

# Wildfire Mitigation Plan Independent Evaluation

**Prepared for:**

**Healdsburg Electric Department**

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## **DISCLAIMER**

This report was prepared by Navigant Consulting, Inc., n/k/a Guidehouse Inc. (“Navigant”),<sup>1</sup> for the City of Healdsburg, Healdsburg Electric Department. 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.

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<sup>1</sup> 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**

The City of Healdsburg, Healdsburg Electric Department (HED or “the City”) 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 between December 2019 and February of 2020 and completed the Report on February 21, 2020. Navigant’s project team reviewed detailed information related to the Plan and assessed HED’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 Board<sup>2</sup> and mandatory cyclical reviews. The required elements for a WMP have not been modified by this new legislation. This Report meets HED’s requirements under PUC Section 8387(c), which mandate an independent evaluation of HED’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 March 16, 2020. The Report includes the following:

- Background of the legislative history requiring WMPs and their independent evaluations
- Approach and methodology evaluating the Plan’s comprehensiveness
- HED’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 HED’s WMP is comprehensive in accordance with PUC section 8387.

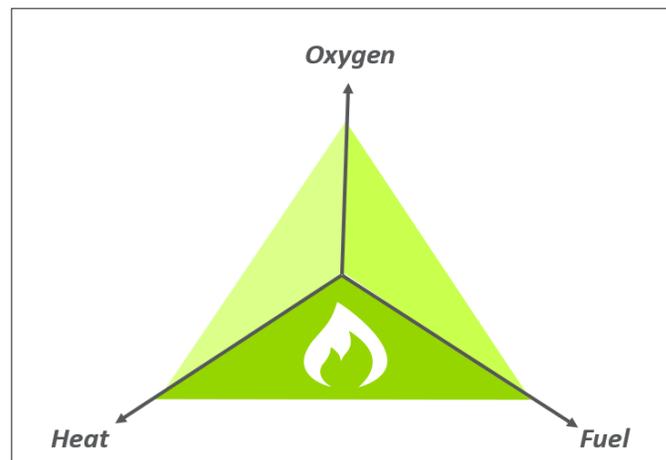
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<sup>2</sup> Due for implementation in 2020.

## 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.<sup>3</sup> 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

<sup>3</sup> 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 Healdsburg Electric Department Plan Preparation**

Healdsburg Electric Department (HED) is a department within the City of Healdsburg. Its service territory, roughly one-third, is within a defined higher wildfire threat area. Within this area, the HED owns and operates approximately 14.5 mile of underground primary conductor and 7.5 miles of overhead primary conductor. These areas include the City's wildland urban interface (WUI) and are generally described as the areas around Fitch Mountain, the Healdsburg Ridge, and the northern most portions of the City's service territory. These areas were identified by staff and confirmed by the City Council and the CPUC.

HED prepared its first WMP pursuant to SB 901 directives in October 2019 and presented it to the Healdsburg City Council on December 16, 2019. 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. HED posted its initial Plan to its website for public review. HED intends to treat its WMP as a living document that will be amended from time to time. The next version of the Plan is proposed to be approved March 16, 2020; this review is based upon that version of the Plan.

### **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 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 present<sup>4</sup> 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.<sup>5</sup>

HED 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

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

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

Guidehouse Inc. (Navigant) in October of 2019 to undertake an assessment of its Plan based on 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 HED's publicly owned business practices relative to IOUs, through our experience developing WMPs IOUs and POUs and our continued tracking of related CPUC dockets intended to refine strategies that carry an effective Plan.

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.

## 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 HED’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**

<b>PUC Section 8387</b> <i>(as amended on July 12, 2019)</i>
<p><b>(a)</b> 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>(b) (1)</b> 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><b>(2)</b> The wildfire mitigation plan shall consider as necessary, at minimum, all of the following:</p>
<p><b>(A)</b> An accounting of the responsibilities of persons responsible for executing the plan.</p>
<p><b>(B)</b> The objectives of the wildfire mitigation plan.</p>
<p><b>(C)</b> 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><b>(D)</b> 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><b>(E)</b> A discussion of how the application of previously identified metrics to previous wildfire mitigation plan performances has informed the wildfire mitigation plan.</p>
<p><b>(F)</b> 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><b>(G)</b> 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><b>(H)</b> Plans for vegetation management.</p>
<p><b>(I)</b> Plans for inspections of the local publicly owned electric utility's or electrical cooperative's electrical infrastructure.</p>
<p><b>(J)</b> 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><b>(i)</b> 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><b>(ii)</b> 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><b>(K)</b> 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><b>(L)</b> A methodology for identifying and presenting enterprise wide safety risk and wildfire-related risk.</p>

(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. Navigant has tracked docketed proceedings and maintains a presence in state activities and workshops surrounding wildfire prevention. Understanding that HED is not subject to CPUC regulations, the insight gained from this related experience is leveraged in assessing HED'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.

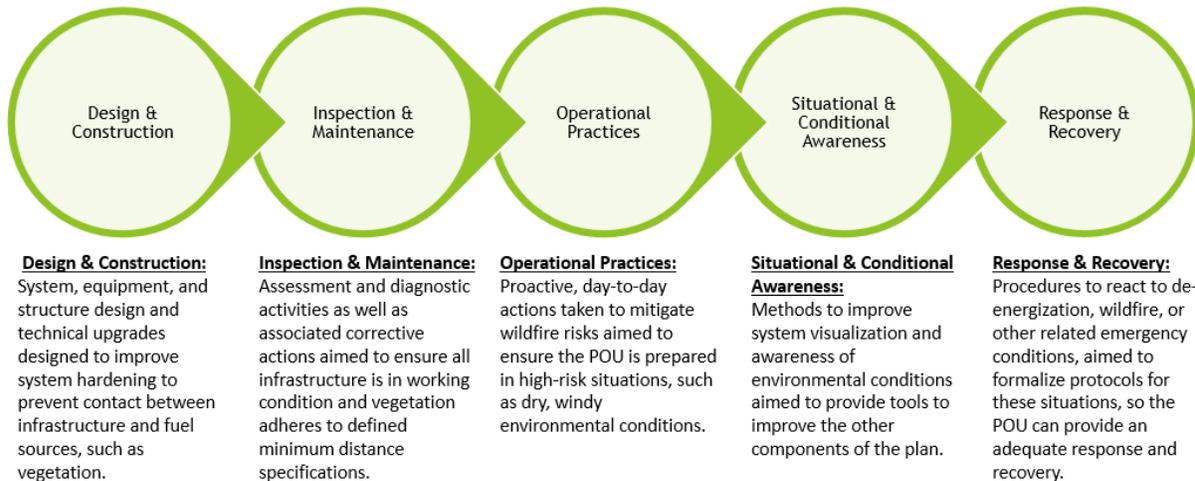
**2.2.1 Statutory Compliance**

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. HED'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**



Expertise in these critical elements facilitated Navigant’s review of the comprehensiveness of HED’s WMP. While not all of these strategies are present in or applicable to HED’s Plan, due to HED’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 that 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.<sup>6</sup>

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<sup>6</sup> 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](https://apps.cpuc.ca.gov/apex/f?p=401:56:0::NO:RP,57,RIR:P5_PROCEEDING_SELECT:R1810007).

