

**Horizon West Transmission, LLC  
WILDFIRE MITIGATION PLAN 2021**

*for Submittal to:*

**CALIFORNIA PUBLIC UTILITIES COMMISSION**  
505 Van Ness Avenue  
San Francisco, California 94102



One California Street, Suite 1600  
San Francisco, California 94111

**MARCH 2021**

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## ATTACHMENTS

- Attachment A (Confidential):** Persons Responsible for Executing the WMP
- Attachment B:** HWT’s Quarterly Report on 2020 WMP for Q4 2020
- Attachment C (Confidential):** Emergency Operations Plan

## 0 GLOSSARY OF DEFINED TERMS

Term	Definition
<b>10-hour dead fuel moisture content</b>	Moisture content of small dead vegetation (e.g. grass, leaves, which burn quickly but not intensely), which can respond to changes in atmospheric moisture content within 10 hours.
<b>Access and functional needs populations</b>	Per Government Code § 8593.3 and D.19-05-042, individuals who have developmental or intellectual disabilities, physical disabilities, chronic conditions, injuries, limited English proficiency or who are non-English speaking, older adults, children, people living in institutionalized settings, or those who are low income, homeless, or transportation disadvantaged, including, but not limited to, those who are dependent on public transit or those who are pregnant.
<b>Authority Having Jurisdiction</b>	AHJ, party with assigned responsibility, depending on location and circumstance.
<b>Asset (utility)</b>	Electric lines, equipment, or supporting hardware.
<b>At-risk species</b>	Species of vegetation that are particularly likely to contact power lines in the event of high winds and/or ignite if they catch a spark.
<b>Baseline (ignition probability, maturity)</b>	A measure, typically of the current state, to establish a starting point for comparison.
<b>Carbon dioxide equivalent</b>	Tons of greenhouse gases (GHG) emitted, multiplied by the global warming potential relative to carbon dioxide.
<b>Circuit mile</b>	The total length in miles of separate circuits regardless of the number of conductors used per circuit
<b>Contractor</b>	Any individual in the temporary and/or indirect employ of the utility whose limited hours and/or time-bound term of employment are not considered as “full-time” for tax and/or any other purposes.
<b>Critical facilities and infrastructure</b>	<p>For brevity in the 2021 WMP, “critical facilitates and infrastructure” may be shortened to “critical infrastructure” and/or “critical facilities” throughout the WMP. Critical facilities and infrastructure is defined in accordance with the definition adopted in D.19-05-042 and modified in D.20-05-051: those facilities and infrastructure that are essential to the public safety and that require additional assistance and advance planning to ensure resiliency during de energization events. Namely:</p> <ul style="list-style-type: none"> <li>• Emergency Services Sector <ul style="list-style-type: none"> <li>○ Police Stations</li> <li>○ Fire Station</li> <li>○ Emergency Operations Centers</li> <li>○ Public safety answering points</li> </ul> </li> <li>• Government Facilities Sector <ul style="list-style-type: none"> <li>○ Schools</li> <li>○ Jails and prisons</li> </ul> </li> </ul>

Term	Definition
	<ul style="list-style-type: none"> <li>• Healthcare and Public Health Sector <ul style="list-style-type: none"> <li>○ Public Health Departments</li> <li>○ Medical facilities, including hospitals, skilled nursing facilities, nursing homes, blood banks, health care facilities, dialysis centers and hospice facilities (excluding doctor offices and other non-essential medical facilities)</li> </ul> </li> <li>• Energy Sector <ul style="list-style-type: none"> <li>○ Public and private utility facilities vital to maintaining or restoring normal service, including, but not limited to, interconnected publicly-owned utilities and electric cooperatives</li> </ul> </li> <li>• Water and Wastewater Systems Sector <ul style="list-style-type: none"> <li>○ Facilities associated with the provision of drinking water or processing of wastewater including facilities used to pump, divert, transport, store, treat and deliver water or wastewater</li> </ul> </li> <li>• Communications Sector <ul style="list-style-type: none"> <li>○ Communication carrier infrastructure including selective routers, central offices, head ends, cellular switches, remote terminals and cellular sites</li> </ul> </li> <li>• Chemical Sector <ul style="list-style-type: none"> <li>○ Facilities associated with the provision of manufacturing, maintaining, or distributing hazardous materials and chemicals (including Category N-Customers as defined in D.01-06-085)</li> </ul> </li> <li>• Transportation Sector <ul style="list-style-type: none"> <li>○ Facilities associated with automobile, rail, aviation, major public transportation, and maritime transportation for civilian and military purposes</li> </ul> </li> </ul>
<b>Customer hours</b>	Total number of customers, multiplied by the average number of hours (e.g. of power outage).
<b>Data cleaning</b>	Calibrating raw data to remove errors (including typographical and numerical mistakes).
<b>Dead fuel moisture content</b>	Moisture content of dead vegetation, which responds solely to current environmental conditions and is critical in determining fire potential.
<b>Detailed inspection</b>	In accordance with GO 165, an inspection where individual pieces of equipment and structures are carefully examined, visually and through use of routine diagnostic test, as appropriate, and (if

Term	Definition
	practical and if useful information can be so gathered) opened, and the condition of each rated and recorded.
<b>Enhanced inspection</b>	Inspection whose frequency and thoroughness exceeds the requirements of the detailed inspection, particularly if driven by risk calculations.
<b>Evacuation impact</b>	Number of people evacuated, with the duration for which they are evacuated, from homes and businesses, due to wildfires.
<b>Evacuation zone</b>	Areas designated by CAL FIRE and local fire agency evacuation orders, to include both “voluntary” and “mandatory” in addition to other orders such as “precautionary” and “immediate threat”.
<b>Fuel density</b>	Mass of fuel (vegetation) per area which could combust in a wildfire.
<b>Fuel management</b>	Removing or thinning vegetation to reduce the potential rate of propagation or intensity of wildfires.
<b>Fuel moisture content</b>	Amount of moisture in a given mass of fuel (vegetation), measured as a percentage of its dry weight.
<b>Full-time employee</b>	Any individual in the ongoing and/or direct employ of the utility whose hours and/or term of employment are considered as “full-time” for tax and/or any other purposes.
<b>GO 95 nonconformance</b>	Condition of a utility asset that does not meet standards established by General Order 95.
<b>Greenhouse gas (GHG) emissions</b>	Health and Safety Code 38505 identifies seven greenhouse gases that ARB is responsible to monitor and regulate in order to reduce emissions: carbon dioxide (CO <sub>2</sub> ), methane (CH <sub>4</sub> ), nitrous oxide (N <sub>2</sub> O), sulfur hexafluoride (SF <sub>6</sub> ), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and nitrogen trifluoride (NF <sub>3</sub> ).
<b>Grid hardening</b>	Actions (such as equipment upgrades, maintenance, and planning for more resilient infrastructure) taken in response to the risk of undesirable events (such as outages) or undesirable conditions of the electrical system in order to reduce or mitigate those events and conditions, informed by an assessment of the relevant risk drivers or factors.
<b>Grid topology</b>	General design of an electric grid, whether looped or radial, with consequences for reliability and ability to support de-energization (e.g., being able to deliver electricity from an additional source).
<b>High Fire Threat District (HFTD)</b>	Per D.17-01-009, areas of the State designated by the CPUC and CAL FIRE to have elevated wildfire risk, indicating where utilities must take additional action (per GO 95, GO 165, and GO 166) to mitigate wildfire risk.
<b>Highly rural region</b>	In accordance with 38 CFR 17.701, “highly rural” shall be defined as those areas with a population of less than 7 persons per square mile.

Term	Definition
	For the purposes of the WMP, “area” shall be defined as census tracts.
<b>High Wind Warning (HWW)</b>	Level of wind risk from weather conditions, as declared by the National Weather Service (NWS). For historical NWS data, refer to the Iowa State University Iowa archive of NWS watch / warnings. <sup>1</sup>
<b>HWW overhead (OH) Circuit Mile Day</b>	Sum of overhead circuit miles of utility grid subject to High Wind Warnings (HWW, as defined by the National Weather Service) each day within a given time period, calculated as the number of overhead circuit miles that were under an HWW multiplied by the number of days those miles were under said HWW. For example, if 100 overhead circuit miles were under an HWW for 1 day, and 10 of those miles were under HWW for an additional day, then the total HWW OH circuit mile days would be 110.
<b>Ignition probability</b>	The relative possibility that an ignition will occur, probability is quantified as a number between 0% and 100% (where 0% indicates impossibility and 100% indicates certainty). The higher the probability of an event, the more certainty there is that the event will occur. (Often informally referred to as likelihood or chance).
<b>Ignition-related deficiency</b>	Any condition which may result in ignition or has previously resulted in ignition, even if not during the past five years.
<b>Impact/consequence of ignitions</b>	The effect or outcome of a wildfire ignition, affecting objectives, which may be expressed by terms including, although not limited to health, safety, reliability, economic and/or environmental damage.
<b>Initiative</b>	Measure or activity proposed or in process designed to reduce the consequences and/or probability of wildfire or PSPS.
<b>Inspection protocol</b>	Documented procedures to be followed in order to validate that a piece of equipment is in good condition and expected to operate safely and effectively.
<b>Invasive species</b>	Non-native species whose proliferation increases the risk of wildfires.
<b>Level 1 finding</b>	In accordance with GO 95, an immediate safety and/or reliability risk with high probability for significant impact.
<b>Level 2 finding</b>	In accordance with GO 95, a variable (non-immediate high to low) safety and/or reliability risk.
<b>Level 3 finding</b>	In accordance with GO 95, an acceptable safety and/or reliability risk.
<b>Life expectancy</b>	Anticipated years that a piece of equipment can be expected to meet safety and performance requirements.

<sup>1</sup> <https://mesonet.agron.iastate.edu/request/gis/watchwarn.phtml>



Term	Definition
<b>Limited English Proficiency (LEP)</b>	Populations with limited English working proficiency based on the International Language Roundtable scale.
<b>Line miles</b>	The number of miles of transmission and/or distribution line. Differs from circuit miles because individual circuits, such as the two circuits of a double-circuit line, are not counted separately in circuit miles but are counted as separate total miles of line.
<b>Live fuel moisture content</b>	Moisture content within living vegetation, which can retain water longer than dead fuel.
<b>Lost energy</b>	Energy that would have been delivered were it not for an outage.
<b>Major roads</b>	Interstate highways, U.S. highways, state and county routes.
<b>Match drop simulation</b>	Wildfire simulation method that takes an arbitrary ignition and forecasts propagation and consequence/impact.
<b>Member of the public</b>	Any individual not employed by the utility.
<b>Multi-attribute value function</b>	Risk calculation methodology introduced during CPUC's S-MAP and RAMP proceedings.
<b>Near miss</b>	Previously used to define an event with probability of ignition. Redefined under "Risk event."
<b>Need for PSPS</b>	When utilities' criteria for utilizing PSPS are met.
<b>Noncompliant clearance</b>	Rights-of-way whose vegetation is not trimmed in accordance with the requirements of GO 95.
<b>Outages of the type that could ignite a wildfire</b>	Outages that, in the judgement of the utility, could have ignited a wildfire.
<b>Outcome metrics</b>	Measurements of the performance of the utility and its service territory in terms of both leading and lagging indicators of wildfire, PSPS, and other consequences of wildfire risk, including the potential unintended consequences of wildfire mitigation work, such as acreage burned by utility-ignited wildfire.
<b>Overcapacity</b>	When the energy transmitted by utility equipment exceeds that of its nameplate capacity.
<b>Patrol inspection</b>	In accordance with GO 165, a simple visual inspection of applicable utility equipment and structures that is designed to identify obvious structural problems and hazards. Patrol inspections may be carried out in the course of other company business.
<b>Percentile conditions</b>	Top X% of a particular set (e.g. wind speed), based on a historical data set with sufficient detail. For example, "Top 95 percentile wind speeds in the last 5 years" would refer to the 5% of avg daily wind speeds recorded by each weather station. If 1,000 weather stations recorded average daily wind speeds over 10 days, then the 95 <sup>th</sup> percentile wind speed would be the top 5% of weather station-days.

Term	Definition
	In this example, there will be 10 days each with 1,000 weather station reports and a total of 10,000 weather station-days, so 50 observations will be in the top 5%. The lowest wind speed in this top 5% would be the “95 <sup>th</sup> percentile wind speed”.
<b>Planned outage</b>	Electric outage announced ahead of time by the utility.
<b>Preventive maintenance (PM)</b>	The practice of maintaining equipment on a regular schedule, based on risk, elapsed time, run-time meter readings, or number of operations. The intent of PM is to “prevent” maintenance problems or failures before they take place by following routine and comprehensive maintenance procedures. The goal is to achieve fewer, shorter, and more predictable outages.
<b>Priority essential services</b>	Critical first responders, public safety partners, critical facilities and infrastructure, operators of telecommunications infrastructure, and water utilities/agencies.
<b>Program targets</b>	Quantifiable measurements of activity identified in WMPs and subsequent updates used to show progress towards reaching the objectives, such as number of trees trimmed or miles of power lines hardened.
<b>Progress metrics</b>	Measurements that track how much utility wildfire mitigation activity has changed the conditions of utility wildfire risk exposure or utility ability to manage wildfire risk exposure, in terms of leading indicators of ignition probability and wildfire consequences.
<b>Property</b>	Private and public property, buildings and structures, infrastructure, and other items of value that were destroyed by wildfire, including both third-party property and utility assets.
<b>Public Safety Power Shutoff (PSPS) event</b>	Defined as the time period from the first public safety partner notified of a planned public safety de-energization to the final customer re-energized.
<b>PSPS risk</b>	The potential for the occurrence of a PSPS event expressed in terms of a combination of various outcomes of the event and their associated probabilities.
<b>PSPS weather</b>	Weather that exceeds a utility's risk threshold for initiating a PSPS.
<b>Red Flag Warning (RFW)</b>	Level of wildfire risk from weather conditions, as declared by the National Weather Service. For historical NWS data, refer to the Iowa State University Iowa archive of NWS watch / warnings. <sup>2</sup>
<b>RFW Overhead (OH) Circuit Mile Day</b>	Sum of overhead circuit miles of utility grid subject to Red Flag Warning each day within a given time period, calculated as the number of overhead circuit miles that were under an RFW multiplied by the number of days those miles were under said RFW. For

<sup>2</sup> <https://mesonet.agron.iastate.edu/request/gis/watchwarn.phtml>

Term	Definition
	example, if 100 overhead circuit miles were under an RFW for 1 day, and 10 of those miles were under RFW for an additional day, then the total RFW OH circuit mile days would be 110.
<b>Risk event</b>	An event with probability of ignition, including wires down, contacts with objects, line slap, events with evidence of heat generation, and other events that cause sparking or have the potential to cause ignition. The following risk events all qualify as risk event: <ul style="list-style-type: none"> <li>• Ignitions</li> <li>• Outages not caused by vegetation</li> <li>• Vegetation-caused outages</li> <li>• Wire-down events</li> <li>• Faults</li> <li>• Other risk events with potential to cause ignitions</li> </ul>
<b>Risk event simulation</b>	Simulation of what the consequence would have been of an ignition had it occurred.
<b>Risk-spend efficiency (RSE)</b>	An estimate of the cost-effectiveness of initiatives, calculated by dividing the mitigation risk reduction benefit by the mitigation cost estimate based on the full set of risk reduction benefits estimated from the incurred costs. For ongoing initiatives, the RSE can be calculated by determining the “marginal benefit” of additional spending in the ongoing initiative. For example, the RSE of an ongoing initiative could be calculated by dividing the mitigation risk reduction benefit from a 5% increase in spend by the cost associated with a 5% increase in spend.
<b>Rule</b>	Section of public utility code requiring a particular activity or establishing a particular threshold.
<b>Run-to-failure</b>	A maintenance approach that replaces equipment only when it fails.
<b>Rural region</b>	In accordance with GO 165, "rural" shall be defined as those areas with a population of less than 1,000 persons per square mile as determined by the United States Bureau of the Census. For the purposes of the WMP, “area” shall be defined as census tracts.
<b>Safety Hazard</b>	A condition that poses a significant threat to human life or property.
<b>Simulated wildfire</b>	Propagation and impact/consequence of a wildfire ignited at a particular point ('match drop'), as simulated by fire spread software.
<b>Span</b>	The space between adjacent supporting poles or structures on a circuit consisting of electric lines and equipment. "Span level" refers to asset-scale granularity.
<b>System Average Interruption Duration Index (SAIDI)</b>	System-wide total number of minutes per year of sustained outage per customer served.

Term	Definition
<b>Third-party contact</b>	Contact between a piece of electrical equipment and another object, whether natural (tree branch) or human (vehicle).
<b>Time to expected failure</b>	Time remaining on the life expectancy of a piece of equipment.
<b>Top 30% of proprietary fire potential index</b>	Top 30% of FPI or equivalent scale (e.g., “Extreme” on SCE’s FPI; “extreme”, 15 or greater, on SDG&E’s FPI; and 4 or above on PG&E’s FPI).
<b>Trees with strike potential / hazard trees</b>	Trees that could either 'fall in' to a power line, or have branches detach and 'fly in' to contact a power line in high-wind conditions.
<b>Unplanned outage</b>	Electric outage that occurs with no advance notice from the utility (e.g. blackout).
<b>Urban region</b>	In accordance with GO 165, "urban" shall be defined as those areas with a population of more than 1,000 persons per square mile as determined by the United States Bureau of the Census.
<b>Utility-ignited wildfire</b>	Wildfires ignited by utility infrastructure or employees, including all wildfires determined by AHJ investigation to originate from ignition caused by utility infrastructure. For the purposes of the WMP, “area” shall be defined as census tracts.
<b>Vegetation management</b>	Trimming and clearance of trees, branches, and other vegetation that poses the risk of contact with electric equipment.
<b>Vegetation risk index</b>	Risk index indicating the probability of vegetation-related outages along a particular circuit, based on the vegetation species, density, height, and growth rate.
<b>Weather normalization</b>	Adjusting metrics based on relative weather risk factors or indices
<b>Wildfire impact/consequence</b>	The effect or outcome of a wildfire affecting objectives, which may be expressed, by terms including, although not limited to health, safety, reliability, economic and/or environmental damage.
<b>Wildfire risk</b>	The potential for the occurrence of a wildfire event expressed in terms of ignition probability, wildfire impact/consequence.
<b>Wildfire-only WMP programs</b>	Activities, practices, and strategies that are only necessitated by wildfire risk, unrelated to or beyond that required by minimum reliability and/or safety requirements. Such programs are not indicated or in common use in areas where wildfire risk is minimal (e.g., territory with no vegetation or fuel) or under conditions where wildfires are unlikely to ignite or spread (e.g., when rain is falling).
<b>Wildland urban interface (WUI)</b>	A geographical area identified by the state as a “Fire Hazard Severity Zone”, or other areas designated by the enforcing agency to be a significant risk from wildfires, established pursuant to Title 24, Part 2, Chapter 7A.

Term	Definition
<b>Wire down</b>	Instance where an electric transmission or distribution conductor is broken and falls from its intended position to rest on the ground or a foreign object.

## EXECUTIVE SUMMARY

Horizon West Transmission (HWT) is a new, transmission-only utility with no end-use customers. HWT's first transmission project, the Suncrest Facility, was placed into operation on February 29, 2020. The Suncrest Facility is located approximately 40 miles east of San Diego near the town of Alpine in San Diego County, California, in an area that is designated as a Tier 3 (Extreme) HFTD based on the California Public Utilities Commission's (CPUC or Commission) Fire-Threat Map. The Suncrest Facility is a +300/-100 megavolt-ampere reactive (MVar) static var compensator (SVC) facility with a rated real power output of 0 MW, and nominal terminal voltage of 230 kV, and 230 kV single-circuit transmission line (with approximately one mile constructed underground and approximately 115 feet constructed overhead), that collectively provide dynamic reactive power support at the existing San Diego Gas & Electric Company (SDG&E) Suncrest Substation, a 500/230 kV substation near Alpine, San Diego County, California.

In recent years, catastrophic wildfires in California have escalated in frequency and scope. 2020 was a record-setting year for wildfires in California, with over 4.2 million acres burned according to the California Department of Forestry and Fire Protection (CAL FIRE). Five of the six largest wildfires in California history occurred in 2020.

In September of 2020, during Red Flag Warning conditions, the Valley Fire started a few miles away from the Suncrest Facility and rapidly spread to over 17,000 acres in under three days. The Valley Fire was within approximately four miles of the Suncrest Facility and, under different wind conditions, could have directly threatened the asset. While the cause of the Valley Fire was not linked to utility equipment, the magnitude and consequences of unprecedented 2020 wildfire activity in California necessitate continued focus on wildfire mitigation to minimize risk of utility-caused wildfires.

While HWT currently has a limited scope in California with one operational asset, HWT is very focused on wildfire safety and is determined to have industry-leading wildfire mitigation capabilities. In 2020, HWT has made significant progress on its wildfire mitigation initiatives, implementing commitments in its 2020 CPUC-approved WMP to further harden the Suncrest Facility and minimize risk of utility-caused ignitions.

HWT continues to learn and implement best practices in wildfire mitigation, as it accumulates operational experience with Suncrest and grows its footprint in California. HWT is committed to continuous improvement of its wildfire-related plans, systems, and processes and will include new wildfire-related initiatives in its future WMP submissions.

