



2023 Independent Evaluation of Burbank Water and Power's 2022 Wildfire Mitigation Plan

Prepared for:

Burbank Water & Power

Submitted by:

Guidehouse Inc.
4001 South 700 East
Salt Lake City, UT 84107

March 23, 2023

[guidehouse.com](https://www.guidehouse.com)

This deliverable was prepared by Guidehouse Inc. for the sole use and benefit of, and pursuant to a client relationship exclusively with Lodi Electric Utility ("Client"). The work presented in this deliverable represents Guidehouse's professional judgement based on the information available at the time this report was prepared. Guidehouse is not responsible for a third party's use of, or reliance upon, the deliverable, nor any decisions based on the report. 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.

Table of Contents

Executive Summary	1
1. Background	2
1.1 Wildfire Mitigation Plans.....	2
1.1.1 SB 901.....	2
1.1.2 AB 1054 Statutory Modifications	3
1.2 Burbank Water and Power Plan Preparation	3
1.2.1 Independent Evaluation Services.....	3
2. Evaluation Scope and Approach	5
2.1 Evaluation Parameters.....	5
2.1.1 WMP Requirements	5
2.1.2 Industry Knowledge and Regulatory Proceedings	6
2.2 Evaluation Approach.....	6
2.2.1 Statutory Compliance	7
2.2.2 Industry Wildfire Mitigation Practices Comparison	7
3. BWP WMP Elements	8
3.1 Responsibilities of Persons Responsible for Executing the Plan	8
3.2 Objectives of the Plan	8
3.3 Wildfire Prevention Strategies.....	8
3.4 Metrics	9
3.5 Disabling Reclosers	10
3.6 De-Energizing Protocols	10
3.7 Event Communication.....	10
3.8 Vegetation Management.....	11
3.9 Infrastructure Inspections.....	11
3.10 Risk Assessment and Drivers	11
3.11 Asset Overview and Service Territory.....	12
3.12 Restoration.....	15
3.13 Monitoring and Auditing the Plan	15
3.14 Annual Review	16
4. FIRE INDUSTRY PRACTICES COMPARISON.....	17
5. Best Practice Comparison.....	21
6. Results and Discussion.....	35
Appendix A. Statutory Compliance Matrix.....	A-1

List of Tables

Table 2-1 – POU Requirements.....	5
Table 3-1 – Breakdown of BWP's 2022 electrical assets within Tier 2 HFTD.....	13
Table 3-2 – Inventory of BWP assets in the Tier 2 HFTD by circuit.....	15
Table 5-1 – Industry Practice Strategy Comparison Matrix	21

List of Figures

Figure 1-1 – Fire Triangle	2
Figure 2-1 – Mitigation Strategy Overview.....	7
Figure 3-1 – Electrical facilities within the Tier 2 HFTD	14
Figure 5-1 – Determinations for Benchmarking	21

Executive Summary

Burbank Water & Power (BWP) contracted with Guidehouse Inc. (Guidehouse) 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 Guidehouse. Guidehouse performed this evaluation in February 2023 and finalized the Report on March 20, 2023. Guidehouse's project team reviewed detailed information related to the Plan and assessed BWP's procedures related to the Plan.

The Plan was prepared as a response to Senate Bill (SB) 901. SB 901 and included a number of provisions and directives, among which includes the requirement for electric utilities to prepare and adopt WMPs 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).

Guidehouse evaluated the Plan based on the statutory requirements of PUC Section 8387 as it relates to POUs. This PUC Section was amended in 2019 with 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 Board and mandatory cyclical reviews, including a comprehensive update every three years. The required elements for a WMP have not been modified by this new legislation. This Report meets BWP's requirements under PUC Section 8387(c), which mandates an independent evaluation of BWP's WMP. The Report was also developed to satisfy the statutory requirement for public review. This Report underlies the required presentation at a public meeting of the Burbank City Council scheduled for May 23, 2023. BWP will also present this information to the BWP Board on May 4, 2023, for advice and comments before presentation to the City Council. The Report includes the following:

- Background of the legislative history requiring WMPs and their independent evaluations
- Approach and methodology evaluating the WMP's comprehensiveness
- BWP's WMP elements and their compliance with SB 901 and PUC Section 8387 WMP elements and directives
- An evaluation of the WMP's presented metrics to assess the effectiveness of the overall WMP
- 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 Guidehouse has concluded that BWP's WMP is comprehensive in accordance with PUC section 8387.

1. Background

In recent years, California has seen numerous utility equipment-involved, catastrophic wildfires. The unique geographic profile of California and the impacts of climate change, including prolonged drought, high winds, and elevated temperatures, have led to elongated fire seasons. The state also has historically high levels of past fire suppression efforts. This increasingly abundant dry vegetation is the leading driver of wildfires. These fuel-rich environments, coupled with intensified climatological conditions with high wind gusts and inherent 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 1-1.

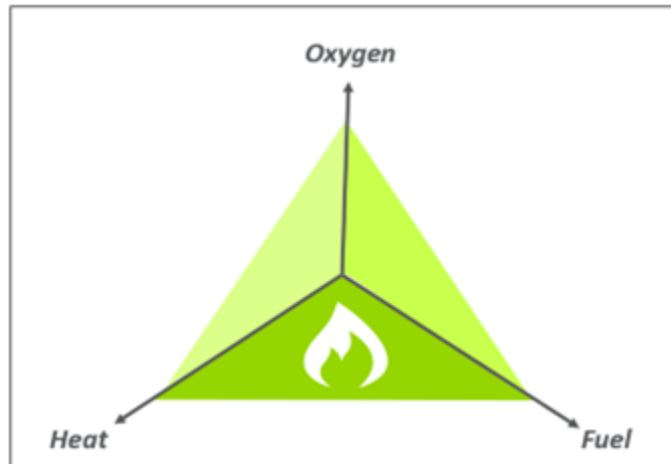


Figure 1-1 – Fire Triangle

Disastrous wildfire threat is a well-known and shared priority among electric utilities in California. Disastrous utility-involved wildfire incidents and the significant financial and livelihood impacts associated with them led California legislators and regulators to formalize requirements to ensure safe operations of electric utility equipment and greater investment in wildfire mitigation efforts. Specifically, the state has approved legislation that strengthens governmental and regulatory oversight of wildfire prevention implementation activities, utility wildfire mitigation 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 SB 901 (Senator Bill Dodd, 2018), to prepare and annually adopt a wildfire mitigation plan. This effort is foundational to the state's prioritized goal of minimizing the potential of devastating fires in future years.

1.1 Wildfire Mitigation Plans

1.1.1 SB 901

In an effort to minimize future devastating occurrences through risk-driven wildfire prevention, electric utilities, including publicly owned utilities (POUs), were mandated, by Senate Bill (SB) 901 to prepare and annually adopt a WMP. The WMPs must include several mitigation and response elements in each utility's strategies, protocols, and programs. The requirements for POUs are codified in Public Utilities Code (PUC) Section 8387. Details relating to POU requirements are discussed in Section 2 of this WMP evaluation report (Report).

1.1.2 AB 1054 Statutory Modifications

In 2019, Assembly Bill (AB) 1054 was signed into law, modifying the requirements for POU WMPs. AB 1054 aims to mitigate the intensity of wildfire impacts through several initiatives separate from those actions required of electric utilities. AB 1054 includes directives to establish the Wildfire Safety Division¹ at the California Public Utilities Commission and the state's Wildfire Safety Advisory Board (WSAB). AB 1054 requires POUs submit their WMPs by July 1 of each year for review by and recommendations from WSAB and requires POUs to comprehensively update their WMPs at least every three years. The most recent *Guidance Advisory Opinion for 2022 POU WMPs* was published on March 2, 2022.

1.2 Burbank Water and Power Plan Preparation

Burbank Water and Power is a vertically integrated, publicly owned municipal utility that has served Burbank's electrical needs for more than 100 years. Being vertically integrated means that BWP generates, transmits, and distributes power to Burbank customers. BWP is owned and operated by the City of Burbank and is governed by the BWP Board and the Burbank City Council. BWP is not-for profit, delivering service at cost.

BWP is committed to providing reliable, affordable and sustainable electrical service to Burbank. BWP's reliability is superb, maintaining electrical service to BWP's customers 99.99% of the time in 2021.

