

## Wildfire Mitigation Plan Independent Evaluation



**Prepared for:**

**Truckee Donner Public Utility District**

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## **DISCLAIMER**

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

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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**

Truckee Donner Public Utility District (TDPUD or “District”) contracted with Navigant Consulting, Inc. n/k/a Guidehouse Inc. (Navigant) to engage in an independent evaluation of its Wildfire Mitigation Plan (Plan or WMP). This independent evaluation report (Report) describes the technical review and evaluation provided by Navigant. Navigant performed this evaluation in October and November 2019 and completed the Report on November 26, 2019. Navigant’s project team reviewed detailed information related to the Plan and assessed TDPUD’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 TDPUD’s requirements under PUC Section 8387(c), which mandate an independent evaluation of TDPUD’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 December 4, 2019. The Report includes the following:

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

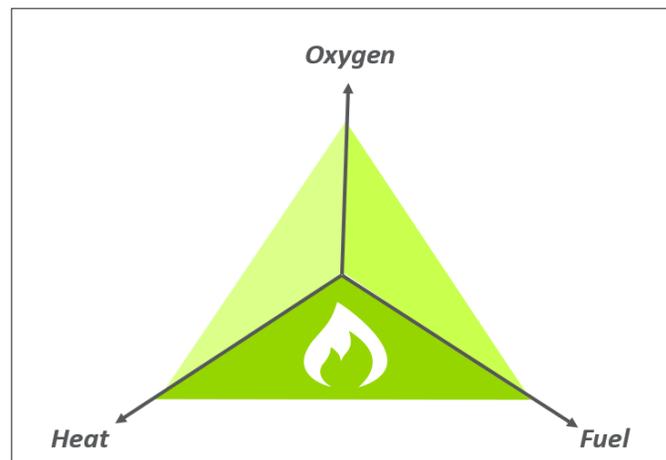
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<sup>2</sup> Due for implementation in 2020.

## 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 TDPUD Electric Utility Plan Preparation**

TDPUD Electric Utility (TDPUD or "District") is a public utility district of the State of California. Its service territory is approximately 44 square miles. TDPUD's primary goal is to provide safe, reliable, and cost-effective electricity to its local community. The District's actions and decisions are governed by the Board of Directors and managed by the General Manager. Under this structure, the Board is responsible for adoption of all policy and delegates the operational implementation of the policy to the General Manager. The General Manager has full operational authority of TDPUD and operates as the Chief Executive, reporting directly to the Board.

TDPUD prepared its first WMP pursuant to SB 901 directives. The Plan aims to address each of the required elements presented by PUC Section 8387 and ultimately reduce the risk of contributing to utility-involved wildfire events through Plan execution and metric tracking. TDPUD has posted the WMP to its website for public review. TDPUD will present the Plan and this Independent Evaluation to the Board in December 2019.

### **1.1.1 Independent Evaluation Services**

PUC Section 8387(c) directs POUs to procure services for an independent evaluation (IE) of the comprehensiveness of the WMP. In January 2020, upon commencement of the California Wildfire Safety Advisory Board, guidelines and further details related to the scope and timelines of future IEs will be discussed and reviewed. In its 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>

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

<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.

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 TDPUD's publicly-owned business practices relative to IOUs, through our experience developing WMPs for two IOUs and our continued tracking of related CPUC dockets intended to refine strategies that carry an effective Plan.<sup>6</sup>

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.

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

## 2. EVALUATION SCOPE AND APPROACH

At the time of this IE, the guidelines and requirements were not available to POUs regarding the structure or determination of comprehensiveness pursuant to PUC Section 8387(c). In lieu of this formalized directive, Navigant completed this evaluation based on industry standard practices, our experience developing and reviewing WMPs and other grid hardening activities, our active tracking of wildfire legislative and regulatory proceedings and, most importantly, a comparison of the specific criteria in PUC Section 8387(b)(2) to the specific wildfire-related plans outlined in TDPUD’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. While POUs are directed to develop this Plan prior to January 1, 2020, Navigant recognizes that California utilities subject to CPUC jurisdiction have filed their respective Plans on February 6, 2019. Navigant has tracked docketed proceedings and maintains a presence in state activities and workshops surrounding wildfire prevention. Understanding that TDPUD is not subject to CPUC regulations, the insight gained from this related experience is leveraged in assessing TDPUD'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**

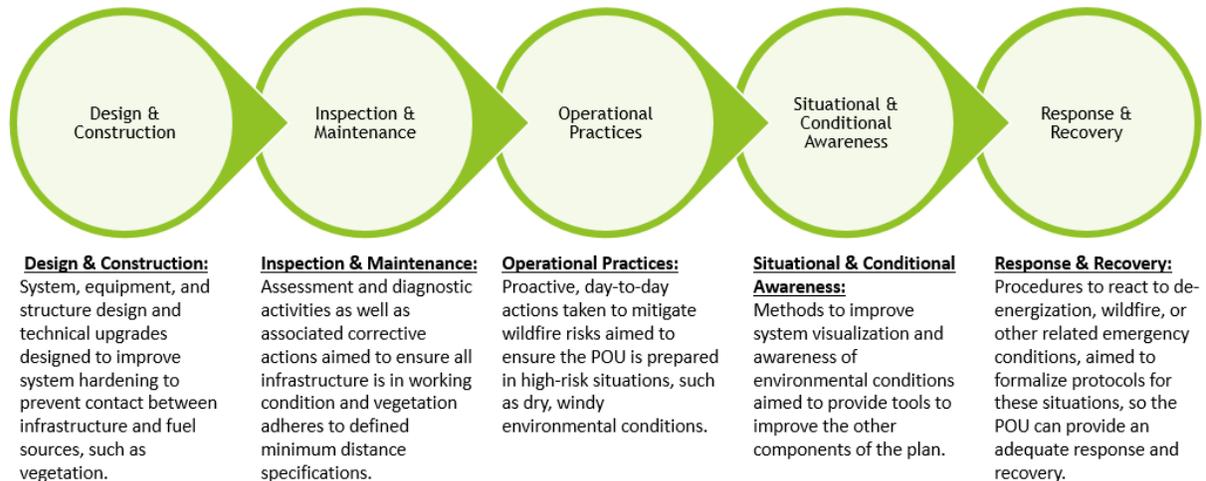
Navigant sought to determine compliance with the provisional requirements laid out in SB901 as codified in PUC Section 8387. The Plan's alignment with the statutory requirement is presented in Appendix A. TDPUD's mitigation measures are not required to exceed the statutory requirements.