# 1 PERSONS RESPONSIBLE FOR EXECUTING THE WMP

*Instructions:<sup>3</sup> Provide an accounting of the responsibilities of the responsible person(s) executing the plan, including:*

- 1. Executive level with overall responsibility*
- 2. Program owners specific to each component of the plan*

*Title, credentials and components of responsible must be released publicly, but other contact information may be provided in a redacted file attached to the WMP submission.*

## **Executive-level owner with overall responsibility**

- Name and title: Eric Gleason, President – Horizon West Transmission
- Email: Redacted, provided separately in Attachment A
- Phone number: Redacted, provided separately in Attachment A

## **Program owners specific to each section of the plan**

*Note: A program owner may own multiple sections, and multiple components across sections, but each section must have a program owner accountable.*

### **Section 1: Persons responsible for executing the plan**

Program owner (add additional program owners if separated by component in section)

- Name and title: Eric Gleason, President – Horizon West Transmission
- Email: Redacted, provided separately in Attachment A
- Phone number: Redacted, provided separately in Attachment A
- Component (if entire section, put “entire section”): Entire Section

### **Section 2: Adherence to statutory requirements**

Program owner (add additional program owners if separated by component in section)

- Name and title: Eric Gleason, President – Horizon West Transmission
- Email: Redacted, provided separately in Attachment A
- Phone number: Redacted, provided separately in Attachment A
- Component (if entire section, put “entire section”): Entire Section

### **Section 3: Actuals and planned spending**

Program owner (add additional program owners if separated by component in section)

- Name and title: Alona Sias, Director – NextEra Energy Transmission
- Email: Redacted, provided separately in Attachment A
- Phone number: Redacted, provided separately in Attachment A
- Component (if entire section, put “entire section”): Entire Section

### **Section 4: Lessons learned and risk trends**

Program owner (add additional program owners if separated by component in section)

- Name and title: Alona Sias, Director – NextEra Energy Transmission

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<sup>3</sup> Text in blue italics are instructions, prompts, and clarifications from Resolution WSD-011, Attachment 2.2 – 2021 Wildfire Mitigation Plan Guidelines Template (November 2020), as modified by the WSD on January 5, 2021, January 22, 2021, and January 25, 2021.

- Email: Redacted, provided separately in Attachment A
- Phone number: Redacted, provided separately in Attachment A
- Component (if entire section, put “entire section”): Entire Section

### **Section 5: Inputs to the plan and directional vision**

Program owner (add additional program owners if separated by component in section)

- Name and title: Alona Sias, Director – NextEra Energy Transmission
- Email: Redacted, provided separately in Attachment A
- Phone number: Redacted, provided separately in Attachment A
- Component (if entire section, put “entire section”): Entire Section

### **Section 6: Metrics and underlying data**

Program owner (add additional program owners if separated by component in section)

- Name and title: Alona Sias, Director – NextEra Energy Transmission
- Email: Redacted, provided separately in Attachment A
- Phone number: Redacted, provided separately in Attachment A
- Component (if entire section, put “entire section”): Entire Section

### **Section 7: Mitigation initiatives**

Program owner (add additional program owners if separated by component in section)

- Name and title: Jennifer Chaney, Director – NextEra Energy Transmission
- Email: Redacted, provided separately in Attachment A
- Phone number: Redacted, provided separately in Attachment A
- Component (if entire section, put “entire section”): Entire Section

### **Section 8: Public Safety Power Shutoff**

Program owner (add additional program owners if separated by component in section)

- Name and title: Jennifer Chaney, Director – NextEra Energy Transmission
- Email: Redacted, provided separately in Attachment A
- Phone number: Redacted, provided separately in Attachment A
- Component (if entire section, put “entire section”): Entire Section

### **Section 9: Appendix**

Program owner (add additional program owners if separated by component in section)

- Name and title: Alona Sias, Director – NextEra Energy Transmission
- Email: Redacted, provided separately in Attachment A
- Phone number: Redacted, provided separately in Attachment A
- Component (if entire section, put “entire section”): Entire Section



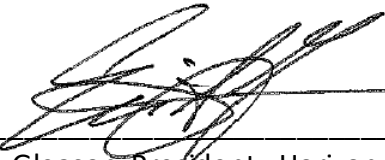
## 1.1 Verification

I am an officer of the applicant corporation herein, and am authorized to make this verification on its behalf. The statements in the foregoing document are true of my own knowledge, except as to matters which are therein stated on information or belief, and as to those matters I believe them to be true.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on March 4th, 2021.

At One California Street, Suite 1600, San Francisco 94111, California.

  
\_\_\_\_\_  
Eric Gleason, President - Horizon West Transmission  
(Signature and Title of Corporate Officer)

## 2 ADHERENCE TO STATUTORY REQUIREMENTS

**Instructions:** Section 2 comprises a “check list” of the CPUC Code Sec. 8386 (c) requirements and subparts. Each utility shall both affirm that the WMP addresses each requirement AND cite the Section or Page Number where it is more fully described (whether in Executive Summary or other section of the WMP).

*Illustrative Table 2-1 check-list:*

Requirement	Description	WMP Section/Page
2	The objectives of the plan	Section 4.1 pg. 13
10	Protocols for the de-energization of the electrical corporation’s transmission infrastructure, etc.	Section 5 overview, pg. 30-31

Mark the following table with the location of each requirement. If requirement is located in multiple areas, mention all WMP sections and pages, separated by semi-colon (e.g., Section 5, pg. 30-32; Section 7, pg. 43)

Requirement	Description	WMP Section/Page
1	An accounting of the responsibilities of persons responsible for executing the plan	Section 1, pg.15-17
2	The objectives of the plan	Section 5.2, pg. 41-43
3	A description of the preventive strategies and programs to be adopted by the electrical corporation to minimize the risk of its electrical lines and equipment causing catastrophic wildfires, including consideration of dynamic climate change risks	Section 7.3, pg. 56-73
4	A description of the metrics the electrical corporation plans to use to evaluate the plan's performance and the assumptions that underlie the use of those metrics	Section 6, pg. 47-51
5	A discussion of how the application of previously identified metrics to previous plan performances has informed the plan	Section 4.1, pg. 26-31
6	Protocols for disabling reclosers and deenergizing portions of the electrical distribution system that consider the associated impacts on public safety. As part of these protocols, each electrical corporation shall include protocols related to mitigating the public safety impacts of disabling reclosers and deenergizing portions of the electrical distribution system that consider the impacts on all of the aspects listed in PU Code 8386c	N/A (HWT is a transmission-only utility and thus does not have distribution reclosers)
7	Appropriate and feasible procedures for notifying a customer who may be impacted by the deenergizing of electrical lines, including procedures for those customers receiving a medical baseline allowance as described in paragraph (6). The procedures shall direct notification to all public safety offices, critical first responders, health care facilities, and operators of telecommunications infrastructure with premises within the footprint of potential deenergization for a given event	Section 8, pg. 74-79
8	Plans for vegetation management	Section 7.3, pg. 56-73
9	Plans for inspections of the electrical corporation's electrical infrastructure	Section 7.3, pg. 56-73

Requirement	Description	WMP Section/Page
10	Protocols for the deenergization of the electrical corporation's transmission infrastructure, for instances when the deenergization may impact customers who, or entities that, are dependent upon the infrastructure	Section 8, pg. 74-79
11	A list that identifies, describes, and prioritizes all wildfire risks, and drivers for those risks, throughout the electrical corporation's service territory, including all relevant wildfire risk and risk mitigation information that is part of the Safety Model Assessment Proceeding and the Risk Assessment Mitigation Phase filings	Section 4, pg. 26-40
12	A description of how the plan accounts for the wildfire risk identified in the electrical corporation's Risk Assessment Mitigation Phase filing	N/A (HWT does not have a RAMP filing)
13	A description of the actions the electrical corporation will take to ensure its system will achieve the highest level of safety, reliability, and resiliency, and to ensure that its system is prepared for a major event, including hardening and modernizing its infrastructure with improved engineering, system design, standards, equipment, and facilities, such as undergrounding, insulation of distribution wires, and pole replacement	Section 4, pg. 26-40; Section 5.2, pg. 41-43; Section 7, pg. 52-73
14	A description of where and how the electrical corporation considered undergrounding electrical distribution lines within those areas of its service territory identified to have the highest wildfire risk in a commission fire threat map	N/A (HWT is a transmission-only utility with a single operating asset)
15	A showing that the electrical corporation has an adequately sized and trained workforce to promptly restore service after a major event, taking into account employees of other utilities pursuant to mutual aid agreements and employees of entities that have entered into contracts with the electrical corporation	Section 5, 41-46; Section 8, pg. 74-79

Requirement	Description	WMP Section/Page
16	Identification of any geographic area in the electrical corporation's service territory that is a higher wildfire threat than is currently identified in a commission fire threat map, and where the commission should consider expanding the high fire threat district based on new information or changes in the environment	N/A (HWT is a transmission-only utility with a single operating asset located within a Tier 3 (Extreme) Fire Threat District)
17	A methodology for identifying and presenting enterprise-wide safety risk and wildfire-related risk that is consistent with the methodology used by other electrical corporations unless the commission determines otherwise	Section 4, pg. 26-40
18	A description of how the plan is consistent with the electrical corporation's disaster and emergency preparedness plan prepared pursuant to Section 768.6, including plans to restore service and community outreach	Section 8, pg. 74-79
19	A statement of how the electrical corporation will restore service after a wildfire	Section 8, pg. 74-79
20	Protocols for compliance with requirements adopted by the commission regarding activities to support customers during and after a wildfire, outage reporting, support for low-income customers, billing adjustments, deposit waivers, extended payment plans, suspension of disconnection and nonpayment fees, repair processing and timing, access to electrical corporation representatives, and emergency communications	N/A (HWT is a transmission-only utility with no end-use customers)
21	A description of the processes and procedures the electrical corporation will use to do the following: (A) Monitor and audit the implementation of the plan. (B) Identify any deficiencies in the plan or the plan's implementation and correct those deficiencies. (C) Monitor and audit the effectiveness of electrical line and equipment inspections, including inspections performed by contractors, carried out under the plan and other applicable statutes and commission rules.	Section 7.2, pg. 55-56

## 3 ACTUALS AND PLANNED SPENDING FOR MITIGATION PLAN

### 3.1 Summary of WMP initiative expenditures

*Instructions: In the Table 3-1, summarize the projected costs (in thousands) per year over the three-year WMP cycle, including actual expenditures for years passed. In Table 3-2 break out projected costs per category of mitigations, over the three-year WMP cycle. The financials represented in the summary tables below equal the aggregate spending listed in the mitigations financial tables reported quarterly. Nothing in this document shall be construed as a statement that costs listed are approved or deemed reasonable if the WMP is approved, denied, or otherwise acted upon.*

HWT is a new, transmission-only utility with no end-use customers. HWT's first transmission project, the Suncrest Facility, was placed into operation on February 29, 2020. The Suncrest Facility is located near the town of Alpine in San Diego County, California, in an area that is designated as a Tier 3 (Extreme) HFTD based on the CPUC's Fire-Threat Map. The Suncrest Facility is a +300/-100 Megavar (MVar) SVC facility with a rated real power output of 0 MW, and nominal terminal voltage of 230 kV, and 230 kV single-circuit transmission line (with approximately one mile constructed underground and approximately 115 feet constructed overhead), that collectively provide dynamic reactive power support at the existing SDG&E Suncrest Substation, a 500/230 kV substation near Alpine, San Diego County, California. HWT believes that Tier 3 (Extreme) Fire-Threat is an accurate designation for the location of the Suncrest Facility, and while the Suncrest Facility has limited size, minimal overhead transmission line (with only approximately 115 feet of the 230 kV transmission line constructed overhead), lack of surrounding vegetation, and fire prevention mitigation measures, HWT intends to meet all applicable requirements for the Suncrest Facility's Tier 3-related Fire Threat location, per D.17-12-024, and harden the asset to further reduce wildfire risk.

2020 was a record-breaking year for wildfires in California, with over 4.2 million acres burned according to CAL FIRE. In 2020 alone, at least three wildfires occurred within just a few miles of the Suncrest Facility. As described in detail in Section 4.1 Lessons Learned and Risk Trends, one of these wildfires, the Valley Fire, started on September 5, 2020 during Red Flag Warning conditions and rapidly spread to over 17,000 acres by September 7, 2020. The Valley Fire approached the Suncrest Facility within approximately four miles and could have directly threatened the facility if the wind direction was towards the asset.

Given the extreme wildfire risk conditions of the area where the Suncrest Facility is located and recent history of fast-spreading wildfires in San Diego County, HWT is pursuing several wildfire mitigation initiatives detailed in Section 7 of this WMP to further harden the asset and reduce wildfire risk.

To inform appropriate wildfire hardening initiatives, HWT has conducted a comprehensive assessment of equipment using a Failure Modes and Effects Analysis (FMEA) and commissioned a third-party wildfire assessment that evaluated wildfire risk at the facility, modelled a hypothetical ignition event and associated wildfire propagation, and identified appropriate

wildfire hardening improvements. The FMEA considers the potential failures from each HWT Facility component and assesses and prioritizes the potential risk, along with providing potential mitigations. The methodology and results of the FMEA and third-party wildfire mitigation assessment are further detailed in Sections 4 and 7 of this WMP.

The Table 3-1 below summarizes HWT’s planned total spend on wildfire mitigation initiatives detailed in Section 7 of this WMP.

**Table 3-1: Summary of WMP Expenditures - Total**

<b>Spend in thousands \$</b>	
<b>2020 WMP Planned</b>	4,085
<b>2020 Actual</b>	4,632
<b>Difference</b>	(547)
<b>2021 Planned</b>	9,575
<b>2022 Planned</b>	18,946
<b>2020-22 Planned (w/ 2020 Actual)</b>	33,153

**Table 3-2: Summary of WMP Expenditures by Category (Spend in thousand \$)**

WMP Category	2020 WMP Planned	2020 Actual	Difference	2021 Planned	2022 Planned	2020-22 Planned (w/ 2020 Actual)
Risk and Mapping	0	200	(200)	0	0	200
Situational Awareness	150	347	(197)	3,070	100	3,517
Grid Design and System Hardening	3,900	3,935	(35)	6,300	18,641	28,876
Asset Management and Inspections	35	80	(45)	100	100	280
Vegetation Management	0	0	0	35	35	70
Grid Operations	0	70	(70)	70	70	210
Data Governance	0	0	0	0	0	0
Resource Allocation	0	0	0	0	0	0
Emergency Planning	0	0	0	0	0	0
Stakeholder Cooperation and Community Engagement	0	0	0	0	0	0
<b>Total</b>	<b>4,085</b>	<b>4,632</b>	<b>(547)</b>	<b>9,575</b>	<b>18,946</b>	<b>33,153</b>

### 3.2 Summary of ratepayer impact

***Instructions:** Report the projected cost increase to ratepayers due to utility-ignited wildfires and wildfire mitigation activities engaged in each of the years below. Account for all expenditure incurred in that year due to utility-ignited wildfires / mitigation activities and provide methodology behind calculation below Table 3-3.*

HWT is a transmission-only electrical corporation and public utility that does not have retail customers and whose rates and cost recovery are regulated by the Federal Energy Regulatory Commission (FERC) and recovered exclusively through the California Independent System Operator Corp. (CAISO) Transmission Access Charge (TAC). HWT has not had any utility-ignited wildfires. Moreover, 2021 annual CAISO-wide revenue requirement that is collected through the TAC is \$2.63 billion and thus the annual customer impact of HWT's wildfire mitigation activities



given planned spend summarized in Table 3-1 would be *de minimis*. Therefore, Table 3-3 is not applicable and is intentionally provided with no ratepayer impact calculations.

**Table 3-3: WMP Electricity cost increase to ratepayers**

	Annual performance - Actual					
Outcome metric name	2016	2017	2018	2019	2020	Unit(s)
<b>Increase in electric costs to ratepayer due to utility-ignited wildfires (total)</b>	N/A	N/A	N/A	N/A	N/A	Dollar value of average monthly rate increase attributable to utility-ignited wildfires per year (e.g., \$3/month on average across customers for utility-ignited wildfires occurring in 20XX)
<b>Increase in electric costs to ratepayer due to wildfire mitigation activities (total)</b>	N/A	N/A	N/A	N/A	N/A	Dollar value of average monthly rate increase attributable to WMPs per year





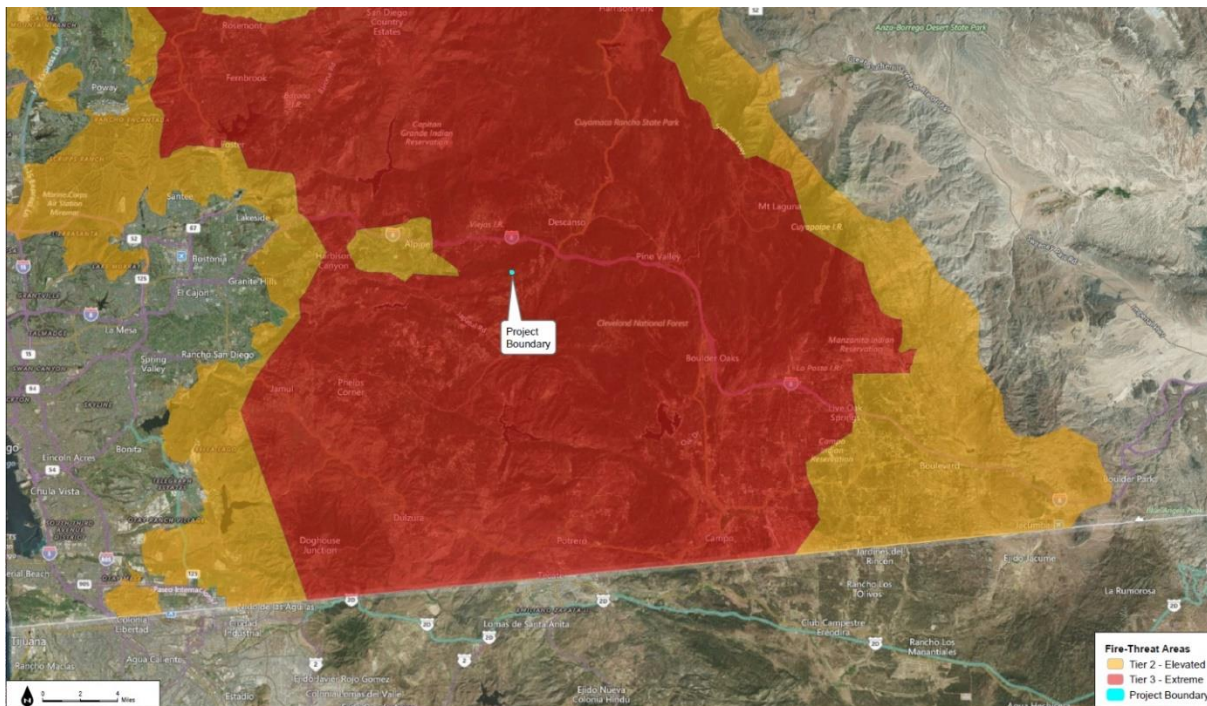


Figure 2. CPUC Fire Threat Map

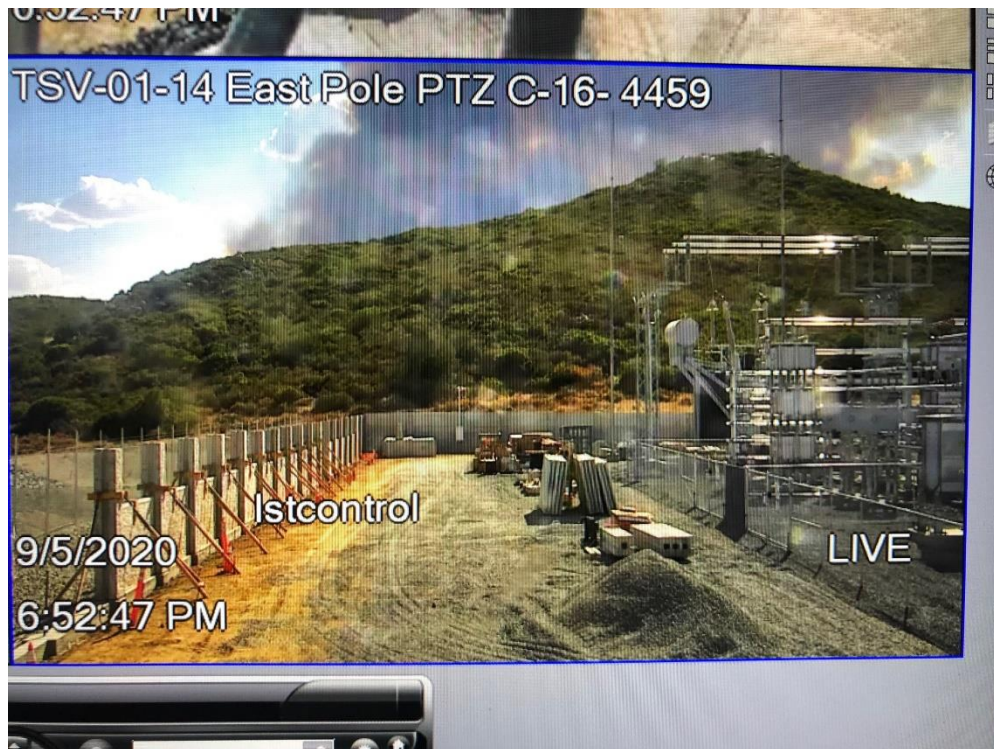


Figure 3. Project Overview Map

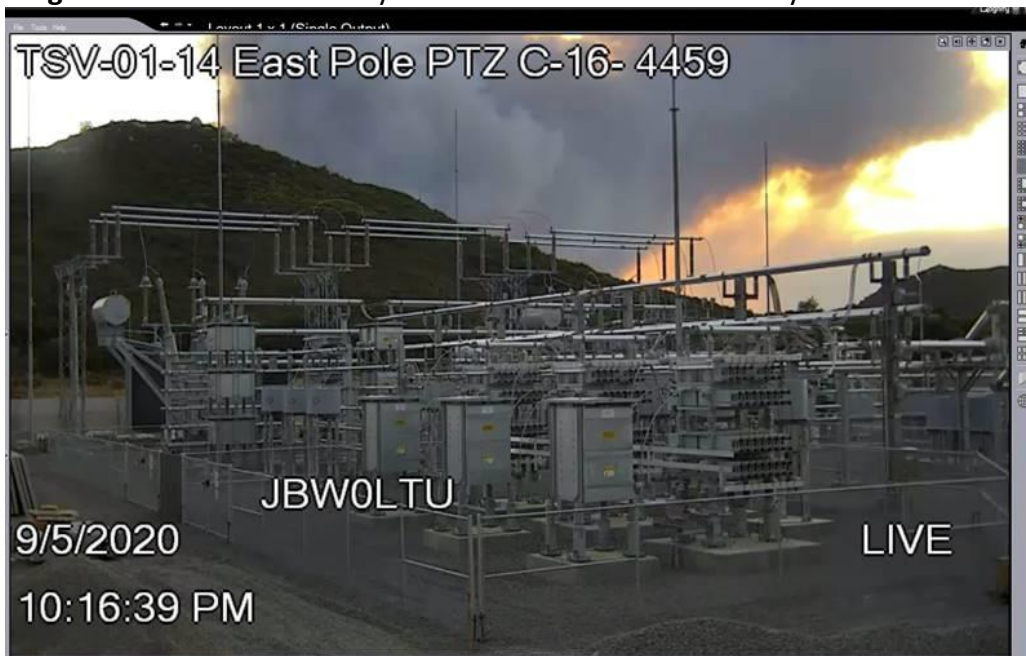
As further detailed in Sections 5 and 6 of this WMP, HWT's fire prevention performance metrics are focused on reducing the potential for on-site ignitions that may spread to off-site vegetation. This approach has proven to be successful to date, as it focuses on leading indicators and prevention of ignition events by identifying, documenting, tracking, and monitoring the anticipated ignition sources with the highest potential for resulting in flame, sparks, arcs, heated material, or similar ignition conduits. This approach also offers the ability to track compliance trends over time, correct issues as they occur, and adapt metrics as conditions mandate. During 2020, there were no reportable on-site ignition events or near misses at the Suncrest Facility.

