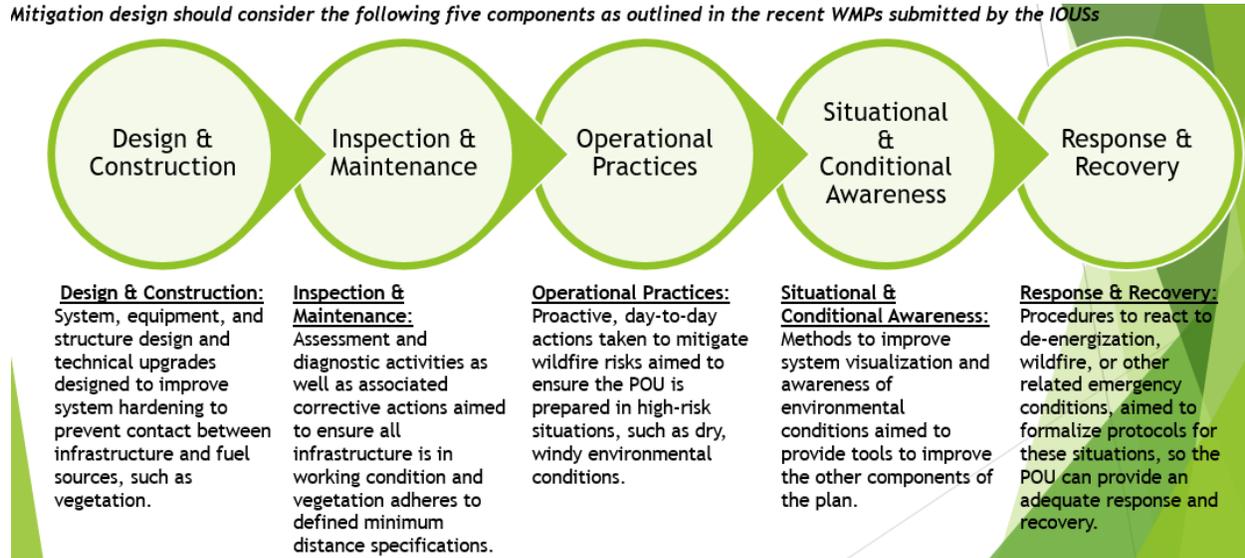
2.2.2 Industry Wildfire Mitigation Practices Comparison

Accepted practices for wildfire mitigation have been discussed and presented at numerous events, such as the Wildfire Technology Innovation Summit, held on March 20-21, 2019. Additionally, Plans approved

by the CPUC have garnered significant insight from the industry at large. Navigant’s understanding of an effective Plan draws on comparisons from existing WMPs and industry practices and is summarized according to business practice categories described in Figure 3.

Figure 3: Mitigation Strategy Overview

Mitigation design should consider the following five components as outlined in the recent WMPs submitted by the IOUSs



Expertise in these critical elements facilitated Navigant’s review of the comprehensiveness of LEU’s WMP. While not all of these strategies are present in or applicable to LEU’s Plan, due to LEU’s size, location, and operational characteristics, Navigant’s understanding of collected utility strategies demonstrated throughout the state are summarized below:

- **Inspection and maintenance of distribution transmission and substation assets** including conducting system patrols and ground inspections, using technological inspection tools, managing predictive and electrical preventative maintenance, and conducting vegetation inspections and management, vulnerability detection such as Light Detection and Ranging (LiDAR) inspection; and geospatial and topography identification, geographic information system (GIS) mapping data. A key component is identifying collected data elements through each program and understand how that data is used and shared to improve utility practices.
- **Vegetation management** that includes routine preventative vegetation maintenance; corrective vegetation management and off-cycle tree work; emergency vegetation clearance, prioritized for portions of the service territory the lie in high hazard zones, quality control processes; and resource protection plan, including animal and avian mitigation programs.
- **System hardening** that includes pole replacement, non-expulsion equipment, advanced fuses, tree attachment removal, less flammable transformer oil, covered wire and wire wrap, and undergrounding where cost beneficial.
- **Operational practices** including communications and mustering plans under varying degrees of wildfire risk. Plans to deactivate automatic reclosers, de-energization of “at risk” area powerlines based on type of facility (overhead bare conduction, high voltage, etc.), tree and vegetation density, available dry fuel, and other factors that make certain locations vulnerable to wildfire risk.
- **Situational awareness** including obtaining information from devices and sensors on actual system, weather and other wildfire conductivity conditions, two-way communication with agencies and key personnel. Programs such as online feeds and websites such as the National Fire

Danger Rating System. Situational awareness should help achieve a shared understanding of actual conditions and serve to improve collaborative planning and decision making.