**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 TDPUD’s WMP. While not all of these strategies are present in or applicable to TDPUD’s Plan, due to TDPUD’s size, location, and operational characteristics, Navigant’s understanding of collected utility strategies demonstrated throughout the state are summarized below:

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

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

### **2.2.3 Value Determination of Plan Metrics**

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

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<sup>7</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. TDPUD 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 TDPUD’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.

TDPUD has clearly stated objectives in its WMP in Section II of the WMP. TDPUD’s primary objective is minimizing the probability that TDPUD’s electric system may be the origin or contributing source for the ignition of a fire as well as the protect the system from wildfire damage. The secondary objective is to improve the resiliency of TDPUD’s electric system by assessing new industry practices and technologies, improving fire response, and mitigating fire fuels located in the wildland urban interface (WIU) in TDPUD service territory. TDPUD also sets forth an objective to minimize unnecessary or ineffective actions. This third objective supports continuous improvement of its WMP in a manner that is cost-effective for its customers.

Section V of the Plan details TDPUD’s preventive strategies and programs that minimize the risk of its electrical lines and equipment causing catastrophic wildfires. Because the majority of TDPUD’s footprint lies within Tier 2 and Tier 3 High Fire Threat Districts as identified by the California Public Utilities Commission, TDPUD has chosen to treat all of its area as falling in Tier 3 “Extreme” Fire Threat and treat its assets accordingly. Accordingly, the District applies the following strategies across its service territory.

TDPUD employs the following programs to reduce the likelihood of fire ignitions:

- Weather monitoring – TDPUD monitors the weather and delays routine work during periods of extreme weather and Red Flag Warnings
- Design and construction standards – the District utilizes CPUC General Order (GO) 95 as a guiding principle for design and construction of overhead equipment, and constructs its facilities in accordance with a “heavy-loading” district as defined by the CPUC.
- Vegetation management – TDPUD strives to meet or exceed (1) Public Resources Code section 4292; (2) Public Resources Code section 4293; (3) GO 95 Rule 35 (Exhibit C); and (4) the GO 95 Appendix E Guidelines to Rule 35 (Exhibit D). These standards require significantly increased clearances in a HFTD area. This is discussed in more detail in section 3.1.3.3 below.

- Inspections – TDPUD aims to meet or exceed GO 165 (Exhibit E) and GO 95 Rule 18 (Exhibit F) and strives to complete all inspections annually prior to the start of fire season. See section 3.1.3.4 for additional detail.
- High-flashpoint insulating oil – Since 2008, the District has been switching the oil used in transformers and substation voltage regulators to Envirotemp FR3 fluid for cooling oil and requires it for all new oil insulated equipment. This oil has a much higher flashpoint than traditional mineral oil. It is currently used for all applications except for pad-mounted switchgear but TDPUD will evaluate the appropriateness of using this alternative for its pad-mounted switchgear.
- TDPUD has initiated a pilot program for replacing traditional fuses with non-expulsive fuses in a development that is identified as Tier 3 on the CPUC maps. Depending on its performance through the snow-laden winter months, the District may expand the use of such fuses across its footprint through a three-year capital improvement project.
- Workforce training – the District has “developed rules and complementary training programs for its workforce to reduce the likelihood of an ignition. All field staff will be: trained in the content of the WMP; trained in proper use and storage of fire extinguishers; [receive] pre-job briefings to discuss the potential for ignition; environmental conditions ... and [be able to] identify the closest fire extinguisher.” It is also expected that all ignitions will be reported.
- Disabling automatic reclosers during fire season (typically early June – November) – TDPUD will disable all automatic circuit reclosers on its system for the summer months. The timing on this may change from year to year due to lingering snow on the ground or the timing of the fall precipitation.
- Covered primary jumper wire – TDPUD will be implementing the use of insulated jumper wires to minimize inadvertent contact with wildlife and mitigate the possibility of a flashover that could result in an ignition.

The preceding represents some of the efforts to be undertaken by TDPUD to reduce the risk of catastrophic wildfires in the face of dynamic climate change. While TDPUD, notes tree mortality, extended drought, and other weather challenges, they do not specifically mention climate change in the current Plan. The District may wish to consider adding a discussion about climate change to future iterations of the WMP.

### 3.1.1 Risk Assessment & Drivers

#### PUC Section 8387

**(J)** A list that identifies, describes, and prioritizes all wildfire risks, and drivers for those risks, throughout the local publicly owned electric utility’s or electrical cooperative’s service territory. The list shall include, but not be limited to, both of the following:

**(i)** Risks and risk drivers associated with design, construction, operation, and maintenance of the local publicly owned electric utility’s or electrical cooperative’s equipment and facilities.

**(ii)** Particular risks and risk drivers associated with topographic and climatological risk factors throughout the different parts of the local publicly owned electric utility’s or electrical cooperative’s service territory.

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

Section IV of TDPUD’s WMP discusses “Wildfire Risks, Drivers Associated with Design, Construction, Operation, and Maintenance. This risk analysis and risk drivers that guide the development of TDPUD’s wildfire prevention practices. The District identifies both risks associated with topographic and climatological risk factors as well as enterprise-wide safety risk.

TDPUD identifies the following as the primary wildfire risk drivers for its territory:

- Extended drought;
- Vegetation type
- High winds;
- Mountainous terrain;
- Tree mortality;
- Lightning;
- Traffic; and
- Lack of early fall precipitation

The enterprise-wide safety risk identified by the District include:

- Unavailability of NV Energy's Transmission
- Loss of internet connectivity
- Loss of cellular communications
- Impacts of system de-energization (explained in more detail in Section V.J); and
- Impacted roadways limiting movement of personnel and equipment and access to TDPUD facilities.