As stated above, during the first year of Suncrest's operation in 2020, at least three wildfires occurred in close proximity to the asset. On September 4, 2020, the National Weather Service (NWS) issued a Red Flag Warning (RFW) for the area of the Suncrest Facility for September 5 and 6, 2020. In response to the RFW, the HWT Operations Team reviewed all relevant procedures and completed an onsite Wildfire Mitigation Assessment. The Systems Operations personnel who remotely monitor HWT's facilities 24 hours a day, seven days a week were aware of forecasted extreme weather conditions. According to CAL FIRE, on Saturday, September 5, 2020, the Valley Fire has started southeast of Alpine several miles south of the Suncrest Facility. At 3:11 pm on Saturday, September 5, the HWT Operations Team received an alert of possible fire in the area via the CAISO notifications system and immediately notified on-site Suncrest Facility staff, who contracted CAL FIRE to ensure that they were aware of the incident and responding to the fire. As of September 8, the Valley Fire rapidly spread to over 17,345 acres. The Valley Fire was mostly contained by September 14. The fire came within approximately four miles of the Suncrest Facility and, depending on wind conditions, could have approached and threatened the facility. Figures 4-6 show smoke from Valley Fire seen from Suncrest's on-site camera and the Suncrest Substation in relation to the Valley Fire.

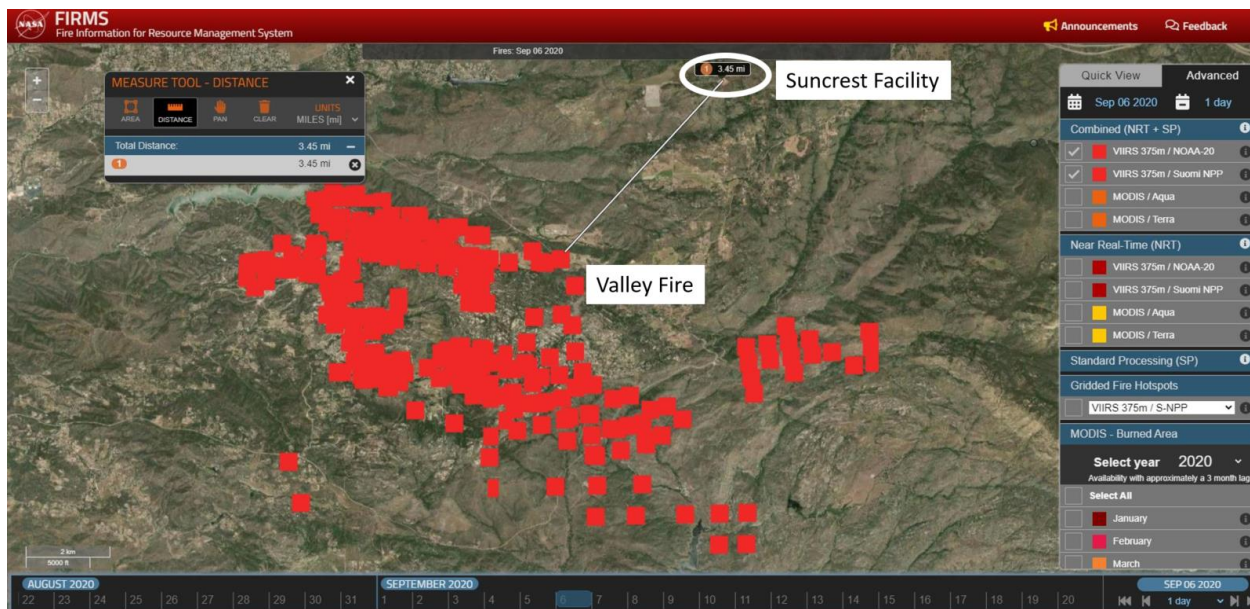




**Figure 4.** Smoke from Valley Fire Seen from Suncrest Facility On-site Camera



**Figure 5.** Smoke from Valley Fire Seen from Suncrest Facility On-site Camera



**Figure 6.** HWT's Suncrest Facility in Relation to the Valley Fire

HWT is committed to continuous improvement of its wildfire-related systems, plans and procedures. After the Valley Fire was substantially contained and was no longer threatening the Suncrest Facility, HWT promptly reviewed the response to the wildfire to record lessons learned and further improve its systems and processes.

HWT has identified the following lessons learned from the execution of its 2020 WMP to date and the Valley Fire experience:

1. **Proactive asset inspections when RFW conditions are issued** – in addition to monthly inspections of the Suncrest Facility by designated Operations personnel, HWT conducts facility inspections ahead of extreme fire weather periods when NWS issues RFW for the area of the facility. Inspections are conducted by experienced and trained individuals, who document their findings and submit them to the NextEra Energy Transmission, LLC (NEET) Director of Operations and other appropriate personnel. Since CAL FIRE estimates that 90% of the acreage burned occurs from the 10% of the fires that coincide with RFW conditions, HWT will continue conducting proactive asset inspections ahead of RFW conditions to minimize the risk of ignitions at the Suncrest Facility. The inspections include general checks and measurements, visual inspections, general housekeeping, vegetation control, and a line patrol of the overhead section.
2. **Wildfire modeling capabilities and real-time wildfire tracking** – HWT is developing real-time modeling capabilities to enhance situational awareness at the Suncrest Facility. During the Valley Fire, which rapidly grew in size during RFW conditions, approached within approximately four miles of the Suncrest Facility and could have directly threatened the asset under different wind conditions, the HWT Operations team monitored the asset 24/7 through the facility's remote sensors and monitors, on-site cameras, and third-party wildfire tracking tools. To enhance HWT's situational awareness and better inform operational decision-making during extreme fire weather events, HWT is developing a

proprietary fire risk index to determine real-time fire risk. Additionally, HWT is working to access third-party granular real-time wildfire tracking tools that utilize satellite data to monitor and track propagation of wildfires to help evaluate proximity of fires to HWT's assets and inform appropriate operational response, if a wildfire were to approach and directly threaten HWT facilities.

3. **Additional cameras at the Suncrest Facility** – HWT is adding more cameras to enhance situational awareness at the Suncrest Facility and observe any off-site ignitions and the propagation of surrounding wildfires to better inform real-time operational decision-making. As described above, during the Valley Fire, the HWT Operations team remotely monitored the site 24/7 and observed the propagation of the fire through its on-site camera, including propagation of smoke from the fire as seen in Figures 4 and 5. Such real-time situational awareness at the site was invaluable to the HWT Operations team to help inform real-time operational decision making depending on the progress of the fire. Hence, HWT is adding another camera at the Suncrest SVC location to expand coverage of the surrounding area through remote cameras.
4. **Annual wildfire simulation** – HWT is adding an annual wildfire simulation to its wildfire mitigation procedures to be conducted in the spring or early summer ahead of increased frequency of RFW days in late summer and fall. During the Valley Fire, HWT has responded according to HWT's emergency operations plan as described above. To ensure that emergency operations procedures, protocols, and roles and responsibilities are top of mind for HWT's Operations and other key personnel, HWT will conduct an annual wildfire simulation at the Suncrest Facility in response to an on-site ignition event or an off-site wildfire event like the Valley Fire.

#### 4.2 Understanding major trends impacting ignition probability and wildfire consequence

*Instructions: Describe how the utility assesses wildfire risk in terms of ignition probability and estimated wildfire consequence, including use of Multi-Attribute Risk Score (MARS) and Multi-Attribute Value Function (MAVF) as in the Safety Model and Assessment Proceeding (S-MAP)<sup>4</sup> and Risk Assessment Mitigation Phase (RAMP), highlighting changes since the 2020 WMP report. Include description of how the utility distinguishes between these risks and the risks to safety and reliability. List and describe each "known local condition" that the utility monitors per GO 95, Rule 31.1, including how the condition is monitored and evaluated. In addition:*

- A. *Describe how the utility monitors and accounts for the contribution of weather to ignition probability and estimated wildfire consequence in its decision-making, including describing any utility-generated Fire Potential Index or other measure (including input variables, equations, the scale or rating system, an explanation of how uncertainties are accounted for, an explanation of how this index is used to inform operational decisions, and an*

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<sup>4</sup> Updates to S-MAP are currently in deliberation under proceeding R. 20-07-013 – Order Instituting Rulemaking to Further Develop a Risk-based Decision-making Framework for Electric and Gas Utilities



*explanation of how trends in index ratings impact medium-term decisions such as maintenance and longer-term decisions such as capital investments, etc.).*

- B. *Describe how the utility monitors and accounts for the contribution of fuel conditions to ignition probability and estimated wildfire consequence in its decision-making, including describing any proprietary fuel condition index (or other measures tracked), the outputs of said index or other measures, and the methodology used for projecting future fuel conditions. Include discussion of measurements and units for live fuel moisture content, dead fuel moisture content, density of each fuel type, and any other variables tracked. Describe the measures and thresholds the utility uses to determine extreme fuel conditions, including what fuel moisture measurements and threshold values the utility considers “extreme” and its strategy for how fuel conditions inform operational decision-making.*

With respect to the CPUC’s Risk Assessment Mitigation Phase (RAMP) and Safety Model and Assessment Proceedings (S-MAP), HWT is a transmission-only electrical corporation and public utility whose rates and cost recovery are regulated exclusively by FERC. As such, HWT does not utilize RAMP or S-MAP. HWT uses an FMEA methodology to assess wildfire risk, which was used to inform wildfire mitigation measures identified and approved in HWT’s 2020 WMP.

The FMEA conducted by HWT specifically focuses on identifying and mitigating wildfire risks by considering potential failure modes at the asset. Each component of the Suncrest Facility is evaluated for its potential for failure, the effects from a failure, what typically causes a failure, what controls are in place to detect and prevent failure, what actions are taken to reduce the likelihood of failure and improve early detection, and who is responsible for implementing the improvement actions. The FMEA is a risk assessment method developed by NASA to identify potential failure modes, assess and prioritize the overall risk presented by each failure mode. Risks are identified and ranked along three dimensions:

- Occurrence (likelihood of an event taking place);
- Severity (degree of impact of an event once it occurs); and
- Detection (ability to know when an event has occurred).

This risk assessment method has become a standard and best practice in many industries, in the areas of product and process design, as well as in quality management and continuous improvement frameworks, such as Lean Six Sigma. The general process of this methodology as applied by HWT to identify and prioritize wildfire risks, drivers and mitigation measures consists of the following five steps:

- **Risk Identification:** for each major equipment component, a group of experienced subject matter experts (SMEs) brainstorm and capture all potential ways that the component could cause an ignition event (failure modes).
- **Risk Driver Identification:** for each identified failure mode, the SMEs brainstorm and capture all potential root causes (drivers).



- **Risk Prioritization:** each risk driver identified is assessed against a pre-determined scale for each of the three dimensions of Occurrence, Severity and Detection, to calculate a Risk Priority Number (RPN). The drivers are then ranked by RPN, with the higher RPNs representing the higher overall risks.
- **Risk Mitigation:** for each of the risk drivers identified, starting with the highest RPNs, the SMEs brainstorm to identify and capture cost-effective mitigation measures, and determine how to implement each measure and when.
- **Risk Assessment and Re-prioritization:** once measures have been developed, and implementation plans established for each risk driver, the RPN is recalculated and a re-ranking is done to determine the new higher priority risk drivers.

This process can be applied iteratively, which allows for further improvements and refinement of a specific plan over time. HWT is focused on continuous improvement of its wildfire strategy and thus annually refreshes the FMEA to reflect operational learnings from the field, learnings and best practices from other entities, and innovation in wildfire-related mitigation measures.

As mentioned above, HWT's operational asset, the Suncrest Facility, is located in Tier 3 (Extreme) HFTD. Besides that, there are no other "known local conditions" that HWT monitors per GO 95, Rule 31.1.

HWT regularly monitors for the contribution of weather to ignition probability and estimated wildfire consequence by leveraging SDG&E's Fire Potential Index (FPI) for its Suncrest Facility. SDG&E's FPI uses a combination of weather parameters (wind speed, humidity, temperature), vegetation and fuel conditions, and other factors to judge current fire risk and to create a forecast indicative of fire risk. SDG&E's FPI and RFW alerts from NWS inform HWT's near-term operational decision-making. HWT's Operations Personnel and management get daily FPI notifications and are notified when NWS declares RFW conditions for the area of the Suncrest Facility. The construction crew on site at the Suncrest Facility conducts daily safety briefings at the start of each workday, including discussion of current wildfire risk based on FPI conditions. When HWT is notified of forecasted RFW conditions, HWT's on-site personnel conduct a Wildfire Mitigation Condition Assessment of the facility ahead of RFW conditions, which includes general checks and measurements, visual inspections, general housekeeping and vegetation control, line patrols, and maintenance and calibration of tools and equipment. All non-critical constructions and maintenance activities cease during RFW conditions and the asset is more closely monitored remotely by HWT's 24/7 Operations Center.

As mentioned above in Section 4.1 Lessons Learned, HWT is working on developing a proprietary fire index and capabilities to monitor real-time propagation of wildfires to enhance situational awareness at the Suncrest Facility and future transmission assets HWT develops in California.

With respect to HWT's monitoring of contribution of fuel conditions to ignition probability and estimated wildfire consequences, there is very limited vegetation immediately around the Suncrest Facility, and the asset has hardscaped defensible space by design to reduce the need for vegetation management and potential contribution of surrounding vegetation as fuel for

wildfire. Additionally, as further detailed in Section 7 of this WMP, HWT employs vegetation management strategies to remove all vegetation from within the perimeter wall area and maintain modified fuel zone outside the wall, resulting in a layered approach. Vegetation management includes vegetation removal during grading within the fenced area and placement of rock and treatments with herbicide, as necessary.

#### **4.2.1 Service territory fire-threat evaluation and ignition risk trends**

*Instructions: Discuss fire-threat evaluation of the service territory to determine whether an expanded High Fire Threat District (HFTD) is warranted (i.e., beyond existing Tier 2 and Tier 3 areas). Include a discussion of any fire threat assessment of its service territory performed by the electrical corporation, highlighting any changes since the prior WMP report. In the event that the electrical corporation's assessment determines the fire threat rating for any part of its service territory is insufficient (i.e., the actual fire threat is greater than what is indicated in the CPUC Fire Threat Map and High Fire Threat District designations), the corporation shall identify those areas for consideration of HFTD modification, based on the new information or environmental changes. To the extent this identification relies upon a meteorological or climatological study, a thorough explanation and copy of the study shall be included.*

*List and describe any macro trends impacting ignition probability and estimated wildfire consequence within utility service territory, highlighting any changes since the 2020 WMP report:*

- 1. Change in ignition probability and estimated wildfire consequence due to climate change*
- 2. Change in ignition probability and estimated wildfire consequence due to relevant invasive species, such as bark beetles*
- 3. Change in ignition probability and estimated wildfire consequence due to other drivers of change in fuel density and moisture*
- 4. Population changes (including Access and Functional Needs population) that could be impacted by utility ignition*
- 5. Population changes in HFTD that could be impacted by utility ignition*
- 6. Population changes in WUI that could be impacted by utility ignition*
- 7. Utility infrastructure location in HFTD vs non-HFTD*
- 8. Utility infrastructure location in urban vs rural vs highly rural areas*

As mentioned above, HWT currently has one operational asset, the Suncrest Facility, which became operational on February 29, 2020. The Facility is located near the town of Alpine in San Diego County in an area that is designated as a Tier 3 (Extreme) HFTD based on the CPUC's Fire-Threat Map. Given the recent history of fast-spreading wildfires in the immediate proximity of the Suncrest Facility as described in section 4.1, HWT believes that the current Tier 3 (extreme) Fire-Threat designation is appropriate for the area.

Since its 2020 WMP, HWT has engaged a third party to conduct a fire threat assessment of the Suncrest Facility and the surrounding area to evaluate wildfire risk, model a hypothetical ignition event and associated wildfire propagation, and identify appropriate mitigation measures to be

implemented at the Suncrest Facility. A brief discussion of fire threat assessment of Suncrest's territory is provided below.

The Suncrest Facility is in a rural part of eastern San Diego County (approximately 40 miles east of San Diego), in the foothills of the Cuyamaca and Laguna mountain ranges, just off Interstate 8. The site is situated among large open areas of vegetation with several rural communities nearby (e.g., Descanso, Alpine, Viejas Indian Reservation, Pine Valley). The surrounding area of the Facility has a history of wildfires, with more than 30 wildland fires of 300 acres or more having been recorded in the past 80 years according to CAL FIRE. The last wildland fires of historic significance in the vicinity were the 2020 Valley Fire that burned ~17,700 acres; 2018 West Fire that burned 505 acres; the 2003 Cedar Fire, ~280,000 acres; the 2001 Viejas Fire, ~10,438 acres; and the 1970 Laguna Fire, ~174,000 acres. In the greater area surrounding the substation (~39 sq. mi.), there are approximately 23,976 acres of natural vegetation (~95% of the area). This primarily consists of mixed chaparral (~55.6%) and chemise-redshank chaparral (~21.6%), with relatively smaller amounts of grasslands, coastal oakwood, coastal scrub, valley foothill riparian and mixed hardwood. The remaining area (approximately 5%) is developed and/or urban lands.

Based on the local environmental setting at the Suncrest Facility, a wildland fire risk assessment was conducted for the facility site and area surrounding the substation. The assessment was based on the latest in wildland fire behavior modelling and took into consideration the interaction of key influencing factors: fuel, topography and weather. The assessment was tailored to the environmental factors at the Facility and modeled a hypothetical ignition event under 97th percentile weather conditions to understand potential outcomes under extreme conditions, and produced typical flame lengths, speed of wildfire propagation, fire intensity, wildfire spotting behavior, and fire spread probability distribution.

The fire threat assessment of service territory around the Suncrest Facility concluded that the facility is situated in a fire environment that poses a high risk, driven by the following factors:

- **Fire environment** – Steep terrain, continuous fuels, and hot, dry weather are common features of the fire environment. These elements all contribute to rapid fire spread.
- **Continuous fuels** – Fuels are continuous near the substation and even with a significant recent fire history, fuels remain continuous enough to support large fire growth.
- **Fuels can support high fire intensity** – The fuels surrounding the substation are predominately grass, grass-shrub and shrub dominated. When burning under 97th percentile weather conditions, these fuels produce flame lengths that limit firefighters' ability to attack the flaming front of a fire successfully.

The Valley Fire, which started a few miles south of the Suncrest Facility on September 5, 2020 during RFW conditions, behaved in line with the findings of the fire threat assessment described above, rapidly spreading to over 17,000 acres in just two days.

Regarding change in ignition probability and estimated wildfire consequence due to climate change, 2020 was a record-breaking wildfire year in California, with one of the hottest summers on record, well below normal rainfall, and seven RFW alerts lasting 18 days in total for the area

of the Suncrest Facility. These unprecedented weather conditions and resulting wildfire consequences are most likely at least in part due to climate change.

In terms of other macro trends impacting ignition probability, given HWT's limited scale and operational experience at Suncrest so far, HWT has not yet observed any additional macro trends impacting ignition probability at the Suncrest Facility. HWT will continue to evaluate changes in ignition probability drivers as it accumulates operational experience with its facilities.

### 4.3 Change in ignition probability drivers

*Instructions: Based on the implementation of the above wildfire mitigation initiatives, explain how the utility sees its ignition probability drivers evolving over the 3-year term of the WMP, highlighting any changes since the 2020 WMP report. Focus on ignition probability and estimated wildfire consequence reduction by ignition probability driver, detailed risk driver, and include a description of how the utility expects to see incidents evolve over the same period, both in total number (of occurrence of a given incident type, whether resulting in an ignition or not) and in likelihood of causing an ignition by type. Outline methodology for determining ignition probability from events, including data used to determine likelihood of ignition probability, such as past ignition events, number of risk events, and description of events (including vegetation and equipment condition).*

HWT conducts risk analysis and identification of risk drivers regarding wildfires in the context of proximity to high fire-risk areas, existence of vegetative fuels, nature and location of its transmission assets, and the effectiveness of implemented mitigants. As stated in Section 4.2, HWT's Suncrest Facility is located in a Tier 3 (Extreme) HFTD and HWT determines ignition probability drivers through use of FMEA and a third-party wildfire mitigation assessment. HWT wildfire mitigation strategy focuses on minimizing the likelihood of utility-caused ignitions and reducing negative impact from an ignition should one occur.

HWT has integrated significant hardening into the design and construction of the Suncrest Facility and is further hardening the site given its results of FMEA, third-party wildfire assessment, and its recent experience with fast-spreading wildfires in the proximity of the asset's location. HWT has no historical ignition probability driver, risk driver, near miss, or ignition data upon which to evaluate or project the likelihood of ignition probability evolution. Since Suncrest Facility went into service on February 29, 2020, there have been no reportable on-site ignitions or near misses / risk events. HWT will continue to evaluate changes in ignition probability drivers as it accumulates operational experience with its facilities.

### 4.4 Research proposals and findings

*Instructions: Report all utility-sponsored research proposals, findings from ongoing studies and findings from studies completed in 2020 relevant to wildfire and PSPS mitigation.*

Due to the limited scale and scope of HWT's operations, HWT does not engage in utility-sponsored research relevant to wildfires. However, HWT does attend CPUC-sponsored workshops that highlight ongoing research and studies to learn and integrate best practices relevant to wildfire mitigation. For example, HWT learned about the latest wildfire modeling capabilities and vendors through one of the CPUC workshops and is developing wildfire modeling capabilities to enhance situational awareness for HWT's current and future assets.