### 3. HED 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 HED’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.

HED clearly states the WMP objectives on page five<sup>7</sup> of the WMP. HED’s primary objective is to eliminate wildfires caused by electric utility equipment. A secondary objective is to identify cost-effective measures that produce the same or improved wildfire mitigation results.

HED describes its preventative strategies and programs beginning on page six of the WMP. HED includes descriptions of the following actions and programs to reduce fire starts and improve response:

- System Inspections
- Vegetation Management
- Public Education and Notification
- Situational Awareness
- Routine Inspections
- Increased Wood Pole Strength Requirements
- Increased Overhead Line Conductor Spacing
- Planned Replacement of Expulsion Fuses
- Elimination of Split Bolt Connectors
- Removal of Lightning Arrestors
- Operational Procedures
- Capital Improvements/System Hardening
- Staffing & Staff Training
- Wildfire Preparedness, Response, and Recovery

The above approaches include some excellent practices and represent the amount of thought HED has put into the WMP. Many of these are also recently introduced, new, or to be introduced in the future which

<sup>7</sup> HED’s WMP utilizes the headings from PUC 8387 for the headings of the appropriate sections of the WMP this allows for easy cross-referencing between the WMP and PUC 8387. To avoid duplication, Navigant chose not to restate the title of each section of the Plan.

demonstrates that HED is aware of the increased fire threat, especially after their brush with the Kincadee fire in 2019 and is preparing to meet the challenges ahead.

### 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.

Wildfire risks are addressed in the section with that heading on page 12. Specifically, HED identifies the following risks and drivers:

- i. Risks associated with the design, construction, operation, and maintenance of the City's electric system, including:
  - 1) Vegetation near electric lines
  - 2) Overhead utility equipment
  - 3) Reclosing or automatic testing of faulted power lines
  - 4) Operations or maintenance activities during high wildfire-threat weather conditions
- ii. Topographic and climatological risks cited by HED include:
  - 1) Volume of vegetation (fuels) present in the high fire threat districts
  - 2) Periods of significant low humidity
  - 3) High sustained winds and strong wind gusts
  - 4) Extended droughts
  - 5) Steep terrain and difficult to access areas
  - 6) Housing in the wildland urban interface (WUI)
  - 7) Historic susceptibility to wildfire

With respect to the methodology used to identify enterprise-wide safety and wildfire risks, HED describes its efforts on page 14 of the WMP. Here, HED notes that it reviews historic outages within the wildland urban interface and their associated causes as a way to assess wildfire risk and that outages with the potential for causing wildfires are reviewed for potential corrective actions. Additionally, in order to evaluate the wildfire risk, the City reviewed the historical record of fires in the area and assessed the vegetation in the service territory to identify areas of potential threat to the City's infrastructure.

The risks and risk drivers listed above adequately capture the numerous challenges faced by HED as it seeks to eliminate HED's contributions to fire starts and to protect the City's infrastructure from wildfire. Navigant suggests a clearer delineation between the risks and risk drivers in future iterations of the WMP. Additionally, Navigant suggests HED incorporate a formalized risk assessment methodology to evaluate safety and wildfire risks and drivers.

As discussed above, HED also discusses the design and construction standards it is implementing to minimize fire risk. HED has designed and constructed its new facilities to meet or exceed relevant standards such as CPUC GO 95 and discusses pending and proposed improvements to its standards in its preventative strategies covered in Section 3.1 above.

### **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.

Section (b)(2)(K) of PUC 8387 is addressed on page 14 of the WMP. Healdsburg's City Council directed City staff to submit updates to the CPUC's identification High Fire-Threat Districts (HFTDs). These areas are defined as representing Tier 2. According to the CPUC, "Tier 2 fire-threat areas depict areas where there is an elevated risk (including likelihood and potential impacts on people and property) from utility associated wildfires." The remaining portion of HED's service territory falls within Tier 1 or low hazard areas. There are no Tier 3 "extreme risk" High Fire-Threat Districts within HED's territory. HED has not identified any areas where the Commission should expand the identification of HFTDs in its service territory.

### **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**

HED addresses its practices for reclosers on the top of page 10 of the WMP. HED's WMP states reclosing of circuit breakers and line reclosers serving HFTD will be disabled during National Weather Service-issued red flag warnings affecting any part of the HED service territory. Additionally, during red flag warnings, HED will implement recloser settings to shorten the time a fault will exist. In the first half of 2020, HED plans to implement lower instantaneous trip settings and improve the detection of ground faults.

The City is also planning to review on an as-needed basis, not to exceed five years, system protection settings to ensure proper coordination and possible improvements to reduce the risk of wildfire mitigation. Coordination of protection devices is necessary to ensure system faults are cleared in a proper and expedient manner.

### ***3.1.3.2 De-Energization Protocols***

The same section addressing reclosers also addresses the possibility of de-energization. Specifically, HED states de-energization may occur due to one or more of the following conditions:

- 1) Upon the request of Healdsburg's Fire Department, Healdsburg's Police Department, CAL-FIRE or other State or local public safety agencies.
- 2) When energized powerlines subject to high winds or other weather or atmospheric conditions may create a public safety risk.
- 3) When real-time information from qualified City field staff indicates that wind driven vegetation or other combustible debris are threatening City owned electric utility equipment.
- 4) When PG&E de-energizes the City's transmission source.

Where possible, and as time permits, HED intends to coordinate de-energization actions with the City Manager's Office, Electric Department, and City Public Safety Departments. The decision to de-energize City owned powerlines will be communicated to the City Manager's office as soon as practical.

