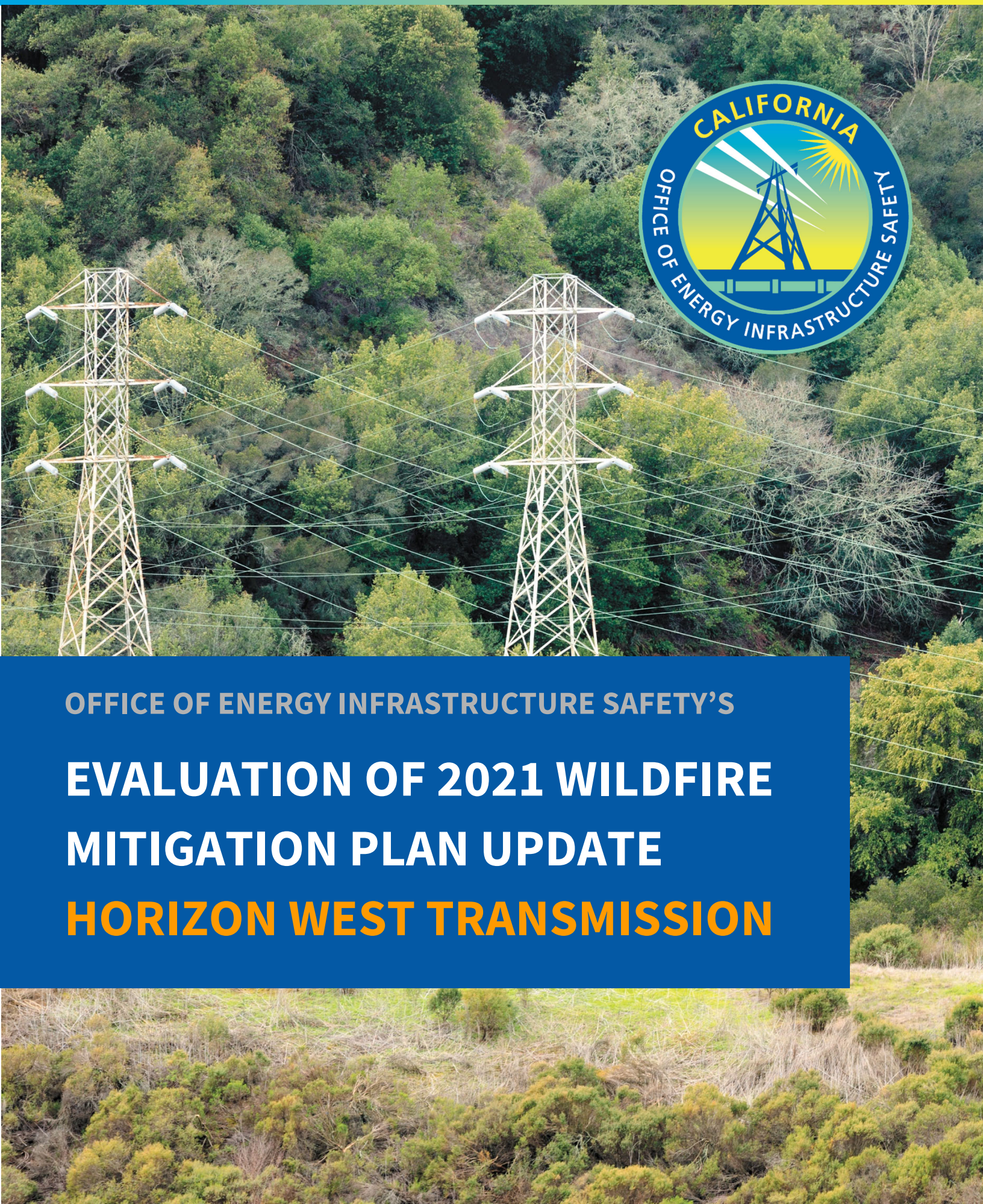

OFFICE OF ENERGY INFRASTRUCTURE SAFETY'S

EVALUATION OF 2021 WILDFIRE MITIGATION PLAN UPDATE

HORIZON WEST TRANSMISSION

Contents

INTRODUCTION AND BACKGROUND

This Action Statement represents the assessment of the California Public Utilities Commission's (CPUC) Wildfire Safety Division (WSD)[1] on the 2021 Wildfire Mitigation Plan (WMP or Plan) of Horizon West Transmission (HWT or the utility). This Plan is an update for the comprehensive 2020-2022 plan filed by HWT in 2020. HWT submitted its 2021 WMP Update on March 5, 2021 in response to guidelines provided by the WSD.[2] Assembly Bill 1054[3] mandates that the WSD complete its evaluation of WMPs within three months of submission, unless the WSD issues an extension.[4]

HWT's 2021 WMP Update is approved.

1. Legal Authority

In 2018, following the devastating wildfires in 2016 and 2017, the California Legislature passed several bills increasing oversight of the electrical corporations' efforts to reduce utility-related wildfires.[5] AB 1054 created the WSD at the CPUC and tasked it with reviewing annual WMPs submitted by electrical corporations under the CPUC's jurisdiction. As of July 2021, the WSD will become the Office of Energy Infrastructure Safety (Energy Safety) within the California Natural Resources Agency (CNRA).[6]

The main regulatory vehicle for the WSD to evaluate electrical corporations' wildfire risk reduction efforts is the WMP, which was first introduced in Senate Bill (SB) 1028[7] and further defined in SB 901,[8] AB 1054, and AB 111. Investor-owned electrical corporations (hereafter referred to as "utilities") are required to submit WMPs assessing their level of wildfire risk and providing plans for wildfire risk reduction. The CPUC evaluated the utilities' first WMPs under the SB 901 framework in 2019.[9]

AB 1054 and AB 111 transferred responsibility for evaluation and approval or denial of WMPs to the WSD; AB 1054 provides, "After approval by the division, the commission shall ratify the

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[1] Because the WSD transitioned to the Office of Energy Infrastructure Safety (Energy Safety) on July 1, 2021, any references herein to WSD actions that post-date this transition should be interpreted as actions taken by Energy Safety or for which Energy Safety will take responsibility. Section 10 of the associated Resolution provides further detail on the transition of the WSD to Energy Safety.

[2] The Commission approved 2021 WMP guidelines in Resolution WSD-011.

[3] Stats. of 2019, Ch. 79.

[4] Pub. Util. Code § 8386.3(a).

[5] In this document "utility" should be understood to mean "electrical corporation."

[6] See AB 111, Stats. of 2019, Ch. 81.

[7] Stats. of 2016, Ch. 598.

[8] Stats. of 2018, Ch. 626.

[9] See Rulemaking (R.) 18-10-007.

action of the division."[10] The WSD must ensure utility wildfire mitigation efforts sufficiently address increasing utility wildfire risk. To support its efforts, the WSD developed a long-term strategic roadmap, Reducing Utility-Related Wildfire Risk (2020).[11] This strategic roadmap informs the WSD's work in updating the WMP process and guidelines and the WSD's evaluation of the WMPs.

2. Multi-Year Plan Process

In February and March of 2020, the utilities[12] submitted their three-year 2020-2022 WMPs. The WSD conducted its evaluation and either approved, conditionally approved, or denied the Plans. In the case of conditional approval, the WSD identified items missing or incomplete in the Plans on a scale of severity, with Class A Deficiencies representing issues that required resolution through a Remedial Compliance Plan (RCP).[13] The 2020 Class B Deficiencies required resolution through Quarterly Reports,[14] and Class C Deficiencies were to be resolved in the 2021 WMP Update.

The WSD approved HWT's 2020 WMP.

3. 2021 Evaluation Process

On November 16, 2020, the CPUC adopted updated WMP requirements (Guidelines) and procedures for the 2021 WMP Plan Year pursuant to Pub. Util. Code Section 8389(d).[15] The updates to the 2021 WMP Guidelines are intended to streamline the reporting and evaluation process. Pursuant to the adopted Guidelines, large utilities submitted 2021 WMP Updates on February 5, 2021; small and multi-jurisdictional utilities (SMJUs) and independent transmission operators (ITOs) submitted 2021 WMP Updates on March 5, 2021.

The 2021 WMP submissions are updates of the 2020-2022 WMPs and are intended to show progress since 2020 and report changes from the 2020 WMP. Importantly for 2021, the WSD amended its review process and will no longer issue conditional approvals. Instead, where the WSD found critical issues with 2021 submissions, the WSD is issuing a Revision Notice requiring

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[10] Pub.Util.Code § 8386.3(a).

[11] The Wildfire Safety Division's strategic roadmap Reducing Utility-Related Wildfire Risk (2020) (accessed July 20, 2021): https://energysafety.ca.gov/who-we-are/strategic-roadmap/.

[12] Here we refer to all utilities that submitted a WMP in 2020: Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), San Diego Gas & Electric Company (SDG&E), PacifiCorp, Bear Valley Electric Service, Inc. (BVES), Liberty Utilities, Trans Bay Cable, LLC, and Horizon West Transmission, LLC; hereafter in this Action Statement "utilities" refers to the two ITOs, TBC and HWT, unless otherwise specified.

[13] An RCP "must present all missing information and/or articulate the electrical corporation's plan, including proposed timeline, to bring the electrical corporation's WMP into compliance." See Resolution WSD-002 at 17.

[14] "Class B issues are of moderate concern and require reporting on a quarterly basis by the electrical corporation to provide missing data or update its progress in a quarterly report." See Resolution WSD-002 at 18.

[15] See the adopted 2021 WMP Update Guidelines: https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/attachment-2.2-to-wsd-011-2021-wmp-guidelines-template.pdf (accessed July 20, 2021)

the utility to remedy such issues prior to completion of the 2021 WMP Update evaluation. Upon receipt of the utility's response to the Revision Notice, the WSD will determine whether the response is sufficient to warrant approval, although additional ongoing reporting or other conditions may be required, or the response is insufficient such that denial of the WMP is warranted due to the utility inadequately reducing wildfire risk and its potential impact to public safety.

The WSD evaluated 2021 WMP Updates according to the following factors:

- Completeness: The WMP is complete and comprehensively responds to the WMP statutory requirements and WMP Guidelines.
- Technical feasibility and effectiveness: Initiatives proposed in the WMP are technically feasible and are effective in addressing the risks that exist in the utility's service territory.
- Resource use efficiency: Initiatives are an efficient use of utility resources and focus on achieving the greatest risk reduction at the lowest cost.
- Demonstrated year-over-year progress: The utility has demonstrated sufficient progress on objectives and program targets reported in the prior annual WMP.
- Forward-looking growth: The utility demonstrates a clear action plan to continue reducing utility-related wildfires and the scale, scope, and frequency of Public Safety Power Shutoff (PSPS) events.[16] In addition, the utility is sufficiently focused on long-term strategies to build the overall maturity of its wildfire mitigation capabilities while reducing reliance on shorter-term strategies such as PSPS and vegetation management.

To conduct its assessment, the WSD relied upon HWT's WMP submission and the subsequent update, input from California Department of Forestry and Fire Protection (CAL FIRE), input from the Wildfire Safety Advisory Board (WSAB), public comments, responses to the WSD's data requests, utility-reported data, and utility responses to the Utility Maturity Survey.

Upon completion of its review, the WSD determined whether each utility's 2021 WMP Update should either be:

- Approved (approval may include the requirement to address certain issues in the utility's subsequent WMP and/or through existing ongoing reporting processes), or,
- Denied (the utility does not have an approved WMP Update for 2021 and must reapply for approval in 2022).

[16] A Public Safety Power Shutoff (PSPS) event, also called a de-energization event, is when a utility proactively and temporarily cuts power to electric lines that may fail in certain weather conditions in specific areas to reduce electric facility-caused fire risk.

4. Cost Recovery

This document does not approve costs attributable to WMPs, as statute requires electrical corporations to seek cost recovery and prove all expenditures are just and reasonable at a future time in their General Rate Cases (GRC) or an appropriate application. Nothing in this Action Statement nor CPUC's Resolution should be construed as approval of any WMP-related costs.[17]

1. SUMMARY OF KEY FINDINGS

Pursuant to Public Utilities Code (Pub. Util. Code) Section 8386.3(a), this Action Statement is the totality of the WSD's review of HWT's 2021 WMP Update.

HWT's 2021 WMP Update is approved.

1.1. Areas of Significant Progress

The WSD finds that HWT has made significant progress over the past year and/or has matured in its mitigation strategies for future years in the following areas:

- HWT commissioned a third-party wildfire assessment in 2020 that identified key wildfire-related risks, simulated a propagation of wildfire in the area of the Suncrest facility in case of an ignition during extreme weather events, and identified relevant wildfire hardening measures HWT can implement. As a result, HWT is installing transformer seismic pads, transformer blast walls, and flame-suppressing stone in transformer containment pits in 2021 and 2022.[18]
- HWT installed a weather station at its Suncrest Facility, which will allow the utility to capture weather data for future usage in its Fire Potential Index (FPI).
- HWT installed transformer oil gas monitors at its Suncrest Facility to track transformer health. This will proactively identify potential transformer vulnerabilities.
- HWT has started development of its proprietary fire risk index and plans to have a functional product to inform operational decisions by the end of 2021.

1.2. Revision Notices

The WSD did not elect to issue a Revision Notice to HWT.

[17] The WSD's approval and the Commission's ratification do not relieve the electrical corporation from any and all otherwise applicable permitting, ratemaking, or other legal and regulatory obligations.

[18] HWT's 2021 WMP Update p. 63

1.3. Key Areas for Improvement and Remedies

The WSD evaluated 2021 WMP Updates with a particular focus on how the utility's chosen mitigations and strategies will drive down the risk of utility-related wildfires as well as the scale, scope, and frequency of PSPS events. The WSD approves HWT's 2021 WMP Update and did not identify key areas for improvement.

The WSD did not identify key areas for improvement for HWT. In some evaluation sections, the WSD lists issues and associated remedies. All remedies must be addressed in HWT's 2022 WMP Update. The WSD expects HWT to take action to address these issues and report on progress made over the year in its 2022 WMP Update.

1.4. Maturity Model Evaluation

The Wildfire Safety Division introduced a maturity model (the Utility Wildfire Mitigation Maturity Model) in 2020, providing a method to assess utility wildfire risk reduction capabilities and examine the relative maturity of individual wildfire mitigation programs. In 2020, the utilities completed a survey setting a baseline for maturity as well as anticipated progress over the three-year plan period. In 2021, the utilities again completed the survey, enabling the WSD to monitor progress and ascertain potential improvements to maturity based on progress to date.

The WSD makes the following key findings regarding HWT's maturity progress in 2021:

- HWT reports steady growth in risk assessment and mapping, which is in line with the current activities within this category.
- HWT reports a sharp increase in maturity score for situational awareness and forecasting, as the utility installed a weather station and is developing a proprietary fire potential index (FPI) for the Suncrest Facility.
- HWT also reports a sharp increase in grid design and system hardening. This increase is justified by the construction of a 10-feet concrete perimeter wall around its Suncrest Facility and beginning an undergrounding project that will be completed by August, 2021. HWT is also installing transformer seismic pads, transformer blast walls, and flame suppressing transformer containment stone in its Suncrest Facility.
- HWT reports little to no progress in the following categories: asset management and inspections, vegetation management and inspections, grid operations and protocols, and resource allocation methodology.

2. WILDFIRE SAFETY ADVISORY BOARD INPUT

The Wildfire Safety Advisory Board (WSAB) provided recommendations on the WMPs of Pacific Gas and Electric Company, Southern California Edison Company (SCE), and San Diego Gas &

Electric Company (SDG&E) on April 16, 2021.[19] The WSAB provided recommendations on the WMPs of the Bear Valley Electric Service, Inc. (BVES), PacifiCorp (PC), and Liberty Utilities, LLC. (Liberty) on May 13, 2021.[20] The WSAB did not comment on HWT's 2021 WMP Update.

3. PUBLIC AND STAKEHOLDER COMMENT

On April 14, 2021, public comments were received for the SMJU/ITO 2021 WMP Updates, The WSD did not identify any significant issues specific to HWT within these comments.

4. DISCUSSION

The following sections discuss in detail the WMP, including progress over the past year, issues, and remedies to address by the next annual submission.

4.1. Introductory sections of the WMP

The first two sections of the WMP Guidelines[21] require the utility to report basic information regarding persons responsible for executing the plan and adherence to statutory requirements. Section 1 requires contact information (telephone and email) for the executive with overall responsibility and the specific program owners. In addition, all experts consulted in preparation of the WMP must be cited by name and include their relevant background/credentials. Contact information and names may be submitted in a redacted file.

Section 2 requires the utility to specify where each of the 22 requirements from Section 8386(c) of the Public Utilities Code are satisfied. Each utility shall both affirm that the WMP addresses each requirement AND cite the section and page number where it is more fully described.

The WSD did not identify key areas for improvement in the introductory sections of HWT's 2021 WMP Update, and the WSD finds that HWT has minimally satisfied all 22 requirements from Section 8386(c) of the Public Utilities Code.

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[19] The WSAB's "Recommendations on the 2021 Wildfire Mitigation Plan Updates for Large Investor-Owned Utilities," approved April 14, 2021, and issued April 16, 2021, can be read here (accessed July 20, 2021): https://energysafety.ca.gov/wp-content/uploads/docs/misc/wsd/wsab-recommendations-on-2021-large-iou-wmp-updates-issued-4.16.2021.pdf.

[20] The WSAB's "Recommendations on the 2021 Wildfire Mitigation Plan Updates for Small and Multi-Jurisdictional Utilities," approved May 12th, 2021, and issued May 13th, 2021, can be read here (accessed July 20, 2021): https://energysafety.ca.gov/wp-content/uploads/docs/misc/wsd/wsab-2021-wmp-smju-recommendations-issued-5.13.21.pdf.

[21] WSD-011 Attachment 2.2, 2021 Wildfire Mitigation Plan Guidelines Template, pp. 14-21 (accessed July 20, 2021): https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/attachment-2.2-to-wsd-011-2021-wmp-guidelines-template.pdf.

4.2. Actuals and planned spending for Mitigation Plan

The WMP Guidelines[22] requires utilities to report a summary of WMP expenditures, planned and actual, for the current WMP cycle. This also includes an estimated annual increase in costs to the ratepayer due to utility-related wildfires and wildfire mitigation activities.[23] The WMP requires that ratepayer impact calculations are clearly shown to demonstrate how each value was derived. Nothing in the request for such information should be construed as approval of any such expenditure, which is left to the CPUC pursuant to Pub. Util. Code Section 8386.4(b).