- **De-Energization actions** triggered and prioritized by forecasted extreme fire weather conditions; imminent extreme fire weather conditions; validated extreme fire weather conditions; and plans for re-energization when weather subsides to safe levels. Manual or automatic capabilities exist for implementation.
- **Advanced Technologies** including Distribution Fault Anticipation technology, tree growth regulators, pulse control fault interrupters, oblique and hyper-spectral imagery; advanced transformer fluids; advanced LiDAR, and advanced SCADA, to reduce electrical ignition while also helping to mitigate power outages and equipment damage.
- **Emergency Preparedness, Outreach and Response communications** before, during, and after emergencies including but not limited to engaging with key stakeholders that include critical facilities and served customers; local governments, critical agencies such as California Department of Forestry and Fire Protection (CAL FIRE), local law enforcement agencies and other first responders, hospitals, local emergency planning committees, other utility providers, California Independent System Operator, and the utility's respective Board. Coordination agreements such as Mutual Assistance should be leveraged. Community outreach plan should inform and engage first responders, local leaders, land managers, business owners and others.
- **Customer support programs** including financial assistance and support for low-income customers; billing adjustments; deposit waivers; extended payment plans; suspension of disconnection and non-payment fees; repair processing and timing; access to utility representatives; and access to outage reporting and emergency communications. Consideration of languages in addition to English. Identification of priority customers, such as first responders and local agencies, health care providers, water and telecommunication facilities, groups that assist children, elderly, mobility impaired, and other vulnerable populations.

2.2.3 Value Determination of Plan Metrics

Metrics for tracking the Plan's progress intend to allow the utility to refresh information as trends become clearer. Based upon the discussion included in the CPUC's Phase 2 of the SB 901 proceeding docket, interests in metric development and underlying data collection are beginning to take shape. While these determinations do not directly influence the public power sector, insight has been leveraged to employ effective metrics.⁷

⁷ CPUC Order Instituting Rulemaking to Implement Electric Utility Wildfire Mitigation Plans Pursuant to SB 901 (2018) (Rulemaking 18-10-007) https://apps.cpuc.ca.gov/apex/f?p=401:56:0::NO:RP,57,RIR:P5_PROCEEDING_SELECT:R1810007.

3. LEU WMP PLAN ELEMENTS

Navigant reviewed the Plan elements and determined whether the activities supported the intention to deploy an effective WMP. This determination incorporated individual elements as well as underlying data sources that further described data collection methodologies and implementation procedures to ensure measures are carried out and also tracked. This understanding also informs internal reviews and subsequent updates for future Plan iterations.

Navigant found that LEU’s WMP meets the statutory requirements of comprehensiveness PUC Section 8387. In this section, we review the WMP’s elements and their purpose relative to the development and successful execution of the WMP. A table comparing each subsection of PUC Section 8387 to the significant sections of the WMP can be found in Appendix A.

3.1 Objectives and Overview of Preventative Strategies and Programs

PUC Section 8387

(B) The objectives of the wildfire mitigation plan.

(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.

LEU has clearly stated objectives in its WMP in section II of the WMP. LEU’s primary objective refers to “reducing 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.” The secondary objective is to improve the resiliency of LEU’s electric system

Section V of LEU’s Plan describes in detail LEU’s preventative strategies and programs, which are discussed in more detail in the sections below.

3.1.1 Risk Assessment & Drivers

PUC Section 8387

(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.

(L) A methodology for identifying and presenting enterprise-wide safety risk and wildfire-related risk.