Navigant recommends HED set forth a protocol document that clearly lays out the conditions and the responsibilities within HED for implementing de-energization of HED equipment due to wildfire risks.

### ***3.1.3.3 Vegetation Management***

Page 11 of the WMP states that HED exceeds General Order 95's clearance requirements for vegetation management around overhead distribution lines. This is supported by the inclusion the City's Technical Specifications for Electric Line Clearance Services which is Appendix D to the WMP. Of specific note is Section 3-11 - Table of Required Minimum Clearances within the HED Technical Specifications for Electric Line Clearance Services. This specification requires line clearance tree pruning for the contract period or throughout the year. This specification is designed to avoid vegetation not meeting clearance requirements that may occur between typical utility vegetation management trim cycle approaches. Additionally, the City's vegetation management program requires the identification and removal of diseased, dying, or hazard trees adjacent to the City's electrical lines

Although HED does not indicate that they have a specific program to institute pole clearances per PRC 4292, HED maintains a 30-foot-wide vegetation clearance for the twelve spans of overhead line in Tier 2 and a proactive weed abatement program and identification of diseased, dying, or hazard trees adjacent to overhead lines serves to reduce fuels within the HFTD.

The Specifications for Electric Line Clearance Services also requires weekly reporting that indicates where on a service map trimming is or, is not, required. HED has documented and tracked its tree trimming for some time, but recently began tracking vegetation management activities on its GIS which is an industry best practice.

### ***3.1.3.4 Infrastructure Inspections***

HED's inspection program is detailed on pages 11-12 of the WMP and also on page six in the description of preventive strategies (8387(b)(2)(C)). HED conducts annual inspections, prior to the start of the annual fire season, which consist of visual and detailed inspections in accordance with GO 165. This inspection will include a visual patrol of all overhead lines within the HFTD as well as inspect, at least:

- 1) Proper vegetation clearance from primary and secondary wires
- 2) Condition of wood poles, cross-arms, and other support structures
- 3) Review and prioritize pending maintenance tags within the HFTD

HED also is planning to inspect the Tier 2 area prior to, and following, a Red Flag Warning from the National Weather Service to identify vegetation clearance or equipment issues that can be quickly

corrected. These patrols will also take photo documentation of fallen vegetation, damaged facilities, or other potential causes of outages.

Inspection evidence will be reviewed by the Utility Director and Electric Superintendent to determine system performance during an event.

The City also intends to update its Preventative Maintenance and Inspection Program guide in 2020. Additionally, inspection records and maintenance tasks and repairs will be tracked as one of the metrics to fulfill 8387(b)(2)(D) and publicly reported each year to the City Council.

### **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**

HED's WMP discusses Customer Notification Procedures on pages 10-11.

HED provides customer education through printed materials, social media, and the City's webpage.

In accordance with the City of Healdsburg's Emergency Operations Plan, customer notification leading up to and during an event is coordinated through the City Manager's office, City Emergency Operations Center (EOC), and other means available to City staff. The City will rely upon automated voice service phone calls, social media, and other automated emergency alerts to contact customers, critical facilities and public safety partners.

With respect to notify high-priority customers, HED plans to make efforts to communicate with critical facility operators, such as hospitals, emergency centers, fire departments, water plants, water utilities/agencies, schools, and telecommunications providers before, during, and after any PSPS effecting their City supplied electric service. Communication with critical facilities will be primarily through automated phone call but operators of these critical facilities will also be encouraged to monitor the City's Facebook page and signup for automated emergency alerts such as NIXLE.

HED explained they coordinate with Citizens Organized to Prepare for Emergencies (COPE), the Fire Department, Police Department, Fitch Mountain Association, and various City departments have all been engaged regarding the risk of wildfire. In the days leading up to an event, these groups are alerted of the forecasted weather conditions and the potential for power outages. At this point, meetings are held as needed and typically include seasonal outreach with more focused discussion leading up to a weather event.

Additionally, HED noted that within the coming year, they plan to reach out to the community and re-establish a list of City customers with need for priority notification. Navigant recommends completing this activity to establish a list of these critical and high priority customers to ensure they are among the first notified of any pending power shutoff. Additionally, Navigant recommends formally scheduled meetings between the stakeholder agencies/entities to discuss emergency preparedness for wildfires.

HED has not developed an incident command team or emergency action plan for a de-energization event or wildfire incident but the Emergency Operations Plan (EOP) indicates the City Manager shall serve as the EOC Director and either the Fire or Police Chief will serve as the EOC Coordinator. Either the EOC Director or EOC Coordinator may activate the Emergency Operations Plan. The Electric Department does not play a primary role in Healdsburg’s Emergency Operations Plan. However, the EOP is planned to be updated before 2021.

HED has not indicated that any wildfire incident-related emergency management training or tabletop exercises have occurred. Navigant recommends the establishment of such training programs and planning or participation in either a local or regional emergency exercise. Development of an emergency action plan for wildfire incidents and/or de-energization events with the associated incident command roles, responsibilities and training assures effective emergency response.

**3.1.4.2 Restoration**

Restoration of service following de-energization is discussed in detail on page 24 of the Plan. Prior to restoration, a four-step process will be followed.

- 1) Overhead facilities in HFTDs must be patrolled and found clear of trouble, damage, or vegetation before re-energizing facilities.
- 2) If damaged facilities are found, those facilities will be isolated such that sections of overhead lines not damaged can be re-energized restoring power to customers. To the extent additional resources are needed to repair the damage, the City will leverage mutual aid agencies and contractors to obtain material and qualified personnel.
- 3) Any damaged facilities or vegetation issues will be documented and photographed before being repaired or cleared.
- 4) Repairs to damaged facilities will be performed consistent with City and utility design standards and then re-energized.

Navigant believes the restoration process satisfies the intent of PUC 8387 (b)(2)(M).

**3.1.5 Plan Execution, Monitoring, & Metrics**

**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**

Page five of the Plan identifies the responsibilities of those who will executed HED’s WMP. The Electric Superintendent is responsible for implementation of the Plan with oversight by the Utility Director and City Manager. Given the small size of HED, this satisfies the intent of 8387(b)(2)(A).

**3.1.5.2 Metrics**

The City identified five metrics that will be used to evaluate the Plan’s performance. Table 2, below, identifies and describes each of these metrics.