- HWT shows a 13.4% increase between its total 2020 planned spend and 2020 actual spend ($4,085,000 to $4,632,000).
- In five mitigation categories, HWT shows an increase between its 2020 planned spend and 2020 actual spend:
    - Risk Assessment and Mapping ($0 to $200,000)
    - Situational Awareness and Forecasting ($150,000 to $347,000)
    - Grid Design and System Hardening ($3,900,000 to $3,935,000)
    - Asset Management and Inspections ($35,000 to $80,000)
    - Grid Operations and Protocols ($0 to $70,000)
- HWT reports $0 spend in five initiative categories across the 2020-2022 WMP cycle:
    - Data Governance
    - Resource Allocation Methodology
    - Emergency Planning and Preparedness
    - Stakeholder Cooperation and Community Engagement
- Consistent with its ITO peer, HWT's top three spend categories are (1) Grid Design and System Hardening, (2) Situational Awareness and Forecasting, and (3) Asset Management and Inspections.

4.3. Lessons learned and risk trends

This section of the WMP Guidelines[24] requires utilities to report how their plans have evolved since 2020 based on lessons learned, current risk trends, and research conducted. This section

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[22] WSD-011 Attachment 2.2, 2021 Wildfire Mitigation Plan Guidelines Template, pp. 22-24 (accessed July 20, 2021): https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/attachment-2.2-to-wsd-011-2021-wmp-guidelines-template.pdf.

[23] WSD-011 Attachment 2.2, 2021 Wildfire Mitigation Plan Guidelines Template, Section 3.2 "Summary of ratepayer impact," p. 23 (accessed July 20, 2021): https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/attachment-2.2-to-wsd-011-2021-wmp-guidelines-template.pdf.

[24] WSD-011 Attachment 2.2, 2021 Wildfire Mitigation Plan Guidelines Template, pp. 24-29 (accessed July 20, 2021): https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/attachment-2.2-to-wsd-011-2021-wmp-guidelines-template.pdf.

also requires utilities to report on potential future learnings through proposed and ongoing research.

Utilities must describe how the utility assesses wildfire risk in terms of ignition probability and estimated wildfire consequence using Commission adopted risk assessment requirements (for large electrical corporations) from the General Rate Case (GRC) Safety Model and Assessment Proceeding (S-MAP) and Risk Assessment Mitigation Phase (RAMP) at a minimum. The utility may additionally include other assessments of wildfire risk. The utility must:

1. Describe how it monitors and accounts for the contribution of weather and fuel to ignition probability and wildfire consequence.
2. Identify any areas where the Commission's High Fire Threat District (HFTD) should be modified.
3. Explain any "high fire threat" areas the utility considers that differ from Commission-adopted HFTD, and why such areas are so classified.
4. Rank trends anticipated to have the greatest impact on ignition probability and wildfire consequence.

HWT provided all required information on lessons learned, current risk trends, and research conducted.

- HWT proactively performs asset inspections when red flag warning (RFW) conditions are issued. In addition to monthly inspections of the Suncrest Facility, HWT conducts facility inspections ahead of extreme fire weather periods. The inspections include general checks and measurements, visual inspections, vegetation control, and line patrol of overhead areas.

- HWT is developing wildfire modeling capabilities and real-time wildfire tracking. HWT is building a proprietary fire risk index to determine real-time fire risks. HWT is also working to access third-party, real-time wildfire tracking tools that utilize satellite data to monitor and track the propagation of wildfires, if one were to approach HWT facilities.

- HWT is adding additional cameras at the Suncrest Facility. Last year, HWT found on-site cameras to be helpful during the Valley Fire when the operations team was able to remotely monitor the Suncrest Facility and make real-time operational decisions.

- HWT committed to conducting annual wildfire simulations. HWT has added annual wildfire simulations to its wildfire mitigation procedures to "ensure that emergency

operations procedures, protocols, and roles and responsibilities are top of mind for HWT's operations and other key personnel".[25]

4.4. Inputs to the plan and directional vision for WMP

This section of the WMP Guidelines[26] requires the utility to rank and discuss trends anticipated to exhibit the greatest impact on ignition probability and wildfire consequence within the utility's service territory over the next 10 years. First, utilities must set forth objectives over the following timeframes: before the upcoming wildfire season, before the next annual update, within the next 3 years, and within the next 10 years. Second and more practically, utilities must report the current and planned qualifications of their workforce they expect in order to meet these objectives.

Goal, objectives, and program targets:

The goal of the WMP is shared across WSD and all utilities: documented reductions in the number of ignitions caused by utility actions or equipment and minimization of the societal consequences (with specific consideration of the impact on Access and Functional Needs populations and marginalized communities) of both wildfires and the mitigations employed to reduce them, including PSPS.

The WMP Guidelines[27] requires utilities to provide their objectives which are unique to each utility and reflect its 1, 3, and 10-year projections of progress toward the WMP goal. The WMP also requires utilities to report their unique program targets, which are quantifiable measurements of activity identified in WMPs and subsequent updates used to show progress toward reaching the objectives, such as number of trees trimmed or miles of power lines hardened.

HWT has provided all required information.

- HWT's WMP objectives have not changed since its 2020 WMP. The overarching objective "is to comply with applicable provisions of California Public Utilities Code (PU Code) Section 8386 at HWT's facilities."[28]

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[25] HWT's 2021 WMP Update p. 31

[26] WSD-011 Attachment 2.2, 2021 Wildfire Mitigation Plan Guidelines Template, pp. 29-31(accessed July 20, 2021): https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/attachment-2.2-to-wsd-011-2021-wmp-guidelines-template.pdf.

[27] WSD-011 Attachment 2.2, 2021 Wildfire Mitigation Plan Guidelines Template, pp. 29-30 (accessed July 20, 2021): https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/attachment-2.2-to-wsd-011-2021-wmp-guidelines-template.pdf.

[28] HWT's 2021 WMP Update p. 41

- HWT satisifies the requirement of presenting its 1, 3, and 10-year wildfire mitigation goals in Section 5.2 of its 2021 WMP Update. Before the next WMP Update, HWT's primary objective is to further harden its Suncrest Facility according to prioritized wildfire mitigation measures. Within the next 3 years, HWT plans to identify, evaluate, and implement additional facility measures. In 10 years, HWT's objective is to achieve the highest level of Wildfire Mitigation Maurity given the scale and scope of its operations.[29]

Workforce planning:

This subsection of the WMP Guidelines[30] requires utilities to report their worker qualifications and training practices regarding utility-related wildfire and PSPS mitigation for workers in mitigation-related roles including:

1. Vegetation inspections
2. Vegetation management projects
3. Asset inspections
4. Grid hardening
5. Risk event inspection

HWT provided all information required regarding worker qualifications within each of the required roles. HWT provides the worker titles, minimum qualifications, and full time employee (FTE) percentages by role for each of the mitigation-related roles listed above.

4.5. Metrics and underlying data

The WMP Guidelines[31] require utilities to report metrics and program targets as follows:

- *Progress metrics* that track how much utility wildfire mitigation activity has managed to change the conditions of a utility's wildfire risk exposure in terms of drivers of ignition probability.
- *Outcome metrics* that measure the performance of a utility and its service territory in terms of both leading and lagging indicators of wildfire risk, PSPS risk, and other direct and indirect consequences of wildfire and PSPS, including the potential unintended consequences of wildfire mitigation work.

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[29] HWT's 2021 WMP Update p. 42-43

[30] WSD-011 Attachment 2.2, 2021 Wildfire Mitigation Plan Guidelines Template, pp. 30-31 (accessed July 20, 2021): https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/attachment-2.2-to-wsd-011-2021-wmp-guidelines-template.pdf.

[31] WSD-011 Attachment 2.2, 2021 Wildfire Mitigation Plan Guidelines Template, pp. 32-41 (accessed July 20, 2021): https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/attachment-2.2-to-wsd-011-2021-wmp-guidelines-template.pdf.

- *Program targets* measure tracking of proposed wildfire mitigation activities used to show progress toward a utility's specific objectives.[32] Program targets track the utility's pace of completing activities as laid out in the WMPs but do not track the efficacy of those activities. The primary use of these program targets in 2021 will be to gauge utility follow-through on existing WMPs.

This section also requires utilities to provide several geographic information system (GIS) files detailing spatial information about their service territory and performance, including recent weather patterns, location of recent ignitions, area and duration of PSPS events, location of lines and assets, geographic and population characteristics, and location of planned initiatives.

Discussion relating to HWT's metrics and data are contained within the data governance section of this document.

5. MITIGATION INITIATIVES AND MATURITY EVALUATION

This section of the WMP Guidelines[33] is the heart of the plan and requires the utility to describe each mitigation initiative it will undertake to reduce the risk of catastrophic wildfire. The utility is also required to self-report its current and projected progress to mitigate wildfire risk effectively,[34] a capability referred to in this document as "maturity" and measured by the WSD Utility Wildfire Mitigation Maturity Model ("Maturity Model"). Utility maturity is measured across the same categories used to report mitigation initiatives listed below, allowing WSD to evaluate a utility's reported and projected maturity in wildfire mitigation in the context of its corresponding current and planned initiatives. The ten maturity and mitigation initiative categories are listed below:

1) Risk assessment and mapping
2) Situational awareness and forecasting
3) Grid design and system hardening
4) Asset management and inspections
5) Vegetation management and inspections

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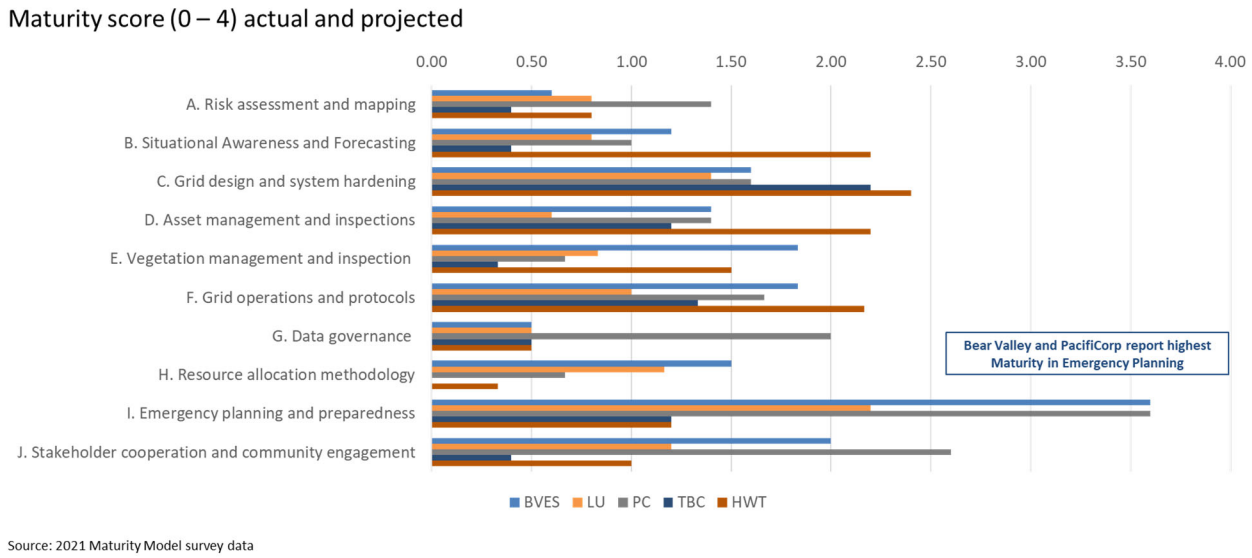
[32] Objectives are unique to each utility and reflect the 1, 3, and 10-year projections of progress toward the WMP goal. See section 5.4 for review of the utility's objectives.

[33] WSD-011 Attachment 2.2, 2021 Wildfire Mitigation Plan Guidelines Template, pp. 42-46 (accessed July 20, 2021): https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/attachment-2.2-to-wsd-011-2021-wmp-guidelines-template.pdf.

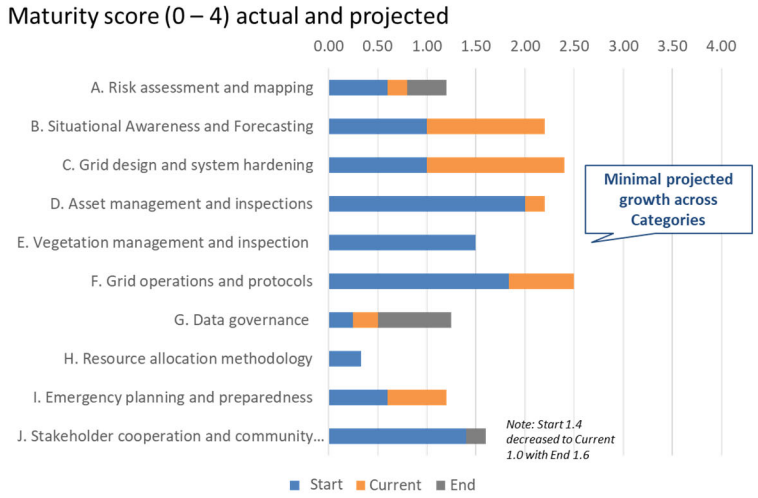
[34] Utilities that filed a WMP were required to complete a survey in which they answered specific questions which assessed their existing and future wildfire mitigation practices across 52 capabilities at the time of filing and at the end of the three-year plan horizon. The 52 capabilities are mapped to the same ten categories identified for mitigation initiatives. The results of the survey can be found in Attachment 11.1. The most recent survey for each utility can be found on the WSD website here: https://energysafety.ca.gov/what-we-do/wildfire-mitigation-and-safety/wildfire-mitigation-plans/2021-wmp/ (accessed July 20, 2021)

6) Grid operations and operating protocols
7) Data governance
8) Resource allocation methodology
9) Emergency planning and preparedness
10) Stakeholder cooperation and community engagement



Source: 2021 Maturity Model survey data

Figure 5.a: Self-reported Maturity by Category: SMJUs / ITOs



Projected growth through WMP cycle in Maturity by Category: Horizon West

Category	Scores Start	Current	End
A. Risk assessment and mapping	0.60	0.80	1.20
B. Situational Awareness and Forecasting	1.00	2.20	2.20
C. Grid design and system hardening	1.00	2.40	2.40
D. Asset management and inspections	2.00	2.20	2.20
E. Vegetation management and inspection	1.50	1.50	1.50
F. Grid operations and protocols	1.83	2.50	2.50
G. Data governance	0.25	0.50	1.25
H. Resource allocation methodology	0.33	0.33	0.33
I. Emergency planning and preparedness	0.60	1.20	1.20
J. Stakeholder cooperation and community engagement	1.40	1.00	1.60

Source: 2021 Maturity Model survey data

Figure 5.b: Horizon West: Projected growth through WMP cycle in Maturity by Category

Below, WSD evaluates HWT's initiatives across the ten categories in the context of its maturity model survey scores.

5.1. Risk Assessment and Mapping

Introduction

This section of the WMP Guidelines[35] requires the utility to discuss the risk assessment and mapping initiatives implemented to minimize the risk of its causing wildfires. Utilities must describe initiatives related to equipment maps and modelling of overall wildfire risk, ignition probability, wildfire consequence, risk-reduction impact, match-drop simulations,[36] and climate/weather-driven risks. This section also requires the utility to provide data on spending, miles of infrastructure treated, spend per treated line mile, ignition probability drivers targeted, projected risk reduction achieved from implementing the initiative, and other (i.e., non-ignition) risk drivers addressed by the initiative.

The parameters of risk assessment (discussed here) and resource allocation (discussed later in the "Resource Allocation Methodology" section) to reduce wildfire risk derive from the S-MAP and RAMP proceedings for the utility GRC (D.18-12-014).

The risk modelling conducted should ultimately inform the RSE analyses discussed in category 8, resource allocation methodology.

Overview

HWT is a transmission-only facility with the majority of its equipment undergrounded or inside a substation, therefore has minimal wildfire risk. The WSD finds that HWT has satisfactorily documented its risk assessment and mapping practices and finds this portion of HWT's 2021 WMP Update to be sufficient. Any changes in this category must be addressed in HWT's 2022 WMP Update.

Progress over the past year

The WSD finds that HWT has made the following progress:

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[35] WSD-011 Attachment 2.2, 2021 Wildfire Mitigation Plan Guidelines Template, pp. 43-44 (accessed July 20, 2021): https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/attachment-2.2-to-wsd-011-2021-wmp-guidelines-template.pdf.

[36] Simulations of the potential wildfire consequences of ignitions that occur along electric lines and equipment effectively showing the potential consequences if an ignition or "match was dropped" at a specific point in a utility's territory.

- HWT utilizes the Failure Mode and Effects Analysis methodology for risk assessment, which instructs the utility to evaluate each component of its facility for potential failures. The identified risks are then categorized and ranked along 3 classifications: occurrence, severity, and detection.[37]
- In 2020, HWT commissioned a third-party wildfire assessment that identified key wildfire-related risks, simulated a propagation of wildfire in the area of the Suncrest facility in case of an ignition during extreme weather events, and identified relevant wildfire hardening measures it can implement. As a result, HWT is installing transformer seismic pads, transformer blast walls, and flame-suppressing stone in transformer containment pits in 2021 and 2022.[38]

Figure(s)

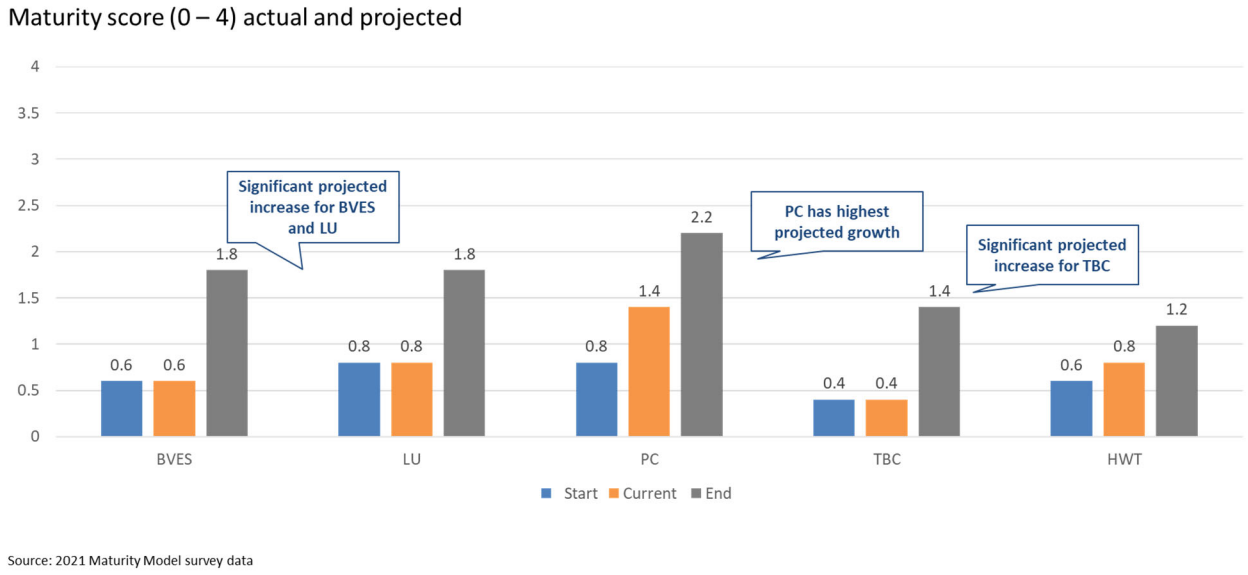


Figure 5.1.a: A. Risk assessment and mapping Maturity score progress

5.2. Situational Awareness and Forecasting

Introduction

A strong weather monitoring and situational awareness system is an essential fire prevention/mitigation risk reduction strategy because it effectively alerts a utility's preparation and response to potentially dangerous fire weather conditions that can inform its decisions on PSPS implementation, grid design, and system hardening. It is also one of the most inexpensive strategies.