HWT will continue to monitor industry developments and emerging wildfire-related technologies and will evaluate their addition to HWT's wildfire mitigation plan.

## 4.5 Model and metric calculation methodologies

### 4.5.1 Additional models for ignition probability, wildfire and PSPS risk

***Instructions:** Report details on methodology used to calculate or model ignition probability, potential impact of ignitions and / or PSPS, including list of all input used in impact simulation; data selection and treatment methodologies; assumptions, including Subject Matter Expert (SME) input; equation(s), functions, or other algorithms used to obtain output; output type(s), e.g., wind speed model; and comments.*

*For each model, organize details under the following headings:*

1. **Purpose of model** – Brief summary of context and goals of model
2. **Relevant terms** - Definitions of relevant terms (e.g., defining "enhanced vegetation management" for a model on vegetation-related ignitions)
3. **Data elements** - Details of data elements used for analysis, including scope and granularity of data in time and location (i.e., date range, reporting frequency and spatial granularity for each data element, see example table above)
4. **Methodology** - Methodology and assumptions for analysis, including Subject Matter Expert (SME) input; equation(s), functions, statistical models, or other algorithms used to obtain output
5. **Timeline** – Model initiation and development progress over time. If updated in last WMP, provide update to changes since prior report.
6. **Application and results** – Explain where the model has been applied, how it has informed decisions, and any metrics or information on model accuracy and effectiveness collected in the prior year.

As described above in Sections 4.2 and 4.3, HWT uses the FMEA methodology to evaluate wildfire risk and identify mitigation measures and has engaged a third-party consultant to evaluate ignition probability and wildfire propagation risk at the Suncrest Facility. Due to the limited scale and scope of HWT's operations, HWT does not employ other additional models for ignition probability, wildfire, and public safety power shut-off (PSPS) risk.

### 4.5.2 Calculation of key metrics

***Instructions:** Report details on the calculation of the metrics below. For each metric, a standard definition is provided with statute cited where relevant. The utility must follow the definition*

provided and detail the procedure they used to calculate the metric values aligned with these definitions. Utilities must cite all data sources used in calculating the metrics below.

1. **Red Flag Warning overhead circuit mile days** – Detail the steps to calculate the annual number of red flag warning (RFW) overhead (OH) circuit mile days. Calculated as the number of circuit miles that were under an RFW multiplied by the number of days those miles were under said RFW. Refer to Red Flag Warnings as issued by the National Weather Service (NWS). For historical NWS data, refer to the Iowa State University Iowa archive of NWS watch / warnings.<sup>5</sup> Detail the steps used to determine if an overhead circuit mile was under a Red Flag Warning, providing an example of how the RFW OH circuit mile days were calculated for a Red Flag Warning that occurred within utility territory over the last five years.
2. **High Wind Warning overhead circuit mile days** – Detail the steps used to calculate the annual number of High Wind Warning (HWW) overhead circuit mile days. Calculated as the number of overhead circuit miles that were under an HWW multiplied by the number of days those miles were under said HWW. Refer to High Wind Warnings as issued by the National Weather Service (NWS). For historical NWS data, refer to the Iowa State University Iowa archive of NWS watch / warnings.<sup>6</sup> Detail the steps used to determine if an overhead circuit mile was under a High Wind Warning, providing an example of how the OH HWW circuit mile days were calculated for a High Wind Warning that occurred within utility territory over the last five years.
3. **Access and Functional Needs population** – Detail the steps to calculate the annual number of customers that are considered part of the Access and Functional Needs (AFN) population. Defined in Government Code § 8593.3 and D.19-05-042 as individuals who have developmental or intellectual disabilities, physical disabilities, chronic conditions, injuries, limited English proficiency or who are non-English speaking,<sup>7</sup> older adults, children, people living in institutionalized settings, or those who are low income, homeless, or transportation disadvantaged, including, but not limited to, those who are dependent on public transit or those who are pregnant.
4. **Wildlife Urban Interface** – Detail the steps to calculate the annual number of circuit miles and customers in Wildlife Urban Interface (WUI) territory. WUI is defined as the area where houses exist at more than 1 housing unit per 40 acres and (1) wildland vegetation covers more than 50% of the land area (intermix WUI) or (2) wildland vegetation covers less than 50% of the land area, but a large area (over 1,235 acres) covered with more than 75% wildland vegetation is within 1.5 mi (interface WUI) (Radeloff et al, 2005).<sup>8</sup>
5. **Urban, rural and highly rural** – Detail the steps for calculating the number of customers and circuit miles in utility territory that are in highly rural, rural, and urban regions for each year. Use the following definitions for classifying an area highly rural/rural/urban (also referenced in glossary):
  - a. **Highly rural** – In accordance with 38 CFR 17.701, “highly rural” shall be defined as those areas with a population of less than 7 persons per square mile as determined by the United States Bureau of the Census. For the purposes of the WMP, “area” shall be defined as census tracts.

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<sup>5</sup> <https://mesonet.agron.iastate.edu/request/gis/watchwarn.phtml>

<sup>6</sup> <https://mesonet.agron.iastate.edu/request/gis/watchwarn.phtml>

<sup>7</sup> Guidance on calculating number of households with limited or no English proficiency can be found in D.20-04-003

<sup>8</sup> Paper can be found here - [https://www.fs.fed.us/pnw/pubs/journals/pnw\\_2005\\_radeloff001.pdf](https://www.fs.fed.us/pnw/pubs/journals/pnw_2005_radeloff001.pdf) with the latest WUI map (form 2010) found here - <http://silvis.forest.wisc.edu/data/wui-change/>



- b. *Rural – In accordance with GO 165, "rural" shall be defined as those areas with a population of less than 1,000 persons per square mile as determined by the United States Bureau of the Census. For the purposes of the WMP, "area" shall be defined as census tracts.*
- c. *Urban – In accordance with GO 165, "urban" shall be defined as those areas with a population of more than 1,000 persons per square mile as determined by the United States Bureau of the Census. For the purposes of the WMP, "area" shall be defined as census tracts.*

*Population density numbers are calculated using the American Community Survey (ACS) 1-year estimates on population density by census tract for each corresponding year (2016 ACS 1-year estimate for 2016 metrics, 2017 ACS 1-year estimate for 2017 metrics, etc.). For years with no ACS 1-year estimate available, use the 1-year estimate immediately before the missing year (use 2019 estimate if 2020 estimate is not yet published, etc.)*

As stated above, HWT currently has one operational asset, the Suncrest Facility, located near the town of Alpine in San Diego County. The asset comprises of a static var compensator (SVC) 230 kV facility enclosed by 10 feet tall concrete perimeter wall, approximately 1 mile of underground 230 kV line and an overhead 115 ft (~0.02 miles) span that HWT is currently working on undergrounding. As a transmission-only utility, HWT does not have any retail customers. The following section describes calculation of key metrics given HWT's current footprint. All the metrics detailed below are reported in HWT's quarterly non-spatial data submissions to the CPUC in Table 6 and Table 8.

1. **Red Flag Warning overhead circuit mile days** – As described above, HWT gets daily FPI alerts leveraging SDG&E current FPI modeling capabilities. Additionally, HWT gets notified when NWS issues a Red Flag Warning (RFW) for the area of the Suncrest Facility. HWT currently owns ~0.02 miles of overhead transmission circuit miles. To calculate Red Flag Warning overhead circuit mile days, HWT multiplies the number of calendar days with RFW for each quarter by the 0.02 miles of overhead transmission circuit miles that were under RFW. For example, NWS issued an RFW for the area of the Suncrest Facility on November 25, 2020, with RFW being effective from 9:00 pm November 26, 2020 to 9:00 am November 29, 2020. To calculate RFW overhead circuit mile days, HWT multiplied 0.02 overhead circuit miles by 3 calendar days of effective RFW to arrive to 0.06 RFW overhead circuit mile days.
2. **High Wind Warning overhead circuit mile days** – similar to the Red Flag Warning overhead circuit mile days metric described above, HWT gets notified when NWS issues a High Wind Warning for the area of the Suncrest Facility. To calculate High Wind Warning overhead circuit mile days, HWT multiplies the number of calendar days with High Wind Warning for each quarter by the 0.02 miles of overhead transmission circuit miles that were under High Wind Warning. For example, NWS issued a High Wind Warning for the area of the Suncrest Facility on December 7, 2020, with High Wind Warning being effective from 10:00 pm December 7, 2020 to 6:00 pm December 8, 2020. To calculate High Wind Warning overhead circuit mile days, HWT multiplied 0.02 overhead circuit miles by 2 calendar days of effective High Wind Warning to arrive to 0.04 High Wind Warning overhead circuit mile days.

3. **Access and Functional Needs population** – HWT is a transmission-only utility and does not have a traditional service territory or retail customers, therefore this metric is not relevant and is not calculated by HWT.
4. **Wildlife Urban Interface** – Both of HWT’s transmission assets (Suncrest Facility and Estrella Substation) are located in Wildlife Urban Interface territory.
5. **Urban, rural, and highly rural** – HWT’s operational asset, the Suncrest Facility, is located in highly rural area near the town of Alpine in San Diego County, ~40 miles east of San Diego. HWT’s second transmission project, the Estrella Substation, is currently in development and is located in rural area within the northern portion of unincorporated San Luis Obispo County.

#### 4.6 Progress reporting on past deficiencies

*Instructions: Report progress on all deficiencies provided in the 2020 WMP relevant to the utility. This includes deficiencies in Resolution WSD-002.*

*Summarize how the utility has responded and addressed the conditions in the table below. Reference documents that serve as part of the utility’s response (e.g. submitted in the utility’s Remedial Compliance Plan, location in 2021 WMP update, etc.). Note action taken by the WSD for Class A and B deficiencies (e.g. response found sufficient, response found insufficient and further action required, etc.).*

The WSD has reviewed and approved HWT’s 2020 WMP without conditions (Full Approval) and did not identify any deficiencies relevant to HWT. Thus, this section is not applicable to HWT and Table 4.6-1 is filled out accordingly.

**Table 4.6-1: List of utility deficiencies and summary of response, 2020**

Deficiency number	Deficiency title	Utility response (brief summary)	Referenced documents	WSD Action
N/A	N/A	N/A	N/A	N/A



## 5 INPUTS TO THE PLAN AND DIRECTIONAL VISION FOR WMP

### 5.1 Goal of Wildfire Mitigation Plan

**Instructions:** *The goal of the Wildfire Mitigation Plan 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 to the impact on Access and Functional Needs populations and marginalized communities) of both wildfires and the mitigations employed to reduce them, including PSPS.*

*In the following sub-sections report utility-specific objectives and program targets towards the WMP goal. No utility response required for section 5.1.*

### 5.2 The objectives of the plan

**Instructions:** *Objectives are unique to each utility and reflect the 1, 3, and 10-Year projections of progress towards the WMP goal. Objectives are determined by the portfolio of mitigation strategies proposed in the WMP. The objectives of the plan shall, at a minimum, be consistent with the requirements of California Public Utilities Code §8386(a) –*

*Each electrical corporation shall construct, maintain, and operate its electrical lines and equipment in a manner that will minimize the risk of catastrophic wildfire posed by those electrical lines and equipment.*

*Describe utility WMP objectives, categorized by each of the following timeframes, highlighting changes since the prior WMP report:*

- 1. Before the next Annual WMP Update*
- 2. Within the next 3 years*
- 3. Within the next 10 years – long-term planning beyond the 3-year cycle*

HWT's WMP objectives have not changed from its CPUC-approved 2020 WMP report. The overarching objective of HWT's WMP is to comply with applicable provisions of California Public Utilities Code (PU Code) Section 8386 at HWT's facilities.

Certain provisions in PU Code Section 8386 and the WMP Guidelines, such as those addressing communications with customers and protocols for disconnecting service to customers, do not apply to a transmission-only utility such as HWT. This WMP addresses provisions in PU Code Section 8386 and the WMP Template as they relate to the HWT Facilities.

This WMP provides direction for complying with the applicable provisions of PU Code Section 8386 and for guiding fire safety awareness and prevention at the HWT Facilities. While the Suncrest Facility is the only facility owned and operated by HWT at the time of filing the 2021 WMP, HWT anticipates that the processes, programs, and practices established in this WMP will apply to all HWT Facilities in

the future. Because this WMP will be actively reviewed and adaptively managed, future WMPs may include variations in content, format, covered assets, and/or approach.

HWT has a vision of having industry-leading fire-protected infrastructure and facilities that appropriately mitigate operational risks including but not limited to system faults, equipment failure, seismic events, flooding, wildfires, urban fires, civil unrest, and insurgent action.

The WMP recognizes the following facts relevant to assessing wildfire risk and establishing effective mitigations:

- HWT only owns and operates transmission infrastructure with no distribution facilities.
- HWT does not serve distribution or retail customers or any residential, commercial, or industrial interconnections.
- HWT transmission facilities are monitored 24 hours a day, 7 days a week while in operation by a certified and qualified System Operator with full authority, responsibility, and requisite emergency response training to take appropriate action to mitigate any fire risk posed, including Emergency Shut-Off as a measure of last resort.
- The HWT Facilities are under the operational control of the CAISO.

HWT has the following WMP objectives, categorized by different timeframes:

**Before the next Annual WMP Update:**

HWT's primary objective is to further harden the Suncrest Facility according to prioritized wildfire mitigation measures, which will minimize the potential for on-site ignition. HWT will work towards achieving this objective through the fire prevention strategies and specific measures detailed in Section 7.

A secondary HWT objective is to periodically evaluate new technologies, materials, and methods for further reducing fire risk at HWT Facilities. This objective will be achieved through HWT's internal programs described in Section 4 and a team that will be empowered and encouraged to evaluate and improve protocols and procedures.

This WMP focuses its objectives on fire risk reduction and prevention for the period between WMP filings with the CPUC, resulting in year-round coverage. Fires and fire weather can occur during any season, and fire safety precautions will be implemented year-round, with heightened restrictions and precautions during declared RFW periods.

**Within the next 3 years:**

As a newly designed and constructed facility, HWT considers the Suncrest Facility to be significantly fire hardened and technologically advanced. However, following placing the

Suncrest Facility into service and over the next three-year period, HWT's objective is to identify, evaluate, and implement additional facility hardening measures. The additional wildfire mitigation measures that HWT has identified for evaluation and consideration at the time of filing are provided in Section 7.

#### **Within the next 10 years:**

HWT's longer-term objectives are consistent with its short-term objectives of minimizing the likelihood of an ignition event from its facilities. As indicated previously, HWT expects to increase the number of facilities owned in California. When HWT constructs additional facilities, it will do so according to the latest technologies and processes available at the time. If HWT acquires existing facilities, HWT will implement wildfire mitigation strategies and design criteria as soon as practical.

Additionally, over the next ten years, HWT's objective is to achieve the highest level of Wildfire Mitigation Maturity consistent with the scale and scope of its operations, as well as to implement an industry-leading standard for fire-protected transmission facilities and infrastructure.

### **5.3 Plan program targets**

*Instructions: Program targets are quantifiable measurements of activity identified in WMPs and subsequent updates used to show progress towards reaching the objectives, such as number of trees trimmed or miles of power lines hardened.*

*List and describe all program targets the electrical corporation uses to track utility WMP implementation and utility performance over the last five years. For all program targets, list the 2019 and 2020 performance, a numeric target value that is the projected target for end of year 2021 and 2022, units on the metrics reported, the assumptions that underlie the use of those metrics, update frequency, and how the performance reported could be validated by third parties outside the utility, such as analysts or academic researchers. Identified metrics must be of enough detail and scope to effectively inform the performance (i.e., reduction in ignition probability or wildfire consequence) of each targeted preventive strategy and program.*

The Suncrest Facility is HWT's first facility that became operational on February 29<sup>th</sup>, 2020. Given HWT's current limited scope and conditions around the Suncrest Facility, HWT's program targets are focused on successful implementation of prioritized wildfire mitigation measures described in Section 7 of this report and ensuring no on-site ignition events or near misses. HWT does not have any additional program targets to report and thus table 5.3-1 is filled out accordingly.

**Table 5.3-1: List and description of program targets, last 5 years**

Program target	2019 performance	2020 performance	Projected target by end of 2021	Projected target by end of 2022	Units	Underlying assumptions	Update frequency	Third-party validation
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

#### 5.4 Planning for Workforce and Other Limited Resources

*Instructions: Report on worker qualifications and training practices regarding wildfire and PSPS mitigation for workers in the following target roles:*

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

*For each of the target roles listed above:*

1. *List all worker titles relevant to target role (target roles listed above)*
2. *For each worker title, list and explain minimum qualifications with an emphasis on qualifications relevant to wildfire and PSPS mitigation. Note if the job requirements include the following:*
  - a. *Going beyond a basic knowledge of General Order 95 requirements to perform relevant types of inspections or activities in the target role*
  - b. *Being a “Qualified Electrical Worker” (QEW) and define what certifications, qualifications, experience, etc. is required to be a QEW for the target role for the utility.*
  - c. *Include special certification requirements such as being an International Society of Arboriculture (ISA) Certified Arborist with specialty certification as a Utility Specialist*
3. *Report percentage of Full Time Employees (FTEs) in target role with specific job title*
4. *Provide a summarized report detailing the overall percentage of FTEs with qualifications listed in (2) for each of the target roles.*
5. *Report plans to improve qualifications of workers relevant to wildfire and PSPS mitigation. Utilities will explain how they are developing more robust outreach and onboarding training programs for new electric workers to identify hazards that could ignite wildfires.*

In view of HWT’s current limited footprint with one operational transmission asset, HWT has a small staff overseeing HWT operations, including dedicated on-site staff performing asset

inspection and maintenance work, as well as remote system operators that remotely control the asset 24/7 from a North American Electric Reliability Corporation (NERC)-certified control center. All HWT maintenance work, including asset inspections, is carried out by dedicated HWT Operations personnel and qualified contractors that, by reason of training, experience, and instruction, are qualified to perform the task. Operations personnel maintain and operate the HWT Facilities in accordance with good utility practice, sound engineering judgment, the guidelines as outlined in applicable NERC reliability standards, laws, and regulations. The HWT operations personnel take proper care to ensure the safety of personnel and the public in performing maintenance duties.

Regarding HWT's plans to improve qualifications of workers relevant to wildfire and PSPS mitigation, HWT Operations personnel are trained on all relevant HWT procedures, including regular monthly asset inspections (Wildfire Mitigation Condition Assessment Procedure), vegetation inspections (Wildlife and Vegetation Procedure), and emergency response (Emergency Operations Plan). HWT also has contracted a private fire brigade to be on site during construction activities and facilitate daily safety briefings, including discussion of weather conditions and fire safety. Additionally, as described above in Section 4 of this WMP, HWT is committed to continuous improvement of its wildfire-related plans, systems, and processes. As such, HWT Operations personnel actively engage in the annual update of the FMEA for the Suncrest Facility, which involves comprehensive review of all potential failure modes at the facility and relevant mitigation measures based on the underlying risk. Additionally, HWT is adding a new procedure as a lesson learned since 2020 WMP and will conduct an annual wildfire simulation at the Suncrest Facility, including participation of relevant HWT Operations Personnel, to ensure that all relevant procedures and processes are top of mind for HWT Personnel. As HWT gains operational experience and learns additional best practices relevant to wildfire mitigation, it will update its personnel training, processes and procedures accordingly.

Given HWT's limited scope, HWT currently is not planning to hire and onboard new electric workers in the near-term. As HWT gains operational experience and grows its presence in California through addition of new transmission facilities, HWT will continue to evaluate the size of its workforce in California and expand that workforce as needed. Further, HWT engages qualified contractors for vegetation management projects and grid hardening.