**Table 2: HED Proposed Metrics**

Specific metric	Indicator	Measure of effectiveness	Criteria
Ignitions caused by utility equipment	Count of events	Decrease over time	To be tracked by the City, staff must have knowledge of the ignition and will track (at a minimum) the date, time, location, and equipment involved for each ignition.
Inspection Records & Maintenance	Tasks/repairs identified and performed	Not stated	Needed maintenance and/or repairs identified during these inspections will be tracked and given priority in the work schedule with higher priority repairs moved up in the Electric Department’s work schedule. Each identified maintenance task or repair will be reported annually.
Vegetation Maintenance	Veg Maintenance Activities Performed in HFTD	Not Stated	Vegetation management performed within the high fire threat areas will be tracked throughout the year and reported annually
Overhead Equipment Failures	Count of Events	No increase over time	Record all failures of overhead equipment
Outage Response Time	Time elapsed between time and arrival	No increase over time	HED staff’s after-hours response time to power-outages or City owned equipment failures will be recorded throughout the year. Staff response time, from first call to the time they arrive on site, will be tracked for every confirmed power-outage and reported annually.

**3.1.5.3 Monitoring and Auditing the Plan**

HED describes its process for oversight, monitoring, and auditing the Plan will be conducted at least annually and is described on page 15. The results of these processes will be collected by the Utility Director and may include the use of external stakeholders and consultants. Any identified deficiencies will be mitigated or remediated at any time as part of a continued effort to improve the Plan and mitigate wildfires. The Electric Superintendent is responsible for quality control of inspections, construction standards, and operating procedures and also tracks and records the effectiveness of operations and maintenance staff. It is not immediately clear from the Plan, however, that an audit will be performed

specifically for the implementation of the WMP or the effectiveness of the inspections and who holds ultimate responsibility for the audits. Navigant recommends adding more clarity to future iterations, including assigning roles and responsibilities for the execution of the audit of the Plan. In addition, or as an alternative, HED may create an audit procedure or plan to audit the WMP and reference that audit procedure or plan in the WMP.

***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. The findings of the oversight, monitoring, and audits will be presented to a public meeting of the Healdsburg City Council as required and necessary.

## 4. INDUSTRY PRACTICES COMPARISON

In consideration of industry-accepted and demonstrated mitigation measures, Navigant provided a comparison against approved California utility Plans where comparable to Healdsburg Electric Department (Healdsburg) service territory, risk profile, and equipment within the HFTD Tier 2 areas. The complete comparison matrix with supporting information is provided in Appendix A. Highlighted strategies for effective wildfire mitigation are represented in Table 3; five items have been recommended for detailed discussion of the applicability and efficacy of the proposed strategy.

### **Service Area:**

Approximately one-third of the Healdsburg service area includes areas to be considered as Tier 2 HFTD. In general, these areas include the City's Wildland Urban Interface (WUI) and are generally described as the areas around Fitch Mountain, the Healdsburg reserve, and the northernmost portions of the City's service territory. Historical fire perimeters (local wildfire history) also exist to the north, west and east of the Healdsburg service territory. Given these factors, the Healdsburg service territory has elevated risks for wildfires and should carefully examine industry best practices.

### **Covered Conductors**

Throughout California and in many areas of the country, the use of bare overhead wire has been the standard. Bare wire has demonstrated a high-level of reliability in adverse weather conditions such as lightning conditions.

Covered conductors are any conductors (wires) protected by layers of insulation, so the conductors are protected against inadvertent contacts. These wires are designed to withstand inadvertent contact with vegetation and/or other debris without starting a fire. Several utilities are employing pilot programs of covered wire replacement of distribution lines, prioritizing for implementation.

In 2018, HED spoke with a supplier regarding installing covered overhead electric conductor within the HFTD. As a result of this discussion, HED determined that covered conductors are heavier than bare conductors and require stronger and larger diameter wood poles. Additionally, HED determined that preventative tree trimming/removal requirements do not change with covered wire and covered wire falling to the ground may not provide timely tripping or de-energization of a distribution line.

HED has indicated within the WMP that it will continue with its policy of increasing conductor spacing and maintain tree trimming standards exceeding the requirements of California Public Utility Commission General Order No. 95 (GO 95). HED considers increased tree trimming and increased spacing between overhead line conductors to be a best practice to reduce tree caused power outages. Additionally, HED uses covered jumpers, wildlife guards, and other protective coverings at equipment locations.

**Although HED does not have a plan to install covered conductors, the other preventative actions indicate proactive and prudent measures to reduce the incidence of inadvertent tree contact causing electric services outages and/or causing utility equipment caused wildfires.**

### **Disabling Reclosing Operations**

Disabling reclosing refers to the ability to turn off the functionality of substation breakers and 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.

HED's WMP indicates that reclosing of circuit breakers and line reclosers serving HFTD will be disabled during National Weather Service issued red flag warnings affecting any part of the HED service territory. Additionally, during red flag warnings, HED will implement recloser settings to shorten the time a fault will exist. In the first half of 2020, HED plans to implement lower instantaneous trip settings and improve the detection of ground faults.

**HED's approach to disabling reclosing, implementation of high-speed tripping and improved ground fault detection represents the implementation of several actions considered 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, HED, 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. Fuse manufacturers now provide current limiting dropout fuses with a self-contained design that eliminate expulsive showers associated with expulsion fuse operation. These non-expulsive fuses are more suitable for HFTDs. Many of these fuses have been granted permanent exemption by the California Department of Forestry and Fire Protection (CAL FIRE) from pole clearance requirements if installed in the field according to manufacturer's specifications.

HED staff reviewed various non-expulsion type fuses with CALFIRE exemption and selected a product to adaptable to the HED distribution system. Within the 2020 calendar year, HED plans to replace existing expulsion fuses within the HFTD with non-expulsive fuses to reduce utility caused wildfire risk.

**HEDs actions are consistent with the non-expulsive fuse best practices being performed by the other utilities in the state.**

### ***Operational Activities Limitations***

A best practice that is being implemented by some California utilities establishes 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. For example, depending upon the level of designated fire risk, activities such as tree trimming, use of reciprocating equipment, blasting and conductor replacement are limited or curtailed. Crew safety monitors may also be assigned when crews are working within a HFTD during period of elevated risk.

Within 2020, HED plans to update and revise the current Preventative Maintenance and Inspection Program. The modifications are aimed at reducing wildfire risk by changing operational work procedures to limit work activities during weather conducive to wildfires and clarify inspection practices within the HFTD and revise other work procedures as necessary.

