Horizon West Transmission, LLC
WILDFIRE MITIGATION PLAN 2020

for Submittal to:

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

HORIZONWEST
TRANSMISSION

One California Street, Suite 1600
San Francisco, California 94111

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GLOSSARY OF DEFINED TERMS

Term	Definition
Activity Risk	Actions that present a risk of igniting a wildfire.
Asset (utility)	Electric lines, equipment, or supporting hardware.
At-risk species	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.
Baseline (ignition probability, maturity)	A measure, typically of the current state, to establish a starting point for comparison.
Contractor	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.
Critical facilities and infrastructure	In accordance with the interim definition adopted in D.19-05-042, 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: emergency services sector (police stations, fire stations, emergency operations centers), government facilities sector (schools, jails, prisons), healthcare and public health sector (public health departments, medical facilities, including hospitals, skilled nursing facilities, nursing homes, blood banks, health care facilities, dialysis centers and hospice facilities), energy sector (public and private utility facilities vital to maintaining or restoring normal service, including, but not limited to, interconnected publicly owned utilities and electric cooperatives), water and wastewater systems sector (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), communications sector (communication carrier infrastructure including selective routers, central offices, head ends, cellular switches, remote terminals and cellular sites), and chemical sector (facilities associated with the provision of manufacturing, maintaining, or distributing hazardous materials and chemicals).
Customer hours	Total number of customers, multiplied by the average number of hours (e.g., of power outage).
Data cleaning	Calibrating raw data to remove errors (including typographical and numerical mistakes).
Dead fuel moisture content	Moisture content of dead vegetation, which responds solely to current environmental conditions and is critical in determining fire potential.
Detailed inspection	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 practical and if useful information can be so gathered) opened, and the condition of each rated and recorded.
Enhanced inspection	Inspection whose frequency and thoroughness exceeds the requirements of the detailed inspection, particularly if driven by risk calculations.
Evacuation impact	Number of people evacuated, with the duration for which they are evacuated, from homes and businesses, due to wildfires.
Evacuation zone	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".
Fire Patrol	Fire Patrol is a Horizon West Transmission, LLC (HWT) employee or representative that will be assigned as "Fire Patrol" specifically to monitor work activities when an Activity Risk exists for fire compliance. The Fire Patrol personnel shall regularly patrol the area on foot and monitor the area for any signs of fire or unsafe practices. They shall have no other duties and shall not be sitting in a vehicle or using a cell phone or computer except for emergency-related calls or for checking for Red Flag Warnings or other fire hazard or weather conditions. They will have the ability to stop work until an identified hazard has been mitigated.
Fire Protection Plan (FPP)	A plan prepared by a qualified fire protection planner that evaluates projects and their specific: fire environments, fire risk and hazards, and compliance with applicable fire codes. FPPs also provide justifications for increased fire protection measures where considered necessary.

Term	Definition
Fire Season	Fire season is no longer officially designated by the wildland fire agencies. CAL FIRE adjusts their staffing patterns as fire conditions moderate or escalate and this can be used as an indicator of potential fire activity. It is also understood that the risk of wildfire spreading increases with the Santa Ana Winds, which generally occur between the months of September and November every year, but may occur any time of the year.
Fire Tools	Fire Tools are firefighting tools to be staged near work activities consisting of a Pulaski, McLeod, 5-gallon "Indian" Backpack hand pump water extinguisher, and minimum 20 pound, 2-A, 10-BC Dry Chemical Fire extinguisher.
Fuel density	Mass of fuel (vegetation) per area which could combust in a wildfire.
Fuel management	Removing or thinning vegetation to reduce the potential rate of propagation or intensity of wildfires.
Fuel Modification Zone	Fuel modification zone is a modified fuel area where vegetation is either removed or is limited in terms of species, density, spacing, and required to be maintained so that it does not present a situation where fire is readily transmitted into a protected asset.
Fuel moisture content	Amount of moisture in a given mass of fuel (vegetation), measured as a percentage of its dry weight.
Full-time employee	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.
GO 95 nonconformance	Condition of a utility asset that does not meet standards established by General Order 95.
Grid hardening	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.
High Fire Threat District (HFTD)	Per D.17-01-009, areas of the State designated by the California Public Utility Commission (CPUC) and the California Department of Forestry and Fire Protection (CAL FIRE) to have elevated wildfire risk, indicating where utilities must take additional action (per General Order (GO) 95, GO 165, and GO 166) to mitigate wildfire risk.
Highly rural region	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.
Horizon West Facilities (HWT Facilities)	The HWT Facilities are facilities owned, constructed, operated, or maintained by HWT that are covered by this WMP. In 2020, the HWT Facilities consist solely of the Suncrest Facility.
Hot Work	Hot Work has the meaning assigned in the California Fire Code (CFC), which defines Hot Work as operations involving cutting, welding, Thermit welding, brazing, soldering, grinding, thermal spraying, thawing pipe, or other similar operations. Hot Work areas are defined as the areas exposed to sparks, hot slag, radiant heat, or convective heat because of the Hot Work.
Ignition probability	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).
Ignition-related deficiency	Any condition which may result in ignition or has previously resulted in ignition, even if not during the past five years.
Impact/consequence of ignitions	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.
Incident Commander (IC)	The IC is the person responsible for all aspects of an emergency response, including quickly developing incident objectives, managing all incident operations, application of resources, as well as responsibility for all persons involved. The IC sets priorities and defines the organization of the incident response teams and the overall incident action plan.
Incident Command System (ICS)	The ICS "a systematic tool used for the command, control, and coordination of emergency response" according to the United States Federal Highway Administration. A more detailed definition of an ICS according to the United States Center for Excellence in Disaster Management & Humanitarian Assistance is "a set of personnel, policies, procedures, facilities, and equipment,

Term	Definition
	integrated into a common organizational structure designed to improve emergency response operations of all types and complexities." Responding emergency service providers would establish the ICS and designate an Incident Commander.
Initiative	Measure or activity proposed or in process designed to reduce the consequences and/or probability of wildfire or PSPS.
Inspection protocol	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.
Invasive species	Non-native species whose proliferation increases the risk of wildfires.
Level 1 finding	In accordance with GO 95, an immediate safety and/or reliability risk with high probability for significant impact.
Level 2 finding	In accordance with GO 95, a variable (non-immediate high to low) safety and/or reliability risk.
Level 3 finding	In accordance with GO 95, an acceptable safety and/or reliability risk.
Life expectancy	Anticipated years that a piece of equipment can be expected to meet safety and performance requirements.
Live fuel moisture content	Moisture content within living vegetation, which can retain water longer than dead fuel.
Lost energy	Energy that would have been delivered were it not for an outage.
Major roads	Interstate highways, U.S. highways, state and county routes.
Near miss	An event with significant probability of ignition, including wires down, contacts with objects, line slap, events with evidence of significant heat generation, and other events that cause sparking or have the potential to cause ignition.
Need for PSPS	When utilities' criteria for utilizing PSPS are met.
Outcome metrics	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.
Patrol inspection	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.
Percentile conditions	Top X% of a particular set (e.g., wind speed), based on a historical data set with sufficient detail.
Planned outage	Electric outage announced ahead of time by the utility.
Preventive maintenance (PM)	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.
Priority essential services	Critical first responders, public safety partners, critical facilities and infrastructure, operators of telecommunications infrastructure, and water utilities/agencies.
Program targets	Measurements of activity identified in WMPs and subsequent annual updates, in terms of volume or scope of work, such as number trees trimmed or miles of power lines hardened.
Progress metrics	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.
Property	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.
PSPS risk	The potential for the occurrence of a Public Safety Power Shut-off (PSPS) event expressed in terms of a combination of various outcomes of the event and their associated probabilities.
PSPS weather	Weather that exceeds a utility's risk threshold for initiating a PSPS.
Public Safety Power Shut-off (PSPS)	For public safety, it may be necessary to turn off power when certain weather conditions (high gusty winds and low humidity) combined with a heightened fire risk, are forecasted

Term	Definition
Red Flag Warning (RFW)	A level of wildfire risk from weather as declared by the National Weather Service. An RFW is a warning issued for a stated period of time by the National Weather Service using pre-determined criteria to identify particularly critical wildfire danger in a particular geographic area. All construction and maintenance activities shall temporarily cease during RFWs, unless the risk of not conducting specific site activities is determined to be higher than the RFW risk. The Site Safety Officer (SSO) will coordinate with personnel to determine which low fire hazard activities may occur during a RFW. Should a local fire agency declare a RFW affecting HWT Facilities, the same work activity restrictions occurring during National Weather Service RFW periods would apply.
RFW Circuit Mile Day	Sum of miles of utility grid subject to Red Flag Warning each day. For example, if 100 circuit miles were under a RFW for 1 day, and 10 of those miles were under RFW for an additional day, then the total RFW circuit mile days would be 110.
Risk-spend efficiency	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.
Rule	Section of public utility code requiring a particular activity or establishing a particular threshold.
Run-to-failure	A maintenance approach that replaces equipment only when it fails.
Rural region	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.
Safety Hazard	A condition that poses a significant threat to human life or property.
San Diego County Fire Authority (SDCFA)	The SDCFA is the department of San Diego County that supports the delivery of high-quality emergency medical and fire services to a 1.5 million-acre area of unincorporated San Diego County. The emergency services are provided by a combination of professionally trained volunteer and career staff. Additionally, SDCFA coordinates regional fire prevention for unincorporated San Diego County.
Site Safety Officer (SSO)	The SSO will be a HWT employee or representative who serves as a liaison to the emergency service agencies and all contractors or inspectors on the jobsite for HWT on emergency incidents and construction-related activities. The SSO has the authority to stop any project work that appears to pose a particular fire risk or hazard.
Span	The space between adjacent supporting poles or structures on a circuit consisting of electric line and equipment. "Span level" refers to asset-scale granularity.
Suncrest Dynamic Reactive Power Support Project (Suncrest Facility)	The Suncrest Facility is a +300/-100 Megavar (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 underground transmission line (with approximately one mile constructed underground and approximately 115 feet constructed overhead), that collectively will provide dynamic reactive power support at the existing San Diego Gas & Electric Company (SDG&E) Suncrest Substation, a 500 kV and 230 kV-level substation near Alpine, San Diego County, California. The CPUC issued a certificate of public convenience and necessity (CPCN) for and authorized construction of the Suncrest Facility in Decision (D.) 18-10-030.
System Average Interruption Duration Index (SAIDI)	System-wide total number of minutes per year of sustained outage per customer served.
Third-party contact	Contact between a piece of electrical equipment and another object, whether natural (tree branch) or human (vehicle).
Time to expected failure	Time remaining on the life expectancy of a piece of equipment.
Top 30% of proprietary fire potential index	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).
Trees with strike potential / hazard trees	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.
Unplanned outage	Electric outage that occurs with no advance notice from the utility (e.g., blackout).

Term	Definition
Urban region	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.
Utility-ignited wildfire	Wildfires ignited by utility infrastructure or employees, including all wildfires determined by AHJ investigation to originate from ignition caused by utility infrastructure.
Vegetation management	Trimming and clearance of trees, branches, and other vegetation that poses the risk of contact with electric equipment.
Weather normalization	Adjusting metrics based on relative weather risk, with RFW circuit mile days as the normalization factor.
Wildfire impact/ consequence	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.
Wildfire risk	The potential for the occurrence of a wildfire event expressed in terms of a combination of various outcomes of the wildfire and their associated probabilities.
Wildfire-only WMP programs	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).
Wildland urban interface (WUI)	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.
WMP Guidelines	WMP Guidelines outline the data and narrative that utilities are expected to include in their WMPs for the 2020 WMP process. This builds upon the template used in the 2019 WMP process and incorporates lessons learned
Wire down	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.

1 PERSONS RESPONSIBLE FOR EXECUTING THE WMP

The Wildfire Mitigation Plan (WMP) is managed at the executive level by Horizon West Transmission, LLC's (HWT) Senior Director of Operations, with ultimate oversight by HWT's President. The Senior Director of Operations manages the Operations staff that are tasked with 24/7 monitoring of HWT Facilities during system operations and conducting maintenance on HWT Facilities. HWT's System Operations staff remotely operates and monitors the HWT Facilities from its affiliate Lone Star Transmission, LLC's (Lone Star) 24/7 control center located in Austin, Texas. HWT's Senior Director of Operations, with oversight by HWT's President, is tasked with confirming that the fire prevention measures, inspections, monitoring, and quality assurance/quality control (QA/QC) processes described in this WMP are successfully implemented at HWT Facilities.

HWT's Operations staff are trained on the WMP provisions and for emergency scenarios and are authorized to take precautionary measures, such as reducing power flow or initiating system shutdown when presented with system warnings or instruction from the California Independent System Operator Corporation (CAISO) or requests from an Interconnecting Transmission Owner.

A detailed breakdown of WMP roles and responsibilities to include accounting for each of the WMP sections and subsections is provided in **Appendix 1.**

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 February 5, 2020.

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

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

2 METRICS AND UNDERLYING DATA

Performance Metrics and Monitoring

Historical Performance Metrics

HWT is a new, transmission-only utility that is currently constructing its first transmission project, the Suncrest Facility, which is expected to be placed into service in March 2020. HWT implemented the provisions of its 2019 WMP throughout construction of the Suncrest Facility.

After filing the 2019 WMP, HWT participated in the California Public Utilities Commission's (CPUC) efforts to develop metrics in Docket No. R.18-10-007. In this 2020 WMP, HWT has adopted the applicable standard metrics developed by the CPUC. HWT will update future WMP filings to reflect the continued development and application of these metrics to HWT's WMP going forward.

HWT Facility Performance Metrics

Performance metrics represent outcome-based metrics that are derived from and address program measures by fire safety category. Table 2-1 provides the performance metrics developed to directly address the identified primary wildfire risk drivers.

Table 1
HWT Wildfire Prevention Performance Metrics

Category	Metric	Responsible	Frequency
Design and Construction	• No reportable ignition incidents on RFW days	Engineering and Construction Project Manager	Monthly (during construction)
Inspection and Maintenance	• Vegetation Caused Ignitions within HFTD on elevated or higher FPI. • Vegetation Caused Outages within HFTD on elevated or higher FPI • Equipment Caused Ignitions within HFTD on elevated or higher FPI. • Overhead Faults on Circuits within the HFTD on elevated or higher FPI. • Energized Wire Down events within HFTD on elevated or higher FPI.	Senior Director HWT Operations	Monthly
Operations	• Number of Non-CAL FIRE Rated Fuse Operations within the HFTD on elevated or higher FPI.	Senior Director HWT Operations	Monthly
Situational Awareness	• No undetected ignition incidents when Fire Potential Index (FPI) – elevated or higher	Senior Director HWT Operations	Monthly

2.1 Lessons learned: how tracking metrics in the 2019 WMP have informed the 2020 WMP

HWT has identified the following lessons learned from the execution of its 2019 WMP to date:

1. Previous Plan Metrics
    a. HWT did not have any facilities operating in 2019 to establish lessons learned for operations, as HWT began construction of its first transmission facility during 2019. Therefore, it is not possible at this time to compare how previous metric performance informed this WMP for operational metrics.
    b. During the design and construction phase of HWT's Suncrest Facility, there were no reportable ignition incidents on RFW days, which was the only metric tracked as part of HWTs 2019 WMP. This has proven to be a valuable metric in terms of prevention during construction, and thus, will continue to be a metric in future HWT WMPs.
2. Establishing Performance Metrics
    a. 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.
    b. HWT recognizes that there may be unforeseen circumstances that result in the inability to meet a certain metric goal for a given timeframe, and that this does not necessarily indicate a failure in the process that requires immediate action. HWT will continue to focus on achievement of this overall metric goal achievement in its performance measurement process, with a primary objective of continuous improvement in performance over time.
3. HWT is a transmission-only utility that does not have distribution customers. Therefore, HWT has determined that there are minimal foreseeable circumstances under which HWT would issue a Public Safety Power Shutdown (PSPS) that would impact end-use customers. This is discussed further in Section 4.4.
4. HWT assessed that its overall wildfire risk level is low, given that the vast majority of its Facilities are underground or inside the substation fence.
5. HWT believes it would be helpful for the CPUC to coordinate with CAISO for the purpose of including Wildfire Risk Mitigation considerations into the functional specifications of transmission projects identified by the CAISO's Transmission Planning Process (TPP), so that transmission projects are planned to incorporate wildfire fire risk-mitigating features.