BWP prepared its first WMP pursuant to SB 901 directives in 2019. While the City of Burbank has experienced several wildfires in the Verdugo Mountains throughout its history, no wildfires have ever been caused by BWP electrical facilities. This WMP describes the range of activities that BWP is taking to mitigate the threat of power-line ignited wildfires, including its various programs, policies and procedures. This plan will be reviewed and evaluated by its governing board each year. This plan meets or exceeds the requirements of PUC section 8387 for publicly owned electric utilities to prepare a WMP by January 1, 2020, and annually thereafter. Table 1 below summarizes the plan compliance with the corresponding plan sections referenced.

1.2.1 Independent Evaluation Services

PUC Section 8387(c) directs POUs to procure an independent evaluation (IE) of the comprehensiveness of the WMP. The provisions of PUC Section 8387 state that the "qualified independent evaluator" shall be experienced in "assessing the safe operation of electrical infrastructure" and will perform an assessment to determine the comprehensiveness of the WMP.

Accordingly, BWP sought IE services to assess the comprehensiveness of its WMP pursuant to PUC Section 8387(c). BWP selected Guidehouse to perform this assessment based on Guidehouse'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. Guidehouse has conducted over 12 independent evaluations of POUs across California and is a California Office of Energy Infrastructure Safety ("Energy Safety") designated

¹ Oversight and responsibility for the Wildfire Safety Division was transferred from the California Public Utilities Commission to the California Natural Resources Agency on July 1, 2021 and is now known as the Office of Energy Infrastructure Safety.

qualified independent evaluator for the last two years, and as such has conducted six independent evaluations of three CA IOUs.

This Report presents the results of Guidehouse's WMP IE.

2. Evaluation Scope and Approach

Guidehouse completed this evaluation based on industry standard practices, our experience performing independent evaluations of WMPs, our active tracking of wildfire regulatory proceedings, WSAB guidance, and, most importantly, a comparison of the specific criteria in PUC Section 8387(b)(2) to the specific wildfire-related plans outlined in BWP's WMP.

2.1 Evaluation Parameters

2.1.1 WMP Requirements

Table 2-1 lists the requirements for the statutory requirements for POUUs to address in their WMPs.

Table 2-1 – POU Requirements

PUC Section 8387
(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.
(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.
(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.
(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.
(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.
(H) Plans for vegetation management.
(I) Plans for inspections of the local publicly owned electric utility's or electrical cooperative's electrical infrastructure.

<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>
<p>(L) A methodology for identifying and presenting enterprise wide safety risk and wildfire-related risk.</p>
<p>(M) A statement of how the local publicly owned electric utility or electrical cooperative will restore service after a wildfire.</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>(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>(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>(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>

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. Guidehouse tracks state proceedings and routinely advises, assesses, and guides utility wildfire mitigation efforts. Accordingly, we reviewed BWP's WMP against the provisions in PUC § 8387 and relative to its risk profile which includes, but is not limited to, its topography, climate, assets, and structure.

2.2 Evaluation Approach

Guidehouse assessed the comprehensiveness of the plan against the applicable regulations to determine whether BWP meets the standard set forth in PUC § 8387(c).

2.2.1 Statutory Compliance

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

2.2.2 Industry Wildfire Mitigation Practices Comparison

Guidehouse's understanding of an effective WMP draws on comparisons from existing WMPs and industry practices, WSAB guidance, risk profile, and mitigation strategy. This mitigation strategy analysis is visually summarized in Figure 2-1.

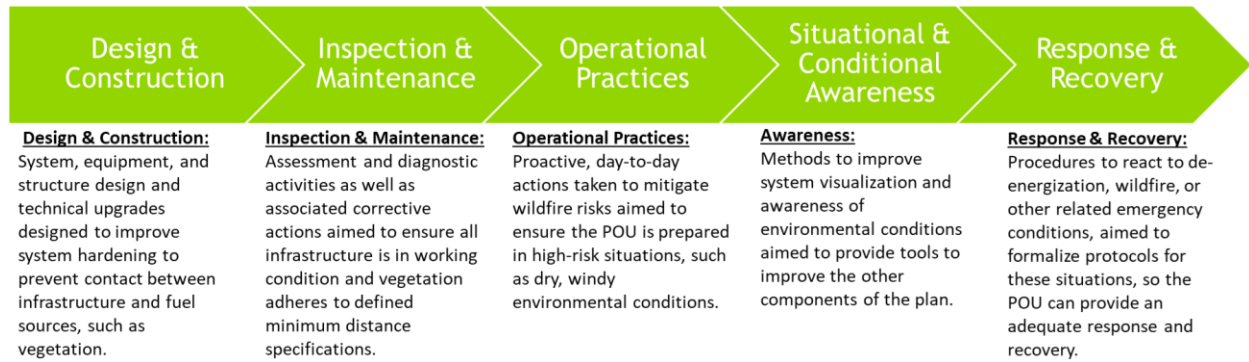


Figure 2-1 – Mitigation Strategy Overview

These critical elements are evaluated as part of Guidehouse's review of the comprehensiveness of BWP's WMP. This evaluation includes a consideration that not all of these strategies are necessarily present in or applicable to BWP's WMP, due to BWP's inherent risk, size, location, and operational characteristics.

3. BWP WMP Elements

Guidehouse reviewed the WMP elements and determined whether the activities achieve the objective of WMP “comprehensiveness” of PUC Section 8387. This determination incorporates individual elements as well as underlying data sources that further describe data collection methodologies and implementation procedures to ensure measures are carried out and also tracked.

Guidehouse determined BWP’s WMP meets the requirement 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 Responsibilities of Persons Responsible for Executing the Plan²

BWP’s General Manager has overall responsibility for the WMP. Other members of the management team are responsible for executing the various components of the WMP. Section 7.1 of the WMP addresses accountability, roles, and responsibility for BWP’s WMP. In general, Design and Construction activities are under the purview of the Manager, T&D Engineering. Inspection and Maintenance is the responsibility of the Manager, Electrical Distribution and Manager, T&D Engineering. Operational Practices responsibility is split between the Managers of the Energy Control Center (ECC) and Electrical Distribution. The Manager, ECC and Manager, T&D Engineering are also responsible for Situational/Conditional Awareness activities. This level of assignment is appropriate for a utility the size of BWP.

3.2 Objectives of the Plan³

The primary objectives of this WMP, are described in Section 1.3 of the WMP and include:

1. Reduce the probability that BWP’s electric system may be the contributing source for the ignition of a wildfire; and
2. Harden and maintain BWP’s electric system against a potential wildfire; and
3. Create a WMP that is consistent with state law and objectives.

In support of these objectives, BWP intends to continually evaluate cost effective improvements to its design standards, physical assets, inspection and maintenance programs, operations, and training to meet these objectives.

3.3 Wildfire Prevention Strategies⁴

Chapter 3 provides an overview of BWP’s preventative strategies and programs for preventing wildfire. Table 2 of the WMP provides an overview of all the actions and programs already under way or planned by BWP to prevent wildfires. These strategies and programs are elaborated upon further in Chapter 5 which details the elements of those strategies and programs. Specifically, BWP details how it incorporates wildfire mitigation into Facility Design and

² PUC Section 8387(2)(A)

³ PUC Section 8387(2)(B)

⁴ PUC Section 8387(2)(C)

Construction, Inspection and Maintenance, Operational Practices, and Situational/Conditional Awareness in accordance with this plan and in consideration of wildfire and dynamic climate change risks.

As noted by the WSAB in their evaluation of BWP's 2020 WMP, Guidehouse believes that "Burbank has provided an excellent description of implementation of wildfire mitigation strategies.

Specifically, BWP conducts the following:

1. Facility Design and Construction
 - Deteriorated pole replacements
 - Pole loading assessments & remediation
 - Overload transformer replacements
 - Distribution construction standard improvements
 - Conventional fuse replacements
2. Inspection and Maintenance
 - Annual patrol inspection (GO 165)
 - Vegetation management program
 - Intrusive pole inspections
3. Operational Practices
 - Block reclosing and increase relay sensitivity during RFW
 - Line patrol after outage event during RFW
 - Ignition potential work practices during RFW
4. Situational Awareness
 - Weather/fire monitoring
 - Geographic information system (GIS) applications
 - Enhanced system monitoring

It is noted that BWP updated the WMP for 2022 to add enhanced system monitoring as a new mitigation activity.