Section IV of LEU's WMP elaborates the risk analysis and risk drivers that guide the development of LEU's wildfire prevention practices. LEU identifies vegetation mortality, extended drought, and high winds as the primary risk drivers in this section. It also identifies indirect risks associated with dynamic climate change risk such as resource limitations if they are redirected to wildfire-related efforts outside of LEU service territory. This section also sets forth LEU's methodology for identifying enterprise-wide and wildfire-related risk includes overlaying its service territory on the CPUC's Fire-Threat Map. This exercise identifies that LEU service territory currently falls under the category of Tier 1 or low risk under the CPUC Fire-Threat Map. Additionally, LEU's system and service area characteristics (primarily urban, flat, compact, and without any unmanaged wildlands) demonstrate LEU poses a low risk of providing an ignition source for a wildfire.

LEU also discusses the specific design and construction standards it has implemented to minimize fire risk in Section V.C of the WMP. This section details the use of insulated wires, transformer selection, use of high flashpoint transformer oil, and use of undergrounding for new subdivisions and large commercial customers.

3.1.2 Asset Overview & Service Territory

PUC Section 8387

(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.

As described in Section IV of the WMP, LEU service territory falls under the Tier 1, low risk area of the CPUC fire threat map. LEU does not propose any changes to the map at this time as mentioned in section IV.C.

3.1.3 Wildfire Prevention Strategies

PUC Section 8387

(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.

(H) Plans for vegetation management.

(I) Plans for inspections of the local publicly owned electric utility's or electrical cooperative's electrical infrastructure.

3.1.3.1 Disabling Reclosers

Section V.F of the WMP states that it does not have any reclosers deployed downstream of its substations and it does not currently have a protocol for disabling reclosers at its substations. This decision is explained in detail based on the low-risk nature of LEU's power system and the negative impacts to public safety, critical first responders, and on health and communication infrastructure expected under extended outages.

3.1.3.2 De-Energization Protocols

Section V.G of the WMP identifies that while LEU has the authority to de-energize portions of its electric system for fire-threat conditions, it is not proposing to implement De-energization protocols for wildfire prevention. As with the decision not to disable LEU's reclosers, because LEU operates entirely within a Tier 1, low risk area LEU considered the harm from preemptory and longer duration power outages exceeds the low likelihood LEU's system may ignite a wildfire. LEU discusses several reasons related to public safety, critical first responders, and on health and communication infrastructure for not developing such a protocol.

This section also addresses that if power fed into LEU's system is cut but a public safety power shutoff (PSPS) LEU would enact its communication and notification capabilities to alert the community of the PSPS.

3.1.3.3 Vegetation Management

In Section V.D, LEU describes its vegetation management plan that implements standards based on and exceeding the minimum requirements in CPUC GO 95. LEU's standard practice for trimming is to have at least a five-foot clearance around secondary voltage overhead infrastructure, a ten-foot clearance around all primary voltage overhead infrastructure, and a 15-foot clearance around all sub-transmission and transmission overhead infrastructure. The vegetation within LEU's service territory is reflective of those typically found in an urban or suburban setting.

All trees in proximity to LEU electric infrastructure are visited at least every 18-24 months. Dense-vegetation areas are prioritized and fast-growing or invasive species are removed, subject to the permission of the tree's owner. LEU contracts this service out and has two dedicated tree crews with the ability to quickly scale up if needed.

3.1.3.4 Infrastructure Inspections

Section V.E of the WMP describes LEU's infrastructure inspection program. LEU seeks to always meet or exceed the inspection requirements in CPUC GO 95 Rule 18 and GO 165. LEU staff also leverage their knowledge of the system and geographical conditions to determine when certain areas require more frequent inspections.

3.1.4 Response & Restoration

PUC Section 8387

(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.

(M) A statement of how the local publicly owned electric utility or electrical cooperative will restore service after a wildfire.

3.1.4.1 Event Communication

LEU sets forth several communication channels in Section III (notably parts D, E, and F) of the WMP for use in an emergency situation to notify the public. These include the County of San Joaquin's emergency

alert system and cell-phone triangulation system, AM broadcasting, the company website, and Lodi Unified School District’s public-messaging capabilities. LEU is also developing an Outage Management System and an Interactive Voice Response system. In addition, the utility complies with the California Office of Emergency Services’ Standardized Emergency Management System (SEMS) Regulations and is a participant in the Western Energy Institute’s Western Region Mutual Assistance Agreement.

The WMP states that these communication channels and resources are available to LEU during an emergency event and would be used in the event of de-energization of an upstream feed to LEU (operating beyond its control).