2.2 Recent performance on progress metrics, last 5 years

Because HWT's first facility (the Suncrest Facility) will not be operational until March 2020, there are no progress metric performance data prior to 2019 that can be analyzed or shared. For 2019, HWT's data are limited to work related to design and construction activities and are shown in Table 1 below. All other progress metrics are not applicable through 2019.

Table 1-1
Recent performance on progress metrics, last 5 years

#	Progress metric name	Annual performance					Unit(s)	Comments
		2015	*2016*	*2017*	*2018*	*2019*		
1	Grid condition findings from inspection	N/A	N/A	N/A	N/A	N/A	Number of Level 1, 2, and 3 findings per mile of circuit in HFTD, and per total miles of circuit for each of the following inspection types: Patrol inspections Detailed inspections Other inspection types	
2	Vegetation clearance findings from inspection	N/A	N/A	N/A	N/A	N/A	Percentage of right-of-way with noncompliant clearance based on applicable rules and regulations at the time of inspection, as a percentage of all right-of-way inspected	
3	Extent of grid modularization	N/A	N/A	N/A	N/A	N/A	Number of sectionalizing devices per circuit mile plus number of automated grid control equipment in: HFTD Non-HFTD	
4	Data collection and reporting	N/A	N/A	N/A	N/A	100%	Percent of data requested in SDR and WMP collected in initial submission	Data pertaining to Design and Construction of HWT's Suncrest Facility was collected

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

Because HWT's first facility (the Suncrest Facility) will not be operational until March 2020, there are no progress metric performance data prior to 2019 that can be analyzed or shared. For 2019, HWT's data are limited to work related to design and construction activities and are shown in Table 2 below. All other progress metrics are not applicable through 2019.

Table 2
Recent performance on outcome metrics, last 5 years

Metric type	#	Outcome metric name	Annual performance					Unit(s)	Comments
			2015	2016	2017	2018	2019		
1. Near misses	1.a.	Number of all events (such as unplanned outages, faults, conventional blown fuses, etc.) that could result in ignition, by type according to utility-provided list (total)	N/A	N/A	N/A	N/A	0	Number per year	
	1.b.	Number of all events (such as unplanned outages, faults, conventional blown fuses, etc.) that could result in ignition, by type according to utility-provided list (normalized)	N/A	N/A	N/A	N/A	0	Number per RFW circuit mile day per year	
	1.c.	Number of wires down (total)	N/A	N/A	N/A	N/A	N/A	Number of wires down per year	
	1.d.	Number of wires down (normalized)	N/A	N/A	N/A	N/A	0	Number per RFW circuit mile day per year	
2. Utility inspection findings	2.a.	Number of Level 1 findings that could increase the probability of ignition discovered per circuit mile inspected	N/A	N/A	N/A	N/A	N/A	Average number of Level 1 findings that could increase the probability of ignition discovered by all inspections per circuit mile per year	
	2.b.	Number of Level 2 findings that could increase the probability of ignition discovered per circuit mile inspected	N/A	N/A	N/A	N/A	N/A	Average number of Level 2 findings that could increase the probability of ignition discovered by all inspections per circuit mile per year	
	2.c.	Number of Level 3 findings that could increase the probability of ignition discovered per circuit mile inspected	N/A	N/A	N/A	N/A	N/A	Average number of Level 3 findings that could increase the probability of ignition discovered by all inspections per circuit mile per year	
3. Customer hours of PSPS and other outages	3.a.	Customer hours of planned outages including PSPS (total)	N/A	N/A	N/A	N/A	N/A	Total customer hours of planned outages per year	
	3.b.	Customer hours of planned outages including PSPS (normalized)	N/A	N/A	N/A	N/A	N/A	Total customer hours of planned outages per RFW circuit mile day per year	
	3.c.	Customer hours of unplanned outages, not including PSPS (total)	N/A	N/A	N/A	N/A	N/A	Total customer hours of unplanned outages per year	

Table 2
Recent performance on outcome metrics, last 5 years

Metric type	#	Outcome metric name	Annual performance					Unit(s)	Comments
			2015	*2016*	*2017*	*2018*	*2019*		
	3.d.	Customer hours of unplanned outages, not including PSPS (normalized)	N/A	N/A	N/A	N/A	N/A	Total customer hours of unplanned outages per RFW circuit mile day per year	
	3.e.	Increase in System Average Interruption Duration Index (SAIDI)	N/A	N/A	N/A	N/A	N/A	Change in minutes compared to the previous year	
4. Utility ignited wildfire fatalities	4.a.	Fatalities due to utility-ignited wildfire (total)	N/A	N/A	N/A	N/A	0	Number of fatalities per year	
	4.b.	Fatalities due to utility-ignited wildfire (normalized)	N/A	N/A	N/A	N/A	0	Number of fatalities per RFW circuit mile day per year	
5. Accidental deaths resulting from utility wildfire mitigation initiatives	5.a.	Deaths due to utility wildfire mitigation activities (total)	N/A	N/A	N/A	N/A	0	Number of fatalities per year	
6. OSHA-reportable injuries from utility wildfire mitigation initiatives	6.a.	OSHA-reportable injuries due to utility wildfire mitigation activities (total)	N/A	N/A	N/A	N/A	0	Number of OSHA-reportable injuries per year	
	6.b.	OSHA-reportable injuries due to utility wildfire mitigation activities (normalized)	N/A	N/A	N/A	N/A	0	Number of OSHA-reportable injuries per year per 1000 line miles of grid	
7. Value of assets destroyed by utility-ignited wildfire, listed by asset type	7.a.	Value of assets destroyed by utility-ignited wildfire (total)	N/A	N/A	N/A	N/A	0	Dollars of damage or destruction per year	
	7.b.	Value of assets destroyed by utility-ignited wildfire (normalized)	N/A	N/A	N/A	N/A	0	Dollars of damage or destruction per RFW circuit mile day per year	
8. Structures damaged or destroyed by utility-ignited wildfire	8.a.	Number of structures destroyed by utility-ignited wildfire (total)	N/A	N/A	N/A	N/A	0	Number of structures destroyed per year	
	8.b.	Number of structures destroyed by utility-ignited wildfire (normalized)	N/A	N/A	N/A	N/A	0	Number of structures destroyed per RFW circuit mile day per year	
9. Acreage burned by utility-ignited wildfire	9.a.	Acreage burned by utility-ignited wildfire (total)	N/A	N/A	N/A	N/A	0	Acres burned per year	
	9.b.	Acreage burned by utility-ignited wildfire (normalized)	N/A	N/A	N/A	N/A	0	Acres burned per RFW circuit mile day per year	
10. Number of utility wildfire ignitions	10.a.	Number of ignitions (total) according to existing ignition data reporting requirement	N/A	N/A	N/A	N/A	0	Number per year	
	10.b.	Number of ignitions (normalized)	N/A	N/A	N/A	N/A	0	Number per RFW circuit mile day per year	
	10.c.	Number of ignitions in HFTD (subtotal)	N/A	N/A	N/A	N/A	0	Number in HFTD per year	

Table 2
Recent performance on outcome metrics, last 5 years

Metric type	#	Outcome metric name	Annual performance					Unit(s)	Comments
			2015	*2016*	*2017*	*2018*	*2019*		
	10.c.i.	Number of ignitions in HFTD Zone 1	N/A	N/A	N/A	N/A	N/A	Number in HFTD Zone 1 per year	
	10.c.ii.	Number of ignitions in HFTD Tier 2	N/A	N/A	N/A	N/A	N/A	Number in HFTD Tier 2 per year	
	10.c.iii.	Number of ignitions in HFTD Tier 3	N/A	N/A	N/A	N/A	0	Number in HFTD Tier 3 per year	
	10.d.	Number of ignitions in HFTD (subtotal, normalized)	N/A	N/A	N/A	N/A	0	Number in HFTD per RFW circuit mile day per year	
	10.d.i.	Number of ignitions in HFTD Zone 1 (normalized)	N/A	N/A	N/A	N/A	N/A	Number in HFTD Zone 1 per RFW circuit mile day per year	
	10.d.ii.	Number of ignitions in HFTD Tier 2 (normalized)	N/A	N/A	N/A	N/A	N/A	Number in HFTD Tier 2 per RFW circuit mile day per year	
	10.d.iii.	Number of ignitions in HFTD Tier 3 (normalized)	N/A	N/A	N/A	N/A	0	Number in HFTD Tier 3 per RFW circuit mile day per year	
	10.e.	Number of ignitions in non-HFTD (subtotal)	N/A	N/A	N/A	N/A	N/A	Number in non-HFTD per year	
	10.f.	Number of ignitions in non-HFTD (normalized)	N/A	N/A	N/A	N/A	N/A	Number in non-HFTD per RFW circuit mile day per year	
11. Critical infrastructure impacted	11.a.	Critical infrastructure impacted by PSPS	N/A	N/A	N/A	N/A	N/A	Number of critical infrastructure (in accordance with D.19-05-042) locations impacted per hour multiplied by hours offline per year	
	11.b.	Critical infrastructure impacted by PSPS (normalized)	N/A	N/A	N/A	N/A	N/A	Number of critical infrastructure (in accordance with D.19-05-042) locations impacted per hour multiplied by hours offline per RFW circuit mile day per year	

2.4 Description of additional metrics

Because HWT's first facility (the Suncrest Facility) will not be operational until March 2020, there are no progress metric performance data prior to 2019 that can be analyzed or shared. For 2019,

HWT's data are limited to work related to design and construction activities, which are shown in Table 3 below. All other progress metrics are not applicable through 2019.

Table 3
List and description of additional metrics, last 5 years

Metric	Performance					Units	Underlying assumptions	Third-party validation
	2015	*2016*	*2017*	*2018*	*2019*			
Number of reportable ignition incidents on RFW days	N/A	N/A	N/A	N/A	0	Number of ignition events	During Design and Construction phase of the Suncrest Facility	N/A
Number of days Fire Potential Index (FPI) – elevated or higher	N/A	N/A	N/A	N/A	27	Number of days with FPI Elevated or higher	Using SDG&E's definition of FPI for the Suncrest Facility location	N/A

2.5 Description of program targets

The Suncrest Facility is HWT's first facility and will be operational approximately in March 2020. Therefore, there are no Program Target data that can be analyzed or shared at this time.

Table 4
List and description of program targets, last 5 years

Program target	2019 performance	Units	Underlying assumptions	Third-party validation
N/A	N/A	N/A	N/A	N/A

2.6 Detailed information supporting outcome metrics

Table 5 provides the number of OSHA-reportable injuries attributed to any HWT wildfire mitigation activities, as listed in HWT 2019 WMP filing or otherwise, according to the type of activity for each of the last five years. There have been no accidental deaths due to utility wildfire mitigation initiative related to HWT Facilities.

Table 5
Accidental deaths due to utility wildfire mitigation initiatives, last 5 years

Activity	Victim															Total
	Full-time employee					*Contractor*					*Member of public*					
Year	*2015*	*2016*	*2017*	*2018*	*2019*	*2015*	*2016*	*2017*	*2018*	*2019*	*2015*	*2016*	*2017*	*2018*	*2019*	
Inspection	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vegetation management	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Utility fuel management	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	0	0
Grid hardening	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Other	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Total	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	0	0

Table 6 provides the number of OSHA-reportable injuries attributed to any HWT wildfire mitigation activities, as listed in HWT's 2019 WMP filing or otherwise, according to the type of activity for each of the last five years. There have been no OSHA-reportable injuries at HWT Facilities, due to any wildfire mitigation initiatives or otherwise.

Table 6
OSHA-reportable injuries due to utility wildfire mitigation initiatives, last 5 years

Activity	Victim															Total
	Full-time employee					*Contractor*					*Member of public*					
Year	*2015*	*2016*	*2017*	*2018*	*2019*	*2015*	*2016*	*2017*	*2018*	*2019*	*2015*	*2016*	*2017*	*2018*	*2019*	
Inspection	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	0	0
Vegetation management	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	0	0
Utility fuel management	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	0	0
Grid hardening	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	0	0
Other	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	0	0
Total	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	0	N/A	N/A	N/A	N/A	0	0

Table 7 provides a summary of the potential ignition impacts analysis and models.

Table 7
Methodology for potential impact of ignitions

List of all data inputs used in impact simulation	Sources of data inputs	Data selection and treatment methodologies	Assumptions, including SME input	Equation(s), functions, or other algorithms used to obtain output	Output type(s), e.g., wind speed model	Comments
Vegetation cover	GIS Data	GIS		Fire Behavior Modeling Program	Fire Behavior Model – flame intensity, flame length, rate of spread	
Extreme condition humidity	Weather Stations	GIS	Utilize inputs developed by local Fire Authority and Interconnecting PTO	Weather and Wind Modeling including Interconnecting PTO model outputs	Humidity % model	
Extreme condition wind speeds	Weather Stations	GIS	Utilize inputs developed by local Fire Authority and Interconnecting PTO	Weather and Wind Modeling including Interconnecting PTO model outputs	Wind speed model and wind values	
Terrain	GIS Data	GIS		Geographic Information System	Digital Terrain Model	

2.7 Mapping recent, modelled, and baseline conditions

Table 8 indicates the map file requirements for recent conditions. The majority of requirements are not applicable to HWT.

Table 8
Map file requirements for recent and modelled conditions of utility service territory, last 5 years

Layer name	Measurements	Units	Attachment location
Recent weather patterns	Average annual number of Red Flag Warning days per square mile across service territory	Area, days, square mile resolution	6.1 – there were 4 Red Flag Warning days at HWT site in 2019
	Average 95th and 99th percentile wind speed and prevailing direction (actual)	Area, miles per hour, at a square mile resolution or better, noting where measurements are actual or interpolated	
Recent drivers of ignition probability	Date of recent ignitions categorized by ignition probability driver	Point, GPS coordinate, days, square mile resolution	6.2 - N/A – HWT has not experienced ignition events.
Recent use of PSPS	Duration of PSPS events and area of the grid affected in customer hours per year	Area, customer hours, square mile resolution	6.3 - N/A – HWT has not

Table 8
Map file requirements for recent and modelled conditions of utility service territory, last 5 years

Layer name	Measurements	Units	Attachment location
			issued a PSPS.