3.4 Metrics⁵

BWP sets forth and describes numerous metrics that may impact or contribute to wildfire prevention in section 7.2.1. These metrics are used by BWP to provide insight into BWP's performance and dynamic conditions across BWP's service area. BWP also designates the responsible party for collecting the metrics and the periodicity for each metric's collection. BWP also tracks risk driver events in Table 14 of this section. The WMP also includes a broader discussion of previous metrics and how those metrics are used to shape and improve measures to reduce the risk of wildfires. For reference, a broader, multi-year period of historical outage information was previously highlighted in Table 5 of Section 4.4 of the WMP. The table includes "Wildfire Risk Event" and "Number of Occurrences (by circuit)".

⁵ PUC Section 8387(2)(D) and PUC Section 8387(2)(E)

Guidehouse agrees with the WSAB that BWP's metrics are an excellent selection of and comprehensive tracking metrics to assess progress on mitigation of wildfire risks, as well as reporting and auditing metric data from previous years.

3.5 Disabling Reclosers⁶

Section 5.3.1 Block reclosing and increase relay sensitivity during RFW - BWP has reclosing capabilities on all substation circuit breakers in the electrical system. Reclosing a circuit could potentially ignite vegetation if fault conditions are still present. Accordingly, BWP enacted an operating procedure to block reclosing capabilities on all circuits in the Tier 2 HFTD during RFW conditions issued by the National Weather Service. Additionally, more sensitive, quicker acting relay settings are employed during RFW conditions to increase the chance of detecting and isolating a fault. Additionally, all of the recloser settings can be changed remotely which allows BWP to respond quickly to changing conditions.

3.6 De-Energizing Protocols⁷

Section 5.5 Public safety power shutoff (PSPS) discusses BWP's approach to pre-emptive de-energization. Specifically, BWP details that they do not plan to implement a PSPS as a mitigation measure unless instructed to do so by the Burbank Fire Department, Burbank Police, CALFIRE, or other emergency responders. Additionally, BWP states ECC retain the authority to de-energize portions of the electric system for safety, reliability or during emergency situations as directed by the three identified entities or other emergency personnel.

BWP supports this approach by citing the following features:

- BWP's compact, urban service territory and accessibility allows for rapid response times from the Burbank Fire Department and BWP electrical field personnel.
- BWP's situational awareness of its electrical system allows for rapid, targeted response to outage event locations. This allows personnel to identify whether any risk driver events led to any ignitions, which allows the Burbank Fire Department to respond quickly and limit any further potential spread.
- BWP's mitigation activities as described in Section 5 of the WMP further reduce the risk of its facilities igniting a wildfire in the Tier 2 HFTD

Guidehouse does, however, recommend BWP develop an operating protocol for PSPS implementation, no matter how unlikely, that includes responsibilities and actions for de-energization. This protocol should describe how BWP will notify those affected, mitigate the public safety impacts of a PSPS, and expected impacts on critical first responders and on health and communication infrastructure.

3.7 Event Communication⁸

Section 6.3 describes customer support during emergencies describes how BWP maintains a communications protocol for communication and coordination with its primary stakeholders, including Burbank Fire, the City Manager, other utilities, elected officials, fire agencies and first

⁶ PUC Section 8387(2)(F)

⁷ PUC Section 8387(2)(F)

⁸ PUC Section 8387(2)(G)

responders, and BWP's emergency response support team. BWP notes that communication with customers impacted by the de-energizing of electrical lines during an emergency would be initiated using BWP's standard communication protocols, however, Guidehouse recommends that notification be addressed in a PSPS protocol recommended above in Section 3.6.

3.8 Vegetation Management⁹

Section 5.2.2 details BWP's Vegetation Management Program by describing how BWP's vegetation management program meets (1) Public Resources Code section 4292; (2) Public Resources Code section 4293; (3) GO 95 Rule 35; and (4) the GO 95 Appendix E Guidelines to Rule 35, and is overseen by the Manager, Electrical Distribution. BWP's vegetation management program is well designed to reduce wildfire hazards.

BWP also performs routine vegetation management specifically for vegetation clearances, as defined in Table 8 – Vegetation clearances, within the WMP, by pruning and removal, on an annual basis in the Tier 2 HFTD. These clearances are beyond those required by GO 95 Rule 35. Each year, field patrols are performed to inspect tree and conductor clearances and to identify any hazard trees. Areas for vegetation pruning and removal are targeted based on the results of these patrols. BWP hires contracted line clearance tree trimming crews to trim vegetation near its electrical lines, inspect tree and conductor clearances and identifies any hazard trees for removal. BWP contractor crews trim a minimum of 12 feet of clearance. BWP's tree trimming contractors are specialists, supervised by a certified arborist. Finally, BWP performs a Quality Assurance review of field work and a Quality Control check of submitted reports and documentation.

3.9 Infrastructure Inspections¹⁰

Section 5.2.1 describes BWP's annual infrastructure patrol inspection (GO 165) program to inspect each component of the electrical system to check that no obvious abnormalities exist to the extent possible. During these inspections, problems are identified, prioritized, and corrected. The specific cycles, along with the cycles for detailed inspections are included in Table 7 of the WMP. Additionally, Section 5.2.3 describes BWP's intrusive pole inspections for its Tier 2 areas. BWP performs these inspections on cycles that meet or exceeds the timeframes given in General Order 165 (GO 165) and they are moving to a five-year cycle. Additionally, BWP is in the process of implementing digital inspection tools to improve record keeping and tracking of detailed inspections in the HFTD.

3.10 Risk Assessment and Drivers¹¹

Chapter 4. Risk Analysis and Risk Drivers describes BWP's risk assessment process and inputs. BWP's WMP establishes three separate evaluations to identify, describe, and prioritize all wildfire risks and drivers for those risk. These evaluations include a Risk Bowtie Analysis, a Site Fire Environment Assessment, and an Electrical Equipment Assessment. The WMP also defines the difference between hazard and risk.

⁹ PUC Section 8387(2)(H)

¹⁰ PUC Section 8387(2)(I)

¹¹ PUC Section 8387(2)(J)(i); PUC Section 8387(2)(J)(ii); PUC Section 8387(2)(L)

Through these analyses BWP identified and documented the following key elements and actions:

1. Key risk impacts (injuries/fatalities, prolonged outages, damage/loss of equipment, and claims for damaged property),
2. Risk drivers (electrical equipment failure, conventional fuse operation, wire contact with foreign object(s) or vegetation, and extreme weather conditions), and
3. Prioritize risks based on location within the Tier 2 HFTD, proximity to overhead equipment, and density of vegetation underneath the overhead facilities.

BWP analyzed outage records for energized circuits within wildfire-threat areas and recent outage data between January 2005 and December 2021 that was obtained from BWP. These records include frequency and cause of outages and represent the most accurate depiction of how often potential ignitions may occur within BWP's Tier 2 HFTD. The electrical equipment risk assessment examined five categories:

- Equipment failure – Failure of electrical assets and equipment can result in downed wires or sparking which may cause an ignition.
- Conventional fuse operation. Operation of a transformer or lateral fuse for a faulted condition that resulted in sparks that could have led to fire ignition
- Wire contact with foreign object(s). Operation of a transformer or lateral fuse for a faulted condition that resulted in sparks that could have led to fire ignition
- Wire contact with vegetation: Tree, tree limb, palm fronds or other vegetation contact with conductors that could result in ignition.
- other or unspecified events: Situations where BWP was unable to determine the cause and location of the outage.

3.11 Asset Overview and Service Territory¹²

Section 4.1 states BWP retained a third-party consultant to perform a risk assessment of its electrical system and equipment which included an electrical equipment assessment that provided an inventory of BWP electrical assets within the Tier 2 HFTD along with analysis of historical outage information.