[37] HWT's 2021 WMP Update p. 32

[38] HWT's 2021 WMP Update p. 63

The situational awareness and forecasting section of the WMP Guidelines[39] requires the utility to discuss its use of cameras, weather stations, weather forecasting and modeling tools, grid monitoring sensors, fault indicators, and equipment monitoring. Situational awareness requires the utility to be aware of actual ignitions in real time and to understand the likelihood of utility ignitions based on grid and asset conditions, wind, fuel conditions, temperature, and other factors.

The WMP Guidelines refer to key situational awareness measures, including:

1. Installation of advanced weather monitoring and weather stations that collect data on weather conditions so as to develop weather forecasts and predict where ignition and wildfire spread are likely;
2. Installation of high-definition cameras throughout a utility's service territory, with the ability to control the camera's direction and magnification remotely;
3. Use of continuous monitoring sensors that can provide near-real-time information on grid conditions;
4. Use of a fire risk or fire potential index that takes numerous data points in given weather conditions and predicts the likelihood of wildfire; and,
5. Use of personnel to physically monitor areas of electric lines and equipment in elevated fire risk conditions.

Overview

HWT is a transmission-only facility with the majority of its equipment undergrounded or inside a substation, therefore it has minimal wildfire risk. The WSD finds that HWT has satisfactorily documented its situational awareness and forecasting practices and finds this portion of HWT's 2021 WMP Update to be sufficient. Any changes in this category must be addressed in HWT's 2022 WMP Update.

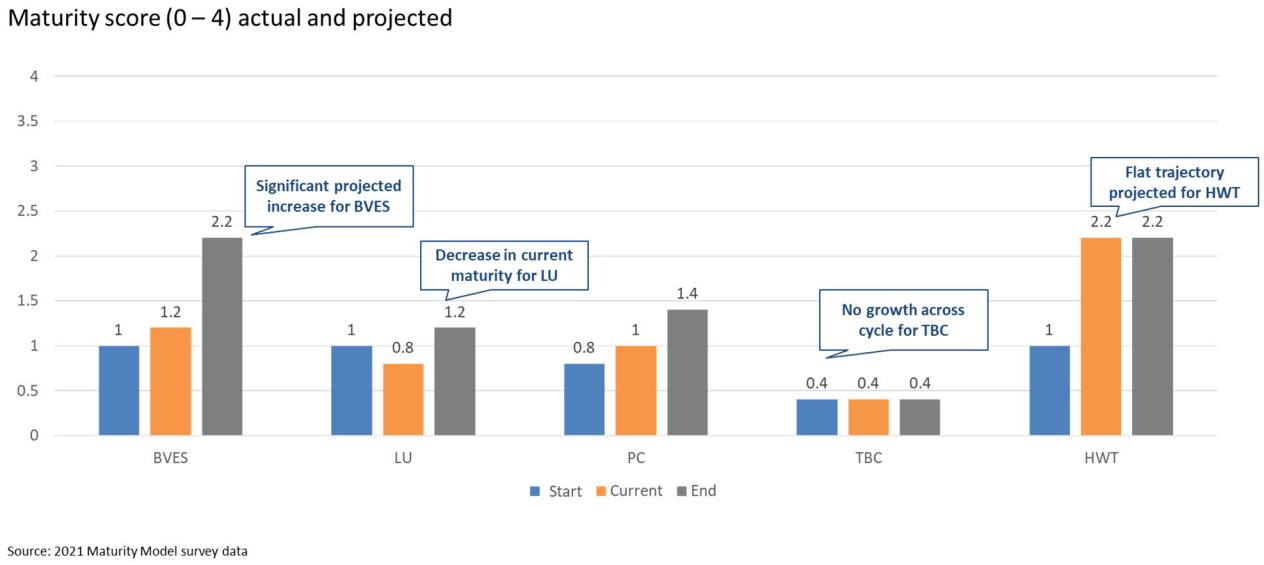
Progress over the past year

The WSD finds that HWT has made the following progress:

- HWT installed a weather station at their Suncrest Facility, which will allow the utility to capture weather data for future usage in their Fire Potential Index.
- HWT installed transformer oil gas monitors at its Suncrest Facility to track transformer health. This will proactively identify potential transformer vulnerabilities.
- HWT has started development of its proprietary fire risk index and plans to have a functional product to determine FPI and inform operational decisions by the end of 2021.

[39] WSD-011 Attachment 2.2, 2021 Wildfire Mitigation Plan Guidelines Template, p. 44 (accessed July 20, 2021): https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/attachment-2.2-to-wsd-011-2021-wmp-guidelines-template.pdf.

Figure(s)



Source: 2021 Maturity Model survey data

Figure 5.2.a: B. Situational awareness and forecasting Maturity score progress

5.3. Grid Design and System Hardening

Introduction

The grid design and system hardening section of the WMP Guidelines[40] examines how the utility is designing its system to reduce ignition risk and what it is doing to strengthen its distribution, transmission, and substation infrastructure to prevent causing catastrophic wildfires. This section also requires discussion of routine and non-routine maintenance programs, including whether the utility replaces or upgrades infrastructure proactively rather than running facilities to failure. Programs in this category, which often cover the most expensive aspects of a WMP, include initiatives such as the installation of covered conductors to replace bare overhead wires, undergrounding of distribution or transmission lines, and pole replacement programs. The utility is required, at a minimum, to discuss grid design and system hardening in each of the following areas:

1. Capacitor maintenance and replacement,
2. Circuit breaker maintenance and installation to de-energize lines upon detecting a fault,
3. Covered conductor installation,
4. Covered conductor maintenance,
5. Crossarm maintenance, repair, and replacement,
6. Distribution pole replacement and reinforcement, including with composite poles,
7. Expulsion fuse replacement,

[40] WSD-011 Attachment 2.2, 2021 Wildfire Mitigation Plan Guidelines Template, p. 44 (accessed July 20, 2021): https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/attachment-2.2-to-wsd-011-2021-wmp-guidelines-template.pdf.

8. Grid topology improvements to mitigate or reduce PSPS events,
9. Installation of system automation equipment,
10. Maintenance, repair, and replacement of connectors, including hotline clamps,
11. Mitigation of impact on customers and other residents affected during PSPS event,
12. Other corrective action,
13. Pole loading infrastructure hardening and replacement program based on pole loading assessment program,
14. Transformer maintenance and replacement,
15. Transmission tower maintenance and replacement,
16. Undergrounding of electric lines and/or equipment,
17. Updates to grid topology to minimize risk of ignition in HFTDs, and,
18. Other/not listed items if an initiative cannot feasibly be classified within those listed above.

Overview

While the majority of typical grid hardening requirements do not apply to HWT due to its small footprint within California, HWT includes initiatives such as undergrounding its newly built overhead transmission line and installing hazard-reducing measures within its Suncrest Facility. The WSD finds that HWT has satisfactorily documented its grid design and system hardening efforts and finds this portion of HWT's 2021 WMP Update to be sufficient. Any changes in this category must be addressed in HWT's 2022 WMP Update.

Progress over the past year

The WSD finds that HWT has made the following progress:

- In 2020, HWT installed a 10 ft concrete perimeter around its Suncrest Facility to prevent ignitions occurring within the perimeter from spreading to vegetation and the surrounding area.[41]
- By the 2022 WMP submission, HWT is planning on undergrounding 115 ft of its 230 kV Suncrest overhead transmission line, with work to be completed by August 1, 2021.[42]
- HWT is installing transformer seismic pads, transformer blast walls, and flame-suppressing stone in transformer containment pits.[43]

Issues and Remedies

[41] HWT's 2021 WMP Update p. 63

[42] HWT's 2021 WMP Update p. 64

[43] HWT's 2021 WMP Update p. 63

While the WSD did not identify key areas for improvement in this area of HWT's 2021 WMP Update, the WSD finds the following issues and associated remedies. All remedies must be addressed in HWT's 2022 WMP Update. The WSD expects HWT to take action to address these issues and report on progress made over the year in its 2022 WMP Update.

- Issue: HWT is undergrounding 115 ft of OH line that was constructed last year without providing a clear justification using a cost-benefit analysis. It is not clear why the newly constructed OH has been deemed at high enough wildfire risk that it needs to be undergrounded.
    - Remedy: HWT must provide analysis, including both risk reduction and cost-benefit, for the need to underground HWT's overhead transmission facilities in order to demonstrate reasonableness.

Figure(s)

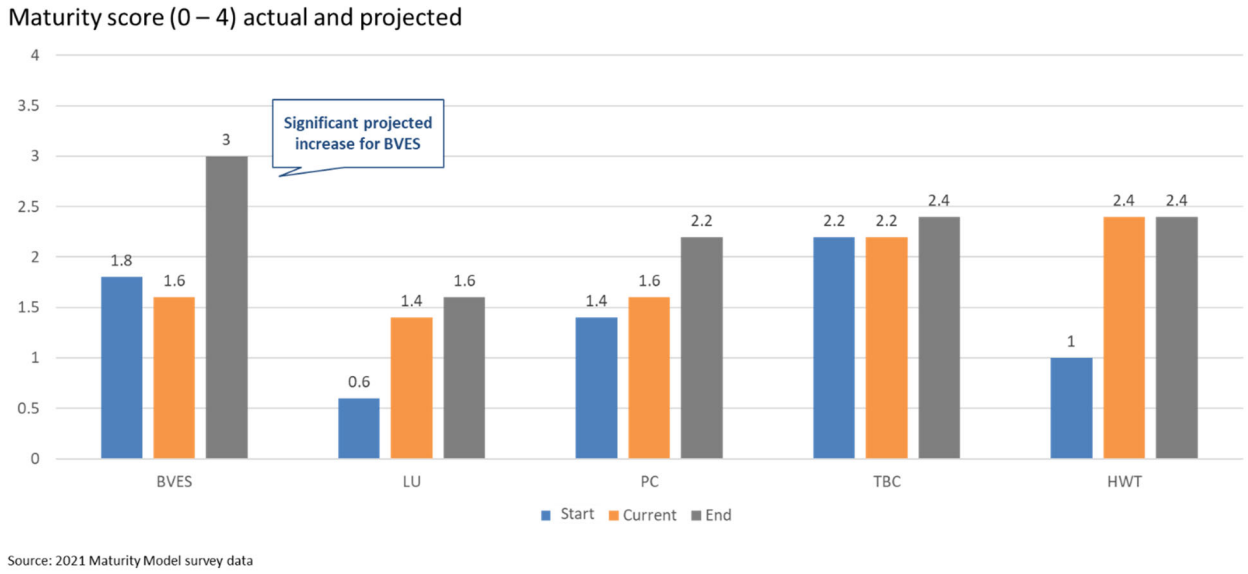


Figure 5.3.a: C. Grid design and system hardening Maturity score progress

5.4. Asset Management and Inspections

Introduction

The asset management and inspections portion of the WMP Guidelines[44] requires the utility to discuss power line/infrastructure inspections for distribution and transmission assets within the HFTD, including infrared, light detection and ranging (LiDAR), substation, patrol, and detailed

[44] WSD-011 Attachment 2.2, 2021 Wildfire Mitigation Plan Guidelines Template, pp. 44-45 (accessed July 20, 2021): https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/attachment-2.2-to-wsd-011-2021-wmp-guidelines-template.pdf.

inspections, designed to minimize the risk of its facilities or equipment causing wildfires. The utility must describe its protocols relating to maintenance of any electric lines or equipment that could, directly or indirectly, relate to wildfire ignition. The utility must also describe how it ensures inspections are done properly through a program of quality control.

Overview

HWT conducts very frequent inspections of all its assets, with no asset specific programs outside of these monthly inspections due to the small nature of HWT's footprint. HWT also conducts additional asset inspections prior to extreme weather alerts, such as RFW alerts. HWT reports that no changes have been made to its asset management and inspections approach since the 2020 WMP. The WSD finds that HWT has satisfactorily documented its asset management and inspections practices and finds this portion of HWT's 2021 WMP Update to be sufficient. Any changes in this category must be addressed in HWT's 2022 WMP Update.

Progress over the past year

The WSD finds that HWT has made the following progress:

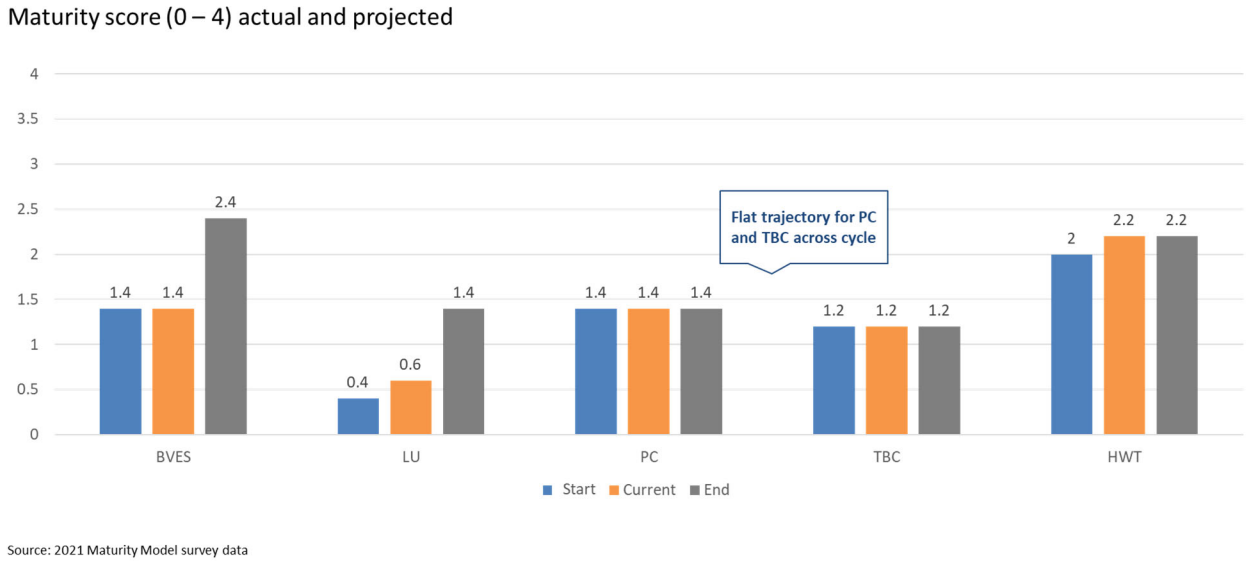
- HWT's only operational facility at this time is the Suncrest Facility, which is inspected monthly with extra inspections conducted prior to Red Flag Warning conditions. All inspections include oversight by the HWT Director of Operations as part of the Quality Assurance/Quality Control process.

Issues and Remedies

While the WSD did not identify key areas for improvement in this category of HWT's 2021 WMP Update, the WSD finds the following issues and associated remedies. All remedies must be addressed in HWT's 2022 WMP Update. The WSD expects HWT to take action to address these issues and report on progress made over the year in its 2022 WMP Update.

- Issue: HWT's current inspection frequency is much higher than General Order 165 requirements, and while being thorough, it is not clear that such frequent inspections are necessary.
    - Remedy: HWT must demonstrate the need for monthly inspections on its transmission line, including conducting a cost-benefit analysis.
- Issue: While HWT states that additional inspections are performed ahead of extreme weather events, HWT does not provide details on the scope of inspection performed.
    - Remedy: HWT must provide HWT's scope and procedures for additional inspections performed as a result RFW conditions.

Figure(s)



Source: 2021 Maturity Model survey data

Figure 5.4.a: D. Asset management and inspections Maturity score progress

5.5. Vegetation Management and Inspections

Introduction

This section of the WMP Guidelines[45] requires utilities to discuss vegetation management inspections, including inspections that go beyond existing regulation, as well as infrared, light detection and ranging (LiDAR), and patrol inspections of vegetation around distribution and transmission lines/equipment, quality control of those inspections, and limitations on the availability of workers. The utility must also discuss collaborative efforts with local land managers, including efforts to maximize benefit from fuel treatment activities and fire break creation as well as the collaborative development of methods for identifying at-risk vegetation, determining trim clearances beyond minimum regulations, and identifying and mitigating impacts from tree trimming and removal (erosion, flooding, etc.).

Overview

The objectives of HWT's vegetation management program are to minimize the likehood of an ignition spreading off-site from HWT facilities and the to protect of equipment from wildfire encroachment. HWT removals of all vegetation from within the perimeter fenced area and

[45] WSD-011 Attachment 2.2, 2021 Wildfire Mitigation Plan Guidelines Template, p. 45 (accessed July 20, 2021): https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/attachment-2.2-to-wsd-011-2021-wmp-guidelines-template.pdf.

creates defensible space zones outside the fenced areas. HWT states that "Since its 2020 WMP, there have been no changes to HWT's vegetation management and inspections approach."[46]

As HWT expands the number of facilities it owns and operates, the WSD expects HWT's vegetation management plan to expand as well. HWT must insure that its vegetation management plans for each facility takes into account place specific risk factors such as topography, climate, vegetation types, etc.

The WSD finds that HWT has satisfactorily documented its vegetation management practices and protocols and finds this portion of HWT's 2021 WMP Update to be sufficient. Any changes in this category must be addressed in HWT's 2022 WMP Update.