Table 9 indicates the map file requirements for baseline conditions projected for 2020. The majority of requirements are not applicable to HWT. HWT has provided shapefiles indicating the number and locations of its critical facilities, which include the Suncrest Facility. HWT has no retail customers, distribution lines, or weather stations (although it plans to install a weather station in mid-2020).

Table 9
Map file requirements for baseline condition of utility service territory projected for 2020

Layer name	Measurements / variables	Units	Appendix location
Current baseline state of service territory and utility equipment	Non-HFTD vs HFTD (Zone 1, Tier 2, Tier 3) regions of utility service territory	Area, square mile resolution per type	6.4 – As applicable
	Urban vs. rural vs. highly rural regions of utility service territory	Area, square mile resolution per type	
	WUI regions of utility service territory	Area, square mile resolution	
	Number and location of critical facilities	Point, GPS coordinate	
	Number and location of customers	Area, number of people, square mile resolution	
	Number and location of customers belonging to access and functional needs populations	Area, number of people, square mile resolution	
	Overhead transmission lines	Line, quarter mile resolution	
	Overhead distribution lines	Line, quarter mile resolution	
	Location of substations	Point, GPS coordinate	
	Location of weather stations	Point, GPS coordinate	
	All utility assets by asset type, model, age, specifications, and condition	Point, GPS coordinate	
Location of planned utility equipment additions or removal	Non-HFTD vs HFTD (Zone 1, Tier 2, Tier 3) regions of utility service territory	Line, quarter mile resolution	N/A – HWT has no planned infrastructure additions or removals in 2020 other than its
	Urban vs. rural vs. highly rural regions of utility service territory	Line, quarter mile resolution	
	WUI regions of utility service territory	Line, quarter mile resolution	
	Circuit miles of overhead transmission lines	Line, quarter mile resolution	

Table 9
Map file requirements for baseline condition of utility service territory projected for 2020

Layer name	Measurements / variables	Units	Appendix location
	Circuit miles of overhead distribution lines	Line, quarter mile resolution	Suncrest Facility
	Location of substations	Point, GPS coordinate	
Planned 2020 WMP initiative activity per year	Location of 2020 WMP initiative activity for each activity as planned to be completed by the end of each year of the plan term	Line, quarter mile resolution	N/A – All HWT activity in 2020 will be confined to the existing Suncrest Facility.

3 BASELINE IGNITION PROBABILITY AND WILDFIRE RISK EXPOSURE

3.1 Recent weather patterns, last 5 years

The Suncrest Facility is HWT's first facility and will be operational approximately in March 2020. Therefore, HWT has not collected any weather data prior to 2019, when it initiated construction the Suncrest site.

Table 10 provides the applicable weather data collected in 2019 that was relevant to the Suncrest Facility site.

Table 10
Weather patterns, last 5 years

Weather measurement	2015	2016	2017	2018	2019	5-year historical average	Unit(s)
Red Flag Warning days	N/A	N/A	N/A	N/A	0.08	N/A	RFW circuit mile days per year
Days rated at the top 30% of proprietary fire potential index or similar fire risk index measure	N/A	N/A	N/A	N/A	0.54	N/A	Circuit mile days where proprietary measure rated above top 30% threshold[1] per year
95th percentile wind conditions	N/A	N/A	N/A	N/A	N/A	N/A	Circuit mile days with wind gusts over 95th percentile historical (meaning the prior 10 years, 2005-2014) conditions per year

[1] Threshold here defined as 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), .

Table 10
Weather patterns, last 5 years

Weather measurement	2015	2016	2017	2018	2019	5-year historical average	Unit(s)
99th percentile wind conditions	N/A	N/A	N/A	N/A	N/A	N/A	Circuit mile days with wind gusts over 99th percentile historical (meaning the prior 10 years, 2005-2014) conditions per year
Other	N/A	N/A	N/A	N/A	N/A	N/A	

3.2 Recent drivers of ignition probability, last 5 years

The Suncrest Facility is HWT's first facility and will be operational in March 2020. For 2019, the ignition driver probability data is limited to the construction activities of HWT's Suncrest Facility.

Table 11
Key recent drivers of ignition probability, last 5 years

Incident type by ignition probability driver		Near misses tracked (y/n)?	Number of incidents per year						Average percentage probability of ignition per incident						Number of ignitions per year from this driver					
			2015	*2016*	*2017*	*2018*	*2019*	*Average*	*2015*	*2016*	*2017*	*2018*	*2019*	*Average*	*2015*	*2016*	*2017*	*2018*	*2019*	*Average*
Contact from object	All types of object contact	Y	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0
	Animal contact	Y	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0
	Balloon contact	Y	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0
	Veg. contact	Y	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0
	Vehicle contact	Y	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0
All types of equipment / facility failure	All types	Y	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0
	Capacitor bank failure	Y	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0
	Conductor failure—all	Y	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0
	Conductor failure—wires down	Y	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0
	Fuse failure—all	Y	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0
	Fuse failure—conventional blown fuse	Y	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0

Table 11
Key recent drivers of ignition probability, last 5 years

Incident type by ignition probability driver		Near misses tracked (y/n)?	Number of incidents per year						Average percentage probability of ignition per incident						Number of ignitions per year from this driver					
			2015	*2016*	*2017*	*2018*	*2019*	*Average*	*2015*	*2016*	*2017*	*2018*	*2019*	*Average*	*2015*	*2016*	*2017*	*2018*	*2019*	*Average*
	Lightning arrestor failure	Y	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0
	Switch failure	Y	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0
	Transforme r failure	Y	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0	N/A	N/A	N/A	N/A	0	0
Wire-to-wire contact / contamination			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Other			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

3.3 Recent use of PSPS, last 5 years

The Suncrest Facility is HWT's first facility and will be operational in March 2020. Therefore, there are no PSPS data available to date. Table 12 below is not applicable and intentionally blank.

Table 12
Recent use of PSPS, last 5 years

PSPS characteristic	2015	2016	2017	2018	2019	Unit(s)
Frequency of PSPS events (total)						Number of instances where utility operating protocol requires de-energization of a circuit or portion thereof to reduce ignition probability, per year
Frequency of PSPS events (normalized)						Number of instances where utility operating protocol requires de-energization of a circuit or portion thereof in order to reduce ignition probability, per RFW circuit mile day per year
Scope of PSPS events (total)						Circuit-events, measured in number of events multiplied by number of circuits de-energized per year
Scope of PSPS events (normalized)						Circuit-events, measured in number of events multiplied by number of circuits targeted for de- energization per RFW circuit mile day per year
Duration of PSPS events (total)						Customer hours per year
Duration of PSPS events (normalized)						Customer hours per RFW circuit mile day per year
Other						

3.4 Baseline state of equipment and wildfire and PSPS event risk reduction plans

3.4.1 Current baseline state of service territory and utility equipment

For the purposes of the WMP and Table 13, which details the quantitative facility and service territory data required, HWT considers the Suncrest Facility to be a critical facility. HWT has no distribution system or distribution/retail customers.

Table 13
Current baseline state of service territory and utility equipment

Land use	Characteristic tracked	In non-HFTD	In HFTD Zone 1	In HFTD Tier 2	In HFTD Tier 3
In urban areas	Circuit miles	N/A	N/A	N/A	N/A
	Circuit miles in WUI	N/A	N/A	N/A	N/A
	Number of critical facilities	N/A	N/A	N/A	N/A
	Number of critical facilities in WUI	N/A	N/A	N/A	N/A
	Number of customers	N/A	N/A	N/A	N/A
	Number of customers in WUI	N/A	N/A	N/A	N/A
	Number of customers belonging to access and functional needs populations	N/A	N/A	N/A	N/A
	Number of customers belonging to access and functional needs populations in WUI	N/A	N/A	N/A	N/A
	Circuit miles of overhead transmission lines	N/A	N/A	N/A	N/A
	Circuit miles of overhead transmission lines in WUI	N/A	N/A	N/A	N/A
	Circuit miles of overhead distribution lines	N/A	N/A	N/A	N/A
	Circuit miles of overhead distribution lines in WUI	N/A	N/A	N/A	N/A
	Number of substations	N/A	N/A	N/A	N/A
	Number of substations in WUI	N/A	N/A	N/A	N/A
In rural areas	Circuit miles	N/A	N/A	N/A	N/A
	Circuit miles in WUI	N/A	N/A	N/A	N/A
	Number of critical facilities	N/A	N/A	N/A	N/A
	Number of critical facilities in WUI	N/A	N/A	N/A	N/A
	Number of customers	N/A	N/A	N/A	N/A
	Number of customers in WUI	N/A	N/A	N/A	N/A
	Number of customers belonging to access and functional needs populations	N/A	N/A	N/A	N/A
	Number of customers belonging to access and functional needs populations in WUI	N/A	N/A	N/A	N/A
	Circuit miles of overhead transmission lines	N/A	N/A	N/A	N/A
	Circuit miles of overhead transmission lines in WUI	N/A	N/A	N/A	N/A
	Circuit miles of overhead distribution lines	N/A	N/A	N/A	N/A
	Circuit miles of overhead distribution lines in WUI	N/A	N/A	N/A	N/A
	Number of substations	N/A	N/A	N/A	N/A
	Number of substations in WUI	N/A	N/A	N/A	N/A
In highly rural areas	Circuit miles	0	0	0	0.02
	Circuit miles in WUI	0	0	0	0.02
	Number of critical facilities	N/A	N/A	N/A	1
	Number of critical facilities in WUI	N/A	N/A	N/A	1
	Number of customers	N/A	N/A	N/A	N/A
	Number of customers in WUI	N/A	N/A	N/A	N/A
	Number of customers belonging to access and functional needs populations	N/A	N/A	N/A	N/A
	Number of customers belonging to access and functional needs populations in WUI	N/A	N/A	N/A	N/A

Table 13
Current baseline state of service territory and utility equipment

Land use	Characteristic tracked	In non-HFTD	In HFTD Zone 1	In HFTD Tier 2	In HFTD Tier 3
	Circuit miles of overhead transmission lines	0	0	0	0.02
	Circuit miles of overhead transmission lines in WUI	0	0	0	0.02
	Circuit miles of overhead distribution lines	0	0	0	0
	Circuit miles of overhead distribution lines in WUI	0	0	0	0
	Number of substations	0	0	0	1
	Number of substations in WUI	0	0	0	1

HWT plans to install a weather station at or in the immediate vicinity of the Suncrest Facility project site in mid-2020 as part of its Situational Awareness improvement efforts. HWT notes that the Suncrest Facility is only one mile from the existing SDG&E Suncrest Substation, and SDG&E operates a vast weather station system throughout the Suncrest Facility's vicinity.

Table 14
Summary data on weather station count

Weather station count type	Current count	Unit(s)
Number of weather stations (total)	0	Total number located in service territory and operated by utility
Number of weather stations (normalized)	0	Total number located in service territory and operated by utility, divided by total number of circuit miles in utility service territory
Number of weather stations in non-HFTD (total)	0	Total number located in non-HFTD service territory and operated by utility
Number of weather stations in non-HFTD (normalized)	0	Total number located in non-HFTD service territory and operated by utility, divided by total number of circuit miles in non-HFTD service territory
Number of weather stations in HFTD Zone 1 (total)	0	Total number located in HFTD Zone 1 service territory and operated by utility
Number of weather stations in HFTD Zone 1 (normalized)	0	Total number located in HFTD Zone 1 service territory and operated by utility, divided by total number of circuit miles in HFTD Zone 1 service territory
Number of weather stations in HFTD Tier 2 (total)	0	Total number located in HFTD Tier 2 service territory and operated by utility
Number of weather stations in HFTD Tier 2 (normalized)	0	Total number located in HFTD Tier 2 service territory and operated by utility, divided by total number of circuit miles in HFTD Tier 2 service territory
Number of weather stations in HFTD Tier 3 (total)	0	Total number located in HFTD Tier 3 service territory and operated by utility
Number of weather stations in HFTD Tier 3 (normalized)	0	Total number located in HFTD Tier 3 service territory and operated by utility, divided by total number of circuit miles in HFTD Tier 3 service territory

HWT is a transmission-only utility and does not have any distribution fault indicators. Thus, Table 15 below is intentionally blank.

Table 15
Summary data on fault indicator count

Fault indicator count type	Current count	Unit(s)
Number of fault indicators (total)		Total number located in service territory and operated by utility
Number of fault indicators (normalized)		Total number located in service territory and operated by utility, divided by total number of circuit miles in utility service territory
Number of fault indicators in non-HFTD (total)		Total number located in non-HFTD service territory and operated by utility
Number of fault indicators in non-HFTD (normalized)		Total number located in non-HFTD service territory and operated by utility, divided by total number of circuit miles in non-HFTD service territory
Number of fault indicators in HFTD Zone 1 (total)		Total number located in HFTD Zone 1 service territory and operated by utility
Number of fault indicators in HFTD Zone 1 (normalized)		Total number located in HFTD Zone 1 service territory and operated by utility, divided by total number of circuit miles in HFTD Zone 1 service territory
Number of fault indicators in HFTD Tier 2 (total)		Total number located in HFTD Tier 2 service territory and operated by utility
Number of fault indicators in HFTD Tier 2 (normalized)		Total number located in HFTD Tier 2 service territory and operated by utility, divided by total number of circuit miles in HFTD Tier 2 service territory
Number of fault indicators in HFTD Tier 3 (total)		Total number located in HFTD Tier 3 service territory and operated by utility
Number of fault indicators in HFTD Tier 3 (normalized)		Total number located in HFTD Tier 3 service territory and operated by utility, divided by total number of circuit miles in HFTD Tier 3 service territory

3.4.2 Planned additions, removal, and upgrade of utility equipment by end of 3-year plan term

As a utility that is constructing its first facility, HWT has designed its Facilities to be fire-hardened, using the latest technology and fire-hardening designs. The Suncrest Facility's Fire Protection Plan was accepted and approved by San Diego County Fire Authority (SDCFA). HWT has an objective over the next three years to identify and evaluate potential additions and upgrades of equipment that could be implemented to further reduce or mitigate wildfire risk.

At the time of filing, HWT has identified the following additions and upgrades to equipment for further evaluation:

- Rated masonry fire barrier walls and projectile shielding between the fire risk and designated equipment and /or structures
- Fixed foam deluge system, or portable foam system with local fire service advice
- Evaluate the use of protective coating on transmission infrastructure
- Evaluate replacing transformer bushings with low explosion risk type bushings
- Evaluate the use of optical fire detectors (linear / electronic / pneumatic / heat actuated)

- Utilize real-time condition monitoring technology of transformer health vs. operating conditions
- Evaluate the use of pole fall sensors
- Undergrounding of transmission lines
- Implementation of security cameras on pole / line
- Transformer seismic hardening
- Installation of weather stations

Table 16 provides a summary of the HWT's potential utility equipment additions by 2023.