**HEDs actions evaluate and limit operational activities within the HFTD during conditions conducive to wildfires is consistent with the best practices being performed by the other utilities in the state. It is also recommended that HED evaluate employee safety practices with the HFTD during periods of elevated wildfire risk.**

## **4.1 Mitigation Strategies Assessment**

The following describes the scoring determinations of the benchmarking practice. Navigant weighed strategies that have been demonstrated globally as well as from those proposed by state utilities. As

expressed in Figure 4, this benchmarking practice supports efforts to determine the Plan's comprehensiveness when investigating the mitigation measures proposed in Healdsburg's WMP. This assessment is designed to confirm prudent measures as proposed by Healdsburg and did not result in any material findings that would result in non-compliance or lack of comprehensive Plan elements.

**Figure 4: Determinations for Benchmarking**



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 District or their risk exposure to wildfire events

The selected strategies represented in Table 3 include both statutory requirements that exist as industry standards for POUs as well as accepted industry practices within the state.

**TABLE 3 INDUSTRY PRACTICE STRATEGY COMPARISON MATRIX**

Identified Practice Strategy	Mitigation Rationale	Healdsburg Applicability	Plan Elements	Determination
<i>Situational Awareness / Weather Conditions</i>				
Investing or investigating in opportunities to procure weather stations for instantaneous weather condition reporting	Having access to internal 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	Especially in HFTD, weather stations would allow HED personnel to have access to real-time monitoring of these areas	HED relies upon internet weather services and technology and field observations to establish weather related wildfire situational awareness	 <p>HED has small service area which has large areas around the service territory with a history of wildfires. Although no definitive plans are indicated for purchase of a local weather station, HED can rely upon internet weather services and reports from neighboring utilities.</p>
Instantaneous weather conditions web-based portal and GIS data sharing capabilities; weather monitoring	Real-time, weather update tracking allows deepened awareness of the conditions that may lead to a spark or ignition. The weather station servers are able to capture and record several weather and meteorological attributes, allowing forecasting scenarios and learning experiences from high-risk events. The presentation and visualization of this data through GIS monitoring applications will assist future risk models and fire prevention planning	Weather stations should have the ability to capture and interpret the information sent in real-time for operations that warrant mitigation measures.	HED does not access weather station servers or present visualization through a GIS.	 <p>Given the small service area served by HED, no definitive plans are indicated for access to local weather station servers and visualization through a GIS.</p>

Identified Practice Strategy	Mitigation Rationale	Healdsburg Applicability	Plan Elements	Determination	
Cameras with night vision mode capability atop of electrical structures	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	HED has limited areas with steep terrain and difficult access within the HFTD that would benefit from night vision camera additional visibility	HED does not use or have future plans for night vision cameras		Since HED has limited opportunity for the benefits of night vision cameras, the strategy does not apply.
<b>System Hardening / Design &amp; Construction</b>					
Replacing bare wires with covered conductors	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 HFTD for implementation.	HED has an applicable overhead distribution line within the HFTDs that would benefit from additional hardening such as covered wire replacement for existing, legacy bare wire.	For several reasons, HED has decided not to implement covered wire program within the HFTD. HED has indicated taking other proactive actions to reduce the threat of inadvertent tree contact utility caused wildfires		Proactive actions such as exceeding GO 95 tree trimming standards, widening conductor spacing and installing protective coverings and animal guards constitute alignment with best practices for reducing inadvertent tree contact utility caused wildfires

Identified Practice Strategy	Mitigation Rationale	Healdsburg Applicability	Plan Elements	Determination	
<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, HED increases pole strength requirements beyond the GO 95 safety factors.</p> <p>HED does not own or construct transmission lines.</p>	<p>HED does not have a replacement program for non-high wind speed construction within the HFTD.</p> <p>HED new construction meets or exceeds the GO 95 standard.</p>		<p>HED meets the best practice criteria through construction of new distribution lines through standards meeting or exceeding GO 95. Additionally, HED in the planned reconstruction of a Tier 2 line HED will be replacing copper conductors with aluminum conductors with steel cores to increase line strength.</p>
<p>Steel or composite poles swapped out for wood poles, at minimum, within HFTDs or fireproofing wooden poles (fire resistant material coating)</p>	<p>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.</p>	<p>While pole remediation activities exist, such as additional clearing, coring to test structural integrity, and coating mechanisms, when new poles are considered for high fire severity zones, more resilient designs should be a consideration.</p>	<p>HED does not own or operate transmission lines so the opportunities to install steel poles are limited.</p> <p>HED investigated the use of steel poles for their distribution system but due to their properties during fire, HED chose not to use steel poles but rather to increase inspection of the integrity or their wood poles.</p>		<p>Should increasing wildfires within the HED service territory occur, investigation of additional pole fireproofing options is recommended</p>

Identified Practice Strategy	Mitigation Rationale	Healdsburg Applicability	Plan Elements	Determination
<p>Pole loading assessment and remediation</p>	<p>Carry out programs that address pole loading issues and inspections that would result in remediation to infrastructure.</p>	<p>HED comply with PRC 4292 for pole clearing activities for vegetation risk and should also maintain awareness of the decay and structural integrity of aged or impacted poles within the service territory.</p> <p>General Order 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. Table 1 defines the inspection standard.</p>	<p>HED routine inspections endure the City’s electric system remains in good condition and follows CUPC Order 165. Repairs and replacements are identified and corrected in a timely manner.</p> <p>HED has an intrusive wood pole inspection program (as outlined in GO 165) to identify and mitigate decayed and aged poles.</p> <p>This program allows HED to monitor the decay and structural integrity of wood poles.</p>	<p>Assessment of pole loading issues and inspections that result in remediation of infrastructure is a best practice.</p>

Identified Practice Strategy	Mitigation Rationale	Healdsburg Applicability	Plan Elements	Determination	
<p><b>Expulsion fuse device change out to current-limiting (non-expulsive) fuses</b></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>HED staff reviewed various non-expulsion type fuses approved by CalFire and selected a product to adaptable to the HED distribution system.</p> <p>Within the 2020 calendar year, HED plans to replace existing expulsion fuses within the HFTD with non-expulsive fuses to reduce utility caused wildfire risk.</p>	 <p>Discontinued use and/or replacement of expulsion type fuses is a common best practice</p>	
<p><b>Tree attachment removals</b></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>HED has no tree attachments within Tier 2 that require evaluation</p>	<p>HED has no tree attachments in the HFTD.</p> <p>HED does not use tree attachments for new service installations</p>	 <p>Since HED does not have existing tree attachment and tree attachments are not used for new service installation, this best practice does not apply to HED</p>	