BWP has a detailed inventory of BWP assets within Tier 2 HFTD area organized by distribution feeder circuit. As indicated, there is a total of approximately 25 miles of distribution lines in Tier 2 HFTD, with 14 miles of underground lines and 11 miles overhead wire. The overhead wire and associated components are the focus of this WMP, which represents the primary source of potential wildfire ignitions. Approximately 56 percent of BWP-owned electrical lines in the Tier 2 HFTD area are currently underground, which significantly reduces the threat of fire ignition.

Section 4.3 describes the electrical facility assessment and includes a breakdown of BWP's electrical assets within the Tier 2 HFTD.

As shown in Table 3-1, approximately five percent of BWP's total 204 miles of overhead wires are located within the Tier 2 HFTD area. Approximately 11 percent of the total underground lines occur within the Tier 2 HFTD area.

¹² PUC Section 8387(2)(K)

Table 3-1 – Breakdown of BWP's 2022 electrical assets within Tier 2 HFTD

BWP asset	Total assets in entire system	Total assets within Tier 2 HFTD	Percent of total
Overhead wire	204 miles	11 miles	5.4%
Underground lines	131 miles	14 miles	10.7%
Poles	10,737	643	6.0%
Overhead transformers	4,698	184	3.9%
Overhead conventional transformer fuses	4,698	184	3.9%
Overhead conventional lateral fuses	2,060	45	2.2%

Table 3-1 does not include a fuse count reduction for the non-expulsive fuses expected to be installed by June 2022 (work in progress), an updated count will be provided in the 2023 WMP, however, as of the 2022 WMP, 38 are installed with an outstanding number of additional fuses to be installed once supply chain issues are resolved.

BWP also included Figure 3-1, below, which represents the portion of BWP's service territory (e.g., feeder lines and equipment) within CPUC fire-threat areas. As illustrated in Figure 3-1, BWP's electrical system is located within both Tier 2 HFTDs, and areas not considered within the HFTD (referred to as outside HFTD in this WMP).

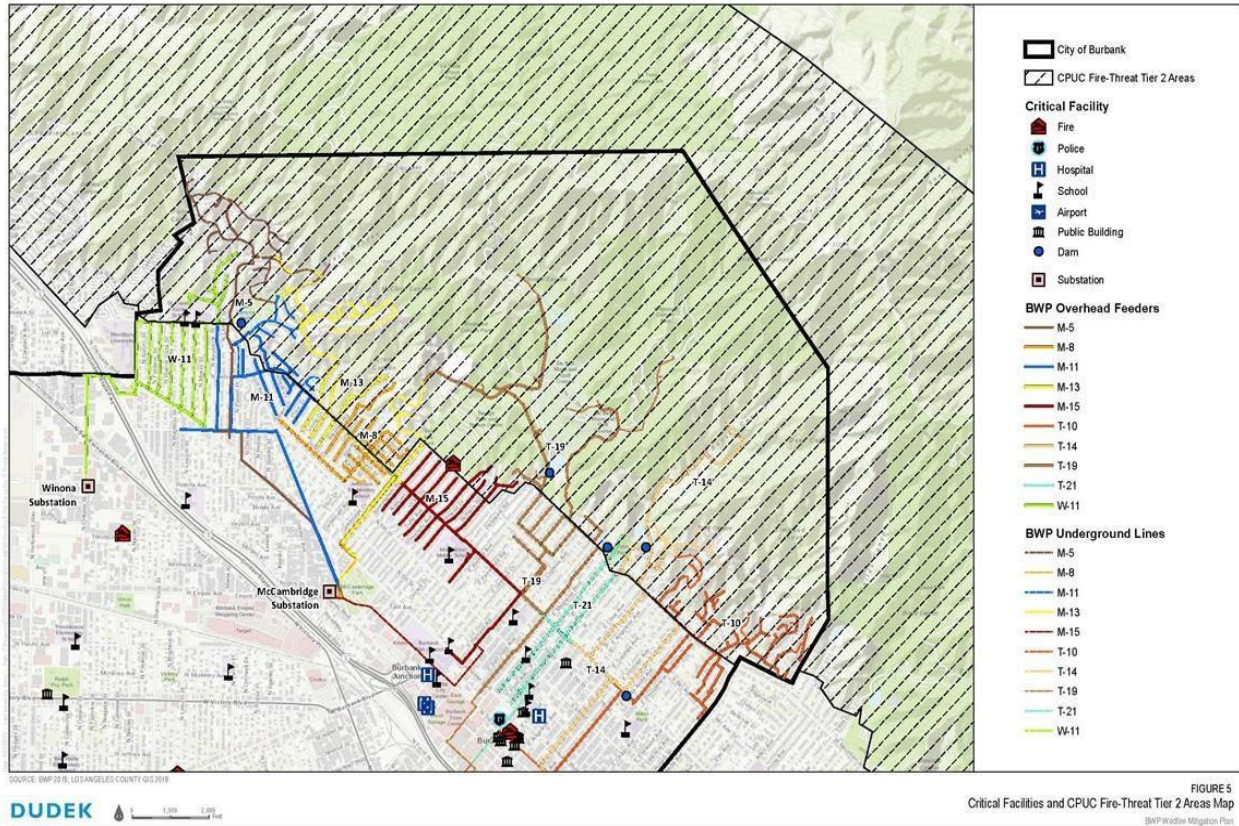


Figure 3-1 – Electrical facilities within the Tier 2 HFTD

There is a total of approximately 25 miles of distribution lines in Tier 2 HFTD, with 14 miles underground lines and 11 miles overhead wire. The overhead wire and related components are the focus of this WMP as they represent the most likely source of potential wildfire ignitions. It is noted that approximately 60 percent of BWP- owned electrical lines in the Tier 2 HFTD area are currently underground, as depicted in column 3, which significantly reduces the threat of fire ignition. Section 4.3.1 notes BWP participated in, and was a territory lead, in the threat mapping process with the CPUC. BWP believes the current CPUC HFTD designations are accurate and do not recommend any changes.

Table 3-2, below, provides an inventory of BWP assets within Tier 2 HFTD area organized by distribution feeder circuit. This table provides an excellent understanding of how the risks identified in the risk assessment present in real life.

Table 3-2 – Inventory of BWP assets in the Tier 2 HFTD by circuit

Electric "feeder" ¹³	Voltage (kV)	No. of miles UG lines	No. of miles OH lines	No. of poles	No. of OH transformers	No. of OH conventional transformer fuses	No. of conventional lateral fuses
M-5	4.16	3.9	0.4	18	11	11	0
M-8	4.16	0.0	1.23	80	20	20	8
M-11	4.16	1.83	0.45	41	9	9	7
M-13	4.16	4.58	0.8	48	11	11	4
M-15	4.16	0.0	0.46	25	8	8	0
T-10	4.16	1.2	2.3	167	48	48	12
T-14	4.16	1.54	1.53	83	24	24	3
T-19	4.16	1.0	2.91	134	38	38	9
T-21	4.16	0.0	0.08	14	2	2	1
W-11	4.16	0.0	0.9	33	13	13	1
Total		14.05	11.06	643	184	184	45

3.12 Restoration¹⁴

Section 6.4 Restoration of Service describes how BWP restores its electric system in accordance with the BWP Emergency Response Plan. After a wildfire, BWP’s Department Operations Center (DOC) will coordinate restoration of service in alignment with direction from the City of Burbank’s Emergency Operations Center (EOC). BWP also noted that it conducts a patrol before re-energizing any de-energized portion following an outage on a circuit with a disabled recloser.

3.13 Monitoring and Auditing the Plan¹⁵

Section 7.3 describes how the WMP is monitored and audited. Specifically, the WMP states that BWP will audit the WMP annually to monitor the effectiveness of the implementation of the

¹⁴ PUC Section 8387(2)(M)

¹⁵ PUC Section 8387(2)(N)(i) and PUC Section 8387(2)(N)(ii)

WMP and will align with BWP's planning and budget process. The audit will include an assessment of the metrics and the effectiveness of the WMP implementation and mitigation activities. After completion of the annual internal audit, the WMP will be updated accordingly. BWP also audits the effectiveness of electrical line and equipment inspections. Any problems identified will be recorded and prioritized for correction.

3.14 Annual Review¹⁶

Section 7.3 also describes BWP's process to annually review and update the WMP following the internal audit.