TDPUD noted it used a risk factor analysis (RFA), "a process to identify and manage potential risks that could undermine core business functions, threaten business continuity, or impact recovery." The current risk analysis is an iterative process using data points, analysis, and professional judgment. Future iterations of the WMP should include more detail about the methodology the RFA utilizes to identify, prioritize, quantify, and analyze these risks.

### **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.

TDPUD served as a territory lead in the creation of the CPUC Fire-Threat Map and worked with local fire. The District's Plan (Section I.A) states the intention to treat the entire service territory as if it were included in Tier 3 because the majority of its territory is either Tier 2 or Tier 3. This designation is then incorporated into its construction, inspection, operation, maintenance, repair, and vegetation management practices. Consequently, TDPUD 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. Additionally, CalFire and CPUC fire risk maps are incorporated in the GIS overlay in order to identify District water and electric facilities within high fire threat areas.

### **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**

TDPUD disables its automatic reclosers annually during fire season which typically runs from early June until early November. The District may change the start or end of this period based upon lingering snow in June, or either an extended fire season or early winter, at the discretion of the Electric Operations Manager or designee.

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

TDPUD will not employ pre-emptive power shut offs during high fire threat periods due to community risks and because it plans to use real-time information and other mitigation strategies (e.g., vegetation management, system hardening, and situational awareness) to avoid shutting off power. However, TDPUD may be downstream of a Public Safety Outage Management (PSOM) shutoff by NV Energy. At such time, the District will enact its emergency communication processes described in Sections III.B-D of the Plan.

#### **3.1.3.3 Vegetation Management**

The District's Plan contains a summary description of vegetation management practices states that TDPUD's vegetation management practices meet or exceed Public Resources Code 4292-4293, California General Order 95 Rule 35 (attached to the plan as Exhibit C) and GO 95 Appendix E Guidelines to Rule 35 (Exhibit D).

TDPUD maintains a separate Vegetation Management Program that was last revised in October 2019. This program, reviewed by Navigant, sets forth additional standards of conduct, practices (e.g. pole clearing and inspection of/maintaining tree attachments) and details applied by the District. Vegetation management activities are tracked in GIS.

TDPUD is also enhancing its vegetation management program to move from a 5-year to a 3-year maintenance cycle to address all facilities.

#### **3.1.3.4 Infrastructure Inspections**

TDPUD maintains an inspection program that meets or exceeds GO 165 Table 1 (Exhibit E to the Plan) and GO 95 Rule 18. The District inspects the lines using trucks, ATVs, helicopter, and foot access with a goal of ensuring all facilities are inspected prior to June 1, the beginning of fire season. Inspection findings, hazards, and corrections are recorded and tracked in the District's GIS database. Issues that can be resolved at the time of identification are repaired immediately, those that cannot be repaired are assigned a priority in accordance with GO 95 Rule 18 (Exhibit F to the WMP).

### **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**

TDPUD will work with the Town of Truckee (police and fire) and Emergency Management Services of Nevada and Placer County to ensure customers are notified about pending or ongoing de-energization of the District's electric system.

TDPUD has conducted an extensive customer outreach campaign to educate customers on wildfire preparedness, a call to action to update contact information and sign up for emergency alerts with TDPUD, and links to resources. The on-going outreach campaign includes: Local radio interview/spots; customer bill stuffer; press release; advertising in local media (Sierra Sun, Moonshine Ink, Tahoe Donner News, The Shire, and Truckee Chamber); public events; direct customer e-mails; and extensive website communications.

#### **3.1.4.2 Restoration**

While TDPUD is not planning to utilize Public Safety Power Shutoffs as a strategy to prevent wildfires in its territory, if power is lost, or lines are de-energized "District staff will patrol the affected portions of the system before the system can be re-energized. Suspect equipment or distribution lines that cannot be patrolled will remain de-energized. In addition, system performance abnormalities will be monitored via the District's SCADA system and its AMI/OMS systems."

The District is developing restoration circuit route maps and operational procedures for visual inspection and safe reenergizing of circuits. In addition, TDPUD has planned a 'mock' reenergizing exercise before the end of the year to refine the maps, procedures, and time estimates to fully inspect and safely restore power after a wildfire power shutoff.

TDPUD is also a member of the California Utility Emergency Association and the Western Energy Institute's Western Region Mutual Assistance Agreement and is a signatory to the American Public Power Association's mutual aid agreement. This allows the District to leverage mutual assistance as needed for restoration of power.

### **3.1.5 Metrics & Plan Monitoring**

#### **PUC Section 8387**

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

**(D)** A description of the metrics the local publicly owned electric utility or electrical cooperative plans to use to evaluate the wildfire mitigation plan's performance and the assumptions that underlie the use of those metrics.

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

(N) A description of the processes and procedures the local publicly owned electric utility or electrical cooperative shall use to do all of the following:

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

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

(iii) Monitor and audit the effectiveness of electrical line and equipment inspections, including inspections performed by contractors, that are carried out under the plan, other applicable statutes, or commission rules.

### ***3.1.5.1 Responsibilities of Persons Responsible for Executing the Plan***

Section III.A identifies the organizational structure of TDPUD and assigns responsibilities for oversight and execution of the WMP. Specifically, the following roles and responsibilities are assigned by the Plan.

- The General Manager has full operational authority of the District and operates as the Chief Executive, reporting directly to the Board. The General Manager provides direction and management to all District staff while implementing Board adopted policy.
- The Assistant General Manager (AGM) / Public Information Officer (PIO), serves as the District's public liaison to outside agencies as well as responding to requests for information, including proactively promulgating public awareness outreach or emergency information. The AGM also assumes the operational authority of General Manager in the absence of the General Manager.
- The Electric Utility Director has overall functional management of the Electric Utility and provides day-to-day oversight of the Electric Utility. The Director utilizes the Electric Operations Manager and Electric Engineering Manager for division oversight.
- The Electric Operations Manager oversees the daily electric utility operations, including; construction; maintenance; energy control; fleet; vegetation management; and other ancillary daily duties. The Electric Operations Manager maintains functional management of assigned divisions within the Electric Utility and reports to the Electric Utility Director.
- The Electric Engineering Manager oversees the design/engineering tasks associated with distribution system modification and development/maintenance of material specifications. The Electric Engineering Manager maintains functional management over the electric engineering related tasks within the Electric Utility and reports directly to the Electric Utility Director.
- District staff have the following responsibilities regarding fire prevention, response and investigation:
  - Conduct work in a manner that will minimize potential fire dangers;
  - Take all reasonable and practicable actions to prevent and suppress fires resulting from District electric facilities;
  - Coordinate with Federal, State, and Local fire management personnel to ensure that appropriate preventative measures are in place;

- Immediately report fires, pursuant to specified procedures;
- Take corrective action when observing or having been notified that fire protection measures have not been properly installed or maintained;
- Ensure compliance with relevant Federal, State, and industry standard requirements;
- Ensure that wildfire data is appropriately collected; and
- Maintain adequate training programs for all relevant employees.