Figure(s)

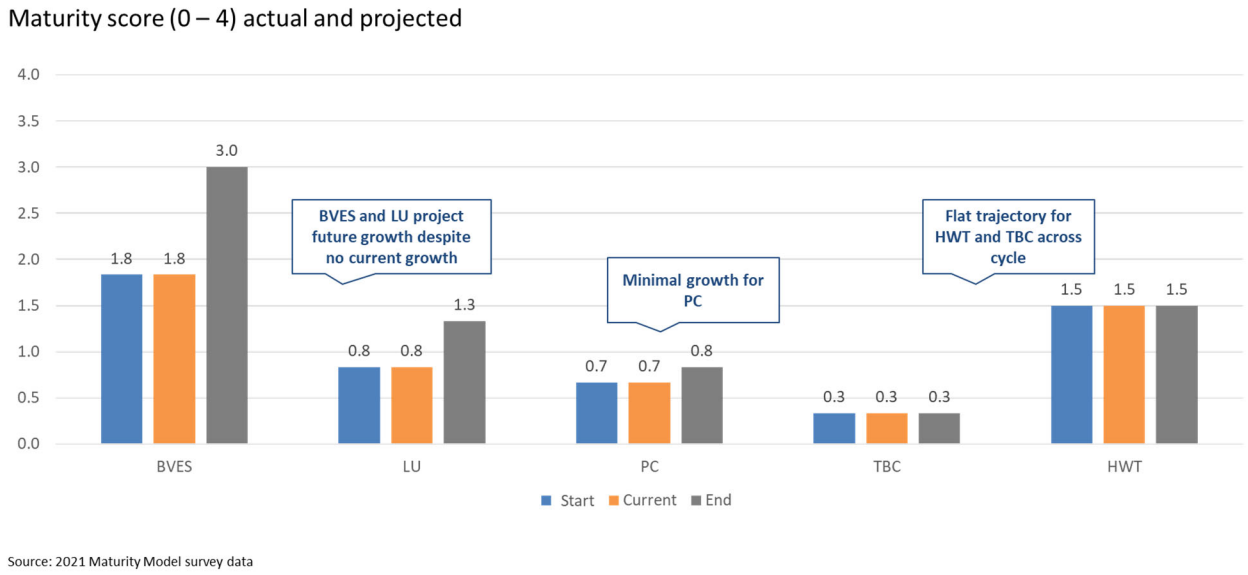


Figure 5.5.a: E. Vegetation management and inspections Maturity score progress

5.6. Grid Operations and Operating Protocols, including PSPS

Introduction

The grid operations and operating protocols section of the WMP Guidelines[47] requires discussion of ways the utility operates its system to reduce wildfire risk. For example, disabling

[46] HWT 2021 WMP Update p. 57

[47] WSD-011 Attachment 2.2, 2021 Wildfire Mitigation Plan Guidelines Template, p. 45 (accessed July 20, 2021): https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/attachment-2.2-to-wsd-011-2021-wmp-guidelines-template.pdf.

the reclosing function of automatic reclosers[48] during periods of high fire danger (e.g., during Red Flag Warning conditions) can reduce utility ignition potential by minimizing the duration and amount of energy released when there is a fault. This section also requires discussion of work procedures in elevated fire risk conditions and protocols to reduce the frequency and scope of de-energization including PSPS events (e.g., through sectionalization, etc.). This section also requires the utility to report whether it has stationed and/or on-call ignition prevention and suppression resources and services.

Overview

Similar to other initiatives, HWT's grid operations and protocols are minimal given its small footprint, with an overall low risk of PSPS events being initialized. HWT has not made any changes to its grid operations and protocols since its 2020 WMP filing. The WSD finds that HWT has satisfactorily documented its grid operations and protocols and finds this portion of HWT's 2021 WMP Update to be sufficient. Any changes in this category must be addressed in HWT's 2022 WMP Update.

Figure(s)

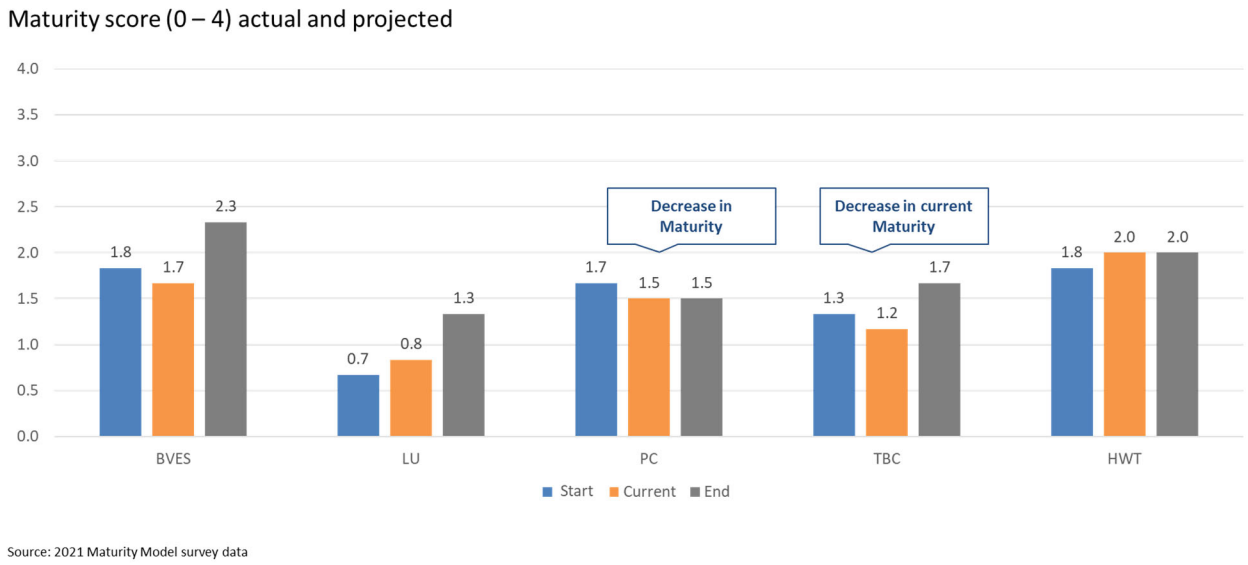


Figure 5.6.a: F. Grid operations and protocols Maturity score progress

5.7. Data Governance

Introduction

[48] A recloser is a switching device that is designed to detect and interrupt momentary fault conditions. The device can reclose automatically and reopen if a fault condition is still detected. However, if a recloser closes a circuit that poses the risk of ignition, wildfire may be the result. For that reason, reclosers are disabled in certain high fire risk conditions. During overcurrent situations, circuit breakers trip a switch that shuts off power to the electrical line.

The data governance section of the WMP Guidelines[49] requires information on the utility's initiatives to create a centralized wildfire-related data repository, conduct collaborative research on utility ignition and wildfire, document and share wildfire-related data and algorithms, and track and analyze near-miss data.

Overview

The WSD finds that HWT has satisfactorily documented its data governance practices and finds this portion of HWT's 2021 WMP Update to be sufficient. Any changes in data governance practices or capabilities must be addressed in HWT's 2022 WMP Update.

Figure(s)

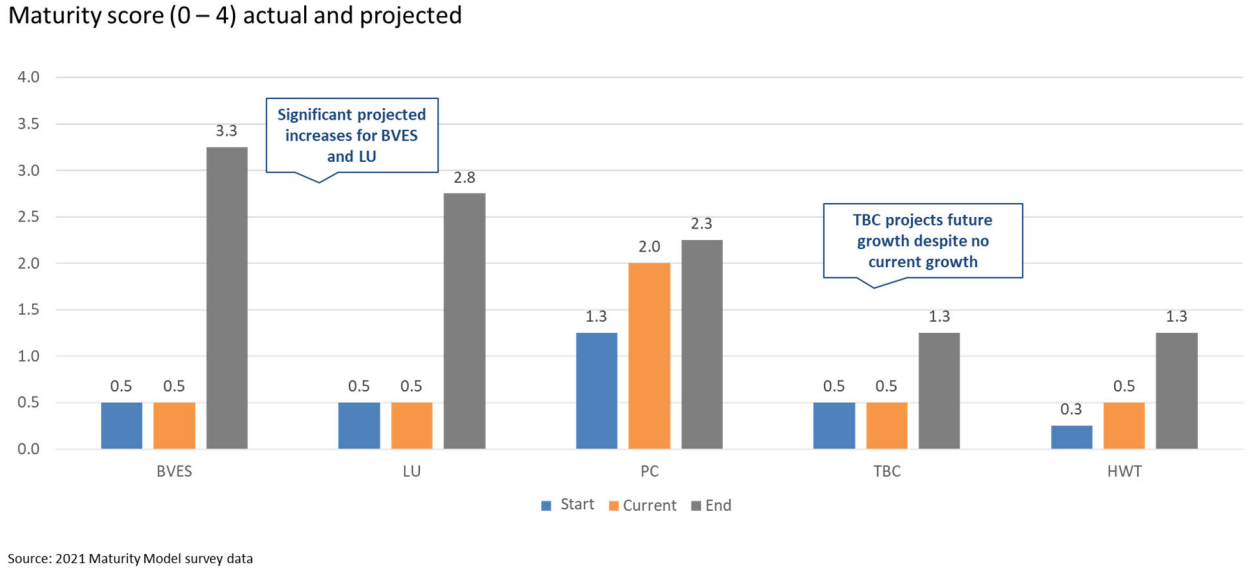


Figure 5.7.a: G. Data governance Maturity score progress

5.8. Resource Allocation Methodology

Introduction

The resource allocation methodology section of the WMP Guidelines[50] requires the utility to describe its methodology for prioritizing programs by cost-efficiency. This section requires

[49] WSD-011 Attachment 2.2, 2021 Wildfire Mitigation Plan Guidelines Template, p. 45 (accessed July 20, 2021): https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/attachment-2.2-to-wsd-011-2021-wmp-guidelines-template.pdf.

[50] WSD-011 Attachment 2.2, 2021 Wildfire Mitigation Plan Guidelines Template, p. 45 (accessed July 20, 2021): https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/attachment-2.2-to-wsd-011-2021-wmp-guidelines-template.pdf.

utilities to discuss risk reduction scenario analysis and provide a risk-spend efficiency (RSE) analysis for each aspect of the plan.

Overview

The objectives of HWT's resource allocation strategy are focused on the prevention and detection of wildfire ignition risks and to enable prompt emergency response to HWT facilities. Given HWT's limited footprint, HWT has a small dedicated operations team in the field monitoring the asset. There have been no changes to HWT's resource allocation methodology since the 2020 WMP.[51] The WSD finds that HWT has satisfactorily documented its resource allocation methodology practices and finds this portion of HWT's 2021 WMP Update to be sufficient. Any changes in HWT's resource allocation practices or capabilities must be addressed in HWT's 2022 WMP Update.

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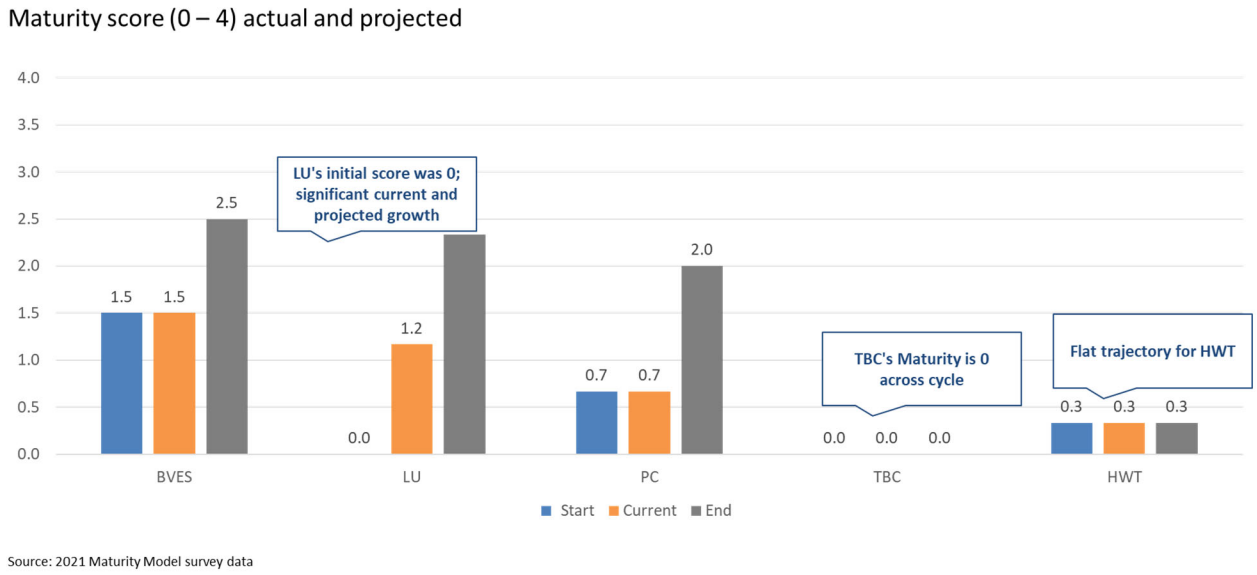


Source: 2021 Maturity Model survey data

Figure 5.8.a: H. Resource allocation methodology Maturity score progress

5.9. Emergency Planning and Preparedness

Introduction

This section of the WMP Guidelines[52] requires a general description of the utility's overall emergency preparedness and response plan, including discussion of how the plan is consistent

[51] HWT's 2021 WMP Update p. 58

[52] WSD-011 Attachment 2.2, 2021 Wildfire Mitigation Plan Guidelines Template, p. 46 (accessed July 20, 2021): https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/attachment-2.2-to-wsd-011-2021-wmp-guidelines-template.pdf.

with legal requirements for customer support before, during, and after a wildfire, including support for low-income customers, billing adjustments, deposit waivers, extended payment plans, suspension of disconnection and nonpayment fees, and repairs. Utilities are also required to describe emergency communications before, during, and after a wildfire in languages deemed prevalent in a utility's territory (D.19-05-036, supplemented by D.20-03-004),[53] and other languages required by the Commission.

This section of the WMP also requires discussion of the utility's plans for coordination with first responders and other public safety organizations, plans to prepare for and restore service, including workforce mobilization and prepositioning of equipment and employees, and a showing that the utility has an adequately sized and trained workforce to promptly restore service after a major event.

Overview

The WSD finds that HWT has satisfactorily documented its emergency planning and preparedness practices and capabilities. The WSD agrees that, as HWT "grows its footprint in California, HWT will evaluate making appropriate changes to its disaster and emergency preparedness plan."[54] Any changes in emergency planning and preparedness practices or capabilities must be addressed in HWT's 2022 WMP Update.

Progress over the past year

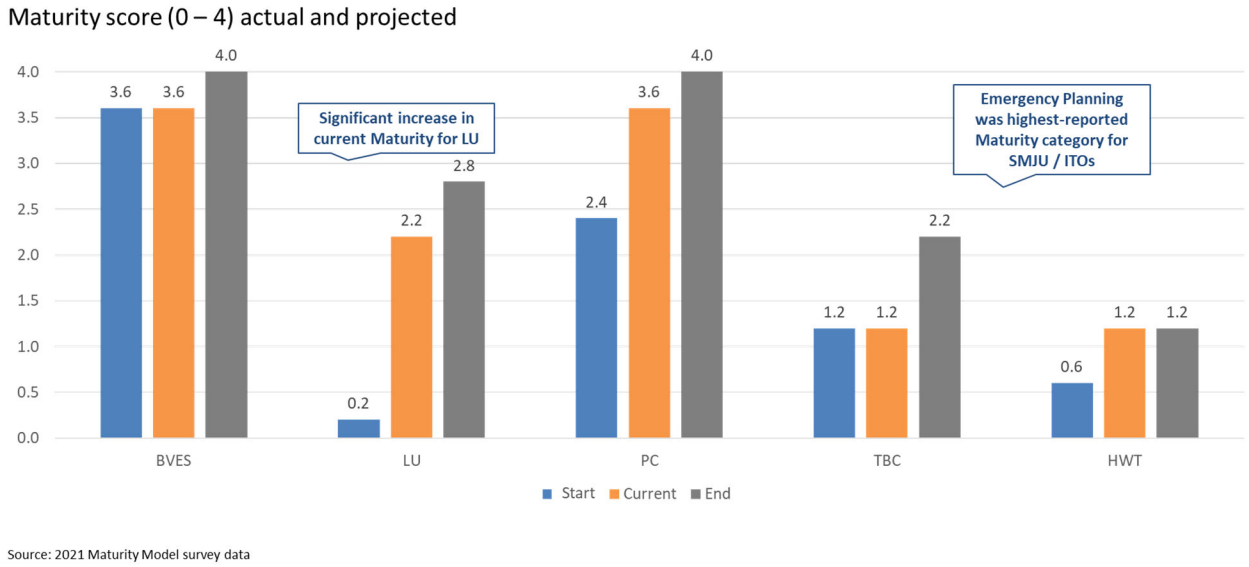
The WSD finds that HWT has made the following progress:

- HWT ensures that lessons learned from wildfire events are appropriately captured to improve on its wildfire related processes and system. HWT will continue to conduct After Action Reviews as needed in the future to identify improvements to its wildfire strategy.

[53] A language is prevalent if it is spoken by 1,000 or more persons in the utility's territory or if it is spoken by 5% or more of the population within a "public safety answering point" in the utility territory. See Cal. Government Code § 53112.

[54] HWT's 2021 WMP Update p. 73

Figure(s)



Source: 2021 Maturity Model survey data

Figure 5.9.a: I. Emergency planning and preparedness Maturity score progress

5.10. Stakeholder Cooperation and Community Engagement

Introduction

The final initiative category in the WMP Guidelines[55] requires the utility to report on the extent to which it will engage the communities it serves and cooperate and share best practices with community members, agencies outside California, fire suppression agencies, forest service entities and others engaged in vegetation management or fuel reduction.

Overview

As a transmission-only utility, HWT does not serve end-use customers or have a traditional service territory. Therefore, it does not provide customer support or engage with communities during an emergency. Despite not engaging directly with communities, HWT developed a communication and coordination protocol with its primary stakeholders (California Independent System Operator and Interconnecting Transmission Owner) where the president or designee will implement its communications protocols in the case of an emergency.

The WSD finds that HWT has satisfactorily documented its stakeholder cooperation and community engagement practices and capabilities. Any changes in stakeholder cooperation and

[55] WSD-011 Attachment 2.2, 2021 Wildfire Mitigation Plan Guidelines Template, p. 46 (accessed July 20, 2021): https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/attachment-2.2-to-wsd-011-2021-wmp-guidelines-template.pdf.

community engagement practices or capabilities must be addressed in HWT's 2022 WMP Update.