3.1.4.2 Restoration

Section VII of the Plan states LEU will restore service following an outage based on the circuit prioritization outlined in its Electricity Emergency Plan (EEP). Lodi restores vital loads first, before the restoration of non-vital loads. During and following wildfire conditions the WMP also discusses how the system will be inspected for visual damage and hazards prior to energization.

3.1.5 Metrics & Plan Monitoring

PUC Section 8387

(A) An accounting of the responsibilities of persons responsible for executing the plan.

(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.

(E) A discussion of how the application of previously identified metrics to previous wildfire mitigation plan performances has informed the wildfire mitigation plan.

(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:

(i) Monitor and audit the implementation of the wildfire mitigation plan.

(ii) Identify any deficiencies in the wildfire mitigation plan or its implementation, and correct those deficiencies.

(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.

3.1.5.1 Responsibilities of Persons Responsible for Executing the Plan

Section III.A, and to a lesser extent Section III.B, identify the organization of LEU within the City of Lodi and identifies those responsible for the execution of the activities detailed in the plan.

3.1.5.2 Metrics

This section provides an assessment of the proposed metrics in Section VIII.A of LEU’s WMP. The metrics are intended to result in measurable, tracked results illustrating the efficacy of the Plan through to successful implementation. Tracking these metrics will also inform appropriate revisions and updates to

the Plan in future years. There are no set standards for metric development as they remain unique to a utility's approach in fire prevention and Plan execution.

The statutory requirements for the inclusion of metrics are found in PUC Section 8387(b)(2)(D) and (E) where utilities are directed to present these metrics and address how prior metrics impact the proposed metrics for the next version of the Plan. The four proposed metrics in LEU's 2019 WMP (shown in Table 5 below) serve as LEU's first version, providing no previous metrics with which to compare. These metrics represent LEU's approach to track fire ignitions related to its electrical infrastructure and to track the progress of its vegetation management and inspection programs. The underlying assumptions suggest that monitoring the frequency and cause of ignition events as well as the status of its programs will shape the direction of mitigation strategies as this information is collected and analyzed. These proposed metrics meet the statutory requirements and will assist in providing insight on the effectiveness of the Plan in future years.

Table 2: LEU Proposed Metrics

Specific metric	Indicator	Measure of effectiveness	Criteria
Wire down events	Count of events	No material increase	Any instance where an electric transmission or primary distribution conductor falls to the ground or on a foreign object
Fire ignitions	Count of events	No material increase	<ol style="list-style-type: none"> (1) LEU facility was associated with origin of the fire (2) Fire was self-propagating and of a material other than electrical and/or communication facilities (3) Resulting fire traveled greater than one linear meter from ignition point (4) LEU has knowledge fire occurred
Inspection-cycle completion	% grid completion	100% complete per GO 165 timelines	LEU service territory is divided into 66 smaller grids and each grid is inspected per the GO 165 timeline
Vegetation management cycle completion	% grid completion	100% complete every 18-24 months	LEU service territory is divided into 66 smaller grids and the vegetation near LEU assets is trimmed, removed, or managed in each grid every 18-24 months

3.1.5.3 Monitoring and Auditing the Plan

LEU plans to present its WMP to the Lodi City Council on an annual basis and have an independent evaluator review the Plan. LEU also plans to have its Operations Division internally audit its WMP and record the findings and corrective actions. In addition, LEU will monitor the effectiveness of its asset inspections through its Computer Maintenance Management System, which tracks issues and deficiencies identified during the inspections and ensures they are addressed. The details of these efforts are described in Section VIII.B-E.

3.1.5.4 Annual Review

The WMP will be reviewed at least annually. The review will include assessments of the WMP's programs and performance. As part of this process LEU will monitor and audit the implementation of the WMP, identify and correct deficiencies, and monitor and audit the effectiveness of electrical line and equipment inspections, including inspections carried out by contractors. The findings of these audits will be presented at a public meeting of the Lodi City Council in accordance with Section VI. of the WMP.

4. RESULTS & DISCUSSION

Navigant concluded this assessment on November 12, 2019. Over the course of reviewing LEU's WMP and supporting documentation, Navigant captured takeaways and findings that align the Plan with state laws and effective wildfire measure demonstration. LEU's Plan appropriately responds to each of the required elements of PUC Section 8387, which is detailed in Appendix A. The following describes the assessment and resulting findings of the Plan's proposed and established mitigation measures as it applies to safe, reliable operation of all electric infrastructure and wildfire prevention and response.