Table 16
Location of planned utility equipment additions or removal by end of 3-year plan term

Land use	Characteristic tracked	Changes by end-2022[1]			
		In non-HFTD	*In HFTD Zone 1*	*In HFTD Tier 2*	*In HFTD Tier 3*
In urban areas	Circuit miles of overhead transmission lines	N/A	N/A	N/A	N/A
	Circuit miles of overhead distribution lines	N/A	N/A	N/A	N/A
	Circuit miles of overhead transmission lines in WUI	N/A	N/A	N/A	N/A
	Circuit miles of overhead distribution lines in WUI	N/A	N/A	N/A	N/A
	Number of substations	N/A	N/A	N/A	N/A
	Number of substations in WUI	N/A	N/A	N/A	N/A
	Number of weather stations	N/A	N/A	N/A	N/A
	Number of weather stations in WUI	N/A	N/A	N/A	N/A
In rural areas	Circuit miles of overhead transmission lines	N/A	N/A	N/A	N/A
	Circuit miles of overhead distribution lines	N/A	N/A	N/A	N/A
	Circuit miles of overhead transmission lines in WUI	N/A	N/A	N/A	N/A
	Circuit miles of overhead distribution lines in WUI	N/A	N/A	N/A	N/A
	Number of substations	N/A	N/A	N/A	N/A
	Number of substations in WUI	N/A	N/A	N/A	N/A
	Number of weather stations	N/A	N/A	N/A	N/A
	Number of weather stations in WUI	N/A	N/A	N/A	N/A

Table 16
Location of planned utility equipment additions or removal by end of 3-year plan term

Land use	Characteristic tracked	Changes by end-2022[1]			
		In non-HFTD	*In HFTD Zone 1*	*In HFTD Tier 2*	*In HFTD Tier 3*
In highly rural areas	Circuit miles of overhead transmission lines	N/A	N/A	N/A	0.02
	Circuit miles of overhead distribution lines	N/A	N/A	N/A	N/A
	Circuit miles of overhead transmission lines in WUI	N/A	N/A	N/A	0.02
	Circuit miles of overhead distribution lines in WUI	N/A	N/A	N/A	N/A
	Number of substations	N/A	N/A	1	1
	Number of substations in WUI	N/A	N/A	1	1
	Number of weather stations	N/A	N/A	1	1
	Number of weather stations in WUI	N/A	N/A	1	1

1 Transmission lines refer to all lines at or above 65kV, and distribution lines refer to all lines below 65kV.

Table 17 below provides the data pertaining to the location of HWT's planned utility infrastructure upgrades from 2020 to 2022.

Table 17
Location of planned utility infrastructure upgrades

Land use	Characteristic tracked	In non-HFTD			In HFTD Zone 1			In HFTD Tier 2			In HFTD Tier 3		
		2020	*2021*	*2022*	*2020*	*2021*	*2022*	*2020*	*2021*	*2022*	*2020*	*2021*	*2022*
Total circuit miles planned for hardening each year, all types and locations		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total number of substations planned for hardening each year, all locations			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
In urban areas	Circuit miles planned for grid hardening of overhead transmission lines	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Circuit miles of overhead transmission lines in WUI to harden	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Circuit miles of overhead distribution lines to harden	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Circuit miles of overhead distribution lines in WUI to harden	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Circuit miles of overhead transmission lines in WUI to harden	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Number of substations to harden	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Number of substations in WUI to harden	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
In rural areas	Circuit miles of overhead transmission lines to harden	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Circuit miles of overhead transmission lines in WUI to harden	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Circuit miles of overhead distribution lines to harden	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Circuit miles of overhead distribution lines in WUI to harden	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Circuit miles of overhead transmission lines in WUI to harden	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Number of substations to harden	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Number of substations in WUI to harden	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
In highly rural areas	Circuit miles of overhead transmission lines to harden	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Circuit miles of overhead transmission lines in WUI to harden	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.02	N/A	N/A
	Circuit miles of overhead distribution lines to harden	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Circuit miles of overhead distribution lines in WUI to harden	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Circuit miles of overhead transmission lines in WUI to harden	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Number of substations to harden	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	1	1	1
	Number of substations in WUI to harden	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	1	1	1

Transmission lines refer to all lines at or above 65kV, and distribution lines refer to all lines below 65kV.

3.4.3 Status Quo Ignition Probability Drivers by Service Territory

HWT does not have an assigned service territory due to the fact that its Facilities are transmission-only and will not serve distribution customers. Wildfire risk is evaluated at the facility level. The wildfire risk evaluation for the Suncrest Facility indicated a low overall risk of off-site vegetation ignitions. HWT will not have an operational facility until March 2020; therefore, there is no historic data associated with the operations of an electrical facility to share at this time. Table 18 below is not applicable and intentionally blank.

Table 18
Key drivers of ignition probability

Ignition probability drivers		Number of incidents per year (according to 5-year historical average)	Average likelihood of ignition per incident	Ignitions from this driver (according to 5-year historical average)				
				Total	*In non-HFTD*	*In HFTD Zone 1*	*In HFTD Tier 2*	*In HFTD Tier 3*
Contact from object	All types of object contact							
	Animal contact							
	Balloon contact							
	Vegetation contact							
	Vehicle contact							
All types of equipment / facility failure	All types							
	Capacitor bank failure							
	Conductor failure— all							
	Conductor failure— wires down							
	Fuse failure—all							
	Fuse failure—conventional blown fuse							
	Lightning arrestor failure							
	Switch failure							
	Transformer failure							
Wire-to-wire contact / contamination								
Other								

4 INPUTS TO THE PLAN AND DIRECTIONAL VISION FOR WILDFIRE RISK EXPOSURE

4.1 The objectives of the plan

The overarching objective of this 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 sections of PU Code Section 8386 and for guiding fire safety awareness and prevention at the HWT Facilities. In 2020, the HWT Facilities will consist of the Suncrest Facility, which HWT plans to place into service by approximately March 2020 (see Figures 1 and 2). Figure 3 presents the CPUC Fire Threat Map and Figure 4 presents the Suncrest Facility Fire Safety Plan. While the Suncrest Facility is the only facility owned and operated by HWT at the time of filing the 2020 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 "world class" fire-protected infrastructure and facilities that considers operational risks including but are 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.
- The HWT Facilities are under the operational control of the CAISO.

Before the upcoming wildfire season:

The Suncrest Facility will be operational prior to the next wildfire season peak, and the primary objective will be to implement all fire safety protocols, measures, and plans that have been prepared for this facility on an ongoing basis to minimize the likelihood of an ignition event.

Before the Next Plan Filing:

HWT's primary objective is to build, operate, and maintain the HWT Facilities according to established fire prevention procedures and strategies, which will minimize the potential for a managed asset to ignite a wildfire. HWT will work towards achieving this objective through the fire prevention strategies and specific measures detailed in Section 4.

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 3.4.2 and a team that will be empowered and encouraged to evaluate and improve protocols and procedures, as well implementing selected wildfire risk mitigating improvements.

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.

Next Three 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 measures that HWT has identified for evaluation and consideration at the time of filing are provided in Section 3.4.2.

Next Ten 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 a "world class" standard for fire-protected transmission facilities and infrastructure.

4.2 Understanding major trends impacting ignition probability and wildfire consequence

HWT's understanding of major trends impacting ignition probability and wildfire consequence is currently based on its experience in the planning, design, and construction of its Suncrest facility, in addition to lessons learned through HWT's participation in the CPUC's WMP proceeding and from its experienced utility affiliates, such as Florida Power and Light Company (FPL). HWT leverages its continuous analysis of wildfire risk drivers to better understand major trends impacting ignition risk and consequences.

Risk Drivers

The risk of wildfire being caused by a HWT Facility is directly related to the type of vegetation (fuel bed) within its vicinity, the local/regional weather patterns, and the facility activities. Areas that include uninterrupted, natural vegetation present a risk of ignition from construction-related activities or from ongoing operations activities or equipment failures. When the area also includes weather conditions that result in periodic high wind and low humidity, the wildfire risk is significantly enhanced. The following section discusses specific high priority risk drivers within each risk category.

Wildfire Risk and Risk Drivers

Wildfire risk and risk drivers have been prioritized within the five fire safety categories: (1) facility design and construction; (2) inspection and maintenance; (3) operation practices, (4) situational/condition awareness; and (5) response and recovery. Risk drivers and the HWT programs and strategies that address each of these risks/risk drivers, by safety category, are presented in Table 2 (Section 2.3). HWT also describes the programs, strategies, and specific fire prevention measures implemented at HWT Facilities in this section below.

Facility Construction Risk Drivers

Fire risk is typically the highest during construction (and decommissioning), 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. The prioritized risk drivers during construction are:

1. **Hot Work During Construction –** Hot Work includes any process that can be (a) a source of ignition when flammable material is present or (b) a fire hazard regardless of the presence of flammable material in the workplace.
2. **Grubbing and Grading During Construction** – Grubbing vegetation from a project site and grading the site involves use of machinery within and adjacent to naturally vegetated areas, which represents a fire hazard due to heat and sparks that may result.

3. **Compost Pile(s) Combustion During Grubbing –** Piling vegetation too high and letting it dry out before it is processed or removed from the site may result in spontaneous combustion, which in turn can ignite nearby vegetation.
4. **Vehicle/Machinery/Tools (Internal Combustion Engines) Operation During Construction –** Use of gas-powered, internal combustion engines includes the potential for ignitions from heat, sparks, heated materials, or direct contact with vegetation.

Inspection and Maintenance Risk Drivers

1. **General Equipment Failure Creating Spark/Heat/Flame –** Transformers, capacitors, bushings, and other electrical facility components may fail without warning due to manufacturing defects, deferred maintenance, age, or other factors.
2. **Wildlife Interference –** Wild animals may create faults by degrading components or direct contact with electrical equipment, transmission line, etc. Wildlife may create nests, burrow, chew, or peck, creating conflicts and potentially, ignitions.
3. **Vegetation Interference –** Unmanaged vegetation can grow quickly to interfere with various facility and transmission line components, primarily through direct contact.
4. **Vegetation as a Fuel Source –** Vegetation adjacent to energy facilities presents a fuel source that can ignite from facility related failures or activities.

Operational Practices Risk Drivers

Fire risk at the HWT Facilities is expected to be lower during operation than during the construction phase. Human activity level drops significantly once construction is complete, and Hot Work and other ignition sources are less frequent. HWT has identified the following risk drivers during operations:

1. **General Equipment Failure Creating Spark/Heat/Flame –** Transformers, capacitors, bushings, and other electrical facility components may fail without warning due to unexpected events.
2. **Extreme Weather Conditions –** Wildfires may occur year-round in California, but conditions that result in high winds and low humidity have proven to result in aggressive wildfires that are not easily controlled. CAL FIRE estimates that 90% of the acreage burned occurs from the 10% of the fires that coincide with RFW conditions.
3. **Wildlife Interference –** Wild animals may create faults by degrading components or direct contact with electrical equipment, transmission lines, and other components. Wildlife may create nests, burrow, chew, or peck, creating conflicts and potentially, ignitions.
4. **Vegetation Interference –** Unmanaged vegetation can grow quickly to interfere with various facility and transmission line components, primarily through direct contact.

5. **Failure to Follow Maintenance Procedures –** Maintenance of electrical equipment is critical for its efficient and safe operation. Fire risk may increase over time without proper maintenance.
6. **Failure to Follow Operations Procedures –** Operations procedures are important as they define the parameters within which equipment safely operates. Operating outside of these parameters increases the risk of a malfunction or failure, and potential for fire.
7. **Vegetation as a Fuel Source –** Vegetation adjacent to energy facilities presents a fuel source that can ignite from facility related failures or activities.
8. **Wire Down –** Downed live wires have been the cause of numerous vegetation fires and avoiding this situation through pole strength and materials and vegetation management beneath transmission lines has been a focus of utilities for reducing fire risk.
9. **Pole Failure (Creating Wire Down) –** Pole failures are a leading cause for down live wires. Wood poles degrade over time and require replacement.
10. **Earthquake or Other Natural Disasters –** Earthquakes, tornadoes, and similar natural disasters are unpredictable, but can cause ignitions through down wires and damaged facilities.
11. **Flame Reaching Beyond Facility –** Flames resulting from failed electrical equipment within a facility may become significant if they reach (such as when blown by wind) off-site vegetation, which may result in a wildfire.
12. **Inability to Adequately Respond to Fire on Facility –** Initial response to an ignition can have a significant impact on whether the ignition elevates beyond a small, isolated, and controllable event to a sizable fire that requires additional resources.
13. **Climate Change –** Climate change may result in longer periods of hot and dry weather, resulting in drier vegetation and increased potential for ignition. Over time, under this scenario in southern California, a vegetation type conversion would be expected with a resulting higher fire frequency, but lower fire intensity.
14. **Normal Weather Conditions (Lightning) –** Lightning represents a potential ignition source as well as a source for electrical equipment faults and failures.
15. **Vandalism –** Vandalism remains a potential fire risk due to the ability of persons intending to harm a facility to damage components, cause failures, light fires, or otherwise cause vegetation ignitions from their actions.

Situational/Condition Awareness Risk Drivers

1. **Inability to Adequately Respond to Fire on Facility –** Initial response to an ignition can have a significant impact on whether the ignition elevates beyond a small, isolated and controllable event to a sizable fire that requires additional resources.

2. **Extreme Weather Conditions –** Wildfires may occur year-round in California, but conditions that result in high winds and low humidity have proven to result in aggressive wildfires that are not easily controlled. CAL FIRE estimates that 90% of the acreage burned occurs from the 10% of the fires that coincide with RFW conditions.
3. **Climate Change –** Climate change may result in longer periods of hot and dry weather, resulting in drier vegetation and increased potential for ignition. Over time, under this scenario, a vegetation type conversion would be expected with a resulting higher fire frequency.
4. **Normal Weather Conditions (Lightning) –** Lightning represents a potential ignition source as well as a source for electrical equipment faults and failures.

Response and Recovery Risk Drivers

1. **Hot Work During Construction –** Hot Work includes any process that can be (a) a source of ignition when flammable material is present, or (b) a fire hazard regardless of the presence of flammable material in the workplace.
2. **Grubbing and Grading During Construction** – Grubbing vegetation from a project site and grading the site involves use of machinery within and adjacent to naturally vegetated areas, which represents a fire hazard due to heat and sparks that may result.
3. **Compost Pile(s) Combustion During Grubbing –** Piling vegetation too high and letting it dry out before it is processed or removed from the site may result in spontaneous combustion, which in turn can ignite nearby vegetation.
4. **Vehicle/Machinery/Tools (Internal Combustion Engines) Operation During Construction –** Use of gas-powered, internal combustion engines includes the potential for ignitions from heat, sparks, heated materials, or direct contact with vegetation.
5. **Wire Down –** Downed live wires have been the cause of numerous vegetation fires and avoiding this situation through pole strength and materials and vegetation management beneath transmission lines has been a focus of utilities for reducing fire risk.
6. **Earthquake or Other Natural Disasters –** Earthquakes, tornadoes, and similar natural disasters are unpredictable, but can cause ignitions through down wires and damaged facilities.
7. **Flame Reaching Beyond Facility –** Flames resulting from failed electrical equipment within a facility may become significant if they reach (such as when blown by wind) off-site vegetation, which may result in a wildfire.
8. **Inability to Adequately Respond to Fire on Facility –** Initial response to an ignition can have a significant impact on whether the ignition elevates beyond a small, isolated and controllable event to a sizable fire that requires additional resources.