Identified Practice Strategy	Mitigation Rationale	Healdsburg Applicability	Plan Elements	Determination
<b>Vegetation Management</b>				
<p>Routine vegetation inspections in accordance with: Public Resources Code (PRC) 4292 &amp; 4393, FAC 003-4, General Order (GO) 95 Rule 35 and Appendix E, and ANSI A300</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 utilities. (Community and investor owned).</p>	<p>PRC sections 4293 and 4293; GO 95 is required by the CPUC for investor owned utilities.</p>	<p>HED states that they meet or exceed The CUPC's requirements for vegetation management around overhead distribution lines. Of specific note is Section 3-11 - Table of Required Minimum Clearances within the HED Technical Specifications for Electric Line Clearance Services. This specification requires line clearance tree pruning <b>for the contract period or throughout the year</b>. This specification is designed to avoid vegetation not meeting clearance requirements that may occur between typical utility vegetation management trim cycle approaches.</p> <p>HED has four spans of wire within the HFTD, these spans are centered within a thirty foot- wide fire break.</p>	<p>Healdsburg meets or exceeds the best practices guidelines for vegetation management</p>

Identified Practice Strategy	Mitigation Rationale	Healdsburg Applicability	Plan Elements	Determination	
<p><b>LiDAR Technology for vegetation management inspections</b></p>	<p>Where foot patrols or normal helicopter patrols are insufficient to evaluate the right-of-way (ROW) clearance, utilities use LiDAR technology to identify trees along the ROW border that can potentially contact with lines during high wind events.</p>	<p>LiDAR is demonstrated as an effective tool for transmission level inspection of dense vegetation within the corridor and adjacent to the easement area.</p>	<p>HED has no transmission facilities within the HFTD</p>		<p>This practice does not apply since HES has no transmission facilities</p>
<p><b>Hazardous tree/vegetation identification and removal protocols and programs</b></p>	<p>Recording and tagging trees that pose risks to adjacent electrical equipment or are dead/dying are considered prudent efforts for vegetation management practices</p>	<p>Within the Tier 2,3 high fire risk area, 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</p>	<p>The HED Vegetation Management Program (VM Program) requires identification, and removal of diseased, dying, or hazard trees adjacent to distribution lines. This is included in the Technical Specifications for Electric Line Clearance Services Section 3-10b. Sections 3-12, 3-13 contain specifications for removal of brush, debris and wood and final site clean-up.</p>		<p>A hazardous tree / vegetation identification and removal protocols and programs are a best practice</p>

<b>Identified Practice Strategy</b>	<b>Mitigation Rationale</b>	<b>Healdsburg Applicability</b>	<b>Plan Elements</b>	<b>Determination</b>	
<p>Off-Cycle / Call-in vegetation removal or corrective work, especially during the fire season</p>	<p>Off-cycle practices of vegetation inspection and management</p>	<p>Within District's service territory Tier 2,3 fire threat areas, 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</p>	<p>HED's VM Program specifies maintaining tree pruning to the clearance standard throughout the year and are not on defined cycle. The annual Wildfire Inspection Program and before and after red-flag warning patrols dictate review of proper vegetation clearance from primary and secondary conductors.</p>		<p>Off-Cycle / Call-in vegetation removal or corrective work, especially during the fire season is a best practice</p>

Identified Practice Strategy	Mitigation Rationale	Healdsburg Applicability	Plan Elements	Determination
<b>Emergency Response &amp; Recovery</b>				
<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>HED provides consumer education through printed materials, social media and the City's webpage.</p> <p>Customer notification is coordinated through the City Manager's office, City Emergency Operations Center and other means available to City staff. The City will rely upon automated phone calls, social media, and other automated emergency alerts to contact customers, critical facilities and public safety partners.</p> <p>Within the coming year, HED plans to reach out to the community and re-establish a list of City customers with AFN. This list will be used to provide an additional level of warning and outreach through automated phone calls and may include notification at the customer's premise.</p>	<p>Development of proactive practices for notification and specific contact lists for public safety partners, critical community facilities and life and health support customer assures effective and timely emergency event communications.</p>

Identified Practice Strategy	Mitigation Rationale	Healdsburg Applicability	Plan Elements	Determination
<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 sequence of effective procedures</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>The City relies on the established citywide EOC for these events. Preparation for wildfire is a citywide effort as it may affect all city departments.</p>	<p>Development of an emergency action plan for wildfire incidents and/or de-energization events with the associated incident command roles, responsibilities and training assures effective emergency response.</p> <p>HED notes the City Emergency Operations Plan will be updated before 2021.</p>
<p>Coordination with stakeholder agencies/entities with routine meetings to discuss emergency preparedness needs and areas of improvement, etc.</p>	<p>Communicating with vested stakeholders during wildfire mitigation activities, PSPS events, and general strategy development will help drive efforts to better align with the risk profile of the utility's service and asset territory. These efforts should occur throughout the year and wildfire mitigation plan planning process</p>	<p>COPE groups, Fire Department, Police Department, Fitch Mountain Association, and various City departments have all been engaged regarding the risk of wildfire. In the days leading up to an event, these groups are alerted of the forecasted weather conditions and the potential for power outages. At this point, meetings are held has needed and typically include seasonal outreach with more focused discussion leading up to a weather event.</p>	<p>The plan does not indicate any formally scheduled proactive meetings between the stakeholder agencies/entities to discuss emergency preparedness for wildfires</p>	<p>HED meets the basic requirements of this practice strategy. Additional proactive coordination during non-wildfire alert periods is recommended in addition to the current activities.</p>

Identified Practice Strategy	Mitigation Rationale	Healdsburg Applicability	Plan Elements	Determination
<i>De-Energization &amp; Recloser Operations</i>				
<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. Operational best practices align with having settings that align with fire potential weather conditions to prevent potential ignition</p>	<p>HED's WMP indicates that reclosing of circuit breakers and line reclosers serving HFTD will be disabled during National Weather Service issued red flag warnings affecting any part of the HED service territory. Additionally, during red flag warnings, HED will implement recloser settings to shorten the time a fault will exist. In the first half of 2020, HED plans to implement lower instantaneous trip settings and improve the detection of ground faults</p>	<p>District meets the basic requirements of this practice strategy</p> <p>Protective device coordination assures selective coordination is achieved and overcurrent protective devices are chosen such that whenever an overcurrent occurs only the nearest upstream overcurrent protective device (OCPD) opens to interrupt the overcurrent.</p> <p>HED updates protective device coordination as required, not to exceed 5 years.</p>
<i>Internal Operations and Inspection Practices</i>				