#### **5.4.1 Target role: Vegetation inspections**

1. **Worker titles in target role:** Operations Engineer, Operations Senior Engineer
2. **Minimum qualifications:** Bachelor's Degree in Engineering
3. **FTE percentages by title in target role:** 100%
4. **Percent of FTEs by high-interest qualification:** 100%
5. **Plans to improve worker qualifications:** See response under 5.4

#### 5.4.2 Target role: Vegetation management projects

1. **Worker titles in target role:** Biologist, Arborists, Ecologist, Fire Planning Specialist, Fire Operations Specialist
2. **Minimum qualifications:** Qualifications vary by discipline; most workers in target role have a Bachelor's Degree and experience in wildfire-related initiatives in California
3. **FTE percentages by title in target role:** N/A – HWT engages a qualified contractor to perform vegetation management projects
4. **Percent of FTEs by high-interest qualification:** N/A – HWT engages a qualified contractor to perform vegetation management projects
5. **Plans to improve worker qualifications:** See response under 5.4

#### 5.4.3 Target role: Asset Inspections

1. **Worker titles in target role:** Operations Engineer, Operations Senior Engineer
2. **Minimum qualifications:** Bachelor's Degree in Engineering
3. **FTE percentages by title in target role:** 100%
4. **Percent of FTEs by high-interest qualification:** 100%
5. **Plans to improve worker qualifications:** See response under 5.4

#### 5.4.4 Target role: Grid hardening

1. **Worker titles in target role:** Operations Engineer, Operations Senior Engineer, Construction Manager
2. **Minimum qualifications:** Qualifications vary by discipline; Operations Engineers have a Bachelor's Degree in Engineering
3. **FTE percentages by title in target role:** <50%
4. **Percent of FTEs by high-interest qualification:** <50%
5. **Plans to improve worker qualifications:** See response under 5.4

#### 5.4.5 Target role: Risk event inspections

1. **Worker titles in target role:** Operations Engineer, Operations Senior Engineer
2. **Minimum qualifications:** Bachelor's Degree in Engineering
3. **FTE percentages by title in target role:** 100%
4. **Percent of FTEs by high-interest qualification:** 100%
5. **Plans to improve worker qualifications:** See response under 5.4



## 6 PERFORMANCE METRICS AND UNDERLYING DATA

**Instructions:** Section to be populated from Quarterly Reports. Tables to be populated are listed below for reference.

*NOTE: Report updates to projected metrics that are now actuals (e.g., projected 2020 spend will be replaced with actual unless otherwise noted). If an actual is substantially different from the projected (>10% difference), highlight the corresponding metric in light green.*

### 6.1 Recent performance on progress metrics, last 5 years

**Instructions for Table 1:**

*In the attached spreadsheet document, report performance on the following metrics within the utility's service territory over the past five years as needed to correct previously-reported data. Where the utility does not collect its own data on a given metric, the utility shall work with the relevant state agencies to collect the relevant information for its service territory, and clearly identify the owner and dataset used to provide the response in the "Comments" column.*

Table 1: Recent Performance on Progress Metrics, last 5 years is provided in Attachment B

### 6.2 Recent performance on outcome metrics, annual and normalized for weather, last 5 years

**Instructions for Table 2:**

*In the attached spreadsheet document, report performance on the following metrics within the utility's service territory over the past five years as needed to correct previously-reported data. Where the utility does not collect its own data on a given metric, the utility shall work with the relevant state agencies to collect the relevant information for its service territory, and clearly identify the owner and dataset used to provide the response in "Comments" column.*

*Provide a list of all types of findings and number of findings per type, in total and in number of findings per circuit mile.*

Table 2: Recent performance on outcome metrics, last 5 years is provided in Attachment B

### 6.3 Description of additional metrics

**Instructions for Table 3:**

*In addition to the metrics specified above, list and describe all other metrics the utility uses to evaluate wildfire mitigation performance, the utility's performance on those metrics over the last*

*five years, the units reported, the assumptions that underlie the use of those metrics, and how the performance reported could be validated by third parties outside the utility, such as analysts or academic researchers. Identified metrics must be of enough detail and scope to effectively inform the performance (i.e., reduction in ignition probability or wildfire consequence) of each preventive strategy and program.*

Table 3: List and description of additional metrics, last 5 years is provided in Attachment B

## 6.4 Detailed information supporting outcome metrics

### **Instructions for Table 4:**

*In the attached spreadsheet document, report numbers of fatalities attributed to any utility wildfire mitigation initiatives, as listed in the utility's previous or current WMP filings or otherwise, according to the type of activity in column one, and by the victim's relationship to the utility (i.e., full-time employee, contractor, of member of the general public), for each of the last five years as needed to correct previously-reported data. For fatalities caused by initiatives beyond these categories, add rows to specify accordingly. The relationship to the utility statuses of full-time employee, contractor, and member of public are mutually exclusive, such that no individual can be counted in more than one category, nor can any individual fatality be attributed to more than one initiative.*

Table 4: Fatalities due to utility wildfire mitigation initiatives, last 5 years is provided in Attachment B

### **Instructions for Table 5:**

*In the attached spreadsheet document, report numbers of OSHA-reportable injuries attributed to any utility wildfire mitigation initiatives, as listed in the utility's previous or current WMP filings or otherwise, according to the type of activity in column one, and by the victim's relationship to the utility (i.e., full-time employee, contractor, of member of the general public), for each of the last five years as needed to correct previously-reported data. For members of the public, all injuries that meet OSHA-reportable standards of severity (i.e., injury or illness resulting in loss of consciousness or requiring medical treatment beyond first aid) shall be included, even if those incidents are not reported to OSHA due to the identity of the victims.*

*For OSHA-reportable injuries caused by initiatives beyond these categories, add rows to specify accordingly. The victim identities listed are mutually exclusive, such that no individual victim can be counted as more than one identity, nor can any individual OSHA-reportable injury be attributed to more than one activity.*

Table 5: OSHA-reportable injuries due to utility wildfire mitigation initiatives, last 5 years is provided in Attachment B

## 6.5 Mapping recent, modelled, and baseline conditions

**Instructions:** Underlying data for recent conditions (over the last five years) of the utility service territory in a downloadable shapefile GIS format, following the schema provided in the spatial reporting schema attachment. All data is reported quarterly, this is a placeholder for quarterly spatial data.

Please refer to HWT's quarterly data report submitted concurrently herewith.

## 6.6 Recent weather patterns, last 5 years

### **Instructions for Table 6:**

*In the attached spreadsheet document, report weather measurements based upon the duration and scope of NWS Red Flag Warnings, High wind warnings and upon proprietary Fire Potential Index (or other similar fire risk potential measure if used) for each year. Calculate and report 5-year historical average as needed to correct previously-reported data.*

Table 6: Weather patterns, last 5 years – reference only is provided in Attachment B.

## 6.7 Recent and projected drivers of ignition probability

### **Instructions for Table 7:**

*In the attached spreadsheet document, report recent drivers of ignition probability according to whether or not risk events of that type are tracked, the number of incidents per year (e.g., all instances of animal contact regardless of whether they caused an outage, an ignition, or neither), the rate at which those incidents (e.g., object contact, equipment failure, etc.) cause an ignition in the column, and the number of ignitions that those incidents caused by category, for each of last five years as needed to correct previously-reported data.*

*Calculate and include 5-year historical averages. This requirement applies to all utilities, not only those required to submit annual ignition data. Any utility that does not have complete 2020 ignition data compiled by the WMP deadline shall indicate in the 2020 columns that said information is incomplete.*

Table 7.1: Key recent and projected drivers of ignition probability, last 5 years and projections is provided in Attachment B

Table 7.2: Key recent and projected drivers of ignition probability by HFTD status, last 5 years and projections is provided in Attachment B

## 6.8 Baseline state of equipment and wildfire and PSPS event risk reduction plans

### 6.8.1 Current baseline state of service territory and utility equipment

#### **Instructions for Table 8:**

*In the attached spreadsheet document, provide summary data for the current baseline state of HFTD and non-HFTD service territory in terms of circuit miles; overhead transmission lines, overhead distribution lines, substations, weather stations, and critical facilities located within the territory; and customers by type, located in urban versus rural versus highly rural areas and including the subset within the Wildland-Urban Interface (WUI) as needed to correct previously-reported data.*

*The totals of the cells for each category of information (e.g., “circuit miles (including WUI and non-WUI)”) would be equal to the overall service territory total (e.g., total circuit miles). For example, the total of number of customers in urban, rural, and highly rural areas of HFTD plus those in urban, rural, and highly rural areas of non-HFTD would equal the total number of customers of the entire service territory.*

Table 8: State of service territory and utility equipment is provided in Attachment B

### 6.8.2 Additions, removal, and upgrade of utility equipment by end of 3-year plan term

#### **Instructions for Table 9:**

*In the attached spreadsheet document, input summary information of plans and actuals for additions or removals of utility equipment as needed to correct previously-reported data. Report net additions using positive numbers and net removals and undergrounding using negative numbers for circuit miles and numbers of substations. Report changes planned or actualized for that year – for example, if 10 net overhead circuit miles were added in 2020, then report “10” for 2020. If 20 net overhead circuit miles are planned for addition by 2022, with 15 being added by 2021 and 5 more added by 2022, then report “15” for 2022 and “5” for 2021. Do not report cumulative change across years. In this case, do not report “20” for 2022, but instead the number planned to be added for just that year, which is “5”.*

Table 9: Location of actual and planned utility equipment additions or removal year over year is provided in Attachment B

#### **Instructions for Table 10:**

*Referring to the program targets discussed above, report plans and actuals for hardening upgrades in detail in the attached spreadsheet document. Report in terms of number of circuit miles or stations to be upgraded for each year, assuming complete implementation of wildfire mitigation activities, for HFTD and non-HFTD service territory for circuit miles of overhead transmission lines, circuit miles of overhead distribution lines, circuit miles of overhead*

*transmission lines located in Wildland-Urban Interface (WUI), circuit miles of overhead distribution lines in WUI, number of substations, number of substations in WUI, number of weather stations and number of weather stations in WUI as needed to correct previously-reported data.*

Table 10: Location of actual and planned utility infrastructure upgrades year over year is provided in Attachment B

## 7 MITIGATION INITIATIVES

### 7.1 Wildfire mitigation strategy

**Instructions:** Describe organization-wide wildfire mitigation strategy and goals for each of the following time periods, highlighting changes since the prior WMP report:

1. By June 1 of current year
2. By Sept 1 of current year
3. Before the next Annual WMP Update
4. Within the next 3 years
5. Within the next 10 years

The description of utility wildfire mitigation strategy shall:

- A. Discuss the utility's approach to determining how to manage wildfire risk (in terms of ignition probability and estimated wildfire consequence) as distinct from managing risks to safety and/or reliability. Describe how this determination is made both for (1) the types of activities needed and (2) the extent of those activities needed to mitigate these two different groups of risks. Describe to what degree the activities needed to manage wildfire risk may be incremental to those needed to address safety and/or reliability risks.
- B. Include a summary of what major investments and implementation of wildfire mitigation initiatives achieved over the past year, any lessons learned, any changed circumstances for the 2020 WMP term (i.e., 2020-2022), and any corresponding adjustment in priorities for the upcoming plan term. Organize summaries of initiatives by the wildfire mitigation categories listed in Section 7.3.
- C. List and describe all challenges associated with limited resources and how these challenges are expected to evolve over the next 3 years.
- D. Outline how the utility expects new technologies and innovations to impact the utility's strategy and implementation approach over the next 3 years, including the utility's program for integrating new technologies into the utility's grid. Include utility research listed above in Section 4.4.

HWT's wildfire mitigation strategy has not changed since its 2020 WMP and can be summarized as: (1) during the facility design phase, engaging with experienced vendors and contractors to design transmission facilities to minimize wildfire risk; (2) during the construction phase, developing and implementing measures to prevent or minimize the probability of occurrence of site-specific risks and risk drivers; and (3) during the operations phase, including mitigating measures into standard operating procedures to ensure that day-to-day operations are performed in a manner that prevents or minimizes the probability of occurrence of site-specific risks and risk drivers.

HWT's approach to determining how to manage wildfire risk is informed by industry best practices, collaboration with experienced internal and external SMEs as detailed in Section 4 of this WMP, and lessons learned through the CPUC's WMP proceeding. Many of HWT's strategies



to manage wildfire risk are similar or related to strategies it undertakes to manage overall risks related to safety and reliability. In addition, as a new transmission-only utility with one operational facility that was recently energized, HWT is continually developing its strategies, particularly as it gains operational experience. As described in detail in Section 4 of this WMP, HWT uses the FMEA process to identify and mitigate wildfire-related risks at the Suncrest Facility. Given that the Suncrest Facility is located in Tier 3 (Extreme) HFTD, HWT's wildfire-related initiatives are primarily focused on infrastructure hardening, undergrounding, increased inspections, increased situational awareness, and operational measures such as detailed facility inspections prior to RFW conditions in the area of the Facility.

In 2020, HWT implemented several wildfire mitigation initiatives at the Suncrest Facility that were approved in HWT's 2020 WMP, including:

- **Grid Design and System Hardening:** Installation of 10 feet tall concrete perimeter wall around the SVC facility to reduce the potential for on-site ignitions to spread to off-site vegetation or probability of non-HWT-related wildfire in the surrounding area to directly impact operations of the Suncrest Facility
- **Situational Awareness and Forecasting:** Installation of a weather station and camera to enhance situational awareness
- **Situational Awareness and Forecasting:** Installation of transformer oil gas monitoring to aid real-time monitoring of transformer health

HWT's lessons learned from operating the Suncrest Facility during California's record-breaking wildfire year in 2020 are summarized in Section 4.1 of this WMP and HWT's priority remains to further reduce wildfire risk at the Suncrest Facility given Tier 3 (Extreme) wildfire threat designation and recent history of fast-spreading wildfires in the area.

As far as challenges associated with limited resources, HWT has dedicated operations personnel in the field who oversee day-to-day operations, maintenance, and regular inspections of the Suncrest Facility. HWT also has contracted a qualified third party to perform vegetation management work for the next several years to ensure guaranteed access to critical vegetation management resources given the current high demand for qualified utility vegetation management personnel.

Below, HWT describes how it will approach these strategies for each of the following time periods:

**By June 1, 2021:**

HWT is currently implementing additional wildfire mitigation measures at its only operational asset, the Suncrest Facility. HWT's goal by June 1, 2021 is to continue safe construction at the site and have no ignition incidents or near misses, especially

because fire risk is typically the highest during construction, when many activities are occurring simultaneously and include grading/grubbing, vehicle operation, larger numbers of workers on the site, Hot Work, and other potential spark, flame, or heat causing activities.

**By September 1, 2021:**

Similar to above, HWT's goal by September 1, 2021 is to continue safe construction at the site and have no ignition incidents or near misses.

**Before the next annual WMP update:**

HWT's primary goal prior to the next annual WMP update in 2022 is substantial completion of additional wildfire mitigation measures identified for the Suncrest Facility as further detailed in Section 7.3 of this WMP, including the following improvements:

- Undergrounding overhead transmission line and installation of underground cable monitoring
- Installation of transformer seismic pads
- Installation of transformer blast walls
- Installation of flame-suppressing transformer containment stone

**Within the next 3 years:**

During the next three years, HWT may construct and/or acquire additional transmission facilities in California. HWT will apply the same robust wildfire mitigation strategies that are being developed and implemented for the Suncrest Facility to new facilities, with any modifications as appropriate to take into account the specific characteristics of new facilities.

**Within the next 10 years:**

During the next ten years, HWT's wildfire mitigation strategies are expected to mature and evolve with the industry and the wildfire threat, including through HWT's operational experience and lessons learned through the CPUC's wildfire mitigation process. HWT also expects to leverage new technologies in the realm of wildfire safety as they become available and as determined applicable to its facilities. HWT is committed to the ongoing achievement and continuous improvement of its fire prevention goals and will invest appropriate resources at each of its facilities as part of its overall commitment.

## 7.2 Wildfire Mitigation Plan implementation

**Instructions:** Describe the processes and procedures the electrical corporation will use to do all the following:

- A. Monitor and audit the implementation of the plan. Include what is being audited, who conducts the audits, what type of data is being collected, and how the data undergoes quality assurance and quality control.
- B. Identify any deficiencies in the plan or the plan's implementation and correct those deficiencies.
- C. Monitor and audit the effectiveness of inspections, including inspections performed by contractors, carried out under the plan and other applicable statutes and commission rules.
- D. Ensure that across audits, initiatives, monitoring, and identifying deficiencies, the utility will report in a format that matches across WMPs, Quarterly Reports, Quarterly Advice Letters,<sup>9</sup> and annual compliance assessment.

HWT has several processes and procedures in place to monitor wildfire plan implementation, as summarized below.

- A. Monitoring and auditing the implementation of the plan.** Per the established roles and responsibilities (see Section 1), the HWT President is responsible for WMP Compliance Assurance to ensure that the WMP obligations are met, including implementing predictive, detective, and corrective controls to mitigate the compliance risk. These controls are used to identify any deficiencies in WMP implementation.
- B. Identifying and correcting deficiencies in the plan.** HWT Operations Leads are responsible for implementing WMP in the field and reporting to the Director of Operations and HWT President, who address any WMP deficiencies identified. The Director of Operations shall review any changes in the WMP, and annual WMP updates are approved by the HWT President. HWT WMPs filed to date have been approved by the CPUC without conditions, and the CPUC has not identified any deficiencies in HWT's wildfire-related compliance.
- C. Monitoring and auditing the effectiveness of inspections.** The HWT Operations Lead documents scheduled and completed inspections of facilities and equipment along with line inspections. The Director of Operations monitors and reviews inspections conducted by operational staff to ensure sustainment of efforts to identify any potential sources of ignition and near misses. Facility inspections are limited to the Suncrest Facility, HWT's

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<sup>9</sup> General Rule for filing Advice Letters are available in General Order 96-B: <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M023/K381/23381302.PDF>

only operational asset at the time of this report. Inspection reports would be submitted to HWT's Operations Lead for inclusion in the overall facility documentation.

- D. Ensuring that utility reports in a format that matches across WMPs, Quarterly Reports, Quarterly Advice Letters, and annual compliance assessment.** Director of Strategy and Business Development is responsible for ensuring that HWT timely meets all WMP milestones (including annual WMP updates, quarterly reports, field inspections data, annual Maturity Model updates, responding to requests from the Wildfire Safety Division (WSD), etc.) in CPUC-specified format. HWT closely monitors all wildfire-related developments and updates released by the CPUC to ensure timely and accurate compliance. HWT President reviews HWT's WMP ahead of submission to the CPUC.

### 7.3 Detailed wildfire mitigation programs

*Instructions: In this section, describe how the utility's specific programs and initiatives plan to execute the strategy set out in Section 5. The specific programs and initiatives are divided into 10 categories, with each providing a space for a narrative description of the utility's initiatives and a summary table for numeric input in the subsequent tables in this section. The initiatives are organized by the following categories provided in this section:*

**1. Risk assessment and mapping**

As previously indicated, HWT utilizes the FMEA methodology for assessing risk and has commissioned a third-party wildfire mitigation assessment to assess ignition risk and wildfire propagation in the area of HWT's Suncrest Facility. HWT updates the FMEA annually to ensure continuous improvement of HWT's wildfire mitigation strategy as new technologies and best practices emerge.

**2. Situational awareness and forecasting**

HWT's facilities are remotely operated and monitored 24/7 from its affiliate Lone Star Transmission, LLC's NERC-certified control center located in Austin, Texas. Graphic displays and alarm processing ensure HWT transmission system operators have real-time situational awareness. Support personnel perform checks of the applications and hardware to ensure they are in proper working order. Any site anomalies are communicated to local personnel and Director of Operations, who will manage and undertake site corrective actions. Since its 2020 WMP, HWT has enhanced situational awareness and forecasting by installing a weather station, a camera, and transformer oil gas monitoring equipment at the Suncrest Facility. Additionally, HWT is further enhancing its situational awareness by developing a proprietary FPI as described in Section 4 of this WMP and installing thermal and partial discharge monitoring for the 230 kV underground cable at the Suncrest Facility.

### **3. Grid design and system hardening**

The HWT Facilities have been designed to incorporate robust wildfire hardening measures to prevent ignitions, including inspected and maintained fuel management setbacks, non-combustible and ignition resistant equipment materials, both of which work to minimize fire effects on the facility and the likelihood that a facility fire would burn off-site into vegetation.

Since its 2020 WMP, HWT has erected a 10 feet tall concrete perimeter wall around the Suncrest Facility to provide an additional layer of defense against a fire originating inside the station propagating beyond the Facility. As detailed further in Section 7.3.2, HWT is further hardening the Suncrest Facility, including undergrounding 115 feet overhead span of 230 kV transmission line, installation of transformer seismic pads, transformer blast walls, and flame suppressing transformer containment stone.

### **4. Asset management and inspections**

HWT conducts monthly detailed inspections of the Suncrest Facility, including inspection of the short, 115-foot span of overhead transmission line from HWT's riser pole to an intermediate pole just outside of the SDG&E Suncrest Substation. HWT also conducts additional asset inspections ahead of extreme weather events, such as RFW alerts. Since its 2020 WMP, there have been no changes to HWT's asset management and inspections approach.

### **5. Vegetation management and inspections**

HWT incorporates a vegetation management program at HWT facilities as an important component of its fire prevention strategy. The objective of the vegetation management program is to minimize the likelihood that an ignition on-site facilitates an off-site vegetation ignition. A secondary objective of the vegetation management program is the protection of equipment from wildfire encroachment. The vegetation management strategies are based on removal of all vegetation from within the perimeter fenced area and provision of a modified fuel zone outside the fence, resulting in a layered approach. The tactics for vegetation management include vegetation removal during grading within the fenced area and maintained throughout operations by placement of rock and treatments with herbicide, as necessary. Perimeter fuel modification areas will be treated by removal of the highest flammability plants and maintenance in a thinned, low fuel condition. Since its 2020 WMP, there have been no changes to HWT's vegetation management and inspections approach.

### **6. Grid operations and protocols**

As described previously, HWT's Suncrest Facility is remotely controlled and monitored 24/7. HWT does not own any distribution infrastructure and hence does not have recloser protocols in place. In addition to the protocols mentioned above, HWT has an Emergency Operations Plan to enable appropriate emergency response. HWT Operations staff are trained on the Emergency Operations Plan. Since its 2020 WMP, there have been no changes to HWT's grid operations and protocols.

## **7. Data governance**

HWT maintains a centralized secure repository for all wildfire-related data for its one operational transmission asset, the Suncrest Facility, including all procedures and relevant documents. Since its 2020 WMP, there have been no changes to HWT's data governance practices.

## **8. Resource allocation methodology**

HWT's resource allocation is focused on prevention and detection and to enable prompt emergency response. Given HWT's current limited footprint, HWT has a small dedicated Operations team in the field overseeing the asset. Since its 2020 WMP, there have been no changes to HWT's resource allocation methodology.

## **9. Emergency planning and preparedness**

This WMP's disaster and emergency preparedness plan is consistent with HWT's overall emergency response approach at the HWT Facilities. HWT has an emergency management plan, including HWT's response to wildfire threats and hazards. While HWT does not own distribution facilities and therefore does not serve end-use customers, HWT recognizes its role in working with Interconnecting Transmission Owners, the CAISO, local fire agencies, and first responders in restoring normalcy after an incident. Since its 2020 WMP, there have been no changes to HWT's emergency planning and preparedness practices.

## **10. Stakeholder cooperation and community engagement**

As explained above, as a transmission-only utility, HWT does not serve end-use customers or have a traditional service territory. Therefore, HWT does not anticipate providing customer support or engage with communities during an emergency. However, HWT has developed a protocol for communication and coordination with its primary stakeholders, including the CAISO and Interconnecting Transmission Owner. HWT's President or designee would be the lead in implementing this communications protocol during an emergency. Since its 2020 WMP, there have been no changes to HWT's stakeholder cooperation and community engagement practices.

### **7.3.1 Financial data on mitigation initiatives, by category**

*Instructions: In the following section (7.3.2) is a list of potential wildfire and PSPS mitigation activities which fit under the 10 categories listed above. While it is not necessary to have initiatives within all activities, all mitigation initiatives will fit into one or more of the activities listed below. Financial information—including actual / projected spend, spend per line-miles treated, and risk-spend-efficiency for activity by HFTD tier (all regions, non-HFTD, HFTD tier 2, HFTD tier 3) for all HFTD tiers which the activity has been or plans to be applied—is reported in the attached file quarterly. Report any updates to the financial data in the spreadsheet attached in Table 12.*



### 7.3.2 Detailed information on mitigation initiatives by category and activity

*Instructions: Report detailed information for each initiative activity in which spending was above \$0 over the course of the current WMP cycle (2020-2022). For each activity, organize details under the following headings:*

1. ***Risk to be mitigated / problem to be addressed***
2. ***Initiative selection ("why" engage in activity) – include reference to a risk informed analysis on empirical (or projected) impact of initiative in comparison to alternatives***
3. ***Region prioritization ("where" to engage activity) – include reference to a risk informed analysis in allocation of initiative (e.g., veg clearance is done for trees tagged as "high-risk")***
4. ***Progress on initiative (amount spent, regions covered) and plans for next year***
5. ***Future improvements to initiative***

***List of initiative activities by category*** - Detailed definitions for each mitigation activity are provided in the appendix

Given HWT's limited scope of operations and nature as a transmission-only utility with no end-use customers, several of the below initiatives are not applicable to HWT.