In addition, Section III.B describes TDPUD’s governance structure and coordination with the water utility and III.C details the coordination with communication infrastructure providers, and III.D elaborates the parties with which it will coordinate in response to wildfire emergencies.

**3.1.5.2 Metrics**

The WMP includes language describing two metrics (fire ignitions and wires down) that may be used to evaluate the mitigation plan and the assumptions that underlie the use of the metrics.

Section VIII. A of TDPUD’s WMP provides TDPUD’s proposed metrics to monitor the performance of its Plan. The metrics are intended to result in measurable, tracked results illustrating the efficacy of the Plan through to successful implementation. Tracking these metrics will also inform appropriate revisions and updates to the Plan in future years, including to the metrics. There are currently no set standards for metric development, however, the District is tracking the discussions at the legislature, CPUC, and with its fellow POU’s on this issue.

The statutory requirements for the inclusion of metrics are found in PUC Section 8387(b)(2)(D) and (E) where utilities are directed to present these metrics and address how prior metrics impact the proposed metrics for the next version of the Plan. The two proposed metrics in TDPUD’s 2019 WMP (shown in Table 5 below) serve as TDPUD’s first version, providing no previous metrics on these topics for comparison.<sup>8</sup> This metrics represent TDPUD’s approach to track fire ignitions and wires down related to its electrical infrastructure. The underlying assumptions suggest that monitoring the frequency and cause of ignition event will shape the direction of mitigation strategies as this information is collected and analyzed. These proposed metrics meet the statutory requirements and will assist in providing insight on the effectiveness of the Plan in future years. TDPUD is also monitoring and tracking implementation of its plan through other means including SCADA and GIS.

**Table 2: TDPUD Proposed Metrics**

Specific metric	Indicator	Measure of effectiveness	Criteria
Fire ignitions	Count of events	No material increase	(1) TDPUD facility was associated with origin of the fire (2) Fire was self-propagating and of a material other than electrical (3) Resulting fire traveled greater than one linear meter from ignition point; and (4) TDPUD has knowledge fire occurred Fires less than 10 acres will be counted and any fire greater than 10 acres will be individually described.

<sup>8</sup> TDPUD tracks a number of its actions and metrics though its SCADA and GIS and has been tracking distribution sytem metrics and reliability data for decades. This tracking and use of data has allowed the District to be recognized with a Platinum Designation for the APPA’s Reliable Public Power (RP3) supplier.

Wire down events	Count of events	No material increase	Any instance where an electric transmission or primary distribution conductor falls to the ground or on a foreign object. This metric will not be normalized by excluding unusual or extreme events, but such events will be logged and described.
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**3.1.5.3 Monitoring and Auditing the Plan**

The plan states the Plan is subject to review by the District's Board of Directors. TDPUD will present the plan annually to the Board. Additionally, the Electric Utility Director, or designee, will update the General Manager on the Plan's implementation, identified deficiencies, and recommendations for improvements at least semi-annually.

TDPUD encourages all staff to vet the plan to identify plan deficiencies and recommend changes to the WMP. The Electric Utility Director, or designee, is "responsible for spearheading discussions on correcting deficiencies when updating the Plan for its annual presentation to the Board. All stakeholders are empowered to suggest improvement opportunities, including, but not limited to: field crews; management; auditors; fire safety professionals; and, members of the public."

Additionally, the objective of "minimizing unnecessary or ineffective actions" implicitly requires the Plan to be a living document that encourages continuous improvement.

Regarding inspections, TDPUD uses GO 95 and 165 cycles as a basis for its inspection cycles. The District also routinely patrol the service area to correct deficiencies when they are found and track their efforts utilizing GIS. Deficiencies that cannot be repaired upon discovery are assigned priorities according to GO 95 Rule 18 and recorded in GIS.

**3.1.5.4 Annual Review**

The WMP will be reviewed at least annually. The review will include assessments of the WMP's programs and performance. As part of this process, TDPUD will monitor and audit the implementation of the WMP, identify and correct deficiencies, and monitor and audit the effectiveness of electrical line and equipment inspections, including inspections carried out by contractors. The findings of these audits will be presented at a public meeting of the TDPUD Board of Directors, along with the revised plan, and the independent evaluation report.

## **4. INDUSTRY PRACTICES COMPARISON**

In consideration of industry-accepted and demonstrated mitigation measures, Navigant provided a comparison against approved California utility Plans comparable to Truckee Donner Public Utility District (District) service territory, risk profile, and equipment within the HFTD Tier 2 and Tier 3 areas. The complete comparison matrix with supporting information is provided in Appendix A. The below four items have been recommended for detailed discussion of the applicability and efficacy of the proposed strategy.

### ***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 HFTA for implementation.

The District service area, due to its location at 6,000 to 8,500 feet altitude, experiences severe winter weather and high winds in excess of 100 mph. In order to withstand extreme weather events, the District distribution system is built to heavy loading standards. As part of the heavy loading construction standards, District uses insulated wire (where practicable). District does not have a replacement program for bare wire within Tier 2,3.

The District is planning to replace bare primary jumper wire with covered wire to minimize contact with wildlife and the potential for flashovers. However, due to the cost of such action, increased weight of insulated wire (TDPUD estimates 6,000 poles would require replacement), and limited ampacity of insulated wire, there is no plan for replacement of bare wire lines.