Figure(s)

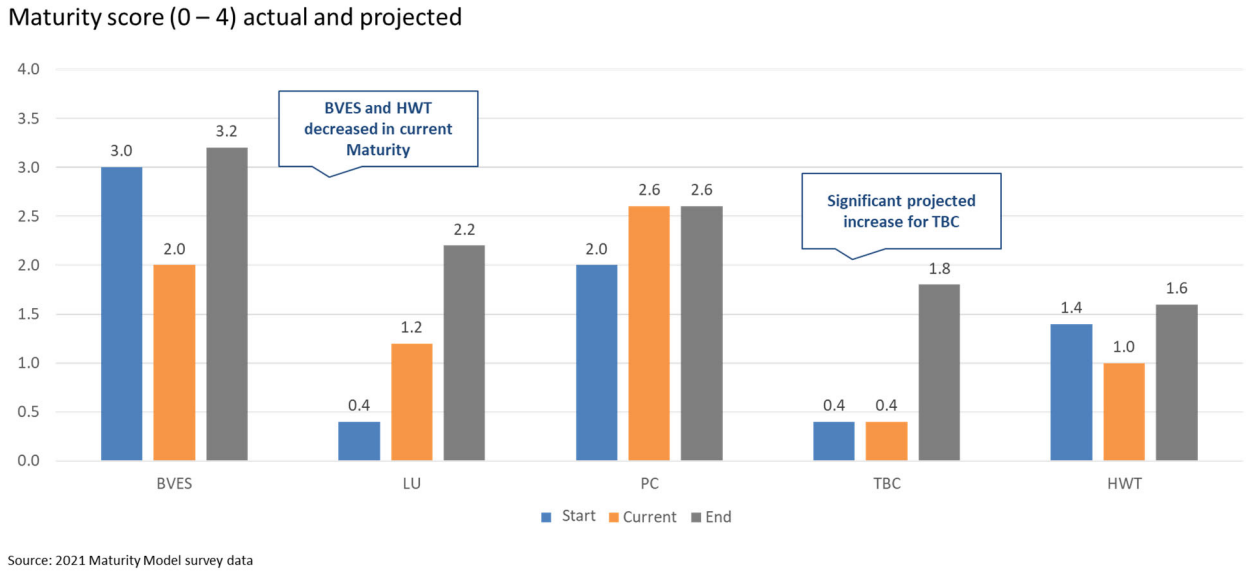


Figure 5.10.a: J. Stakeholder cooperation and community engagement Maturity score progress

6. PUBLIC SAFETY POWER SHUTOFF (PSPS), INCLUDING DIRECTIONAL VISION FOR PSPS

Introduction

In recent years, Public Safety Power Shutoffs (PSPS) have been increasingly used by utilities to mitigate wildfire risk. PSPS events introduce substantial risk to the public and impose a significant burden on public services that must activate during a PSPS event. The WSD supports the use of PSPS only as a last resort and expects the utilities to clearly present plans for reducing the scale, scope, and frequency of PSPS events.

In 2021, WSD separated the reporting of PSPS from the reporting of mitigations and progress metrics to reflect the definition of PSPS as a measure of last resort rather than a mitigation option (pursuant to Guidance Resolution WSD-002 and PSPS decisions D.19-05-036 and D.20-

03-004).[56] This section of the WMP Guidelines[57] requires utilities to report their current and projected progress in PSPS mitigation, including lessons learned from the prior year, de-energization and re-energization protocols, PSPS outcome metrics, plans to reduce future PSPS impacts, and community engagement.

Overview

HWT is a transmission-only utility and is subject to operating instructions from the California Independent System Operator and does not serve retail customers. HWT states that it expects that it will seldom, if ever, be necessary to call a PSPS event for its facilities and reports no significant changes to its PSPS vision or implementation from its approved 2020 WMP.

7. NEXT STEPS

HWT must address the issues identified in the WSD's review of HWT's 2021 WMP Update over the course of the next year. The WSD expects HWT to take action to address these issues and report on progress made over the year in its 2022 WMP Update.

Change Orders

If HWT seeks to significantly modify (i.e., reduce, increase, or end) WMP mitigation measures in response to data and results on electrical corporation ignition risk reduction impacts, HWT must submit a Change Order Report. At a high level, the objective of the change order process is to ensure the electrical corporation continues to follow the most effective and efficient approach to mitigating its wildfire risk. This could change as new information becomes available and as the electrical corporation gains experience and measures the outcomes of its initiatives.

The change order process set forth herein provides a mechanism for the electrical corporation to make adjustments based on this information and experience. The goal of this process is to ensure that utilities make significant changes to their WMPs only if the utilities demonstrate these changes to be improvements per WMP approval criteria (i.e., completeness, technical feasibility, effectiveness, and resource use efficiency). Another goal of the change order process is to maximize the WSD's visibility and ability to respond to any significant changes to the approved plan as efficiently and in as streamlined a way as possible.

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[56] When calculating RSE for PSPS, electrical corporations generally assume 100 percent wildfire risk mitigation and very low implementation costs because societal costs and impact are not included. When calculated this way, PSPS will always rise to the top as a wildfire mitigation tool, but it will always fail to account for its true costs to customers. Therefore, electrical corporations shall not rely on RSE calculations as a tool to justify the use of PSPS.

[57] WSD-011 Attachment 2.2, 2021 Wildfire Mitigation Plan Guidelines Template, pp. 46-49 (accessed July 20, 2021): https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/attachment-2.2-to-wsd-011-2021-wmp-guidelines-template.pdf.

A "significant" change to a utility's WMP that would trigger the change order process is defined below:

- A change falls into the following initiative categories, i) risk assessment and mapping, ii) vegetation management and inspections, iv) grid design and system hardening, or v) asset management and inspections.

or

- A change to the utility's PSPS strategy, protocols and/or decision-making criteria.

and

- Meets one or more of the following criteria:
  - A change that would result in an increase, decrease, or reallocation of more than $5 million constituting a greater than 10% change in spend allocation.
  - A change that reduces or increases the estimated risk reduction value of an initiative more than 25%.
  - A change that results in a radical shift of either the strategic direction or purpose of an initiative (e.g., introducing use of a novel risk model that reverses the risk profile of the utility's circuits).

If an electrical corporation is unsure whether a change is significant, the corporation is encouraged to submit an advance inquiry on the matter. The change order process is not intended to provide electrical corporations with a pass to unilaterally change their WMP initiatives and program targets; rather, its purpose is to provide a mechanism for refining certain elements of WMP initiatives when there is demonstrable quantitative and qualitative justification for doing so.

Utilities shall submit any Change Order Reports by November 1, 2021. The WSD will review change orders and may issue either an approval or a denial if proposed changes are deemed to be materially out of alignment with the WSD's goals.

At a minimum, each proposed change order shall provide the following information:

i. The proposed change
   a. The initiative being altered with reference to where in the WMP the initiative is discussed
   b. The planned budget of that initiative, including:
      i. Planned spend in the 2021 WMP Update of the initiative being altered
      ii. Of the planned spend identified in i. above, how much has already been spent
      iii. Planned spend for the remainder of the WMP plan period
      iv. If spend is being redeployed, how much is being redeployed and to/from which budget
   c. The type of change being proposed, reported as one of the following:
      i. Increase in scale
      ii. Decrease in scale

iii. Change in prioritization
iv. Change in deployment timing
v. Change in work being done
vi. Other change (described)

d. A detailed description of the proposed change

ii. Justification for the proposed change

a. In what way, if any, does the change address or improve:

i. Completeness
ii. Technical feasibility of the initiative
iii. Effectiveness of the initiative
iv. Resource use efficiency over portfolio of WMP initiatives

iii. Change in expected outcomes from the proposed change

a. What outcomes, including quantitative ignition probability and PSPS risk reduction, was the changed initiative expected to achieve in the 2021 WMP Update?

b. What outcomes, including quantitative ignition probability and PSPS risk reduction, will the initiative deliver with the proposed adjustment?

Submission of Change Order Reports shall be through Energy Safety's e-filing system. Changes orders must be submitted to the 2021 WMPs Docket (docket #2021-WMPs). Utilities shall concurrently serve all reports on the Department of Forestry and Fire Protection at CALFIREUtilityFireMitigationUnit@fire.ca.gov.

Stakeholders may comment on Change Order Reports within fifteen days of submission following the submission instructions above but may not otherwise seek change orders through this-process. The WSD may modify the process for submitting or reviewing change orders at its discretion with written notice.

8. CONSULTATION WITH CAL FIRE

Pub. Util. Code Section 8386.3(a) requires the WSD to consult with CAL FIRE in reviewing electrical corporations' 2020 WMPs. The Commission and CAL FIRE have a memorandum of understanding in place to facilitate this consultation (Pub. Util. Code Section 8386.5). The Commission and the WSD have met these requirements, but this Action Statement does not purport to speak for CAL FIRE.

9. COMMENTS ON DRAFT ACTION STATEMENT

No comments were submitted for HWT; therefore, no substantive changes were made to this Action Statement.

10. CONCLUSION

HWT's 2021 WMP Update is approved.

Catastrophic wildfires remain a serious threat to the health and safety of Californians. Electrical corporations, including HWT, must continue to make progress toward reducing utility-related wildfire risk. Through the approval of HWT's 2021 WMP submission, the WSD expects HWT to effectively implement its wildfire mitigation activities to reduce the risk of utility-related ignitions and the potential catastrophic consequences if an ignition occurs as well as to reduce the scale, scope, and frequency of PSPS events. HWT must meet the commitments in its 2020 WMP and fully comply with the conditions listed in this Action Statement to ensure it is achieving a meaningful reduction of utility-related wildfire and PSPS risk within its service territory.

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11. APPENDIX

11.1. Status of 2020 WMP Deficiencies

The 2020 WMP Resolutions for each utility contained a set of "Deficiencies" and associated "Conditions" to remedy those issues. Each issue was categorized into one of the following classes, with Class A being the most serious:

- Class A – aspects of the WMP are lacking or flawed;
- Class B – insufficient detail or justification provided in the WMP;
- Class C – gaps in baseline or historical data, as required in the 2020 WMP Guidelines.

Class A deficiencies were of the highest concern and required a utility to develop and submit to the WSD a Remedial Compliance Plan (RCP) to resolve the identified issue within 45 days of Commission ratification of the Resolution. Class B deficiencies were of medium concern and required reporting by the utility to provide missing data or a progress update in its Quarterly Report. Such reporting was either on a one-time basis or ongoing as set forth in each condition. Class C deficiencies required the utility to submit additional detail and information or otherwise come into compliance in its following annual WMP Update. Detailed descriptions of the RCP and quarterly reports are contained in Resolution WSD-002, the Guidance Resolution on Wildfire Mitigation Plans.[58]

The WSD issued a full approval of HWT's 2020 WMP with no identified deficiencies.

[58] The Draft Guidance Resolution WSD-002 can be found here (accessed July 15, 2021): https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2020/docs/340859823.pdf.

12. ATTACHMENTS

12.1. Attachment 1: HWT's 2021 Maturity Survey

12.1.1. HWT: Description of Data Sources

Data related to the Maturity Model is based on the latest submitted versions of 2021 Utility Wildfire Mitigation Maturity Survey ("Survey") as of May 5, 2021. Data for the Maturity Model is pulled from Survey responses unless stated otherwise.

All source data (the WMP and the Survey responses) are available at: https://energysafety.ca.gov/what-we-do/wildfire-mitigation-and-safety/wildfire-mitigation-plans/2021-wmp/.

All the analysis and corresponding tables presented in this appendix rely upon data that is self-reported by the utilities. By utilizing and presenting this self-reported data in this appendix, the WSD is not independently validating that all data elements submitted by utilities are accurate. The WSD will continue to evaluate utility data, conduct data requests, and conduct additional compliance activities to ensure that data provided is accurate.

12.1.2. HWT: Introduction to Maturity Model Scoring[59]

In order to determine "maturity" in any one capability, the WSD assigned levels to each aspect of the electrical corporations' wildfire mitigation efforts. Each capability was assigned a level, from 0 – 4 range, with 0 being the lowest and 4 the highest. The WSD calculated a maturity level, in accordance with the required elements to achieve each level, as outlined in the maturity model rubric.

The levels were calculated using an "all or nothing" binary approach. That is, levels are reported as whole numbers only.[60] Thus, in order to reach a specific maturity level, an electrical corporation would have to meet 100 percent of the threshold requirements for that level, as detailed in the maturity model rubric. In general, the maturity model rubric outlines numerous elements that are required to be met to achieve a given level, and the sophistication of requirements to reach a level typically increases with each successively higher maturity level.

For example, to obtain a level of 1 in Capability 24 of the 52 total capabilities, titled "Vegetation grow-in mitigation," the electrical corporation (or utility) must demonstrate the following: "[u]tility maintains vegetation around lines and equipment according to minimum statutory and regulatory clearances. Utility: i) removes vegetation waste along right of ways and ii) within 1 week of cutting vegetation across entire grid."

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[59] From WSD-002 p. 10-11

[60] Note: The category averages shown in 11.1.3 (below) average the capability scores and may include decimals.

Thus, in order to receive a maturity level of 1 for Capability 24, an electrical corporation would not only have to maintain minimum regulatory clearances around its overhead lines but also remove the vegetation waste along its right of ways within one week of conducting vegetation clearance work. If an electrical corporation meets only one of these requirements, then it would be assigned the next lowest level. In this example, a level of 0 would be assigned and the electrical corporation would not receive “partial credit” towards a level of 1.

12.1.3. HWT: Maturity detail by capability

Legend: *Maturity Model Scores*

0 | 1 | 2 | 3 | 4

Category A. Risk Assessment and Mapping

	Avg cycle start maturity: 0.6	Avg current maturity: 0.8	Avg projected cycle end maturity: 1.2
Capability 1. Climate scenario modeling			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 0	By end of year 1 (current): 0	Planned state by end of cycle: 2 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
1a: How sophisticated is utility's ability to estimate the risk of weather scenarios?	iii. Weather scenarios can be reliably categorized by level of risk	iii. Weather scenarios can be reliably categorized by level of risk	iv. Risk for various weather scenarios can be reliably estimated
1b: How are scenarios assessed?	ii. Independent expert assessment	ii. Independent expert assessment	iii. Independent expert assessment, supported by historical data of incidents and near misses
1c: How granular is utility's ability to model scenarios?	i. Less granular than regional, or no tool at all	i. Less granular than regional, or no tool at all	v. Asset-based
1d: How automated is the tool?	i. Not automated	i. Not automated	ii. Partially (<50%)
1e: What additional information is used to estimate model weather scenarios and their risk?	iii. Weather, how weather effects failure modes and propagation, existing hardware	iii. Weather, how weather effects failure modes and propagation, existing hardware	iii. Weather, how weather effects failure modes and propagation, existing hardware

1f: To what extent is future change in climate taken into account for future risk estimation?	ii. Future risk estimates take into account generally higher risk across entire service territory due to changing climate	ii. Future risk estimates take into account generally higher risk across entire service territory due to changing climate	iii. Basic temperature modeling used to estimate effects of a changing climate on future weather and risk, taking into account difference in geography and vegetation

Capability 2. Ignition risk estimation			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 1	By end of year 1 (current): 1	Planned state by end of cycle: 1 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
2a: How is ignition risk calculated?	iii. Tools and processes can quantitatively and accurately assess the risk of ignition across the grid based on characteristics and condition of lines, equipment, surrounding vegetation, and localized weather patterns	iii. Tools and processes can quantitatively and accurately assess the risk of ignition across the grid based on characteristics and condition of lines, equipment, surrounding vegetation, and localized weather patterns	iii. Tools and processes can quantitatively and accurately assess the risk of ignition across the grid based on characteristics and condition of lines, equipment, surrounding vegetation, and localized weather patterns
2b: How automated is the ignition risk calculation tool?	ii. Partially (<50%)	ii. Partially (<50%)	ii. Partially (<50%)
2c: How granular is the tool?	v. Asset-based	v. Asset-based	v. Asset-based
2d: How is risk assessment confirmed? Select all that apply.	i. By experts	i. By experts ii. By historical data iii. Through real-time learning	i. By experts ii. By historical data iii. Through real-time learning

2e: What confidence interval, in percent, does the utility use in its wildfire risk assessments?	>60%, or no quantified confidence interval	>60%, or no quantified confidence interval	>60%, or no quantified confidence interval

Capability 3. Estimation of wildfire consequences for communities			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 0	By end of year 1 (current): 0	

Responses to survey questions

Survey questions and the utility's responses are shown below

Question	Start of cycle	By end of year 1 (current)	Planned state by end of cycle
3a: How is estimated consequence of ignition relayed?	i .No translation of ignition risk estimates to potential consequences for communities	i .No translation of ignition risk estimates to potential consequences for communities	i .No translation of ignition risk estimates to potential consequences for communities
3b: What metrics are used to estimate the consequence of ignition risk?	i. As a function of at least one of the following: structures burned, potential fatalities, or area burned	i. As a function of at least one of the following: structures burned, potential fatalities, or area burned	i. As a function of at least one of the following: structures burned, potential fatalities, or area burned
3c: Is the ignition risk impact analysis available for all seasons?	ii. Yes	ii. Yes	ii. Yes
3d: How automated is the ignition risk estimation process?	i. Not automated	i. Not automated	ii. Partially (<50%)
3e: How granular is the ignition risk estimation process?	v. Asset-based	v. Asset-based	v. Asset-based
3f: How are the outputs of the ignition risk impact assessment tool evaluated?	ii. Outputs independently assessed by experts	iii. Outputs independently assessed by experts and confirmed by historical data	iii. Outputs independently assessed by experts and confirmed by historical data

3g: What other inputs are used to estimate impact?	i. Level and conditions of vegetation and weather, including the vegetation specifies immediately surrounding the ignition site	i. Level and conditions of vegetation and weather, including the vegetation specifies immediately surrounding the ignition site	i. Level and conditions of vegetation and weather, including the vegetation specifies immediately surrounding the ignition site

Capability 4. Estimation of wildfire and PSPS risk-reduction impact			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 2	By end of year 1 (current): 2	Planned state by end of cycle: 2 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
4a: How is risk reduction impact estimated?	iii. Approach reliably estimates risk reduction potential of initiatives on an interval scale (e.g. specific quantitative units)	iii. Approach reliably estimates risk reduction potential of initiatives, on an ordinal scale (e.g. 1-5)	iii. Approach reliably estimates risk reduction potential of initiatives, on an ordinal scale (e.g. 1-5)
4b: How automated is your ignition risk reduction impact assessment tool?	ii. Partially (<50%)	ii. Partially (<50%)	ii. Partially (<50%)
4c: How granular is the ignition risk reduction impact assessment tool?	v. Asset-based	v. Asset-based	v. Asset-based
4d: How are ignition risk reduction impact assessment tool estimates assessed?	iii. Independent expert assessment	iv. Independent expert assessment, supported by historical data of incidents and near misses	iv. Independent expert assessment, supported by historical data of incidents and near misses

4e: What additional information is used to estimate risk reduction impact?	ii. Existing hardware type and condition	v. Existing hardware type and condition, including operating history; level and condition of vegetation; weather; and combination of initiatives already deployed	v. Existing hardware type and condition, including operating history; level and condition of vegetation; weather; and combination of initiatives already deployed

Capability 5. Risk maps and simulation algorithms			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 0	By end of year 1 (current): 1	Planned state by end of cycle: 1 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
5a: What is the protocol to update risk mapping algorithms?	ii. Risk mapping algorithms updated based on detected deviations of risk model to ignitions and propagation	ii. Risk mapping algorithms updated based on detected deviations of risk model to ignitions and propagation	ii. Risk mapping algorithms updated based on detected deviations of risk model to ignitions and propagation
5b: How automated is the mechanism to determine whether to update algorithms based on deviations?	i. Not automated	i. Not automated	i. Not automated
5c: How are deviations from risk model to ignitions and propagation detected?	ii. Manually	ii. Manually	ii. Manually
5d: How are decisions to update algorithms evaluated?	ii. Independently evaluated by experts	iii. Independently evaluated by experts and historical data	iii. Independently evaluated by experts and historical data

5e: What other data is used to make decisions on whether to update algorithms?	v. None of the above	iv. Current and historic ignition and propagation data; near-miss data; data from other utilities and other sources	iv. Current and historic ignition and propagation data; near-miss data; data from other utilities and other sources