#### **Risk assessment and mapping**

- 1.1. **A summarized risk map showing the overall ignition probability and estimated wildfire consequence along electric lines and equipment**  
Not applicable to HWT
- 1.2. **Climate-driven risk map and modelling based on various relevant weather scenarios**  
Not applicable to HWT
- 1.3. **Ignition probability mapping showing the probability of ignition along the electric lines and equipment**  
Not applicable to HWT
- 1.4. **Initiative mapping and estimation of wildfire and PSPS risk-reduction impact**  
Not applicable to HWT
- 1.5. **Match drop simulations showing the potential wildfire consequence of ignitions that occur along the electric lines and equipment**
  - a) ***Risk to be mitigated / problem to be addressed:*** Lack of awareness of risk of wildfire propagation in case of a utility-caused ignition in the area.
  - b) ***Initiative selection ("why" engage in activity) – include reference to a risk informed analysis on empirical (or projected) impact of initiative in comparison to alternatives:*** HWT engaged in this initiative to enhance HWT's awareness of wildfire propagation risk in the area of the Suncrest Facility and identify appropriate wildfire mitigation initiatives. There were no other viable alternatives to this initiative.
  - c) ***Region prioritization ("where" to engage activity) – include reference to a risk informed analysis in allocation of initiative (e.g., veg clearance is done for trees tagged as "high-***

- risk*"): N/A. As mentioned above, HWT currently has one operational asset in California, the Suncrest Facility, and thus HWT does not currently operate in more than one region.
- d) **Progress on initiative (amount spent, regions covered) and plans for next year:** HWT has completed this initiative in 2020 by commissioning 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 that HWT is working on implementing at the asset. The characterization of wildfire risk in the Suncrest area per this assessment is further detailed in section 4.2.1 of this WMP. HWT completed this initiative in the first half of 2020 prior to the fast-spreading Valley Fire that occurred in September 2020. This initiative greatly increased HWT's awareness of environmental conditions in the Suncrest Area, aided HWT in preparation for wildfire events, and enabled HWT to further reduce wildfire risk at the Suncrest Facility. The amount spent on this initiative is provided in Attachment B Table 12.
  - e) **Future improvements to initiative:** As HWT grows its footprint in California, it will evaluate conducting similar simulations in other areas of HWT's assets to assess wildfire propagation consequences around HWT facilities.

## Situational awareness and forecasting

### 2.1. Advanced weather monitoring and weather stations

- a) **Risk to be mitigated / problem to be addressed:** Lack of specific 24/7 real-time weather information and situational awareness to inform operational decisions.
- b) **Initiative selection ("why" engage in activity) – include reference to a risk informed analysis on empirical (or projected) impact of initiative in comparison to alternatives:** Weather monitoring is a critical data component to enable HWT to develop its proprietary fire prediction index and inform operational decision-making based on real-time weather conditions at the site. HWT decided to install a weather station at the Suncrest Facility to have sufficient granularity of weather data at the asset location.
- c) **Region prioritization ("where" to engage activity) – include reference to a risk informed analysis in allocation of initiative (e.g., veg clearance is done for trees tagged as "high-risk"):** N/A. As mentioned above, HWT currently has one operational asset in California, the Suncrest Facility, and thus HWT does not currently operate in more than one region.
- d) **Progress on initiative (amount spent, regions covered) and plans for next year:** HWT installed the weather station at its only operational asset, the Suncrest Facility, in 2020 per its 2020 CPUC-approved WMP. The amount spent on this initiative is provided in Attachment B Table 12.
- e) **Future improvements to initiative:** As HWT grows its footprint in California, it will evaluate installing additional weather stations at HWT's new assets.

### 2.2. Continuous monitoring sensors

- a) **Risk to be mitigated / problem to be addressed:** Lack of real-time health monitoring for electric transformers to inform operational decisions.
- b) **Initiative selection ("why" engage in activity) – include reference to a risk informed analysis on empirical (or projected) impact of initiative in comparison to alternatives:** Electric transformers contain mineral oil that provides insulation and cooling.

Transformer failures are frequently caused by a degradation of the mineral oil's dielectric properties, leading to an internal electrical arc. As the mineral oil degrades, gases are produced and dissolved into the oil. Analysis of the types and amounts of gases present in the mineral oil can provide valuable insights into the health of the transformer and can provide advanced warning of a potential failure if trends in the gases are tracked. HWT decided to install transformer oil gas monitors at the Suncrest Facility in order to help monitor and track the health of the transformers and to proactively identify potential vulnerabilities.

- c) **Region prioritization** ("where" to engage activity) – include reference to a risk informed analysis in allocation of initiative (e.g., veg clearance is done for trees tagged as "high-risk"): N/A. As mentioned above, HWT currently has one operational asset in California, the Suncrest Facility, and thus HWT does not currently operate in more than one region.
- d) **Progress on initiative** (amount spent, regions covered) and plans for next year: HWT installed transformer oil gas monitors at its only operational asset, the Suncrest Facility, in 2020. The amount spent on this initiative is provided in Attachment B Table 12.
- e) **Future improvements to initiative**: As HWT grows its footprint in California, it will evaluate installing additional continuous monitoring sensors at HWT's new assets.

### 2.3. Fault indicators for detecting faults on electric lines and equipment

Not applicable to HWT

### 2.4. Forecast of a fire risk index, fire potential index, or similar

- a) **Risk to be mitigated / problem to be addressed**: Lack of awareness of fire threat and propagation based on environmental conditions (temperature, humidity and fuel moisture level, wind speed, etc.).
- b) **Initiative selection** ("why" engage in activity) – include reference to a risk informed analysis on empirical (or projected) impact of initiative in comparison to alternatives: As described in detail in Section 4, HWT is working on developing a proprietary fire risk index for its territory to increase awareness of fire threat and potential for wildfire propagation based on environmental conditions to inform operational decisions and reduce risk of utility-caused ignitions during extreme weather events.
- c) **Region prioritization** ("where" to engage activity) – include reference to a risk informed analysis in allocation of initiative (e.g., veg clearance is done for trees tagged as "high-risk"): N/A. As mentioned above, HWT currently has one operational asset in California, the Suncrest Facility, and thus HWT does not currently operate in more than one region.
- d) **Progress on initiative** (amount spent, regions covered) and plans for next year: HWT has started development of fire risk index late in 2020 and plans to have a minimum viable product with key features that determine fire potential index and help inform operational decisions by the end of 2021. The amount spent on this initiative is provided in Attachment B Table 12.
- e) **Future improvements to initiative**: As HWT grows its footprint in California and gains more operational experience, it will evaluate implementing new features into its proprietary fire risk index and expanding the fire index to HWT's future assets.

**2.5. Personnel monitoring areas of electric lines and equipment in elevated fire risk conditions**

- a) **Risk to be mitigated / problem to be addressed:** Lack of awareness of fire threat.
- b) **Initiative selection ("why" engage in activity) – include reference to a risk informed analysis on empirical (or projected) impact of initiative in comparison to alternatives:**  
As described in detail in Section 4, HWT monitors the Suncrest Facility 24/7. Additionally, System Operators are alerted to high fire threat conditions in the area of the Suncrest Facility to ensure increased monitoring during extreme weather conditions.
- c) **Region prioritization ("where" to engage activity) – include reference to a risk informed analysis in allocation of initiative (e.g., veg clearance is done for trees tagged as "high-risk"):** N/A. As mentioned above, HWT currently has one operational asset in California, the Suncrest Facility, and thus HWT does not currently operate in more than one region.
- d) **Progress on initiative (amount spent, regions covered) and plans for next year:** HWT has monitored the Suncrest Facility 24/7 since the start of operation in 2020.
- e) **Future improvements to initiative:** As HWT grows its footprint in California and gains more operational experience, it will evaluate implementing additional protocols for monitoring areas of electric lines and equipment.

**2.6. Weather forecasting and estimating impacts on electric lines and equipment**

Not applicable to HWT

**Grid design and system hardening**

**3.1. Capacitor maintenance and replacement program**

Not applicable to HWT

**3.2. Circuit breaker maintenance and installation to de-energize lines upon detecting a fault**

Not applicable to HWT

**3.3. Covered conductor installation**

Not applicable to HWT

**3.4. Covered conductor maintenance**

Not applicable to HWT

**3.5. Crossarm maintenance, repair, and replacement**

Not applicable to HWT

**3.6. Distribution pole replacement and reinforcement, including with composite poles**

Not applicable to HWT

**3.7. Expulsion fuse replacement**

Not applicable to HWT

**3.8. Grid topology improvements to mitigate or reduce PSPS events**

Not applicable to HWT

**3.9. Installation of system automation equipment**

Not applicable to HWT

**3.10. Maintenance, repair, and replacement of connectors, including hotline clamps**

Not applicable to HWT

**3.11. Mitigation of impact on customers and other residents affected during PSPS event**

Not applicable to HWT

**3.12. Other corrective action**

- a) ***Risk to be mitigated / problem to be addressed:*** Insufficient wildfire hardening given asset's location in Tier 3 (Extreme) HFTD and increasing wildfire activity in the area of the Suncrest Facility.
- b) ***Initiative selection ("why" engage in activity) – include reference to a risk informed analysis on empirical (or projected) impact of initiative in comparison to alternatives:*** As described in Section 4, HWT has commissioned a third-party study to identify wildfire-related risks at HWT's Suncrest Facility and determine appropriate wildfire hardening measures. To further harden the Suncrest Facility and reduce wildfire risk at the asset, HWT is installing transformer seismic pads, transformer blast walls, and flame-suppressing stone in transformer containment pits in 2021 and 2022.
- c) ***Region prioritization ("where" to engage activity) – include reference to a risk informed analysis in allocation of initiative (e.g., veg clearance is done for trees tagged as "high-risk"):*** N/A. As mentioned above, HWT currently has one operational asset in California, the Suncrest Facility, and thus HWT does not currently operate in more than one region.
- d) ***Progress on initiative (amount spent, regions covered) and plans for next year:*** Since its 2020 WMP filing, HWT has erected a 10 feet tall concrete perimeter wall around the Suncrest SVC to minimize the risk of utility-caused ignition propagating outside of the SVC site and igniting vegetation offsite. The amount spent on this initiative is provided in Attachment B Table 12.
- e) ***Future improvements to initiative:*** As HWT grows its footprint in California and gains more operational experience, it will evaluate additional prudent wildfire hardening measures to implement at its assets.

**3.13. Pole loading infrastructure hardening and replacement program based on pole loading assessment program**

Not applicable to HWT

**3.14. Transformers maintenance and replacement**

Not applicable to HWT

**3.15. Transmission tower maintenance and replacement**

Not applicable to HWT

**3.16. Undergrounding of electric lines and/or equipment**

- a) ***Risk to be mitigated / problem to be addressed:*** Overhead transmission lines in Tier 3 (Extreme) HFTD are susceptible to failure and can cause fast-spreading wildfires during extreme weather conditions.
- b) ***Initiative selection ("why" engage in activity) – include reference to a risk informed analysis on empirical (or projected) impact of initiative in comparison to alternatives:*** Given the Suncrest Facility's location in a Tier 3 (Extreme) HFTD, HWT has decided to underground the short span of approximately 115 feet of overhead transmission line at

the Suncrest Facility, which was included in HWT's 2020 WMP and was approved by the CPUC. Given the high voltage of the line (230 kV), insulating the line to reduce wildfire risk is not a viable alternative, and there were no other alternatives to undergrounding that would provide equivalent risk reduction to undergrounding.

- c) **Region prioritization** ("where" to engage activity) – include reference to a risk informed analysis in allocation of initiative (e.g., veg clearance is done for trees tagged as "high-risk"): N/A. As mentioned above, HWT currently has one operational asset in California, the Suncrest Facility, and thus HWT does not currently operate in more than one region.
- d) **Progress on initiative** (amount spent, regions covered) and plans for next year: HWT expects to commence work on the undergrounding initiative in March 2021. While HWT originally planned to underground the 115 feet of overhead span of transmission line at the Suncrest Facility in 2020, HWT was unable to do so due to regulatory delays needed to conduct the work, as documented in HWT's December 11, 2020 Change Order report, which was approved by the WSD on February 8, 2021. HWT will continue working with the interconnecting transmission owner to ensure timely undergrounding of the transmission line and plans to complete this work by August 1, 2021. The amount spent on this initiative is provided in Attachment B Table 12.
- e) **Future improvements to initiative**: As HWT grows its footprint in California, it will evaluate undergrounding of electric lines and / or equipment at HWT's new assets.

### 3.17. Updates to grid topology to minimize risk of ignition in HFTDs

Not applicable to HWT

## Asset management and inspections

### 4.1. Detailed inspections of distribution electric lines and equipment

Not applicable to HWT

### 4.2. Detailed inspections of transmission electric lines and equipment

- a) **Risk to be mitigated / problem to be addressed**: Timely identification of equipment deterioration and failure.
- b) **Initiative selection** ("why" engage in activity) – include reference to a risk informed analysis on empirical (or projected) impact of initiative in comparison to alternatives: Regular asset inspections enable HWT to closely monitor the health of its infrastructure and proactively identify potential issues and problems, allowing HWT to correct these issues and avoid potential equipment failure, which can contribute to a utility-caused ignition.
- c) **Region prioritization** ("where" to engage activity) – include reference to a risk informed analysis in allocation of initiative (e.g., veg clearance is done for trees tagged as "high-risk"): N/A. As mentioned above, HWT currently has one operational asset in California, the Suncrest Facility, and thus HWT does not currently operate in more than one region.
- d) **Progress on initiative** (amount spent, regions covered) and plans for next year: Per HWT's 2020 CPUC-approved WMP, HWT has been conducting regular monthly inspections of the Suncrest Facility in addition to extra inspections ahead of RFW conditions in the area of the Facility. HWT plans to continue its cadence of asset inspections. The amount spent on this initiative is provided in Attachment B Table 12.



- e) ***Future improvements to initiative:*** As HWT gains more operational experience, it will evaluate making appropriate changes to its asset management and inspections procedures.
- 4.3. Improvement of inspections**  
Not applicable to HWT
- 4.4. Infrared inspections of distribution electric lines and equipment**  
Not applicable to HWT
- 4.5. Infrared inspections of transmission electric lines and equipment**  
Not applicable to HWT
- 4.6. Intrusive pole inspections**  
Not applicable to HWT
- 4.7. LiDAR inspections of distribution electric lines and equipment**  
Not applicable to HWT
- 4.8. LiDAR inspections of transmission electric lines and equipment**  
Not applicable to HWT
- 4.9. Other discretionary inspection of distribution electric lines and equipment, beyond inspections mandated by rules and regulations**  
Not applicable to HWT
- 4.10. Other discretionary inspection of transmission electric lines and equipment, beyond inspections mandated by rules and regulations**  
Not applicable to HWT
- 4.11. Patrol inspections of distribution electric lines and equipment**  
Not applicable to HWT
- 4.12. Patrol inspections of transmission electric lines and equipment**  
Not applicable to HWT
- 4.13. Pole loading assessment program to determine safety factor**  
Not applicable to HWT
- 4.14. Quality assurance / quality control of inspections**
  - a) ***Risk to be mitigated / problem to be addressed:*** Ensuring high quality of inspections and mitigating potential to miss an equipment issue that could become a fire hazard.
  - b) ***Initiative selection ("why" engage in activity) – include reference to a risk informed analysis on empirical (or projected) impact of initiative in comparison to alternatives:*** HWT Director of Operations works with HWT's field operations personnel to review results of monthly equipment inspections and identify any gaps or issues that need to be addressed to mitigate problems and reduce risk of utility-caused ignitions.
  - c) ***Region prioritization ("where" to engage activity) – include reference to a risk informed analysis in allocation of initiative (e.g., veg clearance is done for trees tagged as "high-risk"):*** N/A. As mentioned above, HWT currently has one operational asset in California, the Suncrest Facility, and thus HWT does not currently operate in more than one region.

- d) **Progress on initiative (amount spent, regions covered) and plans for next year:** Per HWT's 2020 CPUC-approved WMP, HWT has been conducting regular monthly inspections of the Suncrest Facility in addition to extra inspections ahead of RFW conditions in the area of the Facility. HWT plans to continue its cadence of asset inspections. The amount spent on this initiative is provided in Attachment B Table 12.
- e) **Future improvements to initiative:** As HWT gains more operational experience, it will evaluate making appropriate changes to its asset management and inspections procedures, including QA / QC processes.

#### 4.15. Substation inspections

- a) **Risk to be mitigated / problem to be addressed:** Timely identification of equipment deterioration and failure.
- b) **Initiative selection ("why" engage in activity) – include reference to a risk informed analysis on empirical (or projected) impact of initiative in comparison to alternatives:** Regular asset inspections enable HWT to closely monitor the health of its infrastructure and proactively identify potential issues and problems, allowing HWT to correct these issues and avoid potential equipment failure, which can contribute to a utility-caused ignition.
- c) **Region prioritization ("where" to engage activity) – include reference to a risk informed analysis in allocation of initiative (e.g., veg clearance is done for trees tagged as "high-risk"):** N/A. As mentioned above, HWT currently has one operational asset in California, the Suncrest Facility, and thus HWT does not currently operate in more than one region.
- d) **Progress on initiative (amount spent, regions covered) and plans for next year:** Per HWT's 2020 CPUC-approved WMP, HWT has been conducting regular monthly inspections of the Suncrest Facility in addition to extra inspections ahead of RFW conditions in the area of the Facility. HWT plans to continue its cadence of asset inspections. The amount spent on this initiative is provided in Attachment B Table 12.
- e) **Future improvements to initiative:** As HWT gains more operational experience, it will evaluate making appropriate changes to its asset management and inspections procedures.

### Vegetation management and inspections

#### 5.1. Additional efforts to manage community and environmental impacts

Not applicable to HWT

#### 5.2. Detailed inspections of vegetation around distribution electric lines and equipment

Not applicable to HWT

#### 5.3. Detailed inspections of vegetation around transmission electric lines and equipment

- a) **Risk to be mitigated / problem to be addressed:** Timely identification of vegetation encroachment around electric lines and equipment.
- b) **Initiative selection ("why" engage in activity) – include reference to a risk informed analysis on empirical (or projected) impact of initiative in comparison to alternatives:** Regular inspections of vegetation around transmission lines and equipment enable HWT to vegetation encroachment or contact with electric equipment, which can contribute to a utility-caused ignition.

- c) **Region prioritization** ("where" to engage activity) – include reference to a risk informed analysis in allocation of initiative (e.g., veg clearance is done for trees tagged as "high-risk"): N/A. As mentioned above, HWT currently has one operational asset in California, the Suncrest Facility, and thus HWT does not currently operate in more than one region.
  - d) **Progress on initiative** (amount spent, regions covered) and plans for next year: Per HWT's 2020 CPUC-approved WMP, HWT has been conducting regular monthly inspections of the Suncrest Facility in addition to extra inspections ahead of RFW conditions in the area of the Facility. HWT plans to continue its cadence of asset inspections. The amount spent on this initiative is provided in Attachment B Table 12.
  - e) **Future improvements to initiative:** As HWT gains more operational experience, it will evaluate making appropriate changes to its vegetation management and inspections procedures.
- 5.4. Emergency response vegetation management due to red flag warning or other urgent conditions**  
Not applicable to HWT
- 5.5. Fuel management and reduction of "slash" from vegetation management activities**  
Not applicable to HWT
- 5.6. Improvement of inspections**  
Not applicable to HWT
- 5.7. LiDAR inspections of vegetation around distribution electric lines and equipment**  
Not applicable to HWT
- 5.8. LiDAR inspections of vegetation around transmission electric lines and equipment**  
Not applicable to HWT
- 5.9. Other discretionary inspection of vegetation around distribution electric lines and equipment, beyond inspections mandated by rules and regulations**  
Not applicable to HWT
- 5.10. Other discretionary inspection of vegetation around transmission electric lines and equipment, beyond inspections mandated by rules and regulations**  
Not applicable to HWT
- 5.11. Patrol inspections of vegetation around distribution electric lines and equipment**  
Not applicable to HWT
- 5.12. Patrol inspections of vegetation around transmission electric lines and equipment**  
Not applicable to HWT
- 5.13. Quality assurance / quality control of inspections**
- a) **Risk to be mitigated / problem to be addressed:** Ensuring high quality of inspections and mitigating potential to miss an equipment issue that could become a fire hazard.
  - b) **Initiative selection** ("why" engage in activity) – include reference to a risk informed analysis on empirical (or projected) impact of initiative in comparison to alternatives: HWT Director of Operations works with HWT's field operations personnel to review

results of monthly equipment inspections and identify any gaps or issues that need to be addressed to mitigate problems and reduce risk of utility-caused ignitions.

- c) **Region prioritization** ("where" to engage activity) – include reference to a risk informed analysis in allocation of initiative (e.g., veg clearance is done for trees tagged as "high-risk"): N/A. As mentioned above, HWT currently has one operational asset in California, the Suncrest Facility, and thus HWT does not currently operate in more than one region.
- d) **Progress on initiative** (amount spent, regions covered) and plans for next year: Per HWT's 2020 CPUC-approved WMP, HWT has been conducting regular monthly inspections of the Suncrest Facility in addition to extra inspections ahead of RFW conditions in the area of the Facility. HWT plans to continue its cadence of asset inspections. The amount spent on this initiative is provided in Attachment B Table 12.
- e) **Future improvements to initiative**: As HWT gains more operational experience, it will evaluate making appropriate changes to its asset management and inspections procedures, including QA / QC processes.