Identified Practice Strategy	Mitigation Rationale	Healdsburg Applicability	Plan Elements	Determination	
<p><b>Ground patrol as well as aerial inspection practices</b></p>	<p>Routine ground patrols are implicit practices in equipment and vegetation inspection protocols. Increasing the frequency, especially in 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 adjacent to required clearances</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>Given the size and nature of HED service area, an aerial inspection patrol program may not be applicable.</p> <p>The annual Wildfire Inspection Program and before and after red-flag warning patrols dictate review of proper vegetation clearance from primary and secondary conductors.</p> <p>Routine inspections are completed to assure that necessary repairs and replacements to electrical facilities are identified and corrected in a timely manner.</p>		<p>HED meets best practices criteria for equipment and vegetation management ground patrols</p>
<p><b>Wildfire Infrastructure Protection Teams</b></p>	<p>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</p>	<p>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</p>	<p>HED has not indicated that staff have been given specific responsibilities regarding fire prevention, response and investigation. A wildfire infrastructure protection team has not been established.</p>		<p>An internal wildfire protection team can support continuous improvement and quality assurance of the Wildfire Mitigation Plan and related activities.</p>

<b>Identified Practice Strategy</b>	<b>Mitigation Rationale</b>	<b>Healdsburg Applicability</b>	<b>Plan Elements</b>	<b>Determination</b>
<p>Infrared corona scanning and high definition imagery technology for inspection practices along with visual inspections</p>	<p>Infrared and ultraviolet (Corona) light cameras are typically mounted to helicopters with special attention to splices, conductor connection/attachment points, and insulators for a detailed visual of electrical equipment</p>	<p>Infrared is an accepted practice that enables better awareness of the utility's equipment</p>	<p>HED performs an infrared line inspection once every 5-years and substations every other year.</p>	<p>Infrared inspections are a diagnostic tool for early identification of conditions that may cause outages and equipment damage</p>

## **5. RESULTS & DISCUSSION**

Navigant concluded this assessment on February 21, 2020. Over the course of reviewing HED's WMP and supporting documentation, Navigant captured takeaways and findings that align the Plan with state laws and effective wildfire measure demonstration. HED'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. HED's WMP aligns appropriately with PUC Section 8387 and includes all required elements.<sup>8</sup>
2. HED's Plan is determined to be comprehensive as described throughout this Report.

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<sup>8</sup> Following acceptance of this Report, HED 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 December 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)	HED Plan Elements (Summarized)	Meets Section Elements (Determination)
<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>Page 5</p>	<p>HED's Plan identifies the responsibilities of those who will executed HED's WMP. The Electric Superintendent is responsible for implementation of the Plan with oversight by the Utility Director and City Manager. Given the small size of HED, this satisfies the intent of 8387(b)(2)(A).</p>	<p>Yes</p>

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<p><b>(B)</b> The objectives of the wildfire mitigation plan.</p>	<p><b>Page 5</b></p>	<p>HED clearly states the WMP objectives on page five of the WMP. HED's primary objective is to eliminate wildfires caused by electric utility equipment. A secondary objective is to identify cost-effective measures that produce the same or improved wildfire mitigation results.</p>	<p><b>Yes</b></p>
<p><b>(C)</b> 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><b>Pages 6-8</b></p>	<p>HED describes numerous preventative strategies and programs in the WMP. HED includes descriptions of the following actions and programs to reduce fire starts and improve response:</p> <ul style="list-style-type: none"> <li>- System Inspections</li> <li>- Vegetation Management</li> <li>- Public Education and Notification</li> <li>- Situational Awareness</li> <li>- Routine Inspections</li> <li>- Increased Wood Pole Strength Requirements</li> <li>- Increased Overhead Line Conductor Spacing</li> <li>- Planned Replacement of Expulsion Fuses</li> <li>- Elimination of Split Bolt Connectors</li> <li>- Removal of Lightning Arrestors</li> <li>- Operational Procedures</li> <li>- Capital Improvements/System Hardening</li> <li>- Staffing &amp; Staff Training</li> <li>- Wildfire Preparedness, Response, and Recovery.</li> </ul>	<p><b>Yes</b></p>
<p><b>(D)</b> 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><b>Pages 8-9</b></p>	<p>The WFMP includes language describing five metrics 1. Ignitions caused by utility equipment, 2. Inspection records &amp; maintenance 3. Vegetation maintenance, 4. Overhead equipment failures, and 5. Outage response time. These metrics may be used to evaluate the mitigation plan and the assumptions that underlie the use of the metrics. Navigant recommends adding additional clarity and targets to the metrics over time to help identify trends and goals.</p>	<p><b>Yes</b></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>Page 9</p>	<p>HED was not been previously required to have a WMP. Therefore, information related to previous metrics is not available in the context of a WMP. The City writes that future versions of the WMP will include a discussion of previous metrics and how those metrics are used to shape and improve measures to reduce the risk of wildfires.</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>Page 10, 15</p>	<p>HED developed new protocols for reclosers in response to recent fire activity and in developing the WMP. Reclosers in the Tier 2 areas will be disabled when the National Weather Service issues red-flag warnings affecting any portion of the City electric service territory. Additionally, during Red-Flag warnings the City will implement recloser settings that shorten the time a fault will exist. In general, these settings include lowering instantaneous trip settings and improving the detection of ground faults. These settings are planned to be implemented in the first half of 2020.</p> <p>Additionally, City staff will review system protection settings to ensure proper coordination and possible improvements to reduce the risk of wildfire mitigation. Coordination of protection devices is necessary to ensure system faults are cleared in a proper and expedient manner.</p> <p>Due to the public safety impacts, HED does not anticipate using de-energization, but does not foreclose the possibility to use it under emergency conditions, De-energization of HED's system may occur due to one or more of the following conditions:</p> <ol style="list-style-type: none"> <li>1) Upon the request of Healdsburg's Fire Department, Healdsburg's Police Department, CAL-FIRE or other State or local public safety agencies.</li> <li>2) When energized powerlines subject to high winds or other weather or atmospheric conditions may create a public safety risk.</li> <li>3) When real-time information from qualified City field staff indicates that wind driven vegetation or other combustible debris are</li> </ol>	<p>Yes</p>