The District's approach is appropriate considering the cost and complexity of such a project but is not a best practice. Residual risk from not insulating wires is mitigated by TDPUD's aggressive vegetation management and inspection practices

### ***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.

District disables automatic reclosing during summer months. District defines summer months as early June through early November. Changes to this protocol may be enacted due to an extended/early winter conditions and the associated operational needs

District's approach to disabling reclosing is appropriate and consistent with the practices of 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, District, 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,

District has undertaken a pilot project to evaluate the suitability of non-expulsion fuses on its overhead system.

As part of the District's ELF Fuse Pilot Project all in-line and transformer fuse locations where an ELF fuse has been installed is tracked in the GIS and tagged with ELF identifier. This will allow the District to track and report any outage or hazard occurrences on ELF fuses through the District's Responder outage management system (OMS). This program began in early 2019. TDPUD currently is operating a pilot program in a Tier 3 neighborhood. TDPUD will be evaluating the fuses functionality in winter months to validate their effectiveness. If found effective, the District will implement a three-year capital improvement project and funding to replace all fuses in its system with ELF fuses.

Current actions are not consistent with the non-expulsive fuse best practices being performed by the other utilities in the state. However, TDPUD experiences much greater snow loading and needs to understand whether the fuses will work under the conditions experienced across the District's footprint and the proposed phased implementation plan is reasonable due to the significantly higher costs associated with non-expulsive fuses.

### ***Tree Attachments***

Tree attachments are a legacy practice where pieces of electrical infrastructure are fastened to tree for infrastructural support. District has tree attachments that consist of secondary voltage service drops and security lighting. District does not use tree attachments for new service installations. Removal of tree attachments is a common utility practice and may reduce the incidence of electrical sparks. Moreover, it is unclear that such attachments would comply with the heavy-loading construction standard for pole loading. No future tree attachments will be allowed.

TDPUD tracks in GIS and regularly inspects its tree attachments and leaves those in place that do not pose a hazard or comply with State Regulations. Additionally, the district is in the process of developing recommendations and operating practices for legacy tree attachments. No target date for completion was indicated. Beginning in 2020, contract tree crews will be inspecting attachments and reporting hazards to District staff for repairs or possible removal and replacement with a pole.

Implementation of a tree attachment removal program would align District with practices being performed by the other utilities in the state. Despite the foregoing, the practices employed for its legacy tree attachments as described in the Vegetation Management Program, and section V.K of the Plan are consistent with 14 CCR § 1257 "Exempt Minimum Clearance Provisions".

## **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 District's WMP. This assessment is designed to confirm prudent measures as proposed by District 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 Best Practice Matrix below include both statutory requirements that exist as industry standards for POU's as well as accepted industry practices within the state.

**APPENDIX A. INDUSTRY PRACTICE STRATEGY COMPARISON MATRIX**

Identified Practice Strategy	Mitigation Rationale	District Applicability	Plan Elements	Determination
<b><i>Situational Awareness / Weather Conditions</i></b>				
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 HFTA, weather stations would allow District personnel to have access to real-time monitoring of these areas	District monitors current and forecasted weather data from a variety of sources. TDPUD relies on NOAA and other weather outlets and local observations. In addition, NV Energy utilizes a sophisticated wildfire danger model that includes TDPUD's service territory and which will drive PSOM and inform TPDUD.	 <p>No definitive plans are indicated for procurement of a local weather station for instantaneous weather condition reporting</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.	As stated above, District does not access weather station servers or present visualization through a GIS.	 <p>No definitive plans are indicated for access to local weather station servers and visualization through a GIS.</p>

Identified Practice Strategy	Mitigation Rationale	District Applicability	Plan Elements	Determination	
<p>Cameras with night vision mode capability atop of electrical structures</p>	<p>Visual inspections can be enhanced through the use of cameras with high definition and night vision capabilities. This measure improves response times in addressing risk incidents and de-energization</p>	<p>District has facilities within HFTA hat would benefit from additional visibility into the regions with greatest threat of ignition or fire spread. This may also be helpful in remote high elevation areas.</p>	<p>District does not use or have future plans for night vision cameras</p>		<p>District does not use or have future plans for night vision cameras</p>
<p><b>System Hardening / Design &amp; Construction</b></p>					
<p>Replacing bare wires with covered conductors</p>	<p>Covered wire is a well-demonstrated prevention method to sparks / ignitions during severe weather conditions. Several utilities are employing pilot programs of covered wire replacement of distribution lines, prioritizing HFTA for implementation.</p>	<p>District has applicable overhead distribution lines within the HFTAs that would benefit from additional hardening such as covered wire replacement for existing, legacy bare wire.</p>	<p>As part of the heavy loading construction standards, District uses insulated wire (where practicable)</p> <p>District does not have a replacement program for base wire within Tier 2,3 due to the heavy cost.</p> <p>District is planning to implement covered primary jumper wire to minimize the unintentional contact with wildlife and flashovers.</p>		<p>It would be prudent for District to consider the use of covered wire for and define exceptions to using covered wire for new and replacement construction.</p>

Identified Practice Strategy	Mitigation Rationale	District 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>New line construction standards are taken into consideration in accordance with GO95.</p>	<p>District states it meets or exceeds the construction standards of GO 95 and implemented heavy loading construction standards that are designed to withstand sustained heavy winds.</p>		<p>District practices align with industry best practices.</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, pole replacement ranking, and coating mechanisms, when new poles are considered for high fire severity zones, more resilient designs should be a consideration.</p>	<p>The District's construction standards described in the WMP do not include consideration of steel pole or fire-retardant wood poles for construction within Tier 2,3.</p>		<p>Consideration should be given to adding steel and /or fire-retardant wood poles within Tier 2,3 (where applicable)</p>

Identified Practice Strategy	Mitigation Rationale	District 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>District must 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>District implements PRC4292 for vegetation clearing around poles. Additionally, TDPUD maintains an intrusive wood pole inspection program (based upon GO 165) and utilizes a “Pole Replacement Ranking Tool” to identify poles that should be replaced based on an evaluation of age, condition, critical asset, and reliability. The poles and their conditions are tracked in TDPUD’s GIS.</p>	<p>TDPUD’s assessment of pole loading issues and inspections that result in remediation of infrastructure is aligned with best practice.</p>