9. **Extreme Weather Conditions –** Wildfires may occur year-round in California, but conditions that result in high winds and low humidity have proven to result in aggressive wildfires that are not easily controlled. CAL FIRE estimates that 90% of the acreage burned occurs from the 10% of the fires that coincide with RFW conditions.
10. **Normal Weather Conditions (Lightning) –** Lightning represents a potential ignition source as well as a source for electrical equipment faults and failures.

Additionally, HWT's subject matter experts (SME) conduct a formalized assessment of equipment using a Failure Modes and Effects Analysis (FMEA). This process considers the potential failures from each HWT Facility component and assesses and prioritizes the potential risk, along with providing potential mitigations. Each component of a HWT 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, and 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 SME brainstorm and capture all potential ways that 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 effective mitigation measures, and determine who should 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.

4.2.1 Service territory fire-threat evaluation and ignition risk trends

Wildfire Threat Area Evaluation

A component of the WMP Template is the evaluation of the area fire threat to determine whether it is accurately classified based on factors such as project location. HWT's only facility, the Suncrest Facility, is located in an area that is designated as a Tier 3 (extreme) Fire-Threat Area, based on the CPUC's Fire-Threat Map. HWT believes this is an accurate designation, 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.

HWT does not have a traditional "service territory," and thus has completed Table 19 below based on its assessment of the conditions at its current sole facility, the Suncrest Facility, and its fire environment in relation to the facility's function, equipment, and fire hardening and prevention measures.

Table 19
Macro trends impacting ignition probability and/or wildfire consequence

Rank	Macro trends impacting utility ignited ignition probability and estimated wildfire consequence by year 10	Comments
2	Change in ignition probability and estimated wildfire consequence due to climate change	Increase drying of proximate vegetative fuels to the Suncrest Facility represents an impacting trend.
8	Change in ignition probability and estimated wildfire consequence due to relevant invasive species, such as bark beetles	Not applicable due to transmission line undergrounding (including the 115 feet overhead span at Suncrest, which will be placed underground in 2020.
1	Change in ignition probability and estimated wildfire consequence due to other drivers of change in fuel density and moisture	Not applicable due to transmission line undergrounding (including the 115 feet overhead span at Suncrest, which will be placed underground in 2020.
5	Population changes (including Access and Functional Needs population) that could be impacted by utility ignition	Not applicable due to transmission line undergrounding (same as above)
4	Population changes in HFTD that could be impacted by utility ignition	Not applicable due to transmission line undergrounding (same as above).
7	Population changes in WUI that could be impacted by utility ignition	Not applicable due to transmission line undergrounding (same as above).

Table 19
Macro trends impacting ignition probability and/or wildfire consequence

Rank	Macro trends impacting utility ignited ignition probability and estimated wildfire consequence by year 10	Comments
3	Utility infrastructure location in HFTD vs non-HFTD	Location in HFTD represent a higher potential impact (consequence).
6	Utility infrastructure location in urban vs rural vs highly rural areas2	Not Applicable. HWT Facilities located in rural areas.

[2] Comment on difference in approach to serving customers in urban versus rural versus highly rural areas.

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 have a RAMP or S-MAP. HWT uses an FMEA Method to assess wildfire risk.

4.3 Change in ignition probability drivers

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) Fire-Threat Area.

HWT has integrated significant hardening into the design and construction of the Suncrest Facility. 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. HWT will continue to evaluate change in ignition probability drivers as it accumulates operational experience with its facilities.

4.4 Directional vision for necessity of Public Safety Power Shut-off

HWT is a transmission-only utility and will not own, operate, or maintain electric distribution facilities. Accordingly, none of HWT's Facilities include distribution reclosers. HWT is still evaluating its directional vision for the necessity of a Public Safety Power Shutoff (PSPS) at its facilities; however, based on the limited scale and scope of the HWT Facilities, at this time, HWT believes that it will seldom be necessary for it to issue a PSPS. Nonetheless, HWT has developed the following PSPS protocol 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 facilities are added. HWT will coordinate closely with Interconnecting Transmission Owners to monitor any PSPS events on interconnected or nearby facilities. HWT's operations are subject to operating instructions from the CAISO and the Interconnecting Transmission Owners, and HWT will also communicate directly with these entities before, during, and after any PSPS event.

HWT is also participating in the CPUC's proceeding regarding de-energization in Docket No. R.18-12-005 and will incorporate guidelines issued in that proceeding regarding de-energization of transmission facilities into its PSPS protocols and into future WMPs as applicable.

As explained previously (in Section 1), the HWT Facilities will be monitored 24/7 by a remote system control operator. During normal grid system operations, the CAISO is responsible for determining the operational settings for the HWT Facilities. The CAISO will communicate changes to operational settings of its facilities with the HWT System Operator, who will then execute the setting changes. The HWT system operator is responsible for executing changes to the operational settings of the HWT Facilities.

The System Operator and Field Operations Personnel are responsible for readiness at all times to assess potential and actual severe events and to coordinate restoration efforts. The actions taken in response to such events include the following principles:

- Monitor – monitor the event and its progression
- Protect – protect transmission and substation equipment from damage
- Safeguard – safeguard first responders
- Respond – assess impacts
- Restore – restore damaged equipment and place back in service

HWT has created procedures that encompass proactive and reactive responses to events that could affect it transmission and substation facilities. These procedures describe: the actions taken by first responders; contact lists that will be continually updated by HWT's system control operator; and list of inventories of spare equipment, materials and supplies that will be continually updated by the field operations team.

The HWT 24/7 system control operator will continually monitor weather and fire patterns that may result in events that could affect its facilities. When made aware that a severe event has been forecasted or is expected to occur, HWT System Operations personnel will:

- Track and/or assess the potential severe event (*e.g.*, location, path and intensity) and keep potentially impacted operating personnel and management informed of any development;
- Communicate with CAISO, Interconnecting Transmission Owners, and first responders so that they may begin preparations for any needed response and keep them posted on the potential event's progress;
- Take all actions necessary to protect the safety of its personnel, the general public, and facilities; and
- Communicate regarding changes in conditions with the CAISO.

Based on system conditions, HWT System Operations Personnel may execute a facility shut down process by opening circuit breakers. If HWT shuts down any of its facilities, HWT will monitor the post shut-down situation and will execute the pre-agreed restoration procedure with the field operations team visual assessment of the facilities condition.

HWT – Initiated Power Shut-off

HWT may employ the use of PSPS as a proactive fire prevention measure if essential to minimize the possibility of the Suncrest Facility becoming the source of an ignition that may endanger local residents and communities. As a last resort, HWT has the responsibility to shut off power 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 Process

PSPS is a last resort to ensure 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 disabling reclosing capabilities, transitioning to more sensitive relay settings, reducing or cancelling at-risk field work, deploying field observers to critical locations, and activating the Emergency Operations Center.

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 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.

Table 20 provides HWT's input on the anticipated PSPS use over the next 10 years.

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 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 20
Anticipated characteristics of PSPS use over next 10 years

Rank order 1-9	PSPS characteristic	Significantly increase; increase; no change; decrease; significantly decrease	Comments
	Number of customers affected by PSPS events (total)		HWT has no distribution or retail customers.
	Number of customers affected by PSPS events (normalized by fire weather, e.g., Red Flag Warning line mile days)		HWT has no distribution or retail customers.
	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)		HWT has no reasonably foreseeable need to issue a PSPS
	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)		HWT has no reasonably foreseeable need to issue a PSPS

Table 20
Anticipated characteristics of PSPS use over next 10 years

Rank order 1-9	PSPS characteristic	Significantly increase; increase; no change; decrease; significantly decrease	Comments
	Scope of PSPS events in circuit-events, measured in number of events multiplied by number of circuits targeted for de-energization (total)		HWT has no reasonably foreseeable need to issue a PSPS.
	Scope of PSPS events in circuit-events, measured in number of events multiplied by		HWT has no reasonably foreseeable need to issue a PSPS.
	number of circuits targeted for de-energization (normalized by fire weather, e.g., Red Flag Warning line mile days)		HWT has no distribution or retail customers.
	Duration of PSPS events in customer hours (total)		HWT has no distribution or retail customers.
	Duration of PSPS events in customer hours (normalized by fire weather, e.g., Red Flag Warning line mile days)		HWT has no distribution or retail customers.
	Other	N/A	N/A

5 WILDFIRE MITIGATION STRATEGY AND PROGRAMS FOR 2019 AND FOR EACH YEAR OF THE 3-YEAR WMP TERM

5.1 Wildfire mitigation strategy

HWT's wildfire mitigation strategy 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, work with experienced internal and external SMEs, 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 that is constructing its first facility, HWT is continually developing its strategies, particularly as it shifts from the design and construction phase to the

operations phase for its first facility. Below HWT describes how it will approach these strategies for each of the following time periods:

Before the Next Wildfire Season:

The Suncrest Facility will be on-line and the construction phase will be over by approximately March 2020, before the 2020 high fire season, as defined by CAL FIRE. Once the Suncrest Facility is operational, HWT will implement the operations phase wildfire ignition mitigation strategies described in the following sections. These strategies will build on the wildfire ignition mitigation strategies that HWT has implemented during construction.

Before the Next Plan Filing:

HWT's wildfire mitigation strategies will be closely monitored between the beginning of Suncrest Facility operations and the next WMP filing. Where issues are identified, alternative approaches will be vetted and integrated with the continued goal of minimizing the likelihood of vegetation ignitions from HWT Facilities.

Within the Next Three Years:

During the next three years, HWT may construct and/or acquire additional facilities. HWT will apply the same intensive 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 Ten 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 developing 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.

5.2 Wildfire Mitigation Plan implementation

5.2.1 Monitoring and Auditing of Plan Implementation

Per the established roles and responsibilities (see Appendix 1), the Senior D irector of Operations is responsible for WMP Compliance Assurance to ensure that the WMP obligations are met to include evaluating compliance risk associated with obligations and

implementing predictive, detective, and corrective controls to mitigate the compliance risk. These controls are used to identify any deficiencies in WMP implementation.

5.2.2 Identifying and Correcting Deficiencies in the Plan

Per the established roles and responsibilities (see Appendix 1), the O perations Lead will be responsible for documenting plan performance and reporting to the Senior Director of Operations, who shall address any WMP deficiencies identified. The Senior Director of Operations shall review any changes in the WMP with an updated WMP approved by the HWT President.

5.2.3 Monitoring and Auditing the Effectiveness of Equipment and Line Inspections

Per the established roles and responsibilities (see Appendix 1), the HWT Operations Lead will be documenting scheduled and completed inspections of facilities and equipment along with line inspections. The Senior Director of Operations, shall monitor and audit inspections conducted by operational staff to ensure sustainment of efforts to identify any potential sources of ignition.

Facility inspections will be limited to the Suncrest Facility for 2020. Inspection reports would be submitted to HWT's Operations Lead for inclusion in the overall facility documentation. CAISO will conduct annual audits of HWT maintenance practices including inspections.

5.2.4 Wildfire-Related Operational Decision-making

HWT has no additional protocols for operational decision-making associated with wildfires beyond its operational practices referenced below.

5.2.5 Operational Practices Relevant to Wildfire Mitigation

HWT's planned routine operational practices include mitigating actions for wildfire risk. Key elements of HWT's operational practices that support fire prevention are:

- HWT System Operators are monitoring the HWT Facilities 24 hours a day, 7 days a week, with direct access to all system controls and facility monitoring features via security applications.
- HWT System Operators have the responsibility and authority needed to take self-directed action to effectively intervene in developing circumstances to break the chain of fire causality, up to and including complete system shutdown.
- HWT System Operators have direct awareness of system operation through HWT's Supervisory Control and Data Acquisition (SCADA) system, controlling the transmission

system operations, which includes telemetry, indications, and alarms indicating abnormal conditions that may pose a fire risk.

- HWT System Operators maintain awareness regarding weather conditions that could pose a fire risk as part of their normal duties in accordance with their qualification training.
- HWT System Operators have access to closed circuit cameras for the site that allow monitoring of the facilities.
- HWT regional situational awareness is supported by regular contact with CAISO and the Interconnecting Transmission Owners.
- HWT System Operators have full authority to summon emergency services if deemed necessary.

5.3 Detailed wildfire mitigation programs

In this section, HWT describes how its specific programs and initiatives plan to execute the strategies identified in Section 5.1

Specific Wildfire Mitigation Strategies and Measures

HWT's prevention strategy during design focuses on hardening a site, while its strategy during construction focuses on providing the necessary training and resources so that all site workers are informed regarding fire safety requirements and best practices and so that training, inspections, and monitoring occur as required to meet overall fire prevention goals during construction. HWT's strategies and programs generally include:

- Emergency Notification Procedures
- Evacuation Procedures
- Roles and Responsibility Assignments
- Red Flag Warning Protocols
- Hot Work Protocols
- Coordination with Local Fire Agency
- Fire Safety Briefings
- Fire Safety Inspections
- Fire Safety Training

Maintenance Plan Philosophy

The HWT maintenance philosophy is to continuously or periodically evaluate equipment condition, utilizing predictive maintenance technologies such as thermographic cameras, dissolved oil analysis,

LiDAR and other specific online tests. The philosophy starts during the design and construction phase. HWT has utilized design standards that require increased equipment tolerances.

During the in-service phase, the philosophy utilizes various measurements on the actual equipment status in combination with measurement of performance, and environmental conditions measured by other devices, to trigger equipment maintenance.

HWT Facilities' maintenance plans are created in accordance with the equipment vendors' directives, industry practices, HWT's internal guidelines, and regulatory requirements. Plans are in compliance with the CAISO Transmission Control Agreement and Maintenance Procedures and practices, and are approved by the CAISO before the start of commercial operations.

Throughout the year, the scheduled maintenance will include certain routine maintenance and inspections that can be performed with the facilities in operation. This includes general checks and measurements, visual inspections, general housekeeping and vegetation control, line patrols, and maintenance and calibration of tools and equipment.

Any major deficiencies identified during the inspections shall be reported to the HWT Operations Lead, who shall determine what appropriate actions are to be taken.

Trained Operations and Maintenance Personnel

HWT's Operations personnel will maintain and operate the HWT Facilities in accordance with good utility practice, sound engineering judgment, the guidelines as outlined in NERC applicable reliability standards, laws, and regulations. Operations personnel will take proper care to ensure the safety of personnel and the public in performing maintenance duties. Operations personnel also are trained on the WMP provisions and for emergency scenarios and are authorized to take precautionary measures, such as reducing power flow or initiating system shutdown when presented with system warnings or instruction from the CAISO or requests from an Interconnecting Transmission Owner.

For inspections, maintenance, or repairs, and anywhere else where specialist skills are required, the Operations team will either leverage internal resources or engage with an experienced contractor, vendor, or in instances where the skills are readily available from a number of sources, seek suitable service providers as and when required.

The following programs are provided for inspection and maintenance of the HWT Facilities. The programs/strategies discussed explain the additional detail regarding specific fire reduction measures.

HWT Facility Inspections

HWT Facility inspections include monthly inspections by designated Operations personnel and as necessary, additional inspections during elevated site activity periods or extreme fire weather periods. Inspections are conducted by experienced and trained individuals, who document their findings and submit those findings to HWT Operations Personnel and other appropriate personnel.

Electrical Infrastructure Inspections

HWT Facilities are continuously monitored from a remote control center 24/7, and the health of major components is continuously analyzed alerting the Operations team to any anomalies.