#### 5.14. Recruiting and training of vegetation management personnel

Not applicable to HWT

#### 5.15. Remediation of at-risk species

Not applicable to HWT

#### 5.16. Removal and remediation of trees with strike potential to electric lines and equipment

Not applicable to HWT

#### 5.17. Substation inspections

- a) **Risk to be mitigated / problem to be addressed**: Timely identification of equipment deterioration and failure.
- b) **Initiative selection** ("why" engage in activity) – include reference to a risk informed analysis on empirical (or projected) impact of initiative in comparison to alternatives: Regular asset inspections enable HWT to closely monitor the health of its infrastructure and proactively identify potential issues and problems, allowing HWT to correct these issues and avoid potential equipment failure, which can contribute to a utility-caused ignition.
- c) **Region prioritization** ("where" to engage activity) – include reference to a risk informed analysis in allocation of initiative (e.g., veg clearance is done for trees tagged as "high-risk"): N/A. As mentioned above, HWT currently has one operational asset in California, the Suncrest Facility, and thus HWT does not currently operate in more than one region.
- d) **Progress on initiative** (amount spent, regions covered) and plans for next year: Per HWT's 2020 CPUC-approved WMP, HWT has been conducting regular monthly inspections of the Suncrest Facility in addition to extra inspections ahead of RFW conditions in the area of the Facility. HWT plans to continue its cadence of asset inspections. The amount spent on this initiative is provided in Attachment B Table 12.
- e) **Future improvements to initiative**: As HWT gains more operational experience, it will evaluate making appropriate changes to its asset management and inspections procedures.

#### 5.18. Substation vegetation management

- a) **Risk to be mitigated / problem to be addressed:** Potential for vegetation contact with electric equipment that could result in a fire hazard.
- b) **Initiative selection ("why" engage in activity) – include reference to a risk informed analysis on empirical (or projected) impact of initiative in comparison to alternatives:** While HWT's Suncrest Facility has hardscaped design that minimizes on-site vegetation, HWT performs vegetation management as needed per its 2020 WMP to remove any vegetation around the Suncrest SVC, including inside the concrete perimeter wall and within a defensible space outside the facility to minimize any potential for contact of vegetation with electric equipment, which could contribute to a fire hazard.
- c) **Region prioritization ("where" to engage activity) – include reference to a risk informed analysis in allocation of initiative (e.g., veg clearance is done for trees tagged as "high-risk"):** N/A. As mentioned above, HWT currently has one operational asset in California, the Suncrest Facility, and thus HWT does not currently operate in more than one region.
- d) **Progress on initiative (amount spent, regions covered) and plans for next year:** Per HWT's 2020 CPUC-approved WMP, HWT has engaged a third party to perform vegetation management and remove any vegetation that could come in contact with electric equipment. The amount spent on this initiative is provided in Attachment B Table 12.
- e) **Future improvements to initiative:** As HWT gains more operational experience, it will evaluate making appropriate changes to its vegetation management and inspections procedures.

#### 5.19. Vegetation inventory system

Not applicable to HWT

#### 5.20. Vegetation management to achieve clearances around electric lines and equipment

- a) **Risk to be mitigated / problem to be addressed:** Potential for vegetation contact with electric equipment that could result in a fire hazard.
- b) **Initiative selection ("why" engage in activity) – include reference to a risk informed analysis on empirical (or projected) impact of initiative in comparison to alternatives:** While HWT has only 115 feet of overhead transmission line and the Suncrest Facility has hardscaped design, HWT performs vegetation management as needed per its 2020 WMP to remove any vegetation around the Suncrest SVC and the overhead transmission line to minimize any potential for contact of vegetation with electric equipment, which would contribute to a fire hazard.
- c) **Region prioritization ("where" to engage activity) – include reference to a risk informed analysis in allocation of initiative (e.g., veg clearance is done for trees tagged as "high-risk"):** N/A. As mentioned above, HWT currently has one operational asset in California, the Suncrest Facility, and thus HWT does not currently operate in more than one region.
- d) **Progress on initiative (amount spent, regions covered) and plans for next year:** Per HWT's 2020 CPUC-approved WMP, HWT has engaged a third party to perform vegetation management and remove any vegetation that could come in contact with electric equipment. The amount spent on this initiative is provided in Attachment B Table 12.

- e) ***Future improvements to initiative:*** As HWT gains more operational experience, it will evaluate making appropriate changes to its vegetation management and inspections procedures.

## **Grid operations and protocols**

### **6.1. Automatic recloser operations**

Not applicable to HWT

### **6.2. Crew-accompanying ignition prevention and suppression resources and services**

Not applicable to HWT

### **6.3. Personnel work procedures and training in conditions of elevated fire risk**

Not applicable to HWT

### **6.4. Protocols for PSPS re-energization**

- a) ***Risk to be mitigated / problem to be addressed:*** As described in Section 8 of this WMP below, HWT has established PSPS protocols, including a re-energization procedure, as a measure of last resort to mitigate wildfire risk.
- b) ***Initiative selection ("why" engage in activity) – include reference to a risk informed analysis on empirical (or projected) impact of initiative in comparison to alternatives:*** HWT proactively developed the PSPS procedure as part of its emergency operations plan as a measure of last resort to reduce wildfire risk. HWT's PSPS strategy is described in detail in Section 8. Given HWT's current footprint and scope, HWT believes that it will seldom, if ever, be necessary to issue a PSPS.
- c) ***Region prioritization ("where" to engage activity) – include reference to a risk informed analysis in allocation of initiative (e.g., veg clearance is done for trees tagged as "high-risk"):*** N/A. As mentioned above, HWT currently has one operational asset in California, the Suncrest Facility, and thus HWT does not currently operate in more than one region.
- d) ***Progress on initiative (amount spent, regions covered) and plans for next year:*** HWT has developed its emergency operations plan, including PSPS protocol, prior to the Suncrest Facility going in service on February 29, 2020. HWT provided its emergency operations plan to the CPUC as part of 2020 WMP and has not made any changes to its procedures. HWT has never deployed PSPS at the Suncrest Facility.
- e) ***Future improvements to initiative:*** As HWT gains more operational experience and grows its footprint in California, HWT will evaluate making appropriate changes to its PSPS protocols.

### **6.5. PPS events and mitigation of PPS impacts**

Not applicable to HWT

### **6.6. Stationed and on-call ignition prevention and suppression resources and services**

- a) ***Risk to be mitigated / problem to be addressed:*** Under extreme weather conditions, an ignition and a small fire that is not timely suppressed can grow rapidly and uncontrollably.
- b) ***Initiative selection ("why" engage in activity) – include reference to a risk informed analysis on empirical (or projected) impact of initiative in comparison to alternatives:*** Given the Suncrest Facility's location in Tier 3 (Extreme) HFTD with a recent history of



fast-spreading wildfires like the Valley Fire in September 2020, HWT has engaged a private fire brigade trained on electrical fires to be on-call for fire suppression service in case of an on-site ignition. This arrangement ensures that HWT has dedicated access to qualified fire suppression services that enable timely response in the field to avoid uncontrollable propagation of wildfire.

- c) **Region prioritization** ("where" to engage activity) – include reference to a risk informed analysis in allocation of initiative (e.g., veg clearance is done for trees tagged as "high-risk"): N/A. As mentioned above, HWT currently has one operational asset in California, the Suncrest Facility, and thus HWT does not currently operate in more than one region.
- d) **Progress on initiative** (amount spent, regions covered) and plans for next year: HWT has had on-call suppression service agreement with a private fire brigade since the Suncrest Facility became operational on February 29, 2020 and plans to maintain this agreement in the future given Tier 3 (Extreme) wildfire risk designation of the Suncrest Facility and recent fast-spreading wildfires in the area of the asset. Additionally, HWT has contracted the private fire brigade to be on-site every day during original facility construction and ongoing wildfire hardening construction activities at the Suncrest Facility to minimize the risk of any on-site ignitions, given that the risk for utility-caused ignitions is the highest during construction activities.
- e) **Future improvements to initiative**: As HWT gains more operational experience and grows its footprint in California, HWT will evaluate making appropriate changes to its on-call ignition prevention and suppression services.

## Data governance

### 7.1. Centralized repository for data

- a) **Risk to be mitigated / problem to be addressed**: Central repository of wildfire-related data does not reduce the risk of ignitions on its own, but it aids in understanding wildfire risk and informing wildfire-related decisions and submission of compliance filings.
- b) **Initiative selection** ("why" engage in activity) – include reference to a risk informed analysis on empirical (or projected) impact of initiative in comparison to alternatives: Given HWT's current limited scope of assets and associated wildfire-related data, HWT maintains a central repository of all wildfire-related data but does not use asset management platforms or solutions for this initiative.
- c) **Region prioritization** ("where" to engage activity) – include reference to a risk informed analysis in allocation of initiative (e.g., veg clearance is done for trees tagged as "high-risk"): N/A. As mentioned above, HWT currently has one operational asset in California, the Suncrest Facility, and thus HWT does not currently operate in more than one region.
- d) **Progress on initiative** (amount spent, regions covered) and plans for next year: HWT has maintained a single repository of all wildfire-related data for its only operational asset, the Suncrest Facility.
- e) **Future improvements to initiative**: As HWT grows its footprint in California, HWT will evaluate making appropriate changes to its data governance procedures.

### 7.2. Collaborative research on utility ignition and/or wildfire

Not applicable to HWT

### 7.3. Documentation and disclosure of wildfire-related data and algorithms

Not applicable to HWT

### 7.4. Tracking and analysis of risk event data

Not applicable to HWT

## Resource allocation methodology

### 8.1. Allocation methodology development and application

Not applicable to HWT

### 8.2. Risk reduction scenario development and analysis

Not applicable to HWT

### 8.3. Risk spend efficiency analysis – not to include PSPS

Not applicable to HWT

## Emergency planning and preparedness

### 9.1. Adequate and trained workforce for service restoration

Covered under initiative 80. Disaster and emergency preparedness plan

### 9.2. Community outreach, public awareness, and communications efforts

Not applicable to HWT

### 9.3. Customer support in emergencies

Not applicable to HWT

### 9.4. Disaster and emergency preparedness plan

- a) **Risk to be mitigated / problem to be addressed:** Ensuring adequate proactive preparedness in case of emergencies.
- b) **Initiative selection ("why" engage in activity) – include reference to a risk informed analysis on empirical (or projected) impact of initiative in comparison to alternatives:** According with good utility practice, HWT has developed an emergency operations plan for its only operating asset, the Suncrest Facility. All relevant HWT personnel, including the system operations team that remotely monitors the Suncrest Facility 24/7, are trained on HWT's emergency operations plan.
- c) **Region prioritization ("where" to engage activity) – include reference to a risk informed analysis in allocation of initiative (e.g., veg clearance is done for trees tagged as "high-risk"):** N/A. As mentioned above, HWT currently has one operational asset in California, the Suncrest Facility, and thus HWT does not currently operate in more than one region.
- d) **Progress on initiative (amount spent, regions covered) and plans for next year:** HWT has developed its emergency operations plan, including its PSPS protocol, prior to the Suncrest Facility going in service on February 29, 2020. HWT provided its emergency operations plan to the CPUC as part of 2020 WMP and has not made any changes to its procedures. HWT has never deployed PSPS at the Suncrest Facility.
- e) **Future improvements to initiative:** As HWT grows its footprint in California, HWT will evaluate making appropriate changes to its disaster and emergency preparedness plan

### 9.5. Preparedness and planning for service restoration

Covered under Initiative 80. Disaster and emergency preparedness plan.

### 9.6. Protocols in place to learn from wildfire events

- a) **Risk to be mitigated / problem to be addressed:** Ensuring that lessons learned from wildfire events are appropriately captured to further improve HWT's wildfire-related processes and systems.
- b) **Initiative selection ("why" engage in activity) – include reference to a risk informed analysis on empirical (or projected) impact of initiative in comparison to alternatives:** HWT is committed to continuous improvement of its wildfire mitigation strategy. Hence, HWT employs After Action Review (AAR) process to analyze HWT's response to wildfire events and learn from them, improving HWT's systems and processes.
- c) **Region prioritization ("where" to engage activity) – include reference to a risk informed analysis in allocation of initiative (e.g., veg clearance is done for trees tagged as "high-risk"):** N/A. As mentioned above, HWT currently has one operational asset in California, the Suncrest Facility, and thus HWT does not currently operate in more than one region.
- d) **Progress on initiative (amount spent, regions covered) and plans for next year:** As described in detail in Section 4, HWT has promptly conducted an AAR after the fast-spreading Valley Fire that occurred several miles away from the Suncrest Facility in 2020. HWT is implementing lessons learned identified in AAR and described in Section 4 of this WMP and will continue conducting AAR as needed in the future to identify further improvements to HWT's wildfire strategy.
- e) **Future improvements to initiative:** As HWT grows its footprint in California, HWT will evaluate making appropriate changes to its protocols to learn from wildfire events.

## Stakeholder cooperation and community engagement

### 10.1. Community engagement

Not applicable to HWT

### 10.2. Cooperation and best practice sharing with agencies outside CA

Not applicable to HWT

### 10.3. Cooperation with suppression agencies

Covered under initiative 80. Disaster and emergency preparedness plan

### 10.4. Forest service and fuel reduction cooperation and joint roadmap

Not applicable to HWT

## 8 PUBLIC SAFETY POWER SHUTOFF (PSPS), INCLUDING DIRECTIONAL VISION FOR PSPS

### 8.1 Directional vision for necessity of PSPS

**Instructions:** Describe any lessons learned from PSPS since the utility's last WMP submission and expectations for how the utility's PSPS program will evolve over the coming 1, 3, and 10 years. Be specific by including a description of the utility's protocols and thresholds for PSPS implementation. Include a quantitative description of how the circuits and numbers of customers that the utility expects will be impacted by any necessary PSPS events is expected to evolve over time. The description of protocols must be sufficiently detailed and clear to enable a skilled operator to follow the same protocols.

When calculating anticipated PSPS, consider recent weather extremes, including peak weather conditions over the past 10 years as well as recent weather years and how the utility's current PSPS protocols would be applied to those years.

HWT is a transmission-only utility and does not own, operate, or maintain electric distribution facilities. The Suncrest Facility is HWT's first facility that became operational on February 29, 2020. Accordingly, none of HWT's Facilities include distribution reclosers. Additionally, HWT has not deployed PSPS since 2020 WMP submission and thus does not have any PSPS-related lessons learned to report. Based on the limited scale and scope of the HWT Facilities, at this time, HWT believes that it will seldom, if ever, be necessary to issue a PSPS. Nonetheless, HWT has developed the PSPS protocol described in Section 8.2 of this WMP to be prepared in the event a PSPS of HWT's facilities becomes necessary to protect the public. HWT will continue to evaluate its directional vision for necessity of PSPS as new transmission facilities are added. HWT will coordinate closely with Interconnecting Transmission Owners to monitor any PSPS events on interconnected or nearby facilities. HWT is subject to operating instructions from the CAISO and Interconnecting Transmission Owners, and HWT will also communicate directly with these entities before, during, and after any PSPS event.

**Instructions for Table 8-1:** Rank order the characteristic of PSPS events (in terms of numbers of customers affected, frequency, scope, and duration) anticipated to change the most and have the greatest impact on reliability (be it to increase or decrease) over the next ten years. Rank in order from 1 to 9, where 1 means greatest anticipated change or impact and 9 means minimal change or impact on ignition probability and estimated wildfire consequence. To the right of the ranked magnitude of impact, indicate whether the impact is to significantly increase reliability, moderately increase reliability, have limited or no impact, moderately decrease reliability, or significantly decrease reliability. For each, include comments describing expected change and expected impact, using quantitative estimates wherever possible.

Given that HWT has no distribution system, no distribution or retail customers, and is already substantially hardened against wildfires, HWT reasonably anticipates it will seldom, if ever, need

to issue a PSPS. Therefore, and considering that the Interconnecting Transmission Owner would be the main driver of PSPS impact, HWT is not in a position to provide meaningful input to an analysis of anticipated characteristics of PSPS use. As such, Table 20 is not applicable and is intentionally provided with no rank order or PSPS characteristic assessment; only comments are provided.

**Table 8-1: Anticipated characteristics of PSPS use over next 10 years**

<b>Rank order 1-9</b>	<b>PSPS characteristic</b>	<b>Significantly increase; increase; no change; decrease; significantly decrease</b>	<b>Comments</b>
N/A	Number of customers affected by PSPS events (total)	N/A	HWT has no distribution or retail customers.
N/A	Number of customers affected by PSPS events (normalized by fire weather, e.g., Red Flag Warning line mile days)	N/A	HWT has no distribution or retail customers.
N/A	Frequency of PSPS events in number of instances where utility operating protocol requires de-energization of a circuit or portion thereof to reduce ignition probability (total)	N/A	HWT has no reasonably foreseeable need to issue a PSPS
N/A	Frequency of PSPS events in number of instances where utility operating protocol requires de-energization of a circuit or portion thereof to reduce ignition probability (normalized by fire weather, e.g., Red Flag Warning line mile days)	N/A	HWT has no reasonably foreseeable need to issue a PSPS
N/A	Scope of PSPS events in circuit-events, measured in number of events multiplied by number of circuits targeted for de-energization (total)	N/A	HWT has no reasonably foreseeable need to issue a PSPS.

N/A	Scope of PSPS events in circuit-events, measured in number of events multiplied by number of circuits targeted for de-energization (normalized by fire weather, e.g., Red Flag Warning line mile days)	N/A	HWT has no reasonably foreseeable need to issue a PSPS.
N/A	Duration of PSPS events in customer hours (total)	N/A	HWT has no distribution or retail customers.
N/A	Duration of PSPS events in customer hours (normalized by fire weather, e.g., Red Flag Warning line mile days)	N/A	HWT has no distribution or retail customers.
N/A	Other	N/A	HWT has no distribution or retail customers.

## 8.2 Protocols on Public Safety Power Shut-off

**Instructions:** Describe protocols on Public Safety Power Shut-off (PSPS or de-energization), highlighting changes since the previous WMP report:

1. Strategy to minimize public safety risk during high wildfire risk conditions and details of the considerations, including but not limited to list and description of community assistance locations and services provided during a de-energization event.
2. Outline of tactical and strategic decision-making protocol for initiating a PSPS/de-energization (e.g., decision tree).
3. Strategy to provide for safe and effective re-energization of any area that was de-energized due to PSPS protocol.
4. Company standards relative to customer communications, including consideration for the need to notify priority essential services – critical first responders, public safety partners, critical facilities and infrastructure, operators of telecommunications infrastructure, and water utilities/agencies. This section, or an appendix to this section, shall include a complete listing of which entities the electrical corporation considers to be priority essential services. This section shall also include a description of strategy and protocols to ensure timely notifications to customers, including access and functional needs populations, in the languages prevalent within the utility's service territory.
5. Protocols for mitigating the public safety impacts of these protocols, including impacts on first responders, health care facilities, operators of telecommunications infrastructure, and water utilities/agencies.



## **HWT – Initiated Power Shut-off**

HWT may employ the use of PSPS as a last resort, if essential to minimize the possibility of the Suncrest Facility becoming the source of an ignition that may endanger local residents and communities. HWT has the responsibility to shut off power if it becomes necessary as a last resort to protect the public. Determining factors for consideration might include, but not limited to:

- If the CAISO instructs HWT to de-energize its facilities, HWT will comply with those instructions.
- If an Interconnecting Transmission Owner determines it is necessary for a PSPS of its interconnected or nearby facilities, HWT will use that decision as input to inform the consideration for a PSPS of the HWT Facilities.
- The HWT System Operator will communicate any current and predicted fire weather conditions, fire safety concerns, required mitigations for planned work operations to HWT Senior Director of Operations and make the determination if a PSPS is necessary.
- Based on the conditions collected in the bullet above, the HWT Operations Lead will perform an on-site inspection for fire ignition conditions.
- In the event that a non-HWT-related fire in the surrounding area has the potential to cut off access and/or directly impact operations of the HWT Facilities, the HWT Field Operations Lead will notify the HWT System Operator for a determination of whether a PSPS is necessary.

## **HWT Safety Power Shutoff Protocol**

PSPS is a last resort measure to ensure public safety. Every reasonable attempt will be made to prevent the implementation of Power Shutoff to the HWT Facilities. Actions could include, but not be limited to Operational adjustments, including evaluation of the HWT Facilities and modifications made, such as, reducing or cancelling at-risk field work and increasing monitoring.

But should additional action be required, HWT system operations staff will undertake the following process:

- Assess
  - HWT system operator will take appropriate actions to protect public safety and mitigate threats
- De-Energize
  - As a last resort, HWT Facility will be de-energized remotely by opening circuit breakers until conditions are safe.
- Patrols & Restoration

- The restoration process requires that the risk for fire ignition and wind speeds for a sustained period are reduced to allow HWT crews to inspect station and transmission elements to be free and clear for re-energization. Once equipment and conditions are confirmed safe by the field operations team, the HWT Facility system operator will initiate the systematic restoration of power.

HWT has a detailed protocol for communication and coordination with its primary stakeholders in an emergency situation (e.g., CAISO, Interconnecting Transmission Owners, local fire agencies and first responders, and HWT's emergency response support team) and power restoration procedures as detailed in HWT's Emergency Operations Plan for its Suncrest SVC facility, which is being provided as a confidential attachment (Attachment C) to the WMP. HWT requests that its Emergency Operations Plan document be kept confidential.

### 8.3 Projected changes to PSPS impact

**Instructions:** *Describe organization-wide plan to reduce scale, scope and frequency of PSPS for each of the following time periods, highlighting changes since the prior WMP report and including key program targets used to track progress over time,*

1. *By June 1 of current year*
2. *By September 1 of current year*
3. *By next Annual WMP Update*

As mentioned above, HWT has not deployed PSPS to date. Given that HWT is a transmission-only utility that has no distribution system, no distribution or retail customers, and is already substantially hardened against wildfires, HWT reasonably anticipates it will seldom, if ever, need to issue a PSPS. Therefore, HWT does not have key program targets related to PSPS that it intends to track over time.