Category B. Situational Awareness and Forecasting

	Avg cycle start maturity: 1	**Avg current maturity: 2.2**	**Avg projected cycle end maturity: 2.2**
Capability 6. Weather variables collected			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 1	By end of year 1 (current): 2	Planned state by end of cycle: 2 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
6a: What weather data is currently collected?	iii. Range of accurate weather variables (e.g. humidity, precipitation, surface and atmospheric wind conditions) that impact probability of ignition and propagation from utility assets	iii. Range of accurate weather variables (e.g. humidity, precipitation, surface and atmospheric wind conditions) that impact probability of ignition and propagation from utility assets	iii. Range of accurate weather variables (e.g. humidity, precipitation, surface and atmospheric wind conditions) that impact probability of ignition and propagation from utility assets
6b: How are measurements validated?	i. Measurements not currently validated	iii. Automatic field calibration measurements	iii. Automatic field calibration measurements
6c: Are elements that cannot be reliably measured in real time being predicted (e.g., fuel moisture content)?	ii. Yes	ii. Yes	ii. Yes
6d: How many sources are being used to provide data on weather metrics being collected?	iii. More than one	iii. More than one	iii. More than one

Capability 7. Weather data resolution			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 1	By end of year 1 (current): 3	Planned state by end of cycle: 3 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
7a: How granular is the weather data that is collected?	iii. Weather data has sufficient granularity to reliably measure weather conditions in HFTD areas, and along the entire grid and in all areas needed to predict weather on the grid	iii. Weather data has sufficient granularity to reliably measure weather conditions in HFTD areas, and along the entire grid and in all areas needed to predict weather on the grid	iii. Weather data has sufficient granularity to reliably measure weather conditions in HFTD areas, and along the entire grid and in all areas needed to predict weather on the grid
7b: How frequently is data gathered	iv. At least six times per hour	iv. At least six times per hour	iv. At least six times per hour
7c: How granular is the tool?	ii. Regional	v. Asset-based	v. Asset-based
7d: How automated is the process to measure weather conditions?	iv. Fully	iv. Fully	iv. Fully

Capability 8. Weather forecasting ability			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 0	By end of year 1 (current): 2	Planned state by end of cycle: 2 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
8a: How sophisticated is the utility's weather forecasting capability?	iii. Utility has the ability to use a combination of accurate weather stations and external weather data to make accurate forecasts	iii. Utility has the ability to use a combination of accurate weather stations and external weather data to make accurate forecasts	iii. Utility has the ability to use a combination of accurate weather stations and external weather data to make accurate forecasts
8b: How far in advance can accurate forecasts be prepared?	i. Less than two weeks in advance	i. Less than two weeks in advance	i. Less than two weeks in advance
8c: At what level of granularity can forecasts be prepared?	ii. Regional	v. Asset-based	v. Asset-based
8d: How are results error-checked?	ii. Results are error checked against historical weather patterns	ii. Results are error checked against historical weather patterns	ii. Results are error checked against historical weather patterns
8e: How automated is the forecast process?	iii. Mostly (>=50%)	iii. Mostly (>=50%)	iii. Mostly (>=50%)

Capability 9. External sources used in weather forecasting			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 1	By end of year 1 (current): 2	Planned state by end of cycle: 2 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
9a: What source does the utility use for weather data?	ii. External data used where direct measurements from utility's own weather stations are not available	iii. Utility uses a combination of accurate weather stations and external weather data	iii. Utility uses a combination of accurate weather stations and external weather data
9b: How is weather station data checked for errors?	i. Weather station data is not checked for errors	ii. Mostly manual processes for error checking weather stations with external data sources	iii. Mostly automated processes for error checking weather stations with external data sources
9c: For what is weather data used?	i. Weather data is used to make decisions	i. Weather data is used to make decisions	ii. Weather data is used to produce a combined weather map that can be used to help make decisions

Capability 10. Wildfire detection processes and capabilities			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 2	By end of year 1 (current): 2	Planned state by end of cycle: 2 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
10 : Are there well-defined procedures for detecting ignitions along the grid?	ii. Yes	ii. Yes	ii. Yes
10b: What equipment is used to detect ignitions?	iii. Well-defined equipment for detecting ignitions along grid, including remote detection equipment including cameras	iii. Well-defined equipment for detecting ignitions along grid, including remote detection equipment including cameras	iii. Well-defined equipment for detecting ignitions along grid, including remote detection equipment including cameras
10 : How is information on detected ignitions reported?	iii. Procedure exists for notifying suppression forces and key stakeholders	iii. Procedure exists for notifying suppression forces and key stakeholders	iv. Procedure automatically, accurately, and in real time notifies suppression forces and key stakeholders
10d: What role does ignition detection software play in wildfire detection?	ii. Ignition detection software in cameras used to augment ignition detection procedures	ii. Ignition detection software in cameras used to augment ignition detection procedures	iii. Ignition detection software in cameras operates automatically as part of ignition detection procedures

Category C. Grid design and system hardening

	Avg cycle start maturity: 1	Avg current maturity: 2.4	Avg projected cycle end maturity: 2.4
Capability 11. Approach to prioritizing initiatives across territory			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 2	By end of year 1 (current): 4	Planned state by end of cycle: 4 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
11a: How are wildfire risk reduction initiatives prioritized?	iii. Plan prioritizes wildfire risk reduction initiatives based on local geography and conditions within only HFTD areas	v. Plan prioritizes wildfire risk reduction initiatives at the asset level based on i) risk modeling driven by local geography and climate/weather conditions, fuel loads and moisture content and topography ii) risk estimates across individual circuits, including estimates of actual consequence, and iii) taking power delivery uptime into account (e.g. reliability, PSPS, etc.)	v. Plan prioritizes wildfire risk reduction initiatives at the asset level based on i) risk modeling driven by local geography and climate/weather conditions, fuel loads and moisture content and topography ii) risk estimates across individual circuits, including estimates of actual consequence, and iii) taking power delivery uptime into account (e.g. reliability, PSPS, etc.)

Capability 12. Grid design for minimizing ignition risk			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 1	By end of year 1 (current): 3	Planned state by end of cycle: 3 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
12a: Does grid design meet minimum G095 requirements and loading standards in HFTD areas?	ii. Yes	iii. Grid topology exceeds design requirements, designed based on accurate understanding of drivers of utility ignition risk	iii. Grid topology exceeds design requirements, designed based on accurate understanding of drivers of utility ignition risk
12b: Does the utility provide micro grids or islanding where traditional grid infrastructure is impracticable and wildfire risk is high?	i. No	i. No	i. No
12c: Does routing of new portions of the grid take wildfire risk into account?	i. Yes	i. Yes	i. Yes
12d: Are efforts made to incorporate the latest asset management strategies and new technologies into grid topology?	ii. Yes, some effort made in HFTD areas	iii. Yes, across the entire service area	iii. Yes, across the entire service area

Capability 13. Grid design for resiliency and minimizing PSPS			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 0	By end of year 1 (current): 0	

Responses to survey questions

Survey questions and the utility's responses are shown below

Question	Start of cycle	By end of year 1 (current)	Planned state by end of cycle
13a: What level of redundancy does the utility's transmission architecture have?	i. Many single points of failure	i. Many single points of failure	i. Many single points of failure
13b: What level of redundancy does the utility's distribution architecture have?	i. Many single points of failure	i. Many single points of failure	i. Many single points of failure
13c: What level of sectionalization does the utility's distribution architecture have?	ii. Switches in HFTD areas to individually isolate circuits	ii. Switches in HFTD areas to individually isolate circuits	ii. Switches in HFTD areas to individually isolate circuits
13d: How does the utility consider egress points in its grid topology?	ii. Egress points used as an input for grid topology design	ii. Egress points used as an input for grid topology design	ii. Egress points used as an input for grid topology design

Capability 14. Risk-based grid hardening and cost efficiency			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 1	By end of year 1 (current): 4	Planned state by end of cycle: 4 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
14a: Does the utility have an understanding of the risk spend efficiency of hardening initiatives?	iii. Utility has an accurate understanding of the relative cost and effectiveness of different initiatives, tailored to the circumstances of different locations on its grid	iii. Utility has an accurate understanding of the relative cost and effectiveness of different initiatives, tailored to the circumstances of different locations on its grid	iii. Utility has an accurate understanding of the relative cost and effectiveness of different initiatives, tailored to the circumstances of different locations on its grid
14b: At what level can estimates be prepared?	v. Asset-based	v. Asset-based	v. Asset-based
14c: How frequently are estimates updated?	iii. Annually or more frequently	iii. Annually or more frequently	iii. Annually or more frequently
14d: What grid hardening initiatives does the utility include within its evaluation?	ii. Some	v. All, supported by independent testing	v. All, supported by independent testing
14e: Can the utility evaluate risk reduction synergies from combination of various initiatives?	ii. Yes	ii. Yes	ii. Yes

Capability 15. Grid design and asset innovation			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 1	By end of year 1 (current): 1	Planned state by end of cycle: 1 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
15 : How are new hardening solution initiatives evaluated?	ii. New initiatives evaluated based on installation into grid and measuring direct reduction in ignition events	ii. New initiatives evaluated based on installation into grid and measuring direct reduction in ignition events	ii. New initiatives evaluated based on installation into grid and measuring direct reduction in ignition events
15b: Are results of pilot and commercial deployments, including project performance, project cost, geography, climate, vegetation etc. shared in sufficient detail to inform decision making at other utilities?	ii. Yes, with a limited set of partners	ii. Yes, with a limited set of partners	ii. Yes, with a limited set of partners
15 : Is performance of new initiatives independently audited?	i. No	i. No	i. No

Category D. Asset management and inspections

	Avg cycle start maturity: 2	Avg current maturity: 2.2	Avg projected cycle end maturity: 2.2
Capability 16. Asset inventory and condition assessments			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 1	By end of year 1 (current): 2	Planned state by end of cycle: 2 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
16a: What information is captured in the equipment inventory database?	ii. There is an accurate inventory of equipment that may contribute to wildfire risk, including age, state of wear, and expected lifecycle	iii. There is an accurate inventory of equipment that may contribute to wildfire risk, including age, state of wear, and expected lifecycle, including records of all inspections and repairs	iii. There is an accurate inventory of equipment that may contribute to wildfire risk, including age, state of wear, and expected lifecycle, including records of all inspections and repairs
16 : How frequently is the condition assessment updated?	iv. Monthly	iv. Monthly	iv. Monthly
16c: Does all equipment in HFTD areas have the ability to detect and respond to malfunctions?	iv. Sensorized, continuous monitoring equipment is in place to determine the state of equipment and reliably detect incipient malfunctions likely to cause ignition, with the ability to de-activate electric lines and equipment exhibiting such failure	iv. Sensorized, continuous monitoring equipment is in place to determine the state of equipment and reliably detect incipient malfunctions likely to cause ignition, with the ability to de-activate electric lines and equipment exhibiting such failure	iv. Sensorized, continuous monitoring equipment is in place to determine the state of equipment and reliably detect incipient malfunctions likely to cause ignition, with the ability to de-activate electric lines and equipment exhibiting such failure
16 : How granular is the inventory?	iii. At the asset level	iii. At the asset level	iii. At the asset level

Capability 17. Asset inspection cycle			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 1	By end of year 1 (current): 1	Planned state by end of cycle: 1 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
17a: How frequent are your patrol inspections?	ii. Consistent with minimum regulatory requirements	ii. Consistent with minimum regulatory requirements	ii. Consistent with minimum regulatory requirements
17b: How are patrol inspections scheduled?	ii. Based on up-to-date static maps of equipment types and environment	ii. Based on up-to-date static maps of equipment types and environment	iii. Risk, as determined by predictive modeling of equipment failure probability and risk causing ignition
17c: What are the inputs to scheduling patrol inspections?	i. At least annually updated or verified static maps of equipment and environment	ii. Predictive modeling of equipment failure probability and risk	iii. Predictive modeling supplemented with continuous monitoring by sensors
17d: How frequent are detailed inspections?	ii. Consistent with minimum regulatory requirements	ii. Consistent with minimum regulatory requirements	ii. Consistent with minimum regulatory requirements
17e: How are detailed inspections scheduled?	ii. Based on up-to-date static maps of equipment types and environment	ii. Based on up-to-date static maps of equipment types and environment	iii. Risk, as determined by predictive modeling of equipment failure probability and risk causing ignition
17f: What are the inputs to scheduling detailed inspections?	i. At least annually updated or verified static maps of equipment and environment	ii. Predictive modeling of equipment failure probability and risk	iii. Predictive modeling supplemented with continuous monitoring by sensors
17g: How frequent are your other inspections?	ii. Consistent with minimum regulatory requirements	ii. Consistent with minimum regulatory requirements	ii. Consistent with minimum regulatory requirements
17h: How are other inspections scheduled?	ii. Based on up-to-date static maps of equipment types and environment	ii. Based on up-to-date static maps of equipment types and environment	iii. Risk, as determined by predictive modeling of equipment failure probability and risk causing ignition
17i: What are the inputs to scheduling other inspections?	i. At least annually updated or verified static maps of equipment and environment	ii. Predictive modeling of equipment failure probability and risk	iii. Predictive modeling supplemented with continuous monitoring by sensors

Capability 18. Asset inspection effectiveness			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 2	By end of year 1 (current): 2	Planned state by end of cycle: 2 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
18a: What items are captured within inspection procedures and checklists?	iii. Patrol, detailed, enhanced, and other inspection procedures and checklists include all items required by statute and regulations, and includes lines and equipment typically responsible for ignitions and near misses	iii. Patrol, detailed, enhanced, and other inspection procedures and checklists include all items required by statute and regulations, and includes lines and equipment typically responsible for ignitions and near misses	iii. Patrol, detailed, enhanced, and other inspection procedures and checklists include all items required by statute and regulations, and includes lines and equipment typically responsible for ignitions and near misses
18b: How are procedures and checklists determined?	ii. Based on predictive modeling based on vegetation and equipment type, age, and condition	ii. Based on predictive modeling based on vegetation and equipment type, age, and condition	ii. Based on predictive modeling based on vegetation and equipment type, age, and condition
18c: At what level of granularity are the depth of checklists, training, and procedures customized?	v. At the asset level	v. At the asset level	v. At the asset level

Capability 19. Asset maintenance and repair			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 4	By end of year 1 (current): 4	Planned state by end of cycle: 4 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
19a: What level are electrical lines and equipment maintained at?	iii. Electrical lines and equipment maintained as required by regulation, and additional maintenance done in areas of grid at highest wildfire risk based on detailed risk mapping	iii. Electrical lines and equipment maintained as required by regulation, and additional maintenance done in areas of grid at highest wildfire risk based on detailed risk mapping	iii. Electrical lines and equipment maintained as required by regulation, and additional maintenance done in areas of grid at highest wildfire risk based on detailed risk mapping
19b: How are service intervals set?	iii. Based on wildfire risk in relevant circuit, as well as real-time monitoring from sensors	iii. Based on wildfire risk in relevant circuit, as well as real-time monitoring from sensors	iii. Based on wildfire risk in relevant circuit, as well as real-time monitoring from sensors
19c: What do maintenance and repair procedures take into account?	ii. Wildfire risk, performance history, and past operating conditions	ii. Wildfire risk, performance history, and past operating conditions	ii. Wildfire risk, performance history, and past operating conditions

Capability 20. QA/QC for asset management			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 2	By end of year 1 (current): 2	Planned state by end of cycle: 2 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
20a: How is contractor activity audited?	iii. Through an established and demonstrably functioning audit process to manage and confirm work completed by subcontractors, where contractor activity is subject to semi-automated audits using technologies capable of sampling the contractor's work (e.g., LiDAR scans, photographic evidence)	iii. Through an established and demonstrably functioning audit process to manage and confirm work completed by subcontractors, where contractor activity is subject to semi-automated audits using technologies capable of sampling the contractor's work (e.g., LiDAR scans, photographic evidence)	iii. Through an established and demonstrably functioning audit process to manage and confirm work completed by subcontractors, where contractor activity is subject to semi-automated audits using technologies capable of sampling the contractor's work (e.g., LiDAR scans, photographic evidence)
20b: Do contractors follow the same processes and standards as utility's own employees?	ii. Yes	ii. Yes	ii. Yes
20c: How frequently is QA/QC information used to identify deficiencies in quality of work performance and inspections performance?	iv. Regularly	iv. Regularly	iv. Regularly
20d: How are work and inspections that do not meet utility-prescribed standards remediated?	iii. QA/QC information is used to identify systemic deficiencies in quality of work and inspections, and recommend training based on weaknesses	iii. QA/QC information is used to identify systemic deficiencies in quality of work and inspections, and recommend training based on weaknesses	iii. QA/QC information is used to identify systemic deficiencies in quality of work and inspections, and recommend training based on weaknesses
20e: Are workforce management software tools used to manage and confirm work completed by subcontractors?	ii. Yes	ii. Yes	ii. Yes

Category E. Vegetation management and inspections

	Avg cycle start maturity: 1.5	Avg current maturity: 1.5	Avg projected cycle end maturity: 1.5
Capability 21. Vegetation inventory and condition assessments			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 0	By end of year 1 (current): 0	
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
21a: What information is captured in the inventory?	iii. Centralized inventory of vegetation clearances, including predominant vegetation species and individual high risk-trees across grid	iii. Centralized inventory of vegetation clearances, including predominant vegetation species and individual high risk-trees across grid	iii. Centralized inventory of vegetation clearances, including predominant vegetation species and individual high risk-trees across grid
21b: How frequently is inventory updated?	ii. Annually	ii. Annually	ii. Annually
21c: Are inspections independently verified by third party experts?	ii. Yes	ii. Yes	ii. Yes
21d: How granular is the inventory?	iv. Asset-based	iv. Asset-based	iv. Asset-based

Capability 22. Vegetation inspection cycle			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 2	By end of year 1 (current): 2	Planned state by end of cycle: 2 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
22a: How frequent are all types of vegetation inspections?	ii. Consistent with minimum regulatory requirements	ii. Consistent with minimum regulatory requirements	ii. Consistent with minimum regulatory requirements
22b: How are vegetation inspections scheduled?	ii. Based on up-to-date static maps of predominant vegetation species and environment	ii. Based on up-to-date static maps of predominant vegetation species and environment	ii. Based on up-to-date static maps of predominant vegetation species and environment
22c: What are the inputs to scheduling vegetation inspections?	i. At least annually-updated static maps of vegetation and environment	ii. Up to date, static maps of vegetation and environment, as well as data on annual growing conditions	ii. Up to date, static maps of vegetation and environment, as well as data on annual growing conditions