Maintenance inspections, measurements, checks, tests, and analyses are intended to identify any problems that either may be averted completely or can be rectified before resulting in a more serious failure to equipment or to the operation of the HWT Facilities.

Operational Practices

HWT is committed to providing the necessary strategies and programs to guide the fire prevention practices that will occur during operations.

Operational practices include all of the inspection and maintenance strategies and programs previously defined, along with operational practices of monitoring, fire weather practices, Hot Work protocols, and vegetation management.

Contractors are provided fire safety training by the Site Safety Officer (SSO), are expected to understand fire prevention and response, and are responsible for adhering to HWT's policies regarding fire emergencies, including the WMP.

Hot Work is a primary source of ignition when conducted adjacent to flammable fuels. Accordingly, prevention measures apply during all phases of the HWT Facilities' lifespans (land clearing, construction, operation, maintenance, and decommissioning). The following requirements are primarily from California Fire Code (CFC) Chapter 26, "Welding and other Hot Work," and NFPA 51-B, "Fire Prevention During Welding, Cutting and other Hot Work". Hot Work is defined in the CFC as operations involving cutting, welding, Thermit welding, brazing, soldering, grinding, thermal spraying, thawing pipe, or other similar operations. Hot Work Areas are defined as the areas exposed to sparks, hot slag, radiant heat, or convective heat because of the Hot Work

- A Hot Work Permit shall be obtained from the on-site SSO, following guidelines from the fire agencies, for all Hot Work regardless of location.

- The Site Safety Officer (SSO) will require all Hot Work to be completed per requirements in NFPA 51-B and CFC Chapter 26. Hot Work permits are required because it is a safety measure that incorporates the SSO. Through this process, Hot Work on fire weather days can be avoided and on typical weather days, the SSO can review the work activity, its location, and make sure that it is appropriate and that there are no combustible materials or vegetation nearby.
- Hot Work shall only be done in fire safe areas designated by the SSO. The SSO shall have the responsibility to ensure safe Hot Work operations, and shall have the authority to modify Hot Work activities associated with construction and/or maintenance activities, and to exceed the requirements in NFPA 51-B and the 2016 CFC, to the degree necessary to prevent fire ignition. Workers must be trained on the Hot Work Information and Criteria in this WMP.

The following Table 20-1 summarizes the HWT Project Risk, Risk Drivers and Mitigation Programs/Strategies.

Table 20-1
Horizon West Transmission Project Risk, Risk Drivers and Mitigation Programs/Strategies

Mitigation Programs/Strategies							
Risk	*Risk Drivers*	*Design & Construction*	*Inspection & Maintenance*	*Operational Practices*	*Situational/Conditional Awareness*	*Response & Recovery*	*Future Actions*
	Definition/Scope of Strategy Categories	Includes the strategies, processes, and programs HWT will use to construct a fire-resistant facility and infrastructure	The procedures and processes HWT will employ to help to ensure the continued safe and reliable operation of its facility	Practices and procedures that HWT will utilize to minimize the risk of its operations igniting a wildfire	Includes the processes and systems HWT will use to monitor fire conditions	The processes and practices HWT will implement to prepare for, respond to, and recover from a wildfire incident	Processes, strategies, and technologies identified by HWT as consideration for future implementation to reduce fire risk
HWT Facility causes a wildfire	Hot Work during construction	>Hot Work procedure requires permits. The Site Safety Officer reviews and grants permits. >Work is performed with fire safe practices. A safe watch is used to monitor for ignitions after the work is completed.	Not applicable	>No unnecessary hot work is performed during red flag warning. >Monitor the job site after Hot Work job complete.	Monitor for red flag warning.	>CAL FIRE and local first responders are notified. >Fire prevention and suppression equipment and tools are available on property and in the vicinity of project site.	
	Grubbing and grading during construction	Until the grubbing is complete, the private fire company is on site for fire suppression.	Not applicable	No unnecessary grubbing and grading during red flag warning.	Monitor for red flag warning.	>CAL FIRE and local first responders can be notified. >Fire prevention and suppression equipment and tools are available on property and in	

Table 20-1
Horizon West Transmission Project Risk, Risk Drivers and Mitigation Programs/Strategies

Mitigation Programs/Strategies							
Risk	*Risk Drivers*	*Design & Construction*	*Inspection & Maintenance*	*Operational Practices*	*Situational/Conditional Awareness*	*Response & Recovery*	*Future Actions*
						the vicinity of project site.	
	Vehicle/machinery/tools (internal combustion engines) operations during construction	>Apply restrictions for locating vehicles. >Catalytic converters are required. >Vehicles have a minimum level of fire suppression tools.	Not applicable	No unnecessary use of tools or equipment during red flag warning.	Monitor for red flag warning.	CAL FIRE and local first responders can be notified.	
	Vegetation pile generate heat/provide fuel	>Fire suppression tools and fire brigade. >Remove vegetation piles within 48 hours. >Compost is set back from adjacent vegetation.	Not applicable	Not applicable	Not applicable	CAL FIRE and local first responders can be notified.	
	General equipment failure that creates an spark/arc	>Steel pole >Undergrounding majority of line >Stone surrounding equipment >Meets or exceeds San Diego County fire code requirements and NFPA guidelines >Online diagnostic of equipment	Create inspection and maintenance programs.	Not applicable	Not applicable	>CAL FIRE and local first responders can be notified. >Fire prevention and suppression equipment and tools are available on property and in the vicinity of project site.	

Table 20-1
Horizon West Transmission Project Risk, Risk Drivers and Mitigation Programs/Strategies

Mitigation Programs/Strategies							
Risk	*Risk Drivers*	*Design & Construction*	*Inspection & Maintenance*	*Operational Practices*	*Situational/Conditional Awareness*	*Response & Recovery*	*Future Actions*
	Extreme weather conditions (wind, drought, etc.)	>Steel pole >Perimeter fencing >Undergrounding of line >Perimeter zone outside of facility	Vegetation management program - inside perimeter fencing and outside perimeter.	>No unnecessary work during red flag warning >Coordination with control center	>Control center monitoring red flag warning. >External sources of information	Local fire and CAL FIRE staff up and position equipment strategically.	Install weather station and link to SDG&E's system
	Wildlife interference	Perimeter fencing	Creation of inspection and maintenance programs	Not applicable	Not applicable	Not applicable	
	Vegetation interference (growing into facility)	Vegetation perimeter and setbacks	Vegetation management program - inside perimeter fencing and outside perimeter	Not applicable	Not applicable	Not applicable	
	Failure to follow maintenance procedures	Not applicable	Not applicable	>Training programs >Update and maintenance of processes and procedures	Not applicable	Not applicable	
	Failure to follow operations procedures	Not applicable	Not applicable	>Training programs >Update and maintenance of processes and procedures	Not applicable	Not applicable	
	Vegetation as a fuel source	Vegetation perimeter and setbacks	Vegetation management program - inside perimeter fencing and outside perimeter	Not applicable	Not applicable	Not applicable	

Table 20-1
Horizon West Transmission Project Risk, Risk Drivers and Mitigation Programs/Strategies

Mitigation Programs/Strategies							
Risk	*Risk Drivers*	*Design & Construction*	*Inspection & Maintenance*	*Operational Practices*	*Situational/Conditional Awareness*	*Response & Recovery*	*Future Actions*
	Wire down	>Undergrounding line to minimize overhead wires >Goes directly into interconnecting PTO's substation >Paved road under portion of overhead line	24-hour monitoring of facility	Not applicable	Cameras to monitor short overhead span	Emergency response plan and strategy	Install Cameras at riser pole to monitor overhead span
	Pole failure creating wire down	Pole hardening	Creation of inspection and maintenance programs	Not applicable	Not applicable	Not applicable	
	Earthquake or other natural disasters	Not applicable	Creation of inspection and maintenance programs	Not applicable	Not applicable	Emergency response plan and strategy	Install seismic pads underneath transformers
	Flame height reaching beyond facility	Outside fence perimeter	Not applicable	Not applicable	Not applicable	CAL Fire and local fire agencies	
	Inability to adequately respond to a fire on property	Some equipment has online diagnostic to monitor the health of the equipment.	Not applicable	Not applicable	>On-site cameras providing the ability to monitor conditions on the facility >Monitored real-time 24/7 from control room >Protocols developed with interconnecting	Coordinated training with CAL FIRE and first responders on specific facility	

Table 20-1
Horizon West Transmission Project Risk, Risk Drivers and Mitigation Programs/Strategies

Mitigation Programs/Strategies							
Risk	*Risk Drivers*	*Design & Construction*	*Inspection & Maintenance*	*Operational Practices*	*Situational/Conditional Awareness*	*Response & Recovery*	*Future Actions*
					PTO. >Physical security monitored		
	Climate change	To be determined	To be determined	To be determined	Monitor, evaluate, and adjust with annual wildfire mitigation plan	To be determined	Install weather station and connect into SDG&E's advanced weather monitoring system
	Normal weather conditions (lightning)	Steel pole	Vegetation management program - inside perimeter fencing and outside perimeter	Not applicable	Monitor weather	Emergency response plan and strategy	
	Vandalism	>Perimeter fencing >Gated access >Security cameras/monitoring	Inspection and maintenance programs	Not applicable	Not applicable	Not applicable	Concrete perimeter fencing at site

Note:
Project Boundaries: Facility includes everything inside the access gate and perimeter fencing. It also includes the fuel modification zone immediately outside and surrounding the perimeter fencing.

5.3.1 Risk assessment and mapping

As previously indicated, HWT utilizes the FMEA methodology for assessing risk. HWT has assessed that outside of the construction phase, RFW have limited operational impact given the design of the HWT Facilities. As indicated in Section 4.4, HWT reasonably considers it very unlikely that it would issue a PSPS. Based on these factors, the initiatives in this category have nominal applicability to HWT. Table 21 below provides HWT's risk assessment and mapping, including for potential measures that HWT is evaluating implementing in the future.

Table 21
Risk assessment and mapping

Initiative activity	Year	Total per-initiative spend	Line miles to be treated	Spend/ treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/ new	Existing: What proceeding has reviewed program	If new: Memorandum account	In / exceeding compliance with regulations	Cite associated rule	Comments
Underground of 115 feet of overhead line	2019 plan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	2019 actual	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	2020	$1.7 M	0.02	$1.7 M	Line Down	100%	N/A	N/A	Existing	2019 WMP	N/A	In	N/A	
	2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	2020-2022 plan total	$1.7 M	N/A	$1.7 M	Line Down	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
SVC Site Hardening	2020	$2.2 M	-	$2.2 M	Equip ignition	50%	N/A	-	Existing	2019 WMP	N/A	In	N/A	
	2021	$4.3 M	-	$4.3 M	Equip Ignition	50%	N/A	-	Existing	2019 WMP	N/A	In	N/A	
	2020-2022 plan total	$6.5 M	-	$6.5 M	Equip Ignition	-	N/A	-	Existing	2019 WMP	N/A	In	N/A	

As a result of its risk assessment and mapping process, HWT expects to implement risk reduction improvements over the following time periods, as indicated:

Before the upcoming wildfire season:

HWT anticipates undergrounding HWT-owned transmission lines outside the HWT Facilities before the next fire season.

Within the next 3 years:

HWT anticipates implementing additional fire-hardening HWT-owned facilities during this period as determined necessary.

Within the next 10 years:

Same as above.

5.3.2 Situational awareness and forecasting

Fire Prevention Strategies and Programs

Real-Time Monitoring

HWT will remotely operate and monitor the HWT Facilities from its affiliate Lone Star's 24/7 control center located in Austin, Texas. Such operation and monitoring will include the use of standard monitoring, control, protection equipment, use of circuit breakers, and other line relay protection equipment. Graphic displays and alarm processing will ensure HWT transmission operations have real-time situational awareness. Support personnel will perform checks of the applications and hardware to ensure they are in proper working order, and will maintain equipment to ensure compliance with NERC Critical Infrastructure Protection Standard requirements. Any site anomalies will be communicated to local personnel, who will manage and undertake site corrective actions.

Extreme Fire Weather Fire Prevention Strategies and Programs

HWT understands that the wildfire risk is highest when high wind and low humidity weather conditions occur, which can happen any time of the year, but historically has occurred more frequently during the fall (October through December) and more recently, in the spring (May through June). Regardless of the timing of the RFW conditions, HWT implements fire prevention strategies aimed at situation awareness, site work limitations, and monitoring during extreme fire weather periods. Where applicable, the HWT's extreme fire weather fire prevention strategies are:

1. **Situational Awareness**: Monitoring of National Weather Service RFWs (https://www.weather.gov/sgx/) and coordinating with other agencies and third parties in the area to determine when restrictions should occur and when they should be lifted.

Additionally, HWT plans to install at least one weather station in mid-2020 at its Suncrest facility for localized advanced weather monitoring.

2. **Site Work Limitations**: Because the majority of acreage burned and assets threatened in California occurs during RFW weather conditions (Yufang Lin, et al. 2015), construction or operational activities is typically limited to low fire hazard, non-Hot Work, unless within an ignition resistant structure until the RFW has been lifted. During fire weather conditions warranting restrictions as indicated in #1 above, site activities are halted, unless it is determined that it is less safe to halt activities than to complete necessary actions. During the work stop period, HWT's Senior Director of Operations determines what, if any, specific site activities may be allowed based on the activity's potential to create spark, flame, heated materials, or other fire risks.
3. **Monitoring**: Site activities and equipment operations are monitored as part of the HWT normal operating procedures. During RFW weather conditions, monitoring will proceed, and may be enhanced beyond normal conditions, as warranted.

Please refer to Table 20-1 for a summary of situational awareness and forecasting measures. In addition to the Extreme Fire Weather monitoring, the following equipment monitoring systems will be on-line prior to commencement of operations.

Before placing facilities in service, HWT creates a suite of customized facility-specific operations practices. Maintenance practices are approved and audited in accordance with the CAISO Transmission Maintenance Procedures (version 20th July 2017), and address the inspections, measurements, checks, tests, and analysis intended to identify any problems that may be either averted completely or can be rectified before resulting in a more serious failure to equipment or to the operation of the facility.

Table 22 summarizes HWT's planned situational awareness and forecasting enhancements.

Table 22
Situational awareness and forecasting

Initiative activity	Year	Total per-initiative spend	Line miles to be treated	Spend/ treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/ new	proceeding has reviewed program	Existing: What	If new: Memorandum account	In / exceeding compliance with regulations	rule	Cite associated	Comments
Advanced weather monitoring, weather stations and OH line/pole cameras	2019 plan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A		N/A
	2019 actual	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A		N/A
	2020	$150k	N/A	N/A	Detect Ignition Early	50%	N/A		Existing	2019 WMP		N/A	In	N/A		N/A
	2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A		N/A
	2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A		N/A
	2020-2022 plan total	$150k	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A		N/A

HWT expects to evolve the program over each of the following time periods as indicated:

Before the upcoming wildfire season:

HWT's protocols are developed for its Suncrest Facility, which will become operational approximately in March 2020. HWT anticipates increasing situational awareness at the Suncrest Facility via advanced weather monitoring, weather stations, and overhead line / pole cameras.

Before the next annual update:

Same as above.

Within the next 3 years:

Same as above.

Within the next 10 years:

Same as above.