Report Conclusions

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.⁸
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.

⁸ Following acceptance of this Report, LEU will post the Report and results online for public view. The Report is scheduled for presentation to the City Council at a public meeting in November 2019. Accomplishing these follow-up tasks will meet all required statutory provisions up until presenting the final WMP to the City Council.

APPENDIX A. STATUTORY COMPLIANCE MATRIX

Required Statutory Element	Plan Section Reference(s)	LEU Plan Elements (Summarized)	Meets Section Elements (Determination)
(a) Each local publicly owned electric utility and electrical cooperative shall construct, maintain, and operate its electrical lines and equipment in a manner that will minimize the risk of wildfire posed by those electrical lines and equipment.			
(b) (1) The local publicly owned electric utility or electrical cooperative shall, before January 1, 2020, prepare a wildfire mitigation plan. After January 1, 2020, a local publicly owned electric utility or electrical cooperative shall prepare a wildfire mitigation plan annually and shall submit the plan to the California Wildfire Safety Advisory Board on or before July 1 of that calendar year. Each local publicly owned electric utility and electrical cooperative shall update its plan annually and submit the update to the California Wildfire Safety Advisory Board by July 1 of each year. At least once every three years, the submission shall be a comprehensive revision of the plan.			
(2) The wildfire mitigation plan shall consider as necessary, at minimum, all of the following:			
(A) An accounting of the responsibilities of persons responsible for executing the plan.	Section III A, B & C, pp. 5-6	LEU has a Roles and Responsibilities section in its plan with descriptions of the roles of the Electric Utility Director, Engineering and Operations Manager, and Electric Superintendent as well as each City Department. While the Plan identifies the Fire Chief as the person responsible for implementing the Incident Command Structure protocols, the identification of other roles with respect to the Incident Command Structure during a potential wildfire emergency may be helpful.	Yes

<p>(B) The objectives of the wildfire mitigation plan.</p>	<p>Section II, p. 4</p>	<p>LEU has clearly stated objectives in its plan. LEU's primary objective refers to reducing, eliminating, minimizing or mitigating the risk of wildfires caused by or exacerbated by the entity's electrical system. The secondary goal of improving system resilience in the context of wildfire risk is also a valid objective.</p>	<p>Yes</p>
<p>(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.</p>	<p>Section V, pp. 14-19</p>	<p>Section V provides a detailed description of LEU's preventative strategies with specific subsections on its low-risk service territory, weather monitoring, design and construction standards, vegetation management and maintenance and inspection. LEU also states that it has not identified any direct impacts on its territory from dynamic climate change risks.</p>	<p>Yes</p>
<p>(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.</p>	<p>Section VIII A, p. 21</p>	<p>The four metrics identified represent measurements of WMP effectiveness, including metrics that track wires down, fire ignitions, the completion rate of its inspection, and vegetation management cycles.</p>	<p>Yes</p>
<p>(E) A discussion of how the application of previously identified metrics to previous wildfire mitigation plan performances has informed the wildfire mitigation plan.</p>	<p>Section VIII B, p. 21</p>	<p>As with many other WMPs prepared for 2020, LEU's plan does not discuss the impact of previous metrics because those metrics have not been monitored and there was no previous wildfire mitigation plan to assess performance. The Plan clearly states LEU has not monitored these metrics in the past.</p>	<p>Yes</p>
<p>(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.</p>	<p>Section V F & G, pp. 18-19</p>	<p>A section on reclosers is included in the plan and clearly states that LEU does not currently have a protocol for blocking the reclosing of lines because it is in a low risk area and it would have significant adverse impacts on customers.</p> <p>Similarly, de-energization is not being implemented by LEU at this time and the discussions and justification are explained in detail. LEU will review this decision in the future iterations of the Plan.</p>	<p>Yes</p>