### 8.4 Engaging vulnerable communities

**Instructions:** *Report on the following:*

1. *Describe protocols for PSPS that are intended to mitigate the public safety impacts of PSPS on vulnerable, marginalized and/or at-risk communities. Describe how the utility is identifying these communities.*
2. *List all languages which are "prevalent" in utility's territory. 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<sup>10</sup> (D.20-03-004).*
3. *List all languages for which public outreach material is available, in written or oral form.*

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<sup>10</sup> See Cal. Government Code § 53112

4. *Detail the community outreach efforts for PSPS and wildfire-related outreach. Include efforts to reach all languages prevalent in utility territory.*

As explained above, as a transmission-only utility, HWT does not serve end-use customers or have a traditional service territory. Therefore, HWT does not anticipate engaging with vulnerable communities regarding PSPS. HWT does have a protocol for engaging with other critical stakeholders (e.g., CAISO, Interconnecting Transmission Owners, local fire agencies, etc.) regarding a potential PSPS event, as detailed in HWT’s Emergency Operations Plan.

## 8.5 PPS-specific metrics

***Instructions for PPS table:*** *In the attached spreadsheet document, report performance on the following PPS metrics within the utility’s service territory over the past five years as needed to correct previously-reported data. Where the utility does not collect its own data on a given metric, the utility shall work with the relevant state agencies to collect the relevant information for its service territory, and clearly identify the owner and dataset used to provide the response in the “Comments” column.*

Table 11: Recent use of PPS and other PPS metrics is provided in Attachment B

## 9 APPENDIX

### 9.1 Definitions of initiative activities by category

Category	Initiative activity	Definition
<b>A. Risk mapping and simulation</b>	A summarized risk map that shows the overall ignition probability and estimated wildfire consequence along the electric lines and equipment	Development and use of tools and processes to develop and update risk map and simulations and to estimate risk reduction potential of initiatives for a given portion of the grid (or more granularly, e.g., circuit, span, or asset). May include verification efforts, independent assessment by experts, and updates.
	Climate-driven risk map and modelling based on various relevant weather scenarios	Development and use of tools and processes to estimate incremental risk of foreseeable climate scenarios, such as drought, across a given portion of the grid (or more granularly, e.g., circuit, span, or asset). May include verification efforts, independent assessment by experts, and updates.
	Ignition probability mapping showing the probability of ignition along the electric lines and equipment	Development and use of tools and processes to assess the risk of ignition across regions of the grid (or more granularly, e.g., circuits, spans, or assets).
	Initiative mapping and estimation of wildfire and PSPS risk-reduction impact	Development of a tool to estimate the risk reduction efficacy (for both wildfire and PSPS risk) and risk-spend efficiency of various initiatives.
	Match drop simulations showing the potential wildfire consequence of ignitions that occur along the electric lines and equipment	Development and use of tools and processes to assess the impact of potential ignition and risk to communities (e.g., in terms of potential fatalities, structures burned, monetary damages, area burned, impact on air quality and greenhouse gas, or GHG, reduction goals, etc.).
<b>B. Situational awareness and forecasting</b>	Advanced weather monitoring and weather stations	Purchase, installation, maintenance, and operation of weather stations. Collection, recording, and analysis of weather data from weather stations and from external sources.
	Continuous monitoring sensors	Installation, maintenance, and monitoring of sensors and sensorized equipment used to

		monitor the condition of electric lines and equipment.
	Fault indicators for detecting faults on electric lines and equipment	Installation and maintenance of fault indicators.
	Forecast of a fire risk index, fire potential index, or similar	Index that uses a combination of weather parameters (such as wind speed, humidity, and temperature), vegetation and/or fuel conditions, and other factors to judge current fire risk and to create a forecast indicative of fire risk. A sufficiently granular index shall inform operational decision-making.
	Personnel monitoring areas of electric lines and equipment in elevated fire risk conditions	Personnel position within utility service territory to monitor system conditions and weather on site. Field observations shall inform operational decisions.
	Weather forecasting and estimating impacts on electric lines and equipment	Development methodology for forecast of weather conditions relevant to utility operations, forecasting weather conditions and conducting analysis to incorporate into utility decision-making, learning and updates to reduce false positives and false negatives of forecast PSPS conditions.
<b>C. Grid design and system hardening</b>	Capacitor maintenance and replacement program	Remediation, adjustments, or installations of new equipment to improve or replace existing capacitor equipment.
	Circuit breaker maintenance and installation to de-energize lines upon detecting a fault	Remediation, adjustments, or installations of new equipment to improve or replace existing fast switching circuit breaker equipment to improve the ability to protect electrical circuits from damage caused by overload of electricity or short circuit.
	Covered conductor installation	Installation of covered or insulated conductors to replace standard bare or unprotected conductors (defined in accordance with GO 95 as supply conductors, including but not limited to lead wires, not enclosed in a grounded metal pole or not covered by: a “suitable protective covering” (in accordance with Rule 22.8 ), grounded metal conduit, or grounded metal sheath or shield). In accordance with GO 95, conductor is defined as a material suitable

		for: (1) carrying electric current, usually in the form of a wire, cable or bus bar, or (2) transmitting light in the case of fiber optics; insulated conductors as those which are surrounded by an insulating material (in accordance with Rule 21.6), the dielectric strength of which is sufficient to withstand the maximum difference of potential at normal operating voltages of the circuit without breakdown or puncture; and suitable protective covering as a covering of wood or other non-conductive material having the electrical insulating efficiency (12kV/in. dry) and impact strength (20ft.-lbs) of 1.5 inches of redwood or other material meeting the requirements of Rule 22.8-A, 22.8-B, 22.8-C or 22.8-D.
	Covered conductor maintenance	Remediation and adjustments to installed covered or insulated conductors. In accordance with GO 95, conductor is defined as a material suitable for: (1) carrying electric current, usually in the form of a wire, cable or bus bar, or (2) transmitting light in the case of fiber optics; insulated conductors as those which are surrounded by an insulating material (in accordance with Rule 21.6), the dielectric strength of which is sufficient to withstand the maximum difference of potential at normal operating voltages of the circuit without breakdown or puncture; and suitable protective covering as a covering of wood or other non-conductive material having the electrical insulating efficiency (12kV/in. dry) and impact strength (20ft.-lbs) of 1.5 inches of redwood or other material meeting the requirements of Rule 22.8-A, 22.8-B, 22.8-C or 22.8-D.
	Crossarm maintenance, repair, and replacement	Remediation, adjustments, or installations of new equipment to improve or replace existing crossarms, defined as horizontal support attached to poles or structures generally at right angles to the conductor supported in accordance with GO 95.



	Distribution pole replacement and reinforcement, including with composite poles	Remediation, adjustments, or installations of new equipment to improve or replace existing distribution poles (i.e., those supporting lines under 65kV), including with equipment such as composite poles manufactured with materials reduce ignition probability by increasing pole lifespan and resilience against failure from object contact and other events.
	Expulsion fuse replacement	Installations of new and CAL FIRE-approved power fuses to replace existing expulsion fuse equipment.
	Grid topology improvements to mitigate or reduce PSPS events	Plan to support and actions taken to mitigate or reduce PSPS events in terms of geographic scope and number of customers affected, such as installation and operation of electrical equipment to sectionalize or island portions of the grid, microgrids, or local generation.
	Installation of system automation equipment	Installation of electric equipment that increases the ability of the utility to automate system operation and monitoring, including equipment that can be adjusted remotely such as automatic reclosers (switching devices designed to detect and interrupt momentary faults that can reclose automatically and detect if a fault remains, remaining open if so).
	Maintenance, repair, and replacement of connectors, including hotline clamps	Remediation, adjustments, or installations of new equipment to improve or replace existing connector equipment, such as hotline clamps.
	Mitigation of impact on customers and other residents affected during PSPS event	Actions taken to improve access to electricity for customers and other residents during PSPS events, such as installation and operation of local generation equipment (at the community, household, or other level).
	Other corrective action	Other maintenance, repair, or replacement of utility equipment and structures so that they function properly and safely, including remediation activities (such as insulator washing) of other electric equipment deficiencies that may increase ignition probability due to potential equipment failure or other drivers.

	Pole loading infrastructure hardening and replacement program based on pole loading assessment program	Actions taken to remediate, adjust, or install replacement equipment for poles that the utility has identified as failing to meet safety factor requirements in accordance with GO 95 or additional utility standards in the utility's pole loading assessment program.
	Transformers maintenance and replacement	Remediation, adjustments, or installations of new equipment to improve or replace existing transformer equipment.
	Transmission tower maintenance and replacement	Remediation, adjustments, or installations of new equipment to improve or replace existing transmission towers (e.g., structures such as lattice steel towers or tubular steel poles that support lines at or above 65kV).
	Undergrounding of electric lines and/or equipment	Actions taken to convert overhead electric lines and/or equipment to underground electric lines and/or equipment (i.e., located underground and in accordance with GO 128).
	Updates to grid topology to minimize risk of ignition in HFTDs	Changes in the plan, installation, construction, removal, and/or undergrounding to minimize the risk of ignition due to the design, location, or configuration of utility electric equipment in HFTDs.
<b>D. Asset management and inspections</b>	Detailed inspections of distribution electric lines and equipment	In accordance with GO 165, careful visual inspections of overhead electric distribution lines and equipment where individual pieces of equipment and structures are carefully examined, visually and through use of routine diagnostic test, as appropriate, and (if practical and if useful information can be so gathered) opened, and the condition of each rated and recorded.
	Detailed inspections of transmission electric lines and equipment	Careful visual inspections of overhead electric transmission lines and equipment where individual pieces of equipment and structures are carefully examined, visually and through use of routine diagnostic test, as appropriate, and (if practical and if useful information can be so gathered) opened, and the condition of each rated and recorded.
	Improvement of inspections	Identifying and addressing deficiencies in inspections protocols and implementation by

		improving training and the evaluation of inspectors.
	Infrared inspections of distribution electric lines and equipment	Inspections of overhead electric distribution lines, equipment, and right-of-way using infrared (heat-sensing) technology and cameras that can identify "hot spots", or conditions that indicate deterioration or potential equipment failures, of electrical equipment.
	Infrared inspections of transmission electric lines and equipment	Inspections of overhead electric transmission lines, equipment, and right-of-way using infrared (heat-sensing) technology and cameras that can identify "hot spots", or conditions that indicate deterioration or potential equipment failures, of electrical equipment.
	Intrusive pole inspections	In accordance with GO 165, intrusive inspections involve movement of soil, taking samples for analysis, and/or using more sophisticated diagnostic tools beyond visual inspections or instrument reading.
	LiDAR inspections of distribution electric lines and equipment	Inspections of overhead electric transmission lines, equipment, and right-of-way using LiDAR (Light Detection and Ranging, a remote sensing method that uses light in the form of a pulsed laser to measure variable distances).
	LiDAR inspections of transmission electric lines and equipment	Inspections of overhead electric distribution lines, equipment, and right-of-way using LiDAR (Light Detection and Ranging, a remote sensing method that uses light in the form of a pulsed laser to measure variable distances).
	Other discretionary inspection of distribution electric lines and equipment, beyond inspections mandated by rules and regulations	Inspections of overhead electric transmission lines, equipment, and right-of-way that exceed or otherwise go beyond those mandated by rules and regulations, including GO 165, in terms of frequency, inspection checklist requirements or detail, analysis of and response to problems identified, or other aspects of inspection or records kept.
	Other discretionary inspection of transmission electric lines and equipment, beyond	Inspections of overhead electric distribution lines, equipment, and right-of-way that exceed or otherwise go beyond those mandated by rules and regulations, including GO 165, in

	inspections mandated by rules and regulations	terms of frequency, inspection checklist requirements or detail, analysis of and response to problems identified, or other aspects of inspection or records kept.
	Patrol inspections of distribution electric lines and equipment	In accordance with GO 165, simple visual inspections of overhead electric distribution lines and equipment that is designed to identify obvious structural problems and hazards. Patrol inspections may be carried out in the course of other company business.
	Patrol inspections of transmission electric lines and equipment	Simple visual inspections of overhead electric transmission lines and equipment that is designed to identify obvious structural problems and hazards. Patrol inspections may be carried out in the course of other company business.
	Pole loading assessment program to determine safety factor	Calculations to determine whether a pole meets pole loading safety factor requirements of GO 95, including planning and information collection needed to support said calculations. Calculations shall consider many factors including the size, location, and type of pole; types of attachments; length of conductors attached; and number and design of supporting guys, per D.15-11-021.
	Quality assurance / quality control of inspections	Establishment and function of audit process to manage and confirm work completed by employees or subcontractors, including packaging QA/QC information for input to decision-making and related integrated workforce management processes.
	Substation inspections	In accordance with GO 175, inspection of substations performed by qualified persons and according to the frequency established by the utility, including record-keeping.
<b>E. Vegetation management and inspection</b>	Additional efforts to manage community and environmental impacts	Plan and execution of strategy to mitigate negative impacts from utility vegetation management to local communities and the environment, such as coordination with communities to plan and execute vegetation management work or promotion of fire-resistant planting practices

	Detailed inspections of vegetation around distribution electric lines and equipment	Careful visual inspections of vegetation around the right-of-way, where individual trees are carefully examined, visually, and the condition of each rated and recorded.
	Detailed inspections of vegetation around transmission electric lines and equipment	Careful visual inspections of vegetation around the right-of-way, where individual trees are carefully examined, visually, and the condition of each rated and recorded.
	Emergency response vegetation management due to red flag warning or other urgent conditions	Plan and execution of vegetation management activities, such as trimming or removal, executed based upon and in advance of forecast weather conditions that indicate high fire threat in terms of ignition probability and wildfire consequence.
	Fuel management and reduction of “slash” from vegetation management activities	Plan and execution of fuel management activities that reduce the availability of fuel in proximity to potential sources of ignition, including both reduction or adjustment of live fuel (in terms of species or otherwise) and of dead fuel, including "slash" from vegetation management activities that produce vegetation material such as branch trimmings and felled trees.
	Improvement of inspections	Identifying and addressing deficiencies in inspections protocols and implementation by improving training and the evaluation of inspectors.
	LiDAR inspections of vegetation around distribution electric lines and equipment	Inspections of right-of-way using LiDAR (Light Detection and Ranging, a remote sensing method that uses light in the form of a pulsed laser to measure variable distances).
	LiDAR inspections of vegetation around transmission electric lines and equipment	Inspections of right-of-way using LiDAR (Light Detection and Ranging, a remote sensing method that uses light in the form of a pulsed laser to measure variable distances).
	Other discretionary inspections of vegetation around distribution electric lines and equipment	Inspections of rights-of-way and adjacent vegetation that may be hazardous, which exceeds or otherwise go beyond those mandated by rules and regulations, in terms of frequency, inspection checklist requirements or detail, analysis of and response to problems identified, or other aspects of inspection or records kept.

	Other discretionary inspections of vegetation around transmission electric lines and equipment	Inspections of rights-of-way and adjacent vegetation that may be hazardous, which exceeds or otherwise go beyond those mandated by rules and regulations, in terms of frequency, inspection checklist requirements or detail, analysis of and response to problems identified, or other aspects of inspection or records kept.
	Patrol inspections of vegetation around distribution electric lines and equipment	Visual inspections of vegetation along rights-of-way that is designed to identify obvious hazards. Patrol inspections may be carried out in the course of other company business.
	Patrol inspections of vegetation around transmission electric lines and equipment	Visual inspections of vegetation along rights-of-way that is designed to identify obvious hazards. Patrol inspections may be carried out in the course of other company business.
	Quality assurance / quality control of vegetation inspections	Establishment and function of audit process to manage and confirm work completed by employees or subcontractors, including packaging QA/QC information for input to decision-making and related integrated workforce management processes.
	Recruiting and training of vegetation management personnel	Programs to ensure that the utility is able to identify and hire qualified vegetation management personnel and to ensure that both full-time employees and contractors tasked with vegetation management responsibilities are adequately trained to perform vegetation management work, according to the utility's wildfire mitigation plan, in addition to rules and regulations for safety.
	Remediation of at-risk species	Actions taken to reduce the ignition probability and wildfire consequence attributable to at-risk vegetation species, such as trimming, removal, and replacement.
	Removal and remediation of trees with strike potential to electric lines and equipment	Actions taken to remove or otherwise remediate trees that could potentially strike electrical equipment, if adverse events such as failure at the ground-level of the tree or branch breakout within the canopy of the tree, occur.



	Substation inspection	Inspection of vegetation surrounding substations, performed by qualified persons and according to the frequency established by the utility, including record-keeping.
	Substation vegetation management	Based on location and risk to substation equipment only, actions taken to reduce the ignition probability and wildfire consequence attributable to contact from vegetation to substation equipment.
	Vegetation inventory system	Inputs, operation, and support for centralized inventory of vegetation clearances updated based upon inspection results, including (1) inventory of species, (2) forecasting of growth, (3) forecasting of when growth threatens minimum right-of-way clearances (“grow-in” risk) or creates fall-in/fly-in risk.
	Vegetation management to achieve clearances around electric lines and equipment	Actions taken to ensure that vegetation does not encroach upon the minimum clearances set forth in Table 1 of GO 95, measured between line conductors and vegetation, such as trimming adjacent or overhanging tree limbs.
<b>F. Grid operations and protocols</b>	Automatic recloser operations	Designing and executing protocols to deactivate automatic reclosers based on local conditions for ignition probability and wildfire consequence.
	Crew-accompanying ignition prevention and suppression resources and services	Those firefighting staff and equipment (such as fire suppression engines and trailers, firefighting hose, valves, and water) that are deployed with construction crews and other electric workers to provide site-specific fire prevention and ignition mitigation during on-site work
	Personnel work procedures and training in conditions of elevated fire risk	Work activity guidelines that designate what type of work can be performed during operating conditions of different levels of wildfire risk. Training for personnel on these guidelines and the procedures they prescribe, from normal operating procedures to increased mitigation measures to constraints on work performed.
	Protocols for PSPS re-energization	Designing and executing procedures that accelerate the restoration of electric service in

		areas that were de-energized, while maintaining safety and reliability standards.
	PSPS events and mitigation of PSPS impacts	Designing, executing, and improving upon protocols to conduct PSPS events, including development of advanced methodologies to determine when to use PSPS, and to mitigate the impact of PSPS events on affected customers and local residents.
	Stationed and on-call ignition prevention and suppression resources and services	Firefighting staff and equipment (such as fire suppression engines and trailers, firefighting hose, valves, firefighting foam, chemical extinguishing agent, and water) stationed at utility facilities and/or standing by to respond to calls for fire suppression assistance.
<b>G. Data governance</b>	Centralized repository for data	Designing, maintaining, hosting, and upgrading a platform that supports storage, processing, and utilization of all utility proprietary data and data compiled by the utility from other sources.
	Collaborative research on utility ignition and/or wildfire	Developing and executing research work on utility ignition and/or wildfire topics in collaboration with other non-utility partners, such as academic institutions and research groups, to include data-sharing and funding as applicable.
	Documentation and disclosure of wildfire-related data and algorithms	Design and execution of processes to document and disclose wildfire-related data and algorithms to accord with rules and regulations, including use of scenarios for forecasting and stress testing.
	Tracking and analysis of near miss data	Tools and procedures to monitor, record, and conduct analysis of data on near miss events.
<b>H. Resource allocation methodology</b>	Allocation methodology development and application	Development of prioritization methodology for human and financial resources, including application of said methodology to utility decision-making.
	Risk reduction scenario development and analysis	Development of modelling capabilities for different risk reduction scenarios based on wildfire mitigation initiative implementation; analysis and application to utility decision-making.
	Risk spend efficiency analysis	Tools, procedures, and expertise to support analysis of wildfire mitigation initiative risk-

		spend efficiency, in terms of MAVF and/ or MARS methodologies.
<b>I. Emergency planning and preparedness</b>	Adequate and trained workforce for service restoration	Actions taken to identify, hire, retain, and train qualified workforce to conduct service restoration in response to emergencies, including short-term contracting strategy and implementation.
	Community outreach, public awareness, and communications efforts	Actions to identify and contact key community stakeholders; increase public awareness of emergency planning and preparedness information; and design, translate, distribute, and evaluate effectiveness of communications taken before, during, and after a wildfire, including Access and Functional Needs populations and Limited English Proficiency populations in particular.
	Customer support in emergencies	Resources dedicated to customer support during emergencies, such as website pages and other digital resources, dedicated phone lines, etc.
	Disaster and emergency preparedness plan	Development of plan to deploy resources according to prioritization methodology for disaster and emergency preparedness of utility and within utility service territory (such as considerations for critical facilities and infrastructure), including strategy for collaboration with Public Safety Partners and communities.
	Preparedness and planning for service restoration	Development of plans to prepare the utility to restore service after emergencies, such as developing employee and staff trainings, and to conduct inspections and remediation necessary to re-energize lines and restore service to customers.
	Protocols in place to learn from wildfire events	Tools and procedures to monitor effectiveness of strategy and actions taken to prepare for emergencies and of strategy and actions taken during and after emergencies, including based on an accounting of the outcomes of wildfire events.
<b>J. Stakeholder cooperation</b>	Community engagement	Strategy and actions taken to identify and contact key community stakeholders; increase public awareness and support of utility

<b>and community engagement</b>		wildfire mitigation activity; and design, translate, distribute, and evaluate effectiveness of related communications. Includes specific strategies and actions taken to address concerns and serve needs of Access and Functional Needs populations and Limited English Proficiency populations in particular.
	Cooperation and best practice sharing with agencies outside CA	Strategy and actions taken to engage with agencies outside of California to exchange best practices both for utility wildfire mitigation and for stakeholder cooperation to mitigate and respond to wildfires.
	Cooperation with suppression agencies	Coordination with CAL FIRE, federal fire authorities, county fire authorities, and local fire authorities to support planning and operations, including support of aerial and ground firefighting in real-time, including information-sharing, dispatch of resources, and dedicated staff.
	Forest service and fuel reduction cooperation and joint roadmap	Strategy and actions taken to engage with local, state, and federal entities responsible for or participating in forest management and fuel reduction activities; and design utility cooperation strategy and joint stakeholder roadmap (plan for coordinating stakeholder efforts for forest management and fuel reduction activities).

## 9.2 Citations for relevant statutes, Commission directives, proceedings and orders

*Throughout the WMP, cite relevant state and federal statutes, Commission directives, orders, and proceedings. Place the title or tracking number of the statute in parentheses next to comment, or in the appropriate column if noted in a table. Provide in this section a brief description or summary of the relevant portion of the statute. Track citations as end-notes and order (1, 2, 3...) across sections (e.g., if section 1 has 4 citations, section 2 begins numbering at 5).*

The limited authorities referenced in this WMP are cited within the text of this plan or referenced in footnotes.