5.3.3 Grid design and system hardening

The HWT Facilities have been designed to incorporate robust wildfire hardening measures and with 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.

Maintaining a facility's hardening requires ongoing inspections and maintenance. HWT will implement risk controls to address general equipment failures based on its maintenance philosophy, to provide real-time monitoring and periodic inspection. HWT has designed its inspection and maintenance programs customized for its facilities, and will implement its operations inspection and maintenance programs prior to its first facility being placed in service.

In general, HWT plans to perform monthly inspections at the HWT Facilities to inspect each item of equipment to the extent possible without taking the facilities out of service. Annually, it is anticipated that the HWT Facilities will be taken out of service to perform more thorough checks and maintenance on the main components. Inspection and maintenance are performed by HWT personnel, equipment vendors and contractors.

Additionally, HWT reviews and updates annually its risk assessment (FMEA) and identifies mitigating measures appropriate for implementation to further reduce wildfire risk of its facilities.

HWT Plan Initiatives related to this topic are already provided in Tables 21 and 22, and thus Table 23 is intentionally left blank.

Table 23
Grid design and system hardening.

Initiative activity	Year	Total per-initiative spend	Line miles to be treated	Spend/ treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/ new	Existing: What proceeding has reviewed program	If new: Memorandum account	In / exceeding compliance with regulations	Cite associated rule	Comments
N/A	2019 plan													
	2019 actual													
	2020													
	2021													
	2022													
	2020-2022 plan total													

5.3.4 Asset management and inspections

HWT does not have any distribution system or distribution / retail customers, making those initiatives in this category not applicable to HWT.

HWT's performs asset management and inspections for the HWT Facilities as outlined in detail in Section 5.1.

Line inspections during 2020 will be limited to the short, 115-foot span from the riser to intermediate pole just outside the SDG&E substation (POCO). Associated inspection cost estimates are detailed in Table 24.

Table 24
Asset management and inspections

Initiative activity	Year	Total per-initiative spend	Line miles to be treated	Spend/ treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/ new	Existing: What proceeding has reviewed program	If new: Memorandum account	In / exceeding compliance with regulations	Cite associated rule	Comments
Inspections (Training, facility, vegetation, and fuel modification)	2019 plan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	2019 actual	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	2020	$15k to $35k	-	-	-	-	-	-	-	-	-	-	-	-
	2021	$15k to $35k	-	-	-	-	-	-	-	-	-	-	-	-
	2022	$15k to $35k	-	-	-	-	-	-	-	-	-	-	-	-
	2020-2022 plan total	$45k to $105k	-	-	-	-	-	-	-	-	-	-	-	-

HWT expects that its Asset Management and Inspections program will evolve over each of the following time periods as indicated:

Before the upcoming wildfire season:

HWT's protocols are newly developed for its Suncrest Facility, which will become operational approximately March 2020. HWT does not anticipate changes to its Asset Management and Inspections before the next upcoming wildfire season.

Before the next annual update:

HWT does not anticipate changes to its Asset Management and Inspections prior to the next annual update.

Within the next 3 years:

HWT does not anticipate significant changes to its Asset Management and Inspections within the next three years. However, HWT will continue to evaluate its Asset Management and Inspections program based on lessons learned at its Facilities and applicable industry changes.

Within the next 10 years:

HWT does not anticipate significant changes to its Asset Management and Inspections within the next ten years. However, HWT will continue to evaluate its Asset Management and Inspections program based on lessons learned at its Facilities and applicable industry changes.

5.3.5 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 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.

HWT's vegetation management team performs regular ground inspections, at least annually, of HWT Facilities and manages all activities in accordance with the principles under NERC FAC 003-4 requirements, which require a documented annual inspection and work management plan. In addition, HWT's vegetation management is performed in compliance with applicable California requirements including CPUC General Order (GO) 95, Rule 35 and California Public Resources Code (PRC) §§ 4292 and 4293.

In response to the WMP Template adopted in the ALJ Ruling, certain vegetation-related subjects currently do not apply to the HWT Facilities, and therefore have not been included in HWT's WMP at this time. In particular:

- HWT designs appropriate setbacks and buffers into each facility and does not foresee the need to collaborate with local land managers regarding firebreak creation, and additional firebreaks are not likely to be necessary at or near HWT Facilities. To the extent that the HWT Facilities offer land managers or fire professionals opportunities to enhance fuels management, HWT will cooperate to the fullest extent allowable and where considered ecologically appropriate.
- At-risk vegetation will be monitored during scheduled inspections and maintenance activities. Trees that could interfere with any future HWT Facility will be managed as part of the overall vegetation management program, following all applicable laws and regulations, including for protected trees.

- Fuel modification occurring at HWT Facilities is limited to removal of all vegetation within the security fence and in some areas, placement of rock, which will minimize erosion. The perimeter fuel modification areas include removal of highly flammable species, and use of a low-density mix of native plants. The potential for erosion will be minimized in the fuel modification areas. Erosion, flooding, and related secondary impact control measures would be implemented where necessary to prevent secondary impacts from vegetation removal.

Additional Vegetation Management Requirements

Electrical Transmission Line Vegetation Management

HWT overhead transmission lines require standard vegetation clearance. Overhead transmission line and transmission pole vegetation management is regulated by various codes and ordinances including the following regulations:

- **California Public Utilities Commission**
  - GO 95: Rules for Overhead Electric Line Construction
  - CCR, Title 14 Section 1254/1255. Minimum Clearance Provisions - PRC 4292
- **North American Electric Reliability Corporation (NERC)**
  - NERC FAC-003, Standard Application Guide for Transmission Vegetation Management

The HWT Facilities meet these requirements per the fuel modification program defined in this WMP.

Because HWT's first facility (the Suncrest Facility) will not be operational until March 2020, Table 25 is not yet applicable to HWT and is intentionally blank. Estimated Vegetation Management Inspection cost estimates are provided in Table 24, along with other facility inspections.

Table 25
Vegetation management and inspections.

Initiative activity	Year	Total per-initiative spend	Line miles to be treated	Spend/ treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	addressed Other risk drivers	Existing/ new	Existing: What proceeding has reviewed program	Memorandum account If new:	In / exceeding compliance with regulations	Cite associated rule	Comments
N/A	2019 plan													
	2019 actual													
	2020													

Table 25
Vegetation management and inspections.

Initiative activity	Year	Total per-initiative spend	Line miles to be treated	Spend/ treated line mile	gnition probability drivers targeted	Risk reduction	Risk-spend efficiency	addressed Other risk drivers	Existing/ new	Existing: What proceeding has aujawed program	Memorandum account f new:	n / exceeding compliance with egulations	Cite associated rule	Comments
N/A	2021													
	2022													
	2020-2022 plan total													

HWT expects to evolve the Vegetation Management and Inspections program over each of the following time periods as indicated:

Before the upcoming wildfire season:

HWT's protocols are newly developed for its Suncrest Facility, which will become operational approximately in March 2020. HWT does not anticipate changes to its Vegetation Management and Inspections program before the next wildfire season.

Before the next annual update:

HWT does not anticipate changes to its Vegetation Management and Inspections program prior to the next annual update.

Within the next 3 years:

HWT does not anticipate significant changes to its Vegetation Management and Inspections program within the next three years. However, HWT will continue to evaluate its Vegetation Management and Inspections program based on lessons learned at its Facilities and applicable industry changes.

Within the next 10 years:

HWT does not anticipate significant changes to its Vegetation Management and Inspections program within the next ten years. However, HWT will continue to evaluate its Vegetation Management and Inspections program based on lessons learned at its Facilities and applicable industry changes.

5.3.6 Grid operations and protocols

HWT is committed to providing the necessary strategies and programs to guide the fire prevention practices that will occur during operations.

Operational practices include all of the inspection and maintenance strategies and programs previously defined, along with operational practices of monitoring, fire weather practices, Hot Work protocols, and vegetation management.

Because HWT's first facility (the Suncrest Facility) will not be operational until March 2020, Table 26 is not currently applicable to HWT and is intentionally blank.

Table 26
Grid operations and protocols

Initiative activity	Year	Total per-initiative spend	Line miles to be treated	Spend/ treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/ new	Existing: What proceeding has reviewed program	If new: Memorandum account	In / exceeding compliance with regulations	Cite associated rule	Comments
N/A	2019 plan													
	2019 actual													
	2020													
	2021													
	2022													
	2020-2022													

HWT expects to evolve its Grid Operations and Protocols over each of the following time periods as indicated:

Before the upcoming wildfire season:

HWT's protocols are newly developed for its Suncrest Facility, which will become operational approximately March 2020. HWT does not anticipate changes to its Grid Operations and Protocols before the next wildfire season.

Before the next annual update:

HWT does not anticipate changes to its Grid Operations and Protocols prior to the next annual update.

Within the next 3 years:

HWT does not anticipate significant changes to its Grid Operations and Protocols within the next three years. However, HWT will continue to evaluate its Grid Operations and Protocols based on lessons learned at its Facilities and applicable industry changes.

Within the next 10 years:

HWT does not anticipate changes to its Grid Operations and Protocols within the next ten years. However, HWT will continue to evaluate its Grid Operations and Protocols based on lessons learned at its Facilities and applicable industry changes.

5.3.7 Data governance

Because HWT's first facility (the Suncrest Facility) will not be operational until March 2020, Table 27 is not currently applicable to HWT and has been intentionally left blank.

Table 27
Data governance

Initiative activity	Year	Total per-initiative spend	Line miles to be treated	Line mile Spend/ treated	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/ new	Existing: What proceeding has reviewed program	If new: Memorandum account	In / exceeding compliance with regulations	Cite associated rule	Comments
N/A	2019 plan													
	2019 actual													
	2020													
	2021													
	2022													
	2020-2022 plan total													

HWT expects to evolve the Data Governance Procedures over each of the following time periods as indicated:

Before the upcoming wildfire season:

HWT's protocols are newly developed for its Suncrest Facility, which will become operational approximately March 2020. HWT does not anticipate changes to its Data Governance Procedures before the next wildfire season.

Before the next annual update:

HWT does not anticipate changes to its Data Governance Procedures prior to the next annual update.

Within the next 3 years:

HWT does not anticipate significant changes to its Data Governance Procedures within the next three years. However, HWT will continue to evaluate its Data Governance Procedures based on lessons learned at its Facilities and applicable industry changes.

Within the next 10 years:

HWT does not anticipate changes to its Data Governance within the next ten years. However, HWT will continue to evaluate its Data Governance Procedures based on lessons learned at its Facilities and applicable industry changes.

5.3.8 Resource allocation methodology

HWT's resource allocation is focused on prevention and detection and to enable prompt emergency response. Table 28 is not currently applicable to HWT due to the Suncrest Facility's lack of operational history, and has therefore, been left blank.

Table 28
Resource allocation methodology

Initiative activity	Year	Total per-initiative spend	Line miles to be treated	Spend/ treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/ new	Existing: What proceeding has reviewed program	If new: Memorandum account	In / exceeding compliance with regulations	Cite associated rule	Comments
N/A	2019 plan													

Table 28
Resource allocation methodology

Initiative activity	Year	Total per-initiative spend	Line miles to be treated	Spend/ treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/ new	Existing: What proceeding has	If new: Memorandum account	In / exceeding compliance with regulations	Cite associated rule	Comments
	2019 actual													
	2020													
	2021													
	2022													
	2020-2022 plan total													

HWT expects to evolve the Resource Allocation Methods over each of the following time periods as indicated:

Before the upcoming wildfire season:

HWT's protocols are newly developed for its Suncrest Facility, which will become operational approximately March 2020. HWT does not anticipate changes to its Resource Allocation Methods before the next wildfire season.

Before the next annual update:

HWT does not anticipate changes to its Resource Allocation Methods prior to the next annual update.

Within the next 3 years:

HWT does not anticipate significant changes to its Resource Allocation Methods within the next three years. However, HWT will continue to evaluate its Resource Allocation Methods based on lessons learned at its Facilities and applicable industry changes.

Within the next 10 years.

HWT does not anticipate significant changes to its Resource Allocation Methods within the next ten years. However, HWT will continue to evaluate its Resource Allocation Methods based on lessons learned at its Facilities and applicable industry changes.

5.3.9 Emergency planning and preparedness

HWT has developed an emergency response protocol that includes the following key components:

- **Emergency classifications**: defining emergency situations
- **Emergency Response Training Program**: protocols for responding to anticipated emergencies
- **Advance Planning and Preparation:** allocating resources and setting up response teams
- **Emergency Anticipation:** based on most common equipment failure types
- **Service Restoration Procedures**: primary and contingency approaches to service restore
- **Personnel Responsibilities**: assignment of roles and responsibilities
- **Customer/Client Contacts**: provide information regarding emergency and estimated schedule
- **Communications**: protocols for communicating status of emergency situations
- **Outside Aid**: pre-planned contractor assistance for specialized activities
- **Support Services:** actions and responsibilities for sustaining restoration process

Disaster and Emergency Response

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 to allow HWT to respond effectively 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.

In the event of a disaster, HWT will leverage experienced local contractor and affiliate support to perform incident response and management. Roles and responsibilities are divided by functional areas and the emergency response is led by an area commander or an incident commander (IC), depending on incident scope or complexity. HWT will use the Incident Command System (ICS) as the foundation for its incident response organization. ICS is a standardized, on-scene, all-hazard incident management concept, which provides responders with an integrated organizational structure to match the complexities and demands of single or multiple incidents. Through the use of span of control management and a top-down organizational structure, ICS helps ensure full utilization of all incident resources, decreases confusion, and improves communication. As a

system, ICS both provides an organizational structure for incident management, and guides the process for planning, building, and adapting that structure.

The standard ICS organization uses five functions as its foundation. All of the functional areas may or may not be used, based on a specific incident's needs. These functions include:

- **Incident Command:** Sets the incident objectives, strategies, and priorities and has overall responsibility for the incident or incident;
- **Operations:** Conducts tactical operations to carry out the plan; develops the tactical objectives and organization; and directs all tactical resources;
- **Planning:** Collects and evaluates information, maintains resource status, and maintains documentation for incident records;
- **Logistics:** Provides support, resources, and all other services needed to meet the operational objectives; and
- **Finance/Administration:** Monitors costs related to the incident and provides accounting, time recording, and cost analyses.

When an incident affects multiple entities and/or jurisdictions, a unified command structure may be established. The unified command organization consists of the ICs from the various jurisdictions or agencies, who form a single command structure and work together to make joint decisions. Institutions and responding agencies blend into an integrated, unified team. A unified approach results in:

- A shared understanding of priorities and restrictions;
- A single set of incident objectives;
- Collaborative strategies;
- Improved internal and external information flow;
- Less duplication of efforts; and
- Better resource utilization.

By utilizing this framework, HWT will maintain a coordinated and standardized approach to respond to an emergency. This framework serves to safeguard HWT's ability to meet its essential missions and functions under wildfire threats and hazards, with or without warning, in preparation for or during any incident, regardless of its expected duration.