¹⁶ PUC Section 8387(2)(N)(iii)

4. FIRE INDUSTRY PRACTICES COMPARISON

In consideration of industry-accepted and demonstrated mitigation measures, Guidehouse is providing a comparison against approved California utility WMPs, where comparable to BWP by service territory, risk profile, and equipment within the HFTD. This comparison is separate and additional to the regulatory evaluation required by PUC Section 8387(c). The complete comparison matrix with supporting information is provided in TABLE 5-1 – **Industry Practice Strategy Comparison Matrix**. Five areas have been highlighted for detailed discussion of the applicability and efficacy of the proposed WMP strategy.

Service Area

BWP is owned and operated by the City of Burbank and is governed by the BWP Board and the Burbank City Council. BWP electric system provides power to approximately 53,133 customers across 17 square miles within the City limits. In total, BWP currently serves 46,173 residential, 5,629 small commercial, 1,088 medium commercial, 156 large commercial, and 87 extra-large customer accounts. BWP supplies electrical service to its customers through a distribution network, which includes 13 distribution substations, 2 customer substations, 5 switching stations, 45 miles of 34.5 kilovolt (kV) sub-transmission lines, 33 miles of 69 kV transmission lines, 204 miles of overhead distribution lines, 131 miles of underground distribution lines, 587 miles of overhead secondary lines, 117 miles of underground secondary lines, 10,737 poles, and 5,834 transformers.

BWP is responsible for an area adjacent to the Verdugo Mountains designated as Tier 2 (elevated risk) HFTD. The Tier 2 area is 4.89 square miles with approximately 25 miles of distribution lines of which approximately 14 miles are underground lines and 11 miles are overhead wire. Ten distribution circuits have facilities within Tier 2 span across 643 distribution poles and 184 distribution transformers, 184 conventional transformer fuses, and 45 conventional lateral fuses.

BWP performed a risk assessment and determined that due to continuity of vegetation within the canyon and density of tree canopies surrounding the residential homes, Sunset Canyon (the upper road segment of Country Club Drive) poses the greatest risk of wildfire within Burbank's Tier 2. BWP further prioritized their Tier 2 mitigation efforts into three sub-categories:

- Priority Level 2.1 – Tier 2 HFTD with dense vegetation adjacent to overhead electrical facilities
- Priority Level 2.2 – Tier 2 HFTD with low density vegetation underneath overhead electrical facilities
- Priority Level 2.3 – Tier 2 HFTD with no overhead electrical facilities

Fuels Management

Accumulation of vegetation, both live and dead, increase the chances of catastrophic wildland fire. Excess fuel allows fires to burn hotter, larger, longer, and faster, making them more difficult and dangerous to manage. The intensity and severity of wildfires is often reduced through fuels management activities. Fuels management is an action designed to reduce fire hazards by removing or rearranging fuels. When applied to strips of land, they are designated as a fuel

break or fire break. Fuel breaks are strips of land in which vegetation, both dead and alive has been modified, but some trees and shrubs are retained.

The Burbank Fire Department has a Fire Hazard Reduction Program for brush clearance. Two Mountain Fire Zones are designated by the Fire Department. One zone is located along the foothills of the Verdugo Mountains in northeast Burbank, and the other is located in the southwestern portion of the city adjacent to Warner Bros. Studios. The program is designed to have property owners maintain their property in a safe fire condition throughout the year. The program guidelines have 12 specific requirements for 0-100 foot clearance, guidelines for 100-200 foot clearance (fuel modification zone) and recommendations for vegetation management and defensible spaces. Beginning June 1, 2020 Burbank Fire Department conducts annual brush clearance inspections. Burbank Fire Department also provides compliance enforcement.

The City of Burbank's approach to fuels management is well designed and can be considered a leading practice.

Disabling Reclosing Operations

Disabling reclosing refers to the ability to turn off the functionality of substation reclosing circuit breakers and line reclosers to attempt to isolate fault conditions and re-energize (turn back on) areas of the electric grid. Traditionally, electrical circuits were designed to automatically open and close to detect and isolate faults. In many cases, the relays would make two or three attempts to isolate a fault condition. Each potential attempt could cause an electrical spark, which could be a source of ignition. Disabling reclosing significantly reduces the number of potential ignition sources.

BWP has a documented operating procedure that has been enacted to block reclosing capabilities on all circuits in the Tier 2 HFTD during RFW conditions to prevent any potential for vegetation ignitions. Additionally, BWP uses more sensitive, quicker acting relay settings during RFW conditions to increase the chance to detect and address a fault. These practices were enacted through four RFW events that extended across 11 days in 2021.

From the WMP, BWP states it "has reclosing capabilities on all substation circuit breakers in the electrical system. Under normal operation, once a fault is detected the circuit will first open and will attempt to reclose the circuit to test if the fault condition still exists. The circuit will make two total attempts to reclose the circuit and will remain open and locked out if unsuccessful. In the Tier 2 HFTD, each attempt to reclose the circuit could cause a spark if fault conditions are still present. For this reason, BWP enacted an operating procedure to block reclosing capabilities on all circuits in the Tier 2 HFTD during RFW conditions to prevent any potential for vegetation ignitions." Additionally, BWP employed "more sensitive, quicker acting relay settings are employed during RFW conditions to increase the chance of detecting and isolating a fault."

Guidehouse finds BWP's approach to disabling/blocking reclosing, and the use of more sensitive relays on RFW days is consistent with the best practices at other Utilities.

Non-Expulsive Fuse Devices

Fuses (Fusing) refer to protective devices that defend the distribution system from faulted or damaged lines and equipment. Historically, BWP, other utilities in California, and utilities across the country have used conventional fuses to protect powerlines. These conventional fuses, when operated, expel hot particles and gases, which can start fires. In order to mitigate the

potential for fire ignitions, non-expulsive fuses can be installed to replace expulsion type fuses. Fuses manufacturers now provide current-limiting dropout fuses with a self-contained design that eliminates expulsive showers associated with expulsion fuse operation. These non-expulsive fuses are more suitable for HFTDs. These non-expulsive fuses have also been granted permanent exemption by the California Department of Forestry and Fire Protection (CALFIRE) from pole clearance requirements if installed in the field according to manufacturer's specifications.

BWP has made a substantial effort to replace its traditional fuses in the Tier 2 HFTD with exempt non-expulsive fuses, which it had identified as a key risk driver. Tables 3 and 4 in WMP Section 4.4 - Electrical Facility Assessment shows 229 OH distribution transformer and lateral fuses remaining within Tier 2. Additionally, BWP indicates in Section 4.4 - Electrical Facility Assessment, Table 5 - Electrical Equipment Risk Drivers Based on Historical Events that 41% of the historical events (26 potential ignitions) occurred with Tier 2, this section even breaks the numbers down by circuit for granular analysis.

BWP's records show that 41% of risk driver events since 2005 are associated with conventional fuse operations within the Tier 2 HFTD. Replacing conventional fuses with non-expulsive fuses will eliminate this risk driver. After performing an engineering evaluation study in 2021, BWP determined that replacement of all conventional fuses in the Tier 2 HFTD with CALFIRE "Exempt" fuses is a cost-effective method of reducing the risk of utility caused wildfires in the Tier 2 HFTD.

According to BWP's own investigation on this matter "Conventional fuse operations account for 47% of BWP's risk driver events." Therefore, BWP developed and implemented "a program to replace all conventional fuses in the Tier 2 HFTD with CALFIRE "Exempt" fuses based on the "California Power Line Fire Prevention Field Guide." to further reduce the risk of wildfire." BWP plans replace all conventional fuses with CALFIRE "Exempt" fuses in the Priority 2.1 zone of the Tier 2 HFTD. by June 2024.

BWP's fuse replacement program to replace expulsive fuses with the non-expulsive fuses is a best practice and aligns with other utilities in the state.

Operational Activities Limitations

Procedures and routine operational practices that limit or curtail operational activities during periods of increased risk within fire threat districts are a best practice used by some California utilities. These procedures and practices provide employees and contractors specific information and instructions to improve the reliable and safe operations of electric facilities and mitigate the threat of utility caused inadvertent ignitions.