Identified Practice Strategy	Mitigation Rationale	District 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>High fire threat areas 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 High Fire Threat Areas when a short circuit impacts only that portion of the system where the failure occurs.</p>	<p>District has undertaken a pilot project to evaluate the suitability of non-expulsion fuses on its overhead system.</p> <p>District will continue to evaluate the efficacy of non-expulsion fuses and based upon the investigatory outcome, may recommend a future capital project for further deployment onto the system.</p> <p>TDPUD will be evaluating the fuses functionality in winter months to validate their effectiveness. If found effective, the District will implement a three-year capital improvement project and funding to replace all fuses in its system with non-expulsive fuses.</p>	<div style="text-align: center;"></div> <p>Discontinued use and/or replacement of expulsion type fuses is a common best practice</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><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>District has tree attachments within Tier 2,3 that require evaluation to ensure compliance with 14 CCR § 1257.</p>	<p>District has tree attachments that consist of secondary voltage service drops and security lighting.</p> <p>District does not use tree attachments for new service installations</p> <p>District is increasing inspection of legacy tree attachments. All attachments are tracked via GIS.</p>	<div style="text-align: center;"></div> <p>Replacement of legacy tree attachments may decrease the incidence of electrical sparks.</p> <p>Removal of legacy tree attachments is a common best practice</p>	

Identified Practice Strategy	Mitigation Rationale	District 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; FAC 004-4; GO 95 is required by the CPUC for investor owned utilities.</p>	<p>District states that they meet or exceed minimum industry standards for PRC 4292, PRC 4293, GO 95 Rule 35 and Guidelines to Rule 35. Beginning in 2020 TDPUD will be moving from a five-year to a three-year vegetation management cycle.</p> <p>District has developed comprehensive vegetation management plan (revised Oct. 2019) that complies with these statutes. Navigant reviewed the Vegetation Management Plan.</p> <p>All vegetation management activities are tracked in GIS. All customer call ins for vegetation are tracked via the Customer Information System (CIS).</p>	<p style="text-align: center;"></p> <p>District meets the best practices guidelines for vegetation management</p>
<p>LiDAR Technology for vegetation management inspections</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>District has no transmission facilities with Tier 2,3</p>	<p style="text-align: center;"></p> <p>This practice does not apply since District has no transmission facilities in Tier 2,3.</p>

Identified Practice Strategy	Mitigation Rationale	District Applicability	Plan Elements	Determination	
<p>Hazardous tree/vegetation identification and removal protocols and programs</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>District identifies and tracks hazard trees through its inspection program and hazard trees and their removals are tracked in GIS. Customer calls regarding hazard trees are tracked in the CIS. Hazard trees are removed as quickly as possible.</p>		<p>TDPUD's hazardous tree / vegetation identification and removal protocols and programs align with industry best practice.</p>
<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 high fire risk area, 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>District identifies and tracks hazard trees through its inspection program and hazard trees and their removals are tracked in GIS. Customer calls regarding hazard trees are tracked in the CIS. Hazard trees are removed as quickly as possible.</p>		<p>TDPUD's off-cycle / call-in vegetation removal or corrective work aligns with industry practice</p>
<p><b>Emergency Response &amp; Recovery</b></p>					

Identified Practice Strategy	Mitigation Rationale	District Applicability	Plan Elements	Determination
<p>Notify critical facilities and public safety partners, which may include first responders, incident origin law enforcement, acute health care facilities, essential service providers, related governing local and state agencies, adjacent jurisdictions, vulnerable populations, and the Independent System Operator (ISO) (for transmission level de-energization).</p>	<p>Following a sequence of events in contacting public safety partners and impacted community facilities will enable quicker response in reacting to an emergency event (such as a wildfire or de-energization). Utilities should describe their processes to notify critical facilities as it applies to their service territory and impacted communities as well as grid operators.</p>	<p>Notification practices targeting key stakeholders are crucial during emergency events such as storms and wildfires.</p>	<p>TDPUD will work with the Town of Truckee (police and fire) and Emergency Management Services of Nevada and Placer County to ensure customers are notified about pending or ongoing de-energization of the District's electric system. TDPUD has conducted an extensive customer outreach campaign to educate customers on wildfire preparedness, a call to action to update contact information and sign up for emergency alerts with TDPUD, and links to resources.</p> <p>TDPUD has developed an extensive contact list from these agencies (TDPUD, Liberty Utilities, CAL FIRE, California Highway Patrol, Nevada County Office of Emergency Services, Northstar Fire Department, Placer County (OES, Public Health, and Sherriff), Tahoe Forest Hospital, Tahoe Truckee Unified School District, Tahoe Truckee Sanitation Agency, Truckee Police Department, Truckee Fire Protection District, Truckee Sanitary District, and Truckee Tahoe Airport District. Should NV Energy inform TDPUD of a possible PSOM, TDPUD will make direct contact with this</p>	<p>District should develop a notification list for public safety partners, critical community facilities and life and health support customers.</p>

Identified Practice Strategy	Mitigation Rationale	District Applicability	Plan Elements	Determination	
			contact list as soon as possible.		
<p><b>Incident Command Team / Emergency Operations frameworks in the event a de-energization event or wildfire incident occurs</b></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>District leverages the SEMS framework in designing emergency response protocols. A designated team or group of individuals should have the ability to relay information and make informed decisions during emergency response events.</p>	<p>District has indicated the Town of Truckee will lead an incident command team for a deenergization event or wildfire incident</p> <p>District has planned a mock reenergizing event scheduled to take place before the end of 2019 to refine maps, procedures, and time estimates to fully inspect and safely restore power after a shutoff.</p>		<p>Development of an emergency action plan for wildfire incidents and/or deenergization events with the associated incident command roles, responsibilities and training assures effective emergency response.</p>

Identified Practice Strategy	Mitigation Rationale	District Applicability	Plan Elements	Determination	
<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>District works closely with the EOC, Town of Truckee, CalFire, and other local first responders to assure effective communications and coordination</p>	<p>District works closely with the EOC, Town of Truckee, CalFire, and other local first responders to assure effective communications and coordination</p>		<p>District meets the basic requirements of this practice strategy.</p>
<b>De-Energization &amp; Recloser Operations</b>					
<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>District disables automatic reclosing during summer months. District defines summer months as early June through early November. Changes to this protocol may be enacted due to an extended/early winter conditions and the associated operational needs</p> <p>TDPUD can enable/disable substation-based reclosers remotely via SCADA. Additional upgrades are proposed that would allow the remote disabling of field reclosers as well. Currently, field reclosers are manually disabled prior to the fire season.</p>		<p>District meets the basic requirements of this practice strategy</p>
<b>Internal Operations and Inspection Practices</b>					