<p>(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.</p>	<p>Section III E, p. 11</p>	<p>While LEU's stated policy is NOT performing de-energization, it would use the communication procedures noted in Section III.E to notify customers.</p>	<p>Yes</p>
<p>(H) Plans for vegetation management.</p>	<p>Section V-D, pp. 14-16</p>	<p>Details of tree trimming activities are adequate and include minimum distances and frequency of vegetation work. LEU may wish to consider appending additional vegetation management program details.</p>	<p>Yes</p>
<p>(I) Plans for inspections of the local publicly owned electric utility's or electrical cooperative's electrical infrastructure.</p>	<p>Section V-E, pp. 16-18</p>	<p>LEU's Plan states that it meets or exceeds the inspection cycles and requirements provided in GO 95 and 165. LEU may wish to consider appending additional vegetation management program details.</p>	<p>Yes</p>
<p>(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>Section IV A & B, pp. 10-13</p>	<p>In general, this section identifies LEU's risk and risk drivers and addresses the topics of design, operation, and construction, as well as topographic and climatological risk factors.</p>	<p>Yes</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>Section IV A & B, pp. 10-13</p>	<p>LEU states that specific risks from these risk-drivers include increased vegetation mortality, contributing dry-fuels to the region, as well as vegetation in a weakened-state potentially falling into energized lines during high-wind events.</p>	<p>Yes</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 & B, pp. 10-13</p>	<p>In general, this section identifies LEU's risk and risk drivers and addresses the topics of design, operation, and construction as well as topographic and climatological risk factors.</p>	<p>Yes</p>

<p>(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 B, pp. 11-12</p>	<p>LEU's WMP confirms that its system is located completely in a low (tier 1) fire threat zone.</p> <p>LEU states it does not propose changes to the CPUC fire threat map at this time.</p>	<p>Yes</p>
<p>(L) A methodology for identifying and presenting enterprise wide safety risk and wildfire-related risk.</p>	<p>Section IV B, pp. 11-12</p>	<p>LEU includes a map overlay exercise as its methodology to identify and present wildfire-related risk. LEU should consider adding a formal risk assessment process to identify and present enterprise safety and wildfire-related risks.</p>	<p>Yes</p>
<p>(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. 27</p>	<p>LEU's Plan provides a statement of how it plans to restore service after a wildfire, including a discussion of efforts to inspect the condition of the system prior to energization.</p>	<p>Yes</p>
<p>(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>Section VIII C, D & E, pp. 21-22</p>	<p>LEU states it will conduct both internal and external (independent) audits of the plan to identify deficiencies. LEU has stated that the Electric Utility Director is responsible for the internal review and audit of the plan as well as the identification and tracking of deficiencies in the WMP's implementation and direct corrective actions for any plan or implementation deficiencies identified by LEU, its contractors or any external auditing parties. LEU also plans to monitor and audit the implementation of the plan by evaluating the progress of its vegetation management and inspection programs. LEU could expand upon this by instituting monthly or quarterly assessments that track LEU investments and activities proposed in the plan or directed to minimize wildfire risks.</p>	<p>Yes</p>

<p>(ii) Identify any deficiencies in the wildfire mitigation plan or its implementation, and correct those deficiencies.</p>	<p>Section VIII C, D & E, pp. 21-22</p>	<p>LEU has stated that the Electric Utility Director is responsible for the internal review and audit of the plan as well as the identification and tracking of deficiencies in the WMP's implementation and direct corrective actions for any plan or implementation deficiencies identified by LEU, its contractors or any external auditing parties.</p>	<p>Yes</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, D & E, pp. 21-22</p>	<p>LEU also plans to monitor and audit the effectiveness of its vegetation management and inspection programs through two of the metrics it has established in its Plan. LEU could expand upon this by instituting monthly or quarterly assessments that track LEU investments and activities proposed in the plan or directed to minimize wildfire risks.</p>	<p>Yes</p>
<p>(3) The local publicly owned electric utility or electrical cooperative shall, on or before January 1, 2020, and not less than annually thereafter, present its wildfire mitigation plan in an appropriately noticed public meeting. The local publicly owned electric utility or electrical cooperative shall accept comments on its wildfire mitigation plan from the public, other local and state agencies, and interested parties, and shall verify that the wildfire mitigation plan complies with all applicable rules, regulations, and standards, as appropriate.</p>	<p>Section VIII</p>	<p>LEU will present its WMP to the City Council at a public meeting in November 2019.</p>	<p>Yes</p>
<p>(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 website 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>	<p>LEU contracted with Navigant Consulting, Inc. to perform an independent evaluation of its WMP. Qualifications are described in Section 1.</p>	<p>Yes</p>