BWP has implemented several operational practices in the Tier 2 HFTD to reduce fire risk on Red Flag Warning (RFW) days. In the WMP Section 5.3 - Operational Practices, BWP notes that it blocks reclosing and increases its relay sensitivity to prevent the ignition of vegetation and debris. BWP also conducts line patrol after an outage event during an RFW to ensure lines are intact and free from flammable material. The utility also limits certain operational activities designated as Ignition Potential Work (IPW) within Tier 2. This is a best practice to reduce the probability of inadvertent ignitions by BWP workers and contractors. For emergency IPW that must be performed BWP also sets forth several fire prevention and safety practices that must be undertaken before any IPW can be performed. Finally, BWP records the number of outages and RFW days that occur each and the responsive actions taken by staff.

BWP has developed and implemented several operational limitations during Red Flag Warning periods of extreme fire risk. These practices align with industry best practices.

Selective Undergrounding

Selective undergrounding is an effective option for hardening electric facilities for wildfires. The selection criteria can include areas of high tree density, circuits that may be impacted by a PSPS and areas with limited ingress and egress. Often, areas with mountainous terrain are not good candidates for undergrounding of OH lines due to right of way and construction complications. Selective undergrounding of distribution facilities also improves aesthetics and service reliability.

BWP has approximately 25 miles of distribution lines in Tier 2 HFTD, with 15 miles underground lines and 11 miles overhead wire. Currently, 60% of BWP's distribution facilities in Tier 2 are underground. This undergrounding of distribution facilities within Tier 2 significantly reduces the threat of fire ignition.

BWP's approach to selective undergrounding is consistent with the best practices at other Utilities.

5. Best Practice Comparison

The following describes the scoring determinations of the benchmarking practice. Guidehouse weighed strategies that have been demonstrated globally as well as from those proposed by state utilities. As expressed in Figure 5-1, this benchmarking practice supports efforts to determine the Plan's comprehensiveness when investigating the mitigation measures proposed in BWP's WMP. This assessment is designed to confirm prudent measures as proposed by BWP and did not result in any material findings that would result in non-compliance or lack of comprehensive WMP elements.






-  Meets the state and federal requirements and aligns with the identified benchmarking practices
-  The Plan does not effectively describe the mitigation measure to warrant a sound determination or the strategy does not align with the presented best practice strategy. For the purpose of this evaluation, exploratory considerations of proposed best practice measures would fall under this category.
-  The strategy does not apply to the Utility or their risk exposure to wildfire events

Figure 5-1 – Determinations for Benchmarking



The selected strategies represented in Table 5-1 include both statutory requirements that exist as industry standards for POUs as well as accepted industry practices within the state.


Table 5-1 – Industry Practice Strategy Comparison Matrix

<i>Situational Awareness / Weather Conditions</i>				
Identified Practice Strategy	Mitigation Rationale	BWP Applicability	Plan Elements	Determination



<p>Real-time situational awareness of conditions that lead to high risk of wildfires requires a multi-faceted approach including but not limited to coordination with local public agencies, weather monitoring, strategically placed high visibility cameras and other early warning systems.</p>	<p>Having access to internal and external mechanisms to track fire conditions (high wind, dry conditions, high heat), will aid in responding to and preventing potential fires by enacting related protocols during fire watch conditions</p>	<p>Especially in the HFTD, weather stations and cameras would allow BWP personnel to have access to real-time monitoring of these areas</p>	<p>In 2021, BWP's ECC began using the SCE owned fire-monitoring camera in the Verdugo Mountains to enhance situational awareness as-needed.</p> <p>BWP's Energy Control Center monitors National Weather Service warnings and watches and coordinates with other agencies and third parties in the area.</p>		<p>BWP meets the basic requirements of real-time situational awareness. Further coordination with Los Angeles Department of Water and Power (LADWP) is encouraged</p>
<p>Cameras with night vision mode capability atop of electrical structures</p>	<p>Visual inspections can be enhanced through the use of cameras with high definition and night vision capabilities. This measure improves response times in addressing risk incidents and de-energization</p>	<p>The Tier 2 zone within the BWP service territory mostly suburban</p>	<p>Given that the majority of BWP's Tier 2 is suburban, night vision cameras may not be necessary.</p>		<p>This best practice strategy does not apply to BWP</p>



<p>System Hardening / Design & Construction / Operational Practices</p>				
<p>Identified Practice Strategy</p>	<p>Mitigation Rationale</p>	<p>BWP Applicability</p>	<p>Plan Elements</p>	<p>Determination</p>

<p>Selective undergrounding of distribution facilities within Tier 2,3.</p>	<p>Selective undergrounding is an effective option for hardening electric facilities for wildfires. The selection criteria can include areas of high tree density, circuits that may be impacted by a PSPS and areas with limited ingress and egress. Often, areas with mountainous terrain are not good candidates for undergrounding of OH lines due rights of way and construction complications</p>	<p>Poles and overhead wires within known areas of high fire severity zones or past wildfires, should be considered for selective undergrounding</p>	<p>BWP has approximately 25 miles of distribution lines in Tier 2 HFTD, with 14 miles underground lines and 11 miles overhead wire. 60% of the distribution facilities in Tier 2 are underground. This undergrounding of distribution facilities within Tier 2 can significantly reduce the threat of fire ignition. BWP has determined that the Sunset Canyon area in Tier 2 is not feasible for selective undergrounding</p>		<p>BWP's undergrounding of distribution facilities is implemented primarily to improve aesthetics, service reliability but it also significantly mitigates wildfire risk.</p>
<p>Replacing bare wires with covered conductors</p>	<p>Covered wire is a well-demonstrated prevention method to sparks / ignitions during severe weather conditions. Several utilities are employing pilot programs of covered wire replacement of distribution lines, prioritizing HFTDs for implementation.</p>	<p>BWP has overhead distribution lines (11 circuit miles in Tier 2). This area may benefit from additional hardening such as covered wire replacement for existing legacy bare wire.</p>	<p>BWP performed an analysis of #6 bare copper conductor and identified the use of #2 aluminum conductor steel reinforcement (ACSR) as an alternative option. This is currently what BWP uses for all new construction.</p>		<p>Replacing bare wires with covered conductors is a common best practice successfully employed by several utilities with similar operating and environmental conditions as BWP.</p>


			<p>A deeper analysis of the use of covered conductor was performed in 2022. Based on the results of that study, BWP will be installing covered conductor based on location and risk.</p>		<p>BWP will benefit from a full analysis and installation of covered conductors at that time.</p>
<p>New or planned electrical lines (distribution and transmission) that are designed to withstand working loads under the stress above design standards to address high wind speeds</p>	<p>As new capital infrastructure plans are developed, it would be prudent to consider resilient design standards that can withstand sustained winds and gusts that occur during Red Flag Warning periods.</p>	<p>Construction of distribution facilities meet or exceed GO 95 standards. Specifically, BWP increases pole strength requirements to meet the GO 95 safety factors.</p>	<p>BWP designs poles in accordance with the wind loading criteria set in General Order 95 (GO 95) in order to minimize the chance of pole failure during heavy winds.</p> <p>As part of the Design and Construction mitigation activities, BWP performs structural assessments of poles to identify potential issues during high wind events. BWP replaces the poles that do not pass the</p>		<p>BWP's actions are consistent with Utility best practices for design and evaluation of poles withstand working loads under stress for high winds.</p>

			GO 95 wind loading design criteria.		
Steel or composite poles swapped out for wood poles, at minimum, within HFTDs or fireproofing wooden poles (fire resistant material coating)	When considering pole replacement strategies, when applicable, composite or steel poles can reduce the risk that wood poles present. At minimum, fire retardant material can be coated to temporarily enhance the ability to prevent fire spread or impact the stability of the structure under fire threat.	Poles within known areas of high fire severity zones or past wildfires, should be considered for replacement with more fire resilient materials.	BWP continued replacing poles that were in the Priority 2.1 area of its Tier 2 HFTD with composite poles, where deemed appropriate to increase strength, fire resistance, and to assist with ease of installation in difficult terrain.		BWP is swapping high risk poles with composite annually.
Pole loading assessment, pole intrusive inspection and testing	Carry out programs that address pole loading issues and inspections that would result in remediation to infrastructure.	GO 165 is considered a "best practice" by many public owned utilities. GO 165 Section III A (5) defines "Intrusive" inspection as one involving movement of soil, taking samples for analysis, and/or using more sophisticated diagnostic tools beyond visual inspections or instrument reading.	BWP has performed and will continue to perform intrusive pole inspections within Tier 2. Any poles that do not pass the wind loading criteria are scheduled for replacement. In some cases, poles may only require additional guying reinforcement to meet wind loading criteria.		BWP's actions are consistent with Utility best practices for intrusive pole inspection and testing.