Identified Practice Strategy	Mitigation Rationale	District Applicability	Plan Elements	Determination	
<p>Ground patrol as well as aerial inspection practices</p>	<p>Routine ground patrols are implicit practices in equipment and vegetation inspection protocols. Increasing the frequency, especially in HFTDs, presents as effective preventative measures 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>District does not have an aerial inspection patrol program.</p>		<p>This is not applicable because TDPUD's limited subtransmission runs along a road which allows for better inspection than aerial inspection.</p>
<p>Wildfire Infrastructure Protection Teams</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>District indicated that staff has responsibilities regarding preparations for fire season, fire prevention, response, and investigation.</p>		<p>Annually, inspection activities are to be concluded before fire season and reclosers are disabled. During fire season monitoring of fire weather conditions may delay work on energized equipment/</p>

<b>Identified Practice Strategy</b>	<b>Mitigation Rationale</b>	<b>District 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>District does not utilize infrared inspections of distribution lines or substations</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 November 26, 2019. Over the course of reviewing TDPUD's WMP and supporting documentation, Navigant captured takeaways and findings that align the Plan with state laws and effective wildfire measure demonstration. TDPUD'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. TDPUD's WMP aligns appropriately with PUC Section 8387 and includes all required elements.
2. TDPUD's Plan is determined to be comprehensive as described throughout this Report.

**APPENDIX A. STATUTORY COMPLIANCE MATRIX**

Required Statutory Element	Plan Section Reference(s)	TDPUD 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><b>Section III</b></p>	<p>Section III.A identifies the organizational structure of TDPUD and assigns responsibilities for oversight and execution of the WMP.</p> <p>In addition, Section III.B describes TDPUD's governance structure and coordination with the water utility and III.C details the coordination with communication infrastructure providers, and III.D elaborates the parties with which it will coordinate in response to wildfire emergencies.</p>	<p><b>Yes</b></p>

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<p><b>(B)</b> The objectives of the wildfire mitigation plan.</p>	<p><b>Section II</b></p>	<p>TDPUD clearly identifies three specific objectives of the WFMP. The primary objective “is to minimize the probability the District’s distribution system may be an original or contributing source of ignition.” The secondary objective is to “ensure and improve ... system resiliency.” Finally, the Plan also seeks to minimize unnecessary or ineffective actions by measuring “the effectiveness of specific mitigation strategies ... .”</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>Section V</b></p>	<p>TDPUD’s WFMP identifies nine wildfire prevention strategies including:</p> <ul style="list-style-type: none"> <li>- Monitoring weather conditions and modifying work during extreme and Red Flag Warning conditions</li> <li>- Implementing design and construction standards that meet or exceed federal, state, and industry standards</li> <li>- Vegetation management that meets or exceeds standards</li> <li>- A comprehensive inspection program that strives to complete all inspections before the start of fire season</li> <li>- Switch to the use of high flashpoint insulating oil in transformers and voltage regulators</li> <li>- Disabling automatic reclosers during fire season</li> <li>- Work force training</li> <li>- Replacing bare primary jumper wire</li> <li>- Fire-related community outreach</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>Section VIII.A</b></p>	<p>The WMP includes language describing two metrics (fire ignitions and wires down) that may be used to evaluate the mitigation plan and the assumptions that underlie the use of the metrics.</p>	<p><b>Yes</b></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>Section VIII</b></p>	<p>TDPUD was not been previously required to have a WFMP. Therefore, information related to previous metrics is not available in the context of a WMP.</p>	<p><b>Yes</b></p>

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<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><b>Section V.I and V.J</b></p>	<p>TDPUD disables its automatic reclosers annually during fire season – early June – early November. The District this period may change due to either an extended fire season or early winter at the discretion of the Electric Operations Manager or designee.</p> <p>TDPUD will not employ pre-emptive power shut offs during high fire threat periods due to community risks and because it plans to use real-time information and other mitigation strategies (e.g., vegetation management, system hardening, and situational awareness) to avoid shutting off power. However, TDPUD may be downstream of a Public Safety Outage Management (PSOM) shutoff by NV Energy. At such time, the District will enact its emergency communication processes described in Sections III.B-D of the Plan.</p>	<p><b>Yes</b></p>
<p>(G) Appropriate and feasible procedures for notifying a customer who may be impacted by the deenergizing of electrical lines. The procedures shall consider the need to notify, as a priority, critical first responders, health care facilities, and operators of telecommunications infrastructure.</p>	<p><b>Section III.B-D, Section 6: p. 19</b></p>	<p>TDPUD will work with the Town of Truckee (police and fire) and Emergency Management Services of Nevada and Placer County to ensure customers are notified about pending or ongoing de-energization of the District’s electric system.</p>	<p><b>Yes</b></p>
<p>(H) Plans for vegetation management.</p>	<p><b>Section V.D, Vegetation Management Plan</b></p>	<p>The District’s Plan contains a summary description of vegetation management practices states that TDPUD’s vegetation management practices meet or exceed Public Resources Code 4292-4293, California General Order 95 Rule 35 (attached to the plan as Exhibit C) and GO 95 Appendix E Guidelines to Rule 35 (Exhibit D).</p> <p>TDPUD maintains a separate Vegetation Management Program that was last revised in October 2019. This program, reviewed by Navigant, sets forth additional standards of conduct, practices (e.g. pole clearing and inspection of/maintaining tree attachments) and details applied by the District.</p>	<p><b>Yes</b></p>