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		<p>threatening City owned electric utility equipment.</p> <p>Where possible, and as time permits, HED intends to coordinate de-energization actions with the City Manager's Office, Electric Department, and City Public Safety Departments. The decision to de-energize City owned powerlines will be communicated to the City Manager's office as soon as practical.</p>	
<p><b>(G)</b> 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><b>Page 10</b></p>	<p>HED provides customer education through printed materials, social media, and the City's webpage.</p> <p>In accordance with the City of Healdsburg's Emergency Operations Plan, customer notification leading up to and during an event is coordinated through the City Manager's office, City Emergency Operations Center (EOC), and other means available to City staff. The City will rely upon automated voice service phone calls, social media, and other automated emergency alerts to contact customers, critical facilities and public safety partners.</p> <p>Communications with critical customers will be primarily through automated phone call but HED will also encourage critical customers and operators to monitor the City's Facebook page and signup for automated emergency alerts such as NIXLE.</p>	<p><b>Yes</b></p>
<p><b>(H)</b> Plans for vegetation management.</p>	<p><b>Page 11</b></p>	<p>Vegetation management by HED exceeds the requirements of GO 95. The practices are described in the Vegetation Management section of the plan and further detailed in Appendix D "Technical Specifications for Electric Line Clearance Services."</p> <p>HED also recently began recording its tree trimming in GIS and will track its progress as one of the five metrics used to measure performance and lead to improvements of the WMP.</p>	<p><b>Yes</b></p>

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<p>(I) Plans for inspections of the local publicly owned electric utility's or electrical cooperative's electrical infrastructure.</p>	<p><b>Pages 6, 11-12</b></p>	<p>HED's inspection program is described in both the preventive strategies section and a stand-alone inspection section. HED states that it follows GO 165 to inspect the condition of equipment/facilities, vegetation encroachment, and need for and prioritization of maintenance action. These practices are detailed in the Plan and further elaborated in the Preventative Maintenance and Inspection Program.</p> <p>The City will also conduct patrols before/after Red Flag Warnings issued by the National Weather Service and identify issues that can be quickly addressed.</p>	<p><b>Yes</b></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><b>Pages 12-13</b></p>	<p>As described below, HED identified numerous risks and risk drivers addressing parts (i) and (ii) of this requirement. In future iterations, Navigant recommends clearly delineating between the two. Risk drivers are those mechanisms increasing or decreasing the identified risks.</p>	<p><b>Yes</b></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><b>Pages 12-13</b></p>	<p>HED identified four risks associated with the design, construction, operation, and maintenance of its system and facilities including:</p> <ol style="list-style-type: none"> <li>1) Vegetation near electric lines</li> <li>2) Overhead utility equipment</li> <li>3) Reclosing and automatic testing of faulted lines</li> <li>4) Work practices during fire season esp. Red Flag conditions</li> </ol> <p>The City notes it will alter the timing of the work addressing these items to reduce these risks.</p>	<p><b>Yes</b></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><b>Page 13</b></p>	<p>HED identified seven topographical/climatological risks in the Plan including, but not limited to, vegetation, persistent low humidity and/or drought, high winds, steep terrain, housing in the wildland urban interface, and prior fire activity. While these items are beyond the control of HED, the utility is taking steps to address and reduce the impact of these risks.</p>	<p><b>Yes</b></p>

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<p><b>(K)</b> 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><b>Page 14</b></p>	<p>In 2017, at the direction of City Council, HED identified areas within its territory (primarily areas in the WUI) that are at elevated risk for wildfire. This was submitted to the CPUC for inclusion in the fire mapping process.</p> <p>HED has not identified any portion of its system which should be included in a higher risk zone than is currently established and is not making any recommendations to the expand the area of a high fire threat district.</p>	<p><b>Yes</b></p>
<p><b>(L)</b> A methodology for identifying and presenting enterprise wide safety risk and wildfire-related risk.</p>	<p><b>Page 14</b></p>	<p>HED's methodology for identifying and presenting enterprise-wide safety risk and wildfire-related risk is based on the use of historical data outages. Specifically, HED analyses historic outages and wildfires to assess its risk levels. Navigant recommends the development/implementation of a more formalized risk assessment methodology for future iterations of the Plan.</p>	<p><b>Yes</b></p>
<p><b>(M)</b> A statement of how the local publicly owned electric utility or electrical cooperative will restore service after a wildfire.</p>	<p><b>Pages 14-15</b></p>	<p>HED describes the process it will follow for restoration of power service after a wildfire. This process requires patrols, isolation of damaged equipment/facilities, documentation of maintenance needs, and repairs.</p> <p>HED would leverage mutual assistance as needed in the restore phase.</p>	<p><b>Yes</b></p>
<p><b>(N)</b> 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><b>(i)</b> Monitor and audit the implementation of the wildfire mitigation plan.</p>	<p><b>Page 15</b></p>	<p>Oversight, monitoring and auditing of the Plan will occur at least annually. The City Utility Director will collect data from the oversight and monitoring and lessons learned will be incorporated into future iterations.</p>	<p><b>Yes</b></p>

<p>(ii) Identify any deficiencies in the wildfire mitigation plan or its implementation and correct those deficiencies.</p>	<p><b>Page 15</b></p>	<p>HED encourages all staff and external parties to identify plan deficiencies and report them to the Assistant Director of Utility Operations who will log them, assign staff to correct them, and present them at leadership meetings.</p>	<p><b>Yes</b></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><b>Page 15</b></p>	<p>The City Electric Superintendent is responsible for quality control of inspections, construction standards, and operating procedures and tracks the effectiveness of operations and maintenance staff.</p> <p>Navigant recommends adding a statement specifically stating that HED will conduct an audit of the effectiveness of electrical line and equipment inspections.</p>	<p><b>Yes</b></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><b>Page 15</b></p>	<p>HED presented its WMP to the City Council at a public meeting in December 2019. A second presentation will occur on March 16, 2020.</p>	<p><b>Yes</b></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>HED contracted with Navigant Consulting, Inc. to perform an independent evaluation of its WMP. Qualifications are described in Section 1.</p>	<p><b>Yes</b></p>