<p>Expulsion fuse device change out to current-limiting (non-expulsive) fuses</p>	<p>Traditional fuses pose a fire risk due to the ignited material that can be expelled. Best practices for mitigating this risk is to change out these fuses with non-expulsive fuses.</p> <p>A protective device coordination study achieves an optimum balance between equipment protection and selective isolation that is consistent with the operating requirements of power systems.</p>	<p>HFTDs would benefit from the replacement of traditional fuses with ones that minimize sparks and arcs</p> <p>Electrical systems use fuses and circuit breakers to protect electrical equipment. Equipment failures and other anomalies may cause a short circuit. Risks are reduced within HFTDs when a short circuit impacts only that portion of the system where the failure occurs.</p>	<p>BWP has made a substantial effort to replace its traditional fuses in the Tier 2 HFTD with exempt non-expulsive fuses, which it had identified as a key risk driver. BWP also determined such replacements are cost effective.</p> <p>Tables 3 and 4 in WMP Section 4.4 - Electrical Facility Assessment shows 229 OH distribution transformer and lateral fuses remaining within Tier 2.</p>		<p>Replacement of expulsion fuses with non-expulsion fuses is a common best practice.</p> <p>BWP plans replace all conventional fuses with CALFIRE "Exempt" fuses in the Priority 2.1 zone of the Tier 2 HFTD. by June 2024.</p>
<p>Tree attachment removals</p>	<p>This practice involves the removal of electrical infrastructure fastened to trees for infrastructural support but can be a source of ignition. The removal of these legacy devices may reduce electrical spark risk.</p>	<p>BWP has no tree attachments within Tier 2 that require evaluation</p>	<p>BWP does not have tree attachments nor use tree attachments for new construction</p>		<p>This best practice strategy does not apply to BWP</p>

<p>Disabling reclosers through blocking reclosing operations (distribution level) in HFTDs during the fire season and/or during Red Flag Warnings issued by the National Weather Service (or as fire risk potential designates)</p>	<p>Disabling reclosing reduces the number of potential ignition events during a fault condition</p>	<p>Reclosing operations should be defined within the Plan as per statute PUC 8387 (b) (2) (F)</p> <p>Operational best practices align with having settings that align with fire potential weather conditions to prevent potential ignition</p>	<p>BWP has ten distribution circuits feeding Tier 2. No OH line reclosers are present in Tier 2. BWP enacted an operating procedure to block reclosing capabilities on all circuits in Tier 2 during red flag warning (RFW) conditions.</p> <p>Additionally, during an RFW, BWP enables high speed tripping on the distribution circuits feeding Tier 2.</p>		<p>BWP's actions represent a Utility best practice for blocking reclosing on distribution lines within Tier 2</p>
<p>Ground patrol as well as aerial inspection practices</p>	<p>Routine ground patrols are implicit practices in equipment and vegetation inspection protocols. Increasing the frequency, especially in the HFTD, represents an effective preventative measure and ensures the integrity of electrical equipment. Aerial inspections, by way of helicopters, will lead to greater coverage of the service territory and areas</p>	<p>Ground patrols are a required strategy in ensuring safe and reliable delivery of electricity. When access concerns arise, aerial inspections provide better coverage in surveying and inspecting electrical equipment throughout the utility service territory</p>	<p>BWP performs inspection cycles in accordance with GO 165. For Tier 2, BWP performs annual patrols for all overhead equipment. Problems that are identified during inspection are prioritized for correction. Inspection findings are examined to</p>		<p>BWP's actions are consistent with Utility best practices for ground patrols and inspection practices</p>

	adjacent to required clearances		<p>identify trends and recurring problems.</p> <p>BWP has no areas that would benefit from an aerial inspection.</p>		
Wildfire Infrastructure Protection Teams	An internal team to help coordinate efforts to ensure the Plan is being followed as well as coordinating efforts to enhance the Plan's strategies and quality check that activities are being performed and tracked aligning with the Plan	An internal team to prepare and protect physical aspects of the electric system as well as ensure effective mitigation measures are carried out would be a prudent activity to pursue	In Chapter 7, Section 7.1. BWP defines that the General Manager has overall responsibility for the plan. Table 11 shows activity owners for the four categories of mitigation activities. These assignments can be as viewed formation of a Wildfire Infrastructure Protection team.		BWP's actions are consistent with Utility best practices for Wildfire Protection Teams.

<p>Operational activities limitations during the fire season and/or during Red Flag Warnings issued by the National Weather Service (or as fire risk potential designates)</p>	<p>Establishment of procedures and routine operational practices that limit or curtail operational activities during periods of increased risk within fire threat districts. These procedures and practices provide employee and contractors specific information and instructions to improve the reliable and safe operations of electric facilities and mitigate the threat of utility caused inadvertent ignitions.</p>	<p>Limiting operational practices may reduce the probability of inadvertent ignitions by utility workers and utility contractors</p>	<p>In the WMP Section 5.3 - Operational Practices, BWP indicates blocking reclosing and line patrol after an outage event during an RFW as part of the overall strategy for Wildfire Prevention. Limiting operational activities within Tier 2,3 is a common best practice to reduce the probability of inadvertent ignitions by BWP workers and contractors.</p>		<p>BWP has implemented several operational practices in the Tier 2 HFTD to reduce fire risk on RFW days including limiting IPW, blocking reclosers and adjusting trip settings, and instituting safety protocols for emergency work.</p>
--	--	--	---	---	--

Vegetation Management



Identified Practice Strategy	Mitigation Rationale	BWP Applicability	Plan Elements	Determination	
<p>Routine vegetation management & inspections in accordance with: Public Resources Code (PRC) 4292 & 4393, General Order (GO) 95 Rule 35 and</p>	<p>State and federal compliance for vegetation management and inspection, as well as California Public Utilities Commission GO 95, which is accepted as industry standard amongst all</p>	<p>PRC sections 4292 and 4293; GO 95 is required by the CPUC for investor owned utilities. Public Owned Utilities (POUs)</p>	<p>BWP performs routine vegetation management, such as pruning and removal, on an annual basis in Tier 2. Each year, field patrols are performed to inspect tree and conductor clearances and to identify any hazard trees. Areas for vegetation pruning</p>		<p>BWP's actions are consistent with Utility best practices for routine vegetation management inspections.</p>

Appendix E, and ANSI A300	utilities. (Community and investor owned).	generally follow these guidelines.	and removal are targeted based on the results of these patrols.		
Hazardous tree/vegetation identification and removal protocols and programs	Recording and tagging trees that pose risks to adjacent electrical equipment or are dead/dying are considered prudent efforts for vegetation management practices	Within the HFTD, danger trees could pose a greater potential to catch on fire or contribute to fire spread. Addressing, though identification and surveying, as well as implementing remediation activities will result in further wildfire risk reduction	Each year, field patrols are performed to inspect tree and conductor clearances and to identify any hazard trees.		BWP's actions are consistent with Utility best practices for hazardous tree identification and removal protocols and programs.
Fuels management	Fuels management is an action designed to reduce fire hazards by removing or rearranging fuels. When applied to strips of land, they are designated as a fuel break or fire break. Fuel breaks are strips of land in which vegetation, both dead and alive has been modified, but some trees and shrubs are retained.	Fuels management is an effective practice to reduce fire intensity and can provide safe passage zones for the public, BWP workers and Burbank Fire Department	The Burbank Fire Department has a Fire Hazard Reduction Program for brush clearance. Two Mountain Fire Zones are designated by the Department. One zone is located along the foothills of the Verdugo Mountains in northeast Burbank, and the other is located in the southwestern portion of the city adjacent to Warner Bros. Studios. The program is designed to have property owners maintain their property in a safe fire condition		The Fire Hazard Reduction Program is an effective program to provide standards and compliance for fuels management for the City of Burbank.