Capability 23. Vegetation inspection effectiveness			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 3	By end of year 1 (current): 3	Planned state by end of cycle: 3 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
23a: What items are captured within inspection procedures and checklists?	iii. Patrol, detailed, enhanced, and other inspection procedures and checklists include all items required by statute and regulations, and includes vegetation types typically responsible for ignitions and near misses	iii. Patrol, detailed, enhanced, and other inspection procedures and checklists include all items required by statute and regulations, and includes vegetation types typically responsible for ignitions and near misses	iii. Patrol, detailed, enhanced, and other inspection procedures and checklists include all items required by statute and regulations, and includes vegetation types typically responsible for ignitions and near misses
23b: How are procedures and checklists determined?	iii. Based on predictive modeling based on vegetation and equipment type, age, and condition and validated by independent experts	iii. Based on predictive modeling based on vegetation and equipment type, age, and condition and validated by independent experts	iii. Based on predictive modeling based on vegetation and equipment type, age, and condition and validated by independent experts
23c: At what level of granularity are the depth of checklists, training, and procedures customized?	v. At the asset level	v. At the asset level	v. At the asset level

Capability 24. Vegetation grow-in mitigation			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 1	By end of year 1 (current): 1	Planned state by end of cycle: 1 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
24a: How does utility clearance around lines and equipment perform relative to expected standards?	ii. Utility meet minimum statutory and regulatory clearances around all lines and equipment	ii. Utility meet minimum statutory and regulatory clearances around all lines and equipment	ii. Utility meet minimum statutory and regulatory clearances around all lines and equipment
24b: Does utility meet or exceed minimum statutory or regulatory clearances during all seasons?	ii. Yes	ii. Yes	ii. Yes
24c: What modeling is used to guide clearances around lines and equipment?	ii. Ignition and propagation risk modeling	ii. Ignition and propagation risk modeling	ii. Ignition and propagation risk modeling
24d: What biological modeling is used to guide clearance around lines and equipment	i. Species growth rates and species limb failure rates	i. Species growth rates and species limb failure rates	i. Species growth rates and species limb failure rates
24e: Are community organizations engaged in setting local clearances and protocols?	i. No	i. No	i. No
24f: Does the utility remove vegetation waste along its right of way across the entire grid?	ii. Yes	ii. Yes	ii. Yes
24g: How long after cutting vegetation does the utility remove vegetation waste along right of way?	iv. On the same day	iv. On the same day	iv. On the same day

24h: Does the utility work with local landowners to provide a cost-effective use for cutting vegetation?	i. No	i. No	i. No
24i: Does the utility work with partners to identify new cost-effective uses for vegetation, taking into consideration environmental impacts and emissions of vegetation waste?	i. No	i. No	i. No

Capability 25. Vegetation fall-in mitigation			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 0	By end of year 1 (current): 0	
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
25a: Does the utility have a process for treating vegetation outside of right of ways?	i. Utility does not remove vegetation outside of right of way	i. Utility does not remove vegetation outside of right of way	i. Utility does not remove vegetation outside of right of way
25b: How is potential vegetation that may pose a threat identified?	ii. Based on the height of trees with potential to make contact with electric lines and equipment	ii. Based on the height of trees with potential to make contact with electric lines and equipment	ii. Based on the height of trees with potential to make contact with electric lines and equipment
25c: Is vegetation removed with cooperation from the community?	i. No	i. No	i. No
25d: Does the utility remove vegetation waste outside its right of way across the entire grid?	i. No	i. No	i. No
25e: How long after cutting vegetation does the utility remove vegetation waste outside its right of way?	i. Not at all	i. Not at all	i. Not at all

25f: Does the utility work with local landowners to provide a cost-effective use for cutting vegetation?	i. No	i. No	i. No
25g: Does the utility work with partners to identify new cost-effective uses for vegetation, taking into consideration environmental impacts and emissions of vegetation waste?	i. No	i. No	i. No

Capability 26. QA/QC for vegetation management			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 3	By end of year 1 (current): 3	Planned state by end of cycle: 3 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
26a: How is contractor and employee activity audited?	iii. Through an established and demonstrably functioning audit process to manage and confirm work completed by subcontractors, where contractor activity is subject to semi-automated audits using technologies capable of sampling the contractor's work (e.g., LiDAR scans, photographic evidence)	iii. Through an established and demonstrably functioning audit process to manage and confirm work completed by subcontractors, where contractor activity is subject to semi-automated audits using technologies capable of sampling the contractor's work (e.g., LiDAR scans, photographic evidence)	iii. Through an established and demonstrably functioning audit process to manage and confirm work completed by subcontractors, where contractor activity is subject to semi-automated audits using technologies capable of sampling the contractor's work (e.g., LiDAR scans, photographic evidence)
26b: Do contractors follow the same processes and standards as utility's own employees?	ii. Yes	ii. Yes	ii. Yes

26c: How frequently is QA/QC information used to identify deficiencies in quality of work performance and inspections performance?	iv. Regularly	iv. Regularly	iv. Regularly
26d: How is work and inspections that do not meet utility-prescribed standards remediated?	iii. QA/QC information is used to identify systemic deficiencies in quality of work and inspections, and recommend training based on weaknesses	iii. QA/QC information is used to identify systemic deficiencies in quality of work and inspections, and recommend training based on weaknesses	iii. QA/QC information is used to identify systemic deficiencies in quality of work and inspections, and recommend training based on weaknesses
26e: Are workforce management software tools used to manage and confirm work completed by subcontractors?	ii. Yes	ii. Yes	ii. Yes

Category F. Grid operations and protocols

	Avg cycle start maturity: 1.8	Avg current maturity: 2.5	Avg projected cycle end maturity: 2.5
Capability 27. Protective equipment and device settings			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 0	By end of year 1 (current): 0	
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
27a: How are grid elements adjusted during high threat weather conditions?	i. Utility does not make changes to adjustable equipment in response to high wildfire threat conditions	i. Utility does not make changes to adjustable equipment in response to high wildfire threat conditions	i. Utility does not make changes to adjustable equipment in response to high wildfire threat conditions
27b: Is there an automated process for adjusting sensitivity of grid elements and evaluating effectiveness?	i. No automated process	i. No automated process	i. No automated process
27c: Is there a predetermined protocol driven by fire conditions for adjusting sensitivity of grid elements?	i. No	i. No	i. No

Capability 28. Incorporating ignition risk factors in grid control			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 4	By end of year 1 (current): 4	Planned state by end of cycle: 4 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
28a: Does the utility have a clearly explained process for determining whether to operate the grid beyond current or voltage designs?	ii. Yes	ii. Yes	ii. Yes
28b: Does the utility have systems in place to automatically track operation history including current, loads, and voltage throughout the grid at the circuit level?	ii. Yes	ii. Yes	ii. Yes
28c: Does the utility use predictive modeling to estimate the expected life and make equipment maintenance, rebuild, or replacement decisions based on grid operating history, and is that model reviewed?	iii. Modeling is used, and the model is evaluated by external experts and verified by historical data	iii. Modeling is used, and the model is evaluated by external experts and verified by historical data	iii. Modeling is used, and the model is evaluated by external experts and verified by historical data
28d: When does the utility operate the grid above rated voltage and current load?	iii. Never	iii. Never	iii. Never

Capability 29. PSPS op. model and consequence mitigation			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 2	By end of year 1 (current): 2	Planned state by end of cycle: 2 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
29a: How effective is PSPS event forecasting?	iv. PSPS event generally forecasted accurately with fewer than 25% of predictions being false positives	iv. PSPS event generally forecasted accurately with fewer than 25% of predictions being false positives	iv. PSPS event generally forecasted accurately with fewer than 25% of predictions being false positives
29b: What share of customers are communicated to regarding forecasted PSPS events?	v. PSPS event are communicated to >99.9% of affected customers and 100% of medical baseline customers in advance of PSPS action	v. PSPS event are communicated to >99.9% of affected customers and 100% of medical baseline customers in advance of PSPS action	v. PSPS event are communicated to >99.9% of affected customers and 100% of medical baseline customers in advance of PSPS action
29c: During PSPS events, what percent of customers complain?	iii. Less than 0.5%	iii. Less than 0.5%	iii. Less than 0.5%
29d: During PSPS events, does the utility's website go down?	i. No	i. No	i. No
29e: During PSPS events, what is the average downtime per customer?	v. Less than 0.1 hours	v. Less than 0.1 hours	v. Less than 0.1 hours
29f: Are specific resources provided to all affected customers to alleviate the impact of the power shutoff (e.g., providing backup generators, supplies, batteries, etc.)?	i. No	i. No	i. No

Capability 30. Protocols for PSPS initiation			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 2	By end of year 1 (current): 4	Planned state by end of cycle: 4 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
30a: Does the utility have explicit thresholds for activating a PSPS?	ii. Utility has explicit policies and explanation for the thresholds above which PSPS is activated as a measure of last resort	iii. Utility has explicit policies and explanation for the thresholds above which PSPS is activated, but maintains grid in sufficiently low risk condition to not require any PSPS activity, though may de-energize specific circuits upon detection of damaged condition of electrical lines and equipment, or contact with foreign objects	iii. Utility has explicit policies and explanation for the thresholds above which PSPS is activated, but maintains grid in sufficiently low risk condition to not require any PSPS activity, though may de-energize specific circuits upon detection of damaged condition of electrical lines and equipment, or contact with foreign objects
30b: Which of the following does the utility take into account when making PSPS decisions? Select all that apply	i. SME opinion ii. A partially automated system which recommends circuits for which PSPS should be activated and is validated by SMEs	i. SME opinion ii. A partially automated system which recommends circuits for which PSPS should be activated and is validated by SMEs	i. SME opinion ii. A partially automated system which recommends circuits for which PSPS should be activated and is validated by SMEs
30c: Under which circumstances does the utility de-energize circuits? Select all that apply.	i. Upon detection of damaged conditions of electric equipment ii. When circuit presents a safety risk to suppression or other personnel iii. When equipment has come into contact with foreign objects posing ignition risk	i. Upon detection of damaged conditions of electric equipment ii. When circuit presents a safety risk to suppression or other personnel iii. When equipment has come into contact with foreign objects posing ignition risk	i. Upon detection of damaged conditions of electric equipment ii. When circuit presents a safety risk to suppression or other personnel iii. When equipment has come into contact with foreign objects posing ignition risk

30d: Given the condition of the grid, with what probability does the utility expect any large scale PSPS events affecting more than 10,000 people to occur in the coming year?	i. Less than 5 % - Grid is in sufficiently low risk condition that PSPS events will not be required, and the only circuits which may require de-energization have sufficient redundancy that energy supply to customers will not be disrupted	i. Less than 5 % - Grid is in sufficiently low risk condition that PSPS events will not be required, and the only circuits which may require de-energization have sufficient redundancy that energy supply to customers will not be disrupted	i. Less than 5 % - Grid is in sufficiently low risk condition that PSPS events will not be required, and the only circuits which may require de-energization have sufficient redundancy that energy supply to customers will not be disrupted

Capability 31. Protocols for PSPS re-energization			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 1	By end of year 1 (current): 3	Planned state by end of cycle: 3 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
31a: Is there a process for inspecting de-energized sections of the grid prior to re-energization?	ii. Existing process for accurately inspecting de-energized sections of the grid prior to re-energization	iii. Existing process for accurately inspecting de-energized sections of the grid prior to re-energization, augmented with sensors and aerial tools	iii. Existing process for accurately inspecting de-energized sections of the grid prior to re-energization, augmented with sensors and aerial tools
31b: How automated is the process for inspecting de-energized sections of the grid prior to re-energization?	iii. Mostly automated (>=50%)	iii. Mostly automated (>=50%)	iii. Mostly automated (>=50%)
31c: What is the average amount of time that it takes you to re-energize your grid from a PSPS once weather has subsided to below your de-energization threshold?	v. Within 8 hours	v. Within 8 hours	v. Within 8 hours
31d: What level of understanding of probability of ignitions after PSPS events does the utility have across the grid?	i. No probability estimate of after event ignitions	ii. Some probability estimates exist	iii. Utility has accurate quantitative understanding of ignition risk following re-energization, by asset, validated by historical data and near misses

Capability 32. Ignition prevention and suppression			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 2	By end of year 1 (current): 2	Planned state by end of cycle: 2 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
32a: Does the utility have defined policies around the role of workers in suppressing ignitions?	iii. Utilities have explicit policies about the role of crews, including contractors and subcontractors, at the site of ignition	iii. Utilities have explicit policies about the role of crews, including contractors and subcontractors, at the site of ignition	iii. Utilities have explicit policies about the role of crews, including contractors and subcontractors, at the site of ignition
32b: What training and tools are provided to workers in the field?	iii. All criteria in option (ii) met; In addition, suppression tools and training to suppress small ignitions caused by workers or in immediate vicinity of workers are provided	iii. All criteria in option (ii) met; In addition, suppression tools and training to suppress small ignitions caused by workers or in immediate vicinity of workers are provided	iii. All criteria in option (ii) met; In addition, suppression tools and training to suppress small ignitions caused by workers or in immediate vicinity of workers are provided
32c: In the events where workers have encountered an ignition, have any Cal/OSHA reported injuries or fatalities occurred in in the last year?	i. No	i. No	i. No
32d: Does the utility provide training to other workers at other utilities and outside the utility industry on best practices to minimize, report and suppress ignitions?	i. No	i. No	i. No

Category G. Data governance

	Avg cycle start maturity: 0.3	Avg current maturity: 0.5	Avg projected cycle end maturity: 1.3
Capability 33. Data collection and curation			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 0	By end of year 1 (current): 0	Planned state by end of cycle: 2 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
33a: Does the utility have a centralized database of situational, operational, and risk data?	i. No	ii. Yes	ii. Yes
33b: Is the utility able to use advanced analytics on its centralized database of situational, operational, and risk data to make operational and investment decisions?	i. No	i. No	iii. Yes, for both short term and long-term decision making
33c: Does the utility collect data from all sensored portions of electric lines, equipment, weather stations, etc.?	ii. Yes	ii. Yes	ii. Yes
33d: Is the utility's database of situational, operational, and risk data able to ingest and share data using real-time API protocols with a wide variety of stakeholders?	i. No	i. No	i. No
33e: Does the utility identify highest priority additional data sources to improve decision making?	i. No	ii. Yes	iii. Yes, with plans to incorporate these into centralized database of situational, operational and risk data

33f: Does the utility share best practices for database management and use with other utilities in California and beyond?	i. No	i. No	i. No

Capability 34. Data transparency and analytics			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 0	By end of year 1 (current): 0	Planned state by end of cycle: 1 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
34a: Is there a single document cataloguing all fire-related data and algorithms, analyses, and data processes?	i. No	i. No	ii. Yes
34b: Is there an explanation of the sources, cleaning processes, and assumptions made in the single document catalog?	i. No	i. No	ii. Yes
34c: Are all analyses, algorithms, and data processing explained and documented?	i. Analyses, algorithms, and data processing are not documented	iii. Analyses, algorithms, and data processing are documented and explained	iii. Analyses, algorithms, and data processing are documented and explained
34d: Is there a system for sharing data in real time across multiple levels of permissions?	i. No system capable of sharing data in real time across multiple levels of permissions	i. No system capable of sharing data in real time across multiple levels of permissions	i. No system capable of sharing data in real time across multiple levels of permissions
34e: Are the most relevant wildfire related data algorithms disclosed?	i. No	iii. Yes, disclosed publicly in WMP upon request	iii. Yes, disclosed publicly in WMP upon request

Capability 35. Near-miss tracking			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 0	By end of year 1 (current): 1	Planned state by end of cycle: 1 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
35a: Does the utility track near miss data for all near misses with wildfire ignition potential?	i. No	ii. Yes	ii. Yes
35b: Based on near miss data captured, is the utility able to simulate wildfire potential given an ignition based on event characteristics, fuel loads, and moisture?	i. No	i. No	i. No
35c: Does the utility capture data related to the specific mode of failure when capturing near-miss data?	i. No	ii. Yes	ii. Yes
35d: Is the utility able to predict the probability of a near miss in causing an ignition based on a set of event characteristics?	i. No	i. No	i. No
35e: Does the utility use data from near misses to change grid operation protocols in real time?	i. No	i. No	i. No

Capability 36. Data sharing with research community			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 1	By end of year 1 (current): 1	Planned state by end of cycle: 1 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
36a: Does the utility make disclosures and share data?	ii. Utility makes required disclosures, but does not share data beyond what is required	ii. Utility makes required disclosures, but does not share data beyond what is required	ii. Utility makes required disclosures, but does not share data beyond what is required
36b: Does the utility in engage in research?	ii. Utility participates in collaborative research	ii. Utility participates in collaborative research	ii. Utility participates in collaborative research
36c: What subjects does utility research address?	ii. Utility ignited wildfires and risk reduction initiatives	ii. Utility ignited wildfires and risk reduction initiatives	ii. Utility ignited wildfires and risk reduction initiatives
36d: Does the utility promote best practices based on latest independent scientific and operational research?	ii. Yes	ii. Yes	ii. Yes

Category H. Resource allocation methodology

	Avg cycle start maturity: 0.3	Avg current maturity: 0.3	Avg projected cycle end maturity: 0.3
Capability 37. Scenario analysis across different risk levels			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 1	By end of year 1 (current): 1	Planned state by end of cycle: 1 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
37a: For what risk scenarios is the utility able to provide projected cost and total risk reduction potential?	ii. Utility provides an accurate high-risk reduction and low risk reduction scenario, and the projected cost and total risk reduction potential	ii. Utility provides an accurate high-risk reduction and low risk reduction scenario, and the projected cost and total risk reduction potential	ii. Utility provides an accurate high-risk reduction and low risk reduction scenario, and the projected cost and total risk reduction potential
37b: For what level of granularity is the utility able to provide projections for each scenario?	0	0	0
37c: Does the utility include a long term (e.g., 6-10 year) risk estimate taking into account macro factors (climate change, etc.) as well as planned risk reduction initiatives in its scenarios?	i. No	i. No	i. No
37d: Does the utility provide an estimate of impact on reliability factors in its scenarios?	i. No	i. No	ii. Yes

Capability 38. Presentation of relative risk spend efficiency for portfolio of initiatives			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 0	By end of year 1 (current): 0	
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
38a: Does the utility present accurate qualitative rankings for its initiatives by risk spend efficiency?	i. No	i. No	i. No
38b: What initiatives are captured in the ranking of risk spend efficiency?	iv. None of the above	iv. None of the above	iv. None of the above
38c: Does the utility include figures for present value cost and project risk reduction impact of each initiative, clearly documenting all assumptions (e.g. useful life, discount rate, etc.)?	i. No	i. No	i. No
38d: Does the utility provide an explanation of their investment in each particular initiative?	i. No	i. No	i. No
38e: At what level of granularity is the utility able to provide risk efficiency figures?	0	0	0

Capability 39. Process for determining risk spend efficiency of vegetation management initiatives			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 0	By end of year 1 (current): 0	