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		<p>TDPUD is also enhancing its vegetation management program to move from a 5-year to a 3-year maintenance cycle to address all facilities.</p>	
<p>(I) Plans for inspections of the local publicly owned electric utility's or electrical cooperative's electrical infrastructure.</p>	<p><b>Section V.E</b></p>	<p>TDPUD maintains an inspection program that meets or exceeds GO 165 Table 1 (Exhibit E to the Plan) and GO 95 Rule 18. The District inspects the lines using trucks, ATVs, and foot access with a goal of ensuring all facilities are inspected prior to June 1, the beginning of fire season. Inspection findings are noted and tracked in the District's GIS database. Issues that can be resolved at the time of identification are repaired immediately, those that cannot be repaired are assigned a priority in accordance with GO 95 Rule 18 (Exhibit F to the WMP).</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>Section IV. A - B</b></p>	<p>Section IV of TDPUD's WMP discusses "Wildfire Risks, Drivers Associated with Design, Construction, Operation, and Maintenance. This risk analysis and risk drivers that guide the development of TDPUD's wildfire prevention practices. The District identifies both risks associated with topographic and climatological risk factors as well as enterprise-wide safety risk.</p> <p>TDPUD noted it used a risk factor analysis (RFA), "a process to identify and manage potential risks that could undermine core business functions, threaten business continuity, or impact recovery." Future iterations of the WMP should include more detail about the methodology the RFA utilizes to identify, prioritize, quantify, and analyze these risks.</p>	<p><b>Yes</b></p>

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<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>Section IV.B</b></p>	<p>The enterprise-wide safety risk identified by the District include:</p> <ul style="list-style-type: none"> <li>• Unavailability of NV Energy's Transmission</li> <li>• Unavailability of CalPeco/Liberty Utilities' interconnection and its distribution interconnection</li> <li>• Loss of internet connectivity</li> <li>• Loss of cellular communications</li> <li>• Impacts of system de-energization (explained in more detail in Section V.J); and</li> <li>• Impacted roadways limiting movement of personnel and equipment and access to TDPUD facilities.</li> </ul>	<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>Section IV.A</b></p>	<p>TDPUD identifies the following as the primary wildfire risks and drivers for its territory:</p> <ul style="list-style-type: none"> <li>• Extended drought;</li> <li>• Vegetation type</li> <li>• High winds;</li> <li>• Mountainous terrain;</li> <li>• Tree mortality;</li> <li>• Lightning;</li> <li>• Traffic; and</li> <li>• Lack of early fall precipitation</li> </ul> <p>Several of these are directly related to the topographic and climatological conditions present in the District's service territory.</p>	<p><b>Yes</b></p>
<p>(K) Identification of any geographic area in the local publicly owned electric utility's or electrical cooperative's service territory that is a higher wildfire threat than is identified in a commission fire threat map, and identification of where the commission should expand a high fire-threat district based on new information or changes to the environment.</p>	<p><b>Section IV.C, V.A</b></p>	<p>TDPUD served as a territory lead in the creation of the CPUC Fire-Threat Map and worked with local fire.</p> <p>The District's Plan states the intention to treat the entire service territory as if it were included in Tier 3 because the majority of its territory is either Tier 2 or Tier 3. This designation is then incorporated into its construction, inspection, operation, maintenance, repair, and vegetation management practices. Consequently, TDPUD 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>

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<p><b>(L)</b> A methodology for identifying and presenting enterprise wide safety risk and wildfire-related risk.</p>	<p><b>Section IV.B</b></p>	<p>TDPUD noted it used a risk factor analysis (RFA), “a process to identify and manage potential risks that could undermine core business functions, threaten business continuity, or impact recovery.” Future iterations of the WMP should include more detail about the methodology the RFA utilizes to identify, prioritize, quantify, and analyze these risks.</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>Section VII, III.D</b></p>	<p>While TDPUD is not planning to utilize Public Safety Power Shutoffs as a strategy to prevent wildfires in its territory, if power is lost, or lines are de-energized “District staff will patrol the affected portions of the system before the system can be re-energized. Suspect equipment or distribution lines that cannot be patrolled will remain de-energized. TDPUD began defining patrol routes to speed recovery time and limit overlaps in 2019. In addition, system performance abnormalities will be monitored via the District’s SCADA system and its AMI/OMS systems.”</p> <p>TDPUD is also a member of the California Utility Emergency Association and the Western Energy Institute’s Western Region Mutual Assistance Agreement and is a signatory to the American Public Power Association’s mutual aid agreement. This allows the District to leverage mutual assistance as needed for restoration of power.</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></p>	<p></p>	<p></p>
<p><b>(i)</b> Monitor and audit the implementation of the wildfire mitigation plan.</p>	<p><b>Section VIII.C</b></p>	<p>The plan states the Plan is subject to review by the District’s Board of Directors. TDPUD will present the plan annually to the Board. Additionally, the Electric Utility Director, or designee, will update the General Manager on the Plan’s implementation, identified deficiencies, and recommendations for improvements at least semi-annually.</p>	<p><b>Yes</b></p>

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<p>(ii) Identify any deficiencies in the wildfire mitigation plan or its implementation, and correct those deficiencies.</p>	<p><b>Section VIII.C-D, II.C</b></p>	<p>TDPUD encourages all staff to vet the plan to identify plan deficiencies and recommend changes to the WMP. The Electric Utility Director, or designee, is “responsible for spearheading discussions on correcting deficiencies when updating the Plan for its annual presentation to the Board. All stakeholders are empowered to suggest improvement opportunities, including, but not limited to: field crews; management; auditors; fire safety professionals; and, members of the public.”</p> <p>Additionally, the objective of “minimizing unnecessary or infective actions” implicitly requires the Plan to be a living document that encourages continuous improvement.</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>Section VIII.E</b></p>	<p>TDPUD uses GO 95 and 165 cycles as a basis for its inspection cycles. The District also routinely patrol the service area to correct deficiencies when they are found and track their efforts utilizing GIS. Deficiencies that cannot be repaired upon discovery are assigned priorities according to GO 95 Rule 18 and recorded in GIS.</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>Section VIII.C-E</b></p>	<p>TDPUD will present its WMP to the District Board of Directors at a public meeting in December 2019.</p>	<p><b>Yes</b></p>

**Wildfire Mitigation Plan Independent Evaluation**

(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.

**Section IX**

TDPUD contracted with Navigant Consulting, Inc. to perform an independent evaluation of its WMP. Qualifications are described in Section 1.

**Yes**