			<p>throughout the year. The program guidelines have 12 specific requirements for 0-100 feet clearance, guidelines for 100-200 clearance (fuel modification zone) and recommendations for vegetation management and defensible spaces. Beginning June 1, Burbank Fire Department conducts annual brush clearance inspections. Burbank Fire Department also provides compliance enforcement.</p> <p>BWP has a Line Clearance Tree Trimming in Elevated Fire Risk Areas Communications Plan. The communications plan informs the approximately 850 Burbank residents within Tier 2 that they have until May 31, 2020 to trim trees on their property to the California state standards. Customers are also notified that line clearance tree trimming should only be performed by arborists that are certified to work around energized power lines. After May 31, 2020, and before the wildfire season, BWP will trim trees near BWP OH distribution lines on customer</p>		
--	--	--	--	--	--

			property to the compliance standard.		
Off-Cycle / Call-in vegetation removal or corrective work, especially during the fire season	Off-cycle practices of vegetation inspection and management	Within BWP's HFTD, impact trees could pose a greater potential to catch on fire or contribute to fire spread. Addressing, though identification and surveying, as well as implementing remediation activities will result in further wildfire risk reduction	BWP has a Line Clearance Tree Trimming in Elevated Fire Risk Areas Communications Plan. The communications plan informs the approximately 850 Burbank residents within Tier 2 that they have until May 31, 2020 to trim trees on their property to the California state standards. Customers are also notified that line clearance tree trimming should only be performed by arborists that are certified to work around energized power lines. After May 31, 2020, and before the wildfire season, BWP will trim trees near BWP OH distribution lines on customer property to the compliance standard.		A majority of the BWP OH distribution lines in Tier 2 traverses through customer backyards. The BWP program and communications to trim trees in compliance with the state standards is a proactive program and best practice.

Emergency Response & Recovery				
Identified Practice Strategy	Mitigation Rationale	BWP Applicability	Plan Elements	Determination

<p>Notify critical facilities and public safety partners, which may include first responders, incident origin law enforcement, acute health care facilities, essential service providers, related governing local and state agencies, adjacent jurisdictions, vulnerable populations, and the Independent System Operator (ISO) (for transmission level de-energization)</p>	<p>Following a sequence of events in contacting public safety partners and impacted community facilities will enable quicker response in reacting to an emergency event (such as a wildfire or de-energization). Utilities should describe their processes to notify critical facilities as it applies to their service territory and impacted communities as well as grid operators.</p>	<p>Notification practices targeting key stakeholders are crucial during emergency events such as storms and wildfires.</p>	<p>BWP relies upon its Electric Emergency Response Plan (EERP) respond effectively to wildfire threats and other hazards. BWP does not have a formal communications protocols for direct notification to all public safety offices, critical first responders, health care facilities, and operators of telecommunications infrastructure with premises within the footprint for a PSPS event.</p>		<p>Specific communications protocols for PSPS events, even if unlikely, improves communication and coordination.</p>
<p>Incident Command Team / Emergency Operations frameworks in the event a de-energization event or wildfire incident occurs</p>	<p>Using the State Emergency Management System (SEMS) framework, which is determined on the Federal Emergency Management Agency (FEMA) structure for incident command protocols will ensure prepared and adequately trained staff to respond in effective communication manners as well as respond to risk events in a</p>	<p>Establishment of Emergency Action Plans between the Electric Department, the City Emergency Operations Center and other City departments assures effective identification, assignment and training for emergency management roles.</p>	<p>BWP responds to emergencies in accordance with its Electric Emergency Response Plan and in alignment with SEMS and NIMS. This plan aligns with the City of Burbank Emergency Response Plans and establishes a clear Incident Command Structure</p>		<p>Sections 6.1 and 6.2 of the WMP set forward a thoughtful, comprehensive approach to emergency response.</p>

	sequence of effective procedures.				
--	-----------------------------------	--	--	--	--

6. Results and Discussion

Guidehouse finalized this assessment on March 17, 2023. Over the course of reviewing BWP's WMP, discussions with BWP staff, and review of supporting documentation, Guidehouse captured takeaways and findings that align the WMP with state laws and effective wildfire measure demonstration for a utility of BWP's size and low-risk profile. BWP's WMP 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 WMP'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, Guidehouse concludes this Report with the following:

- BWP's WMP aligns appropriately with PUC Section 8387 and includes all required elements.¹⁷
- BWP's WMP is comprehensive as described through this Report in accordance with PUC Section 8387.

¹⁷ Following acceptance of this Report, BWP 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 May 2023. 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)	BWP 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 7.1	BWP 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.	Yes

<p>(B) The objectives of the wildfire mitigation plan.</p>	<p>Section 1.3</p>	<p>BWP has clearly stated objectives in its plan. 1) Reduce the probability that BWP's electric system may be the contributing source for the ignition of a wildfire; 2) harden and maintain BWP's electric system against a potential wildfire; and 3) create a WMP consistent with state laws and objectives.</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>Sections 3 and 5</p>	<p>Section 3 provides an overview and Section 5 provides a detailed description of BWP's preventative strategies with specific subsections on design and construction, inspection and maintenance (including vegetation management) operational practices, and situational/conditional awareness. BWP also considers dynamic climate change risks in its risk assessments and strategies.</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 7.2</p>	<p>BWP tracks numerous metrics that can serve as leading indicators of wildfire and associated risks. These metrics are used by BWP to provide insight into BWP's performance and dynamic conditions across BWP's service area. BWP also designates the responsible party for collecting the metrics and the periodicity for each metric's collection. BWP can be considered a leader in this effort.</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 7.3.3</p>	<p>BWP discusses in detail how the application of previously identified metrics to previous wildfire mitigation plan performances has informed the wildfire mitigation plan.</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 5.3.1 and 5.5</p>	<p>BWP discusses how BWP blocks reclosing and increases trip speed during Red Flag Warning conditions.</p> <p>BWP discusses PSPS in section 5.5 but does not intend to use proactive de-energization as a wildfire prevention strategy but makes clear the ECC has authorization to de-energize if conditions warrant it or if directed by Burbank Fire, Police, or CAL FIRE</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 6.3</p>	<p>While BWP'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 5.2.2</p>	<p>BWP details its vegetation management program in its WMP</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 5.2.1</p>	<p>BWP's WMP states that it meets or exceeds the inspection cycles and requirements provided in GO 95 and 165.</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 4.2, 4.5</p>	<p>BWP's WMP includes a thorough assessment of 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 4.2.1</p>	<p>BWP identifies five categories of risk drivers and details their potential impacts.</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 4.3</p>	<p>BWP discusses the risks and risk drivers associated with its climate/weather, topography, and vegetation and applies those to a detailed analysis of its service territory.</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 4.3.3</p>	<p>BWP's WMP states that BWP's service area is appropriately classified as Tier 1 and Tier 2 areas. BWP further states it did not see a justification for increasing the risk of any particular area within its service territory.</p>	<p>Yes</p>
<p>(L) A methodology for identifying and presenting enterprise wide safety risk and wildfire-related risk.</p>	<p>Section 4.1</p>	<p>BWP includes a three-part process to evaluate its risk. 1) a bowtie risk analysis; 2) a site fire environment assessment; and 3) an electrical equipment assessment.</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 6.4</p>	<p>BWP's WMP 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 7.3, 7.3.3</p>	<p>BWP states it will conduct annual internal audits of the plan to identify deficiencies. BWP also provides an extensive writeup of its prior year audit and responses.</p>	<p>Yes</p>
<p>(ii) Identify any deficiencies in the wildfire mitigation plan or its implementation, and correct those deficiencies.</p>	<p>Section 7.3.1</p>	<p>BWP has stated that deficiencies identified should be corrected through the Assistant GM.</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 7.3.2</p>	<p>BWP has monitored and audited the effectiveness of electrical equipment inspections in 2021, including inspections performed by its vegetation management contractor.</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 8.2</p>	<p>BWP will presents its WMP to the City Council at a public annually, following public posting and opportunities for public comment.</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 8.3</p>	<p>BWP contracted with Guidehouse Consulting, Inc. to perform an independent evaluation of its WMP. Qualifications are described in Section 1.</p>	<p>Yes</p>