Responses to survey questions

Survey questions and the utility's responses are shown below

Question	Start of cycle	By end of year 1 (current)	Planned state by end of cycle
39a: How accurate of a risk spend efficiency calculation can the utility provide?	i. Utility has no clear understanding of the relative risk spend efficiency of various clearances and types of vegetation management initiatives	i. Utility has no clear understanding of the relative risk spend efficiency of various clearances and types of vegetation management initiatives	i. Utility has no clear understanding of the relative risk spend efficiency of various clearances and types of vegetation management initiatives
39b: At what level can estimates be prepared?	i. Less granular than regional, or not at all	i. Less granular than regional, or not at all	i. Less granular than regional, or not at all
39c: How frequently are estimates updated?	i. Never	i. Never	i. Never
39d: What vegetation management initiatives does the utility include within its evaluation?	i. None	i. None	i. None
39e: Can the utility evaluate risk reduction synergies from combination of various initiatives?	i. No	i. No	i. No

Capability 40. Process for determining risk spend efficiency of system hardening initiatives			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 0	By end of year 1 (current): 0	
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
40a: How accurate of a risk spend efficiency calculation can the utility provide?	i. Utility has no clear understanding on the relative risk spend efficiency of hardening initiatives	i. Utility has no clear understanding on the relative risk spend efficiency of hardening initiatives	i. Utility has no clear understanding on the relative risk spend efficiency of hardening initiatives
40b: At what level can estimates be prepared?	i. Less granular than regional, or not at all	i. Less granular than regional, or not at all	i. Less granular than regional, or not at all
40c: How frequently are estimates updated?	i. Never	i. Never	i. Never
40d: What grid hardening initiatives are included in the utility risk spend efficiency analysis?	i. None	i. None	i. None
40e: Can the utility evaluate risk reduction effects from the combination of various initiatives?	i. No	i. No	i. No

Capability 41. Portfolio-wide initiative allocation methodology			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 0	By end of year 1 (current): 0	

Responses to survey questions

Survey questions and the utility's responses are shown below

Question	Start of cycle	By end of year 1 (current)	Planned state by end of cycle
41a: To what extent does the utility allocate capital to initiatives based on risk-spend efficiency (RSE)?	i. Utility does not base capital allocation on RSE	i. Utility does not base capital allocation on RSE	i. Utility does not base capital allocation on RSE
41b: What information does the utility take into account when generating RSE estimates?	iii. Specific information by initiative at the asset level, including state of specific assets and location where initiative will be implemented	iii. Specific information by initiative at the asset level, including state of specific assets and location where initiative will be implemented	iii. Specific information by initiative at the asset level, including state of specific assets and location where initiative will be implemented
41c: How does the utility verify RSE estimates?	i. Utility does not verify RSE estimates	i. Utility does not verify RSE estimates	i. Utility does not verify RSE estimates
41d: Does the utility take into consideration impact on safety, reliability, and other priorities when making spending decisions?	ii. Yes	ii. Yes	ii. Yes

Capability 42. Portfolio-wide innovation in new wildfire initiatives			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 1	By end of year 1 (current): 1	Planned state by end of cycle: 1 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
42a: How does the utility develop and evaluate the efficacy of new wildfire initiatives?	ii. Utility uses pilots and measures direct reduction in ignition events	ii. Utility uses pilots and measures direct reduction in ignition events	ii. Utility uses pilots and measures direct reduction in ignition events
42b: How does the utility develop and evaluate the risk spend efficiency of new wildfire initiatives?	i. No program in place	i. No program in place	i. No program in place
42c: At what level of granularity does the utility measure the efficacy of new wildfire initiatives?	0	0	0
42d: Are the reviews of innovative initiatives audited by independent parties?	i. No	i. No	i. No
42e: Does the utility share the findings of its evaluation of innovative initiatives with other utilities, academia, and the general public?	i. No	i. No	i. No

Category I. Emergency planning and preparedness

	Avg cycle start maturity: 0.6	Avg current maturity: 1.2	Avg projected cycle end maturity: 1.2
Capability 43. Wildfire plan integrated with overall disaster/ emergency plan			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 0	By end of year 1 (current): 1	Planned state by end of cycle: 1 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
43a: Is the wildfire plan integrated with overall disaster and emergency plans?	ii. Wildfire plan is a component of overall plan	ii. Wildfire plan is a component of overall plan	ii. Wildfire plan is a component of overall plan
43b: Does the utility run drills to audit the viability and execution of its wildfire plans?	i. No	ii. Yes	ii. Yes
43c: Is the impact of confounding events or multiple simultaneous disasters considered in the planning process?	ii. Yes	ii. Yes	ii. Yes
43d: Is the plan integrated with disaster and emergency preparedness plans of other relevant stakeholders (e.g., CAL FIRE, Fire Safe Councils, etc.)?	ii. Yes	ii. Yes	ii. Yes
43e: Does the utility take a leading role in planning, coordinating, and integrating plans across stakeholders?	ii. Yes	ii. Yes	ii. Yes

Capability 44. Plan to restore service after wildfire related outage			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 1	By end of year 1 (current): 1	Planned state by end of cycle: 1 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
44a: Are there detailed and actionable procedures in place to restore service after a wildfire related outage?	ii. Yes	ii. Yes	ii. Yes
44b: Are employee and subcontractor crews trained in, and aware of, plans?	ii. Yes	ii. Yes	ii. Yes
44c: To what level are procedures to restore service after a wildfire-related outage customized?	0	0	0
44d: Is the customized procedure to restore service based on topography, vegetation, and community needs?	i. No	i. No	i. No
44e: Is there an inventory of high risk spend efficiency resources available for repairs?	i. No	ii. Yes	ii. Yes
44f: Is the wildfire plan integrated with overall disaster and emergency plans?	ii. Wildfire plan is a component of overall plan	ii. Wildfire plan is a component of overall plan	ii. Wildfire plan is a component of overall plan

Capability 45. Emergency community engagement during and after wildfire			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 0	By end of year 1 (current): 0	
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
45a: Does the utility provide clear and substantially complete communication of available information relevant to affected customers?	i. No	i. No	i. No
45b: What percent of affected customers receive complete details of available information?	i. <=95% of customers	i. <=95% of customers	i. <=95% of customers
45c: What percent of affected medical baseline customers receive complete details of available information?	i. <=99%	i. <=99%	i. <=99%
45d: How does the utility assist where helpful with communication of information related to power outages to customers?	iii. None of the above	iii. None of the above	iii. None of the above
45e: How does the utility with engage other emergency management agencies during emergency situations?	iii. Utility has detailed and actionable established protocols for engaging with emergency management organizations	iii. Utility has detailed and actionable established protocols for engaging with emergency management organizations	iii. Utility has detailed and actionable established protocols for engaging with emergency management organizations
45f: Does the utility communicate and coordinate resources to communities during emergencies (e.g., shelters, supplies, transportation etc.)?	i. No	i. No	i. No

Capability 46. Protocols in place to learn from wildfire events			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 2	By end of year 1 (current): 4	Planned state by end of cycle: 4 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
46a: Is there a protocol in place to record the outcome of emergency events and to clearly and actionably document learnings and potential process improvements?	ii. Yes	ii. Yes	ii. Yes
46b: Is there a defined process and staff responsible for incorporating learnings into emergency plan?	ii. Yes	ii. Yes	ii. Yes
46c: Once updated based on learnings and improvements, is the updated plan tested using "dry runs" to confirm its effectiveness?	i. No	ii. Yes	ii. Yes
46d: Is there a defined process to solicit input from a variety of other stakeholders and incorporate learnings from other stakeholders into the emergency plan?	ii. Yes	ii. Yes	ii. Yes

Capability 47. Processes for continuous improvement after wildfire and PSPS			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 0	By end of year 1 (current): 0	
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
47a: Does the utility conduct an evaluation or debrief process after a wildfire?	ii. Yes	ii. Yes	ii. Yes
47b: Does the utility conduct a customer survey and utilize partners to disseminate requests for stakeholder engagement?	ii. One or the other	i. No	i. No
47c: In what other activities does the utility engage?	iii. Debriefs with partners	iii. Debriefs with partners	iii. Debriefs with partners
47d: Does the utility share with partners findings about what can be improved?	ii. Yes	ii. Yes	ii. Yes
47e: Are feedback and recommendations on potential improvements made public?	i. No	i. No	i. No
47f: Does the utility conduct proactive outreach to local agencies and organizations to solicit additional feedback on what can be improved?	ii. Yes	ii. Yes	ii. Yes
47g: Does the utility have a clear plan for post-event listening and incorporating lessons learned from all stakeholders?	i. No	i. No	ii. Yes

47h: Does the utility track the implementation of recommendations and report upon their impact?	i. No	ii. Yes	ii. Yes
47i: Does the utility have a process to conduct reviews after wildfires in other the territory of other utilities and states to identify and address areas of improvement?	i. No	i. No	i. No

Category J. Stakeholder cooperation and community engagement

	Avg cycle start maturity: 1.4	**Avg current maturity: 1.6**	**Avg projected cycle end maturity: 2.2**
Capability 48. Cooperation and best practice sharing with other utilities			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 1	By end of year 1 (current): 1	Planned state by end of cycle: 4 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
48a: Does the utility actively work to identify best practices from other utilities through a clearly defined operational process?	iii. Yes, from other global utilities	iii. Yes, from other global utilities	iii. Yes, from other global utilities
48b: Does the utility successfully adopt and implement best practices identified from other utilities?	ii. Yes	ii. Yes	ii. Yes
48c: Does the utility seek to share best practices and lessons learned in a consistent format?	i. No	i. No	ii. Yes

48d: Does the utility share best practices and lessons via a consistent and predictable set of venues/media?	i. No	i. No	ii. Yes
48e: Does the utility participate in annual benchmarking exercises with other utilities to find areas for improvement?	i. No	i. No	ii. Yes
48f: Has the utility implemented a defined process for testing lessons learned from other utilities to ensure local applicability?	i. No	i. No	ii. Yes

Capability 49. Engagement with communities on utility wildfire mitigation initiatives			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 3	By end of year 1 (current): 3	Planned state by end of cycle: 3 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
49a: Does the utility have a clear and actionable plan to develop or maintain a collaborative relationship with local communities?	ii. Yes	ii. Yes	ii. Yes
49b: Are there communities in HFTD areas where meaningful resistance is expected in response to efforts to mitigate fire risk (e.g. vegetation clearance)?	i. No	i. No	i. No

49c: What percent of landowners are non-compliant with utility initiatives (e.g., vegetation management)?	v. Less than 0.5%	v. Less than 0.5%	v. Less than 0.5%
49d: What percent of landowners complain about utility initiatives (e.g., vegetation management)?	iv. Less than 1 %	v. Less than 0.5%	v. Less than 0.5%
49e: Does the utility have a demonstratively cooperative relationship with communities containing >90% of the population in HFTD areas (e.g. by being recognized by other agencies as having a cooperative relationship with those communities in HFTD areas)?	ii. Yes	ii. Yes	ii. Yes
49f: Does utility have records of landowners throughout communities containing >90% of the population in HFTD areas reaching out to notify of risks, dangers or issues in the past year?	i. No	i. No	i. No

Capability 50. Engagement with LEP and AFN populations			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 0	By end of year 1 (current): 0	
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
50a: Can the utility provide a plan to partner with organizations representing Limited English Proficiency (LEP) and Access & Functional Needs (AFN) communities?	i. No	i. No	i. No
50b: Can the utility outline how these partnerships create pathways for implementing suggested activities to address the needs of these communities?	i. No	i. No	i. No
50c: Can the utility point to clear examples of how those relationships have driven the utility's ability to interact with and prepare LEP & AFN communities for wildfire mitigation activities?	i. No	i. No	i. No
50d: Does the utility have a specific annually-updated action plan further reduce wildfire and PSPS risk to LEP & AFN communities?	i. No	i. No	i. No

Capability 51. Collaboration with emergency response agencies			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 2	By end of year 1 (current): 2	Planned state by end of cycle: 2 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
51a: What is the cooperative model between the utility and suppression agencies?	iii. Utility cooperates with suppression agencies by working cooperatively with them to detect ignitions, in addition to notifying them of ignitions as needed	iii. Utility cooperates with suppression agencies by working cooperatively with them to detect ignitions, in addition to notifying them of ignitions as needed	iii. Utility cooperates with suppression agencies by working cooperatively with them to detect ignitions, in addition to notifying them of ignitions as needed
51b: In what areas is the utility cooperating with suppression agencies	ii. All areas under utility control	ii. All areas under utility control	ii. All areas under utility control
51c: Does the utility accurately predict and communicate the forecasted fire propagation path using available analytics resources and weather data?	i. No	i. No	i. No
51d: Does the utility communicate fire paths to the community as requested?	i. No	i. No	i. No
51e: Does the utility work to assist suppression crews logistically, where possible?	ii. Yes	ii. Yes	ii. Yes

Capability 52. Collaboration on wildfire mitigation planning with stakeholders			
Capability maturity level based on Maturity Rubric (0 - 4)	Start of cycle: 1	By end of year 1 (current): 2	Planned state by end of cycle: 2 (projected)
Responses to survey questions Survey questions and the utility's responses are shown below			
Question	**Start of cycle**	**By end of year 1 (current)**	**Planned state by end of cycle**
52a: Where does the utility conduct substantial fuel management?	ii. Utility conducts fuel management along rights of way	ii. Utility conducts fuel management along rights of way	ii. Utility conducts fuel management along rights of way
52b: Does the utility engage with other stakeholders as part of its fuel management efforts?	i. Utility does not coordinate with broader fuel management efforts by other stakeholders	iii. Utility shares fuel management plans with other stakeholders and works with other stakeholders conducting fuel management concurrently	iii. Utility shares fuel management plans with other stakeholders and works with other stakeholders conducting fuel management concurrently
52c: Does the utility cultivate a native vegetative ecosystem across territory that is consistent with lower fire risk?	ii. Yes	ii. Yes	ii. Yes
52d: Does the utility fund local groups (e.g., fire safe councils) to support fuel management?	ii. Yes	ii. Yes	ii. Yes

12.1.4. HWT: Numerical maturity summary

Please reference the Guidance Resolution for the Maturity Rubric and for necessary context to interpret the levels shown below. **All levels are based solely on the Maturity Rubric and on HWT's responses to the Utility Wildfire Mitigation Maturity Survey ("Survey").**

Start: Score reported in February 2020; **Current:** Score reported in February 2021; **End:** Score reported in February 2021 projected for February 2023

Category	Capability 1	Capability 2	Capability 3	Capability 4	Capability 5	Capability 6
A. Risk Assessment and Mapping	1. Climate scenario modeling	2. Ignition risk estimation	3. Estimation of wildfire consequences for communities	4. Estimation of wildfire and PSPS risk-reduction impact	5. Risk maps and simulation algorithms	

	Start: 0 Current: 0 End: 2	Start: 1 Current: 1 End: 1	Start: 0 Current: 0 End: 0	Start: 2 Current: 2 End: 2	Start: 0 Current: 1 End: 1
B. Situational Awareness and Forecasting	6. Weather variables collected	7. Weather data resolution	8. Weather forecasting ability	9. External sources used in weather forecasting	10. Wildfire detection processes and capabilities
	Start: 1 Current: 2 End: 2	Start: 1 Current: 3 End: 3	Start: 0 Current: 2 End: 2	Start: 1 Current: 2 End: 2	Start: 2 Current: 2 End: 2
C. Grid design and system hardening	11. Approach to prioritizing initiatives across territory	12. Grid design for minimizing ignition risk	13. Grid design for resiliency and minimizing PSPS	14. Risk-based grid hardening and cost efficiency	15. Grid design and asset innovation
	Start: 2 Current: 4 End: 4	Start: 1 Current: 3 End: 3	Start: 0 Current: 0 End: 0	Start: 1 Current: 4 End: 4	Start: 1 Current: 1 End: 1
D. Asset management and inspections	16. Asset inventory and condition assessments	17. Asset inspection cycle	18. Asset inspection effectiveness	19. Asset maintenance and repair	20. QA/QC for asset management
	Start: 1 Current: 2 End: 2	Start: 1 Current: 1 End: 1	Start: 2 Current: 2 End: 2	Start: 4 Current: 4 End: 4	Start: 2 Current: 2 End: 2
E. Vegetation management and inspections	21. Vegetation inventory and condition assessments	22. Vegetation inspection cycle	23. Vegetation inspection effectiveness	24. Vegetation grow-in mitigation	25. Vegetation fall-in mitigation	26. QA/QC for vegetation management
	Start: 0 Current: 0 End: 0	Start: 2 Current: 2 End: 2	Start: 3 Current: 3 End: 3	Start: 1 Current: 1 End: 1	Start: 0 Current: 0 End: 0	Start: 3 Current: 3 End: 3
F. Grid operations and protocols	27. Protective equipment and device settings	28. Incorporating ignition risk factors in grid control	29. PSPS op. model and consequence mitigation	30. Protocols for PSPS initiation	31. Protocols for PSPS re-energization	32. Ignition prevention and suppression
	Start: 0 Current: 0 End: 0	Start: 4 Current: 4 End: 4	Start: 2 Current: 2 End: 2	Start: 2 Current: 4 End: 4	Start: 1 Current: 3 End: 3	Start: 2 Current: 2 End: 2
G. Data governance	33. Data collection and curation	34. Data transparency and analytics	35. Near-miss tracking	36. Data sharing with research community		
	Start: 0 Current: 0 End: 2	Start: 0 Current: 0 End: 1	Start: 0 Current: 1 End: 1	Start: 1 Current: 1 End: 1		
H. Resource allocation methodology	37. Scenario analysis across different risk levels	38. Presentation of relative risk spend efficiency for portfolio of initiatives	39. Process for determining risk spend efficiency of vegetation management initiatives	40. Process for determining risk spend efficiency of system hardening initiatives	41. Portfolio-wide initiative allocation methodology	42. Portfolio-wide innovation in new wildfire initiatives
	Start: 1 Current: 1 End: 1	Start: 0 Current: 0 End: 0	Start: 0 Current: 0 End: 0	Start: 0 Current: 0 End: 0	Start: 0 Current: 0 End: 0	Start: 1 Current: 1 End: 1
I. Emergency planning and preparedness	43. Wildfire plan integrated with overall disaster/ emergency plan	44. Plan to restore service after wildfire related outage	45. Emergency community engagement during and after wildfire	46. Protocols in place to learn from wildfire events	47. Processes for continuous improvement after wildfire and PSPS
	Start: 0 Current: 1 End: 1	Start: 1 Current: 1 End: 1	Start: 0 Current: 0 End: 0	Start: 2 Current: 4 End: 4	Start: 0 Current: 0 End: 0
J. Stakeholder cooperation and community engagement	48. Cooperation and best practice sharing with other utilities	49. Engagement with communities on utility wildfire mitigation initiatives	50. Engagement with LEP and AFN populations	51. Collaboration with emergency response agencies	52. Collaboration on wildfire mitigation planning with stakeholders
	Start: 1 Current: 1 End: 4	Start: 3 Current: 3 End: 3	Start: 0 Current: 0 End: 0	Start: 2 Current: 2 End: 2	Start: 1 Current: 2 End: 2