Additional Emergency Preparedness Measures

Research (Grant 2010) evaluated what measures provide the best results for improving response capabilities and firefighter safety. Among the types of measures that provide the most benefit are

firefighter training and familiarity, proper labeling, and extreme caution during fire response. To that end, HWT implements the following measures:

- Conduct training sessions with local fire station personnel;
- Provide a technical report identifying project specific firefighting issues;
- Create a customized video training CD that will be provided to local fire agencies for refresher training and training new firefighters who may rotate into potentially responding stations;
- Create consistent and clear labeling and placarding warnings on all electrical equipment; and
- Provide system technical contact information for reliably available key personnel who can assist responding firefighters with technical aspects of the HWT Facilities.

Additionally, HWT is pursuing implementation of additional fire / wildfire emergency response measures once the HWT facilities are operational. Among these measures are: contracting with a local private fire brigade and purchase of a Type III Fire Engine and a foam deluge trailer.

Evacuation Procedures

During significant emergency situations at or near any HWT Facility, the SSO, in consultation with law enforcement or fire authorities, as possible, may issue an evacuation notice. When an evacuation has been declared, any on-site employees will gather at the designated assembly area, which would be the HWT Facilities' primary access driveway, but may be elsewhere, depending on the emergency and as designated by the SSO. The SSO will account for all personnel, as time allows. Once all employees are accounted for, or sooner if dictated by the emergency, vehicles will safely convoy from the site to safe zones, which are generally areas off-site away from the threat. Should there still be persons within the site after the evacuation has been called, the SSO will send convened personnel off site to safe zones, and the SSO and designated construction supervisors will perform a sweep of the facility if it is safe to do so, to locate persons and reconvene at the assembly area. Once all personnel are accounted for, they will exit the site. The Primary Designated Assembly Area is typically located at the main entrance. Secondary assembly areas would be designated by the SSO and would be dependent on the nature of the emergency and its location.

Should a structure or wildland fire (or other emergency) occur that threatens the primary assembly area, other locations may be designated as secondary assembly areas by the SSO or supervisors, as dictated by the situation. The SSO and/or Site Supervisors should be prepared to be available to the IC throughout the incident to facilitate information exchange.

Evacuation Routes

Depending on the type and severity of the emergency, along with weather and/or localized site conditions, roadways designated for evacuating the area will be customized to each HWT Facility and posted at the site. Evacuations will follow law enforcement guidance whenever available and provided.

The SSO is responsible for evacuations. They will employ situation awareness procedures to determine the emergency, talk with fire officials, as possible, and declare the emergency status. Foreman level supervisors shall assist the SSO in accounting for personnel. The SSO or his/her designee shall be assigned to meet and guide firefighting resources to the scene.

Post-Incident Recovery, Restoration, and Remediation

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 HWT field operations team, the HWT system operator will initiate the systematic restoration of power to the HWT Facilities.

HWT will implement the safe, reliable, and efficient restoration of its facilities through use of field personnel and with experienced affiliate and contractor support, as required. To ensure the safe operation and adequate reliability of HWT Facilities, including post-incident recovery, restoration, and remediation, HWT will only utilize persons that are appropriately qualified, skilled, and experienced in their respective trades or occupations. HWT also will require that all personnel undertake necessary training, including periodic specialized training depending on job role and responsibilities.

Because HWT's first facility (the Suncrest Facility) will not be operational until March 2020, Table 29 is not currently applicable to HWT and is intentionally left blank.

Table 29
Emergency planning and preparedness

Initiative activity	Year	Total per-initiative spend	Line miles to be treated	Spend/ treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/ new	Existing: What proceeding has reviewed program	If new: Memorandum account	In / exceeding compliance with regulations	Cite associated rule	Comments
N/A	2019 plan													
	2019 actual													

Table 29
Emergency planning and preparedness

Initiative activity	Year	Total per-initiative spend	Line miles to be treated	Spend/ treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/ new	Existing: What proceeding has reviewed program	If new: Memorandum account	In / exceeding compliance with regulations	Cite associated rule	Comments
	2020													
	2021													
	2022													
	2020-2022 plan total													

HWT expects to evolve the Emergency Planning and Preparedness program over each of the following time periods as indicated:

Before the upcoming wildfire season:

HWT's protocols are newly developed for its Suncrest Facility, which will become operational approximately March 2020. HWT does not anticipate changes to its Emergency Planning and Preparedness program before the next wildfire season.

Before the next annual update:

HWT does not anticipate changes to its Emergency Planning and Preparedness program prior to the next annual update.

Within the next 3 years:

HWT does not anticipate significant changes to its Emergency Planning and Preparedness program within the next three years. However, HWT will continue to evaluate its Emergency Planning and Preparedness program based on lessons learned at its Facilities and applicable industry changes.

Within the next 10 years:

HWT does not anticipate significant changes to its Emergency Planning and Preparedness program within the next ten years. However, HWT will continue to evaluate its Emergency

Planning and Preparedness program based on lessons learned at its Facilities and applicable industry changes.

5.3.10 Stakeholder cooperation and community engagement

Customer Support during Emergencies

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 during an emergency situation. However, HWT has developed a protocol for communication and coordination with its primary stakeholders, which include: CAISO, CPUC, Interconnecting Transmission Owners, other neighboring utilities, elected officials, fire agencies and first responders, and HWT's emergency response support team. HWT's President or designee would be the lead in implementing this communications protocol during an emergency.

Due to the HWT Facilities' function and role in the overall system, designating priority essential services is not applicable and Table 30 has intentionally been left blank.

Table 30
Stakeholder cooperation and community engagement

Initiative activity	Year	Total per-initiative spend	Line miles to be treated	Spend/ treated line mile	Ignition probability drivers targeted	Risk reduction	Risk-spend efficiency	Other risk drivers addressed	Existing/ new	Existing: What proceeding has reviewed program	If new: Memorandum account	In / exceeding compliance with regulations	Cite associated rule	Comments
N/A	2019 plan													
	2019 actual													
	2020													
	2021													
	2022													
	2020-2022 plan total													

HWT expects to evolve its Stakeholder Cooperation and Community Engagement program over each of the following time periods as indicated:

Before the upcoming wildfire season:

HWT's protocols are newly developed for its Suncrest Facility, which will become operational approximately March 2020. HWT does not anticipate changes to its Stakeholder Cooperation and Community Engagement program before the next wildfire season.

Before the next annual update:

HWT does not anticipate changes to its Stakeholder Cooperation and Community Engagement program prior to the next annual update.

Within the next 3 years:

HWT does not anticipate significant changes to its Stakeholder Cooperation and Community Engagement program within the next three years. However, HWT will continue to evaluate its Stakeholder Cooperation and Community Engagement program based on lessons learned at its Facilities and applicable industry changes.

Within the next 10 years:

HWT does not anticipate significant changes to its Stakeholder Cooperation and Community Engagement program within the next ten years. However, HWT will continue to evaluate its Stakeholder Cooperation and Community Engagement program based on lessons learned at its Facilities and applicable industry changes.

5.3.11 Definitions of initiatives by category

Category	Initiative	Definition
A. Risk mapping and simulation	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.

Category	Initiative	Definition
	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. Situational awareness and forecasting	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.
C. Grid design and system hardening	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

Category	Initiative	Definition
		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.

Category	Initiative	Definition
	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.
D. Asset management and inspections	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).

Category	Initiative	Definition
	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	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
	equipment, beyond inspections mandated by rules and regulations	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.
	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.
E. Vegetation management and inspection	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.

Category	Initiative	Definition
	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.

Category	Initiative	Definition
	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.
F. Grid operations and protocols	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.
G. Data governance	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.

Category	Initiative	Definition
	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.
H. Resource allocation methodology	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.
I. Emergency planning and preparedness	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.
J. Stakeholder cooperation and community engagement	Community engagement	Strategy and actions taken to identify and contact key community stakeholders; increase public awareness and support of utility 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.

Category	Initiative	Definition
	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).

5.4 Methodology for enterprise-wide safety risk and wildfire-related risk assessment

HWT utilizes a comprehensive approach to safety risk and wildfire-related risk assessment. This fire risk assessment for HWT Facilities includes a minimum of three HWT risk assessment approaches, all of which are consistent with fire threat and equipment failure prevention methods and are repeatable processes.

5.4.1 Site Fire Environment Risk Assessment

HWT has retained a third-party fire protection consultant to conduct a repeatable evaluation that includes assessment of the Project site and surrounding terrain, vegetative fuels, regional weather patterns, and regional fire history. Fire behavior modeling is conducted to determine (a) the anticipated risk to downwind assets from an ignition and (b) the potential extreme fire behavior and flame lengths so that electrical equipment and components could be appropriately setback and defended and to minimize the possibility that on-site fire could spread to off-site vegetation. The assessment includes evaluation of the local fire response capabilities and resources, their response time, and availability of mutual aid. Among the factors evaluated are:

- **Fire risks:** construction and operation;
- **Site and facility ignition sources:** equipment, personnel, processes;
- **Fire prevention strategies:** design, maintenance, inspections, monitoring;
- **Mitigation measures:** reduced fire risk;
- **Code compliance:** documented compliance with state, county, and other codes and guidelines;
- **Fire agency coordination:** firefighting and emergency response technical evaluation, training, and coordination; and

- **Fire response resource needs:** agreement providing funding to support SDCFA, through additional tax, for HWT's Suncrest Facility.

5.4.2 Facility Equipment Assessment

As part of HWT's FMEA process, described in detail in Section 4.2, HWT conducts in-depth evaluation of the facility electrical components to identify and prioritize risks and risk drivers, mitigate identified risk, and create a process for re-evaluating and reprioritizing these elements. This is a repeatable process that will be employed on at least an annual basis by HWT.

5.4.3 Fire Risk Assessment Workshop

HWT conducts a risk assessment workshop, at least annually, that includes SMEs from its in-house team as well as input from experienced third-party consultants. The team identifies and prioritizes risk drivers, risks, and programs and strategies to address identified risks.

5.5 Planning for workforce and other limited resources

All HWT maintenance is carried out by the HWT Operations personnel that, by reason of training, experience, and instruction, are qualified to perform the task. Operations personnel will maintain and operate the HWT Facilities in accordance with good utility practice, sound engineering judgment, the guidelines as outlined in NERC applicable 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.

Further, HWT will engage contractors or affiliate support where additional manpower is required, particularly where time is of the essence, such as during outages and in emergencies.

For inspections, maintenance, or repairs, and anywhere else where specialist skills are required, the HWT operations team either engage in a term contract with a preferred contractor, vendor, or in instances where the skills are readily available from a number of sources, seek suitable service providers as and when required.

5.6 Expected outcomes of 3-year plan

5.6.1 Planned utility infrastructure construction and upgrades

As a newly designed and constructed facility, HWT's Suncrest Facility is considered to have been designed and built to a very high ignition resistance and wildfire prevention standard based on a focused fire risk evaluation as part of a required Fire Protection Plan reviewed and accepted by SDCFA. As described in Section 3.4.2, HWT has identified an objective over the next three years to identify and evaluate potential system hardening measures that could be implemented to further reduce or mitigate risk. Because the Suncrest Facility is not operational at the time of this WMP's

submission and has no history of data for evaluation, there is no additional information regarding planned updates.

Table 31 is not currently applicable to HWT due to a lack of operating facilities. As data accumulates once the Suncrest Facility is operational, Table 31 will be updated as appropriate.

Table 31
Change in drivers of ignition probability taking into account planned initiatives, for each year of plan

Incident type by ignition probability driver	Detailed risk driver	Are near misses tracked?	Number of incidents per year			Average percentage likelihood of ignition per incident			Number of ignitions per year		
			2020	*2021*	*2022*	*2020*	*2021*	*2022*	*2020*	*2021*	*2022*
Contact from object	All types of object contact										
	Animal contact										
	Balloon contact										
	Vegetation contact										
	Vehicle contact										
All types of equipment / facility failure	All types										
	Capacitor bank failure										
	Conductor failure—all										
	Conductor failure—wires down										
	Fuse failure—all										
	Fuse failure—conventional blown fuse										
	Lightning arrestor failure										
	Switch failure										
	Transformer failure										
Wire-to-wire contact / contamination											
Other											

5.6.2 Protocols on Public Safety Power Shut-off

Public Safety Power Shut-off Protocols

As explained in Section 4.4, HWT is a transmission-only utility and does not own, operate, or maintain electric distribution facilities. Accordingly, none of HWT's Facilities include distribution reclosers. HWT's PSPS protocols are explained in detail also in Section 4.4

6 UTILITY GIS ATTACHMENTS

6.1 Recent weather patterns

Because HWT's Suncrest Facility is not yet operational, this category is not applicable at the time of the 2020 WMP submittal. However, HWT plans to monitor the SDG&E open source weather monitoring capabilities and weather station data once the Suncrest Facility becomes operational.

6.2 Recent drivers of ignition probability

There are no ignition probability drivers data to analyze at the time of this WMP's submittal and therefore no GIS data to provide. Future submittals will include GIS data, as available.

6.3 Recent use of PSPS

HWT does not yet have operating facilities and has never issued a PSPS. Therefore, HWT does not have GIS data for submission.

6.4 Current baseline state of service territory and utility equipment

HWT does not yet have operating facilities, and thus does not have any responsive data at this time.

6.5 Location of planned utility equipment additions or removal

HWT is constructing the Suncrest Facility, which will become operational by approximately March 2020.

6.6 Planned 2020 WMP initiative activity by end-2022

The HWT Facilities are considered to be significantly fire hardened and technologically advanced. As described in Section 3.4.2, HWT has identified an objective over the next three years to identify and evaluate potential system hardening measures that could be implemented to further reduce or mitigate risk.

At the time of filing, HWT has identified the following additional facility hardening measures for further evaluation:

- Rated masonry fire barrier walls and projectile shielding between the fire risk and designated equipment and /or structures.
- Fixed foam deluge system, or portable foam system with local fire service advice.
- Enhance vegetation setback around the substation and overhead-line, cover with crushed rock and vegetation growth suppression.
- Evaluate the use of protective coating on transmission infrastructure.

- Evaluate replacing transformer bushings with low explosion risk type bushings.
- Evaluate the use of optical fire detectors (linear / electronic / pneumatic / heat actuated).
- Utilize real-time condition monitoring technology of transformer health vs. operating conditions.
- Evaluate the use of pole fall sensors.
- Undergrounding of transmission lines.
- Implementation of security cameras on pole / line.
- Transformer seismic hardening.
- Installation of weather stations.
- Comprehensive wildfire safety risk assessment by a 3rd party safety engineering consultant.

APPENDIX 1. HWT ROLES AND RESPONSIBILITIES

HWT's apportionment of roles and responsibilities relevant to the WMP are provided in Table 32.

Table 32 – WMP Roles and Responsibilities

Position / Roles and Responsibilities	Specific WMP Sections and Subsections
President • Overall Executive Oversight • WMP Approval • Emergency contact • Stakeholder Engagement – Senior Level • Communications with CAISO – Senior Level	1, 1.1, 4, 4.4, 5, 5.1, 5.2.5, 5.6.2

Senior Director of Operations
• WMP Execution
• Operations Plan
• WMP Development and Updates
  ○ Changes of facilities
  ○ New facilities
  ○ New regulations
  ○ Climate change effects
• WMP Compliance Implementation
• WMP Deficiency Resolution
• WMP Metrics Development
• WMP Data Governance
• WMP Knowledge Management
	1, 2, 2.1, 2.4, 2.5, 2.7, 3, 3.1, 3.4, 4, 4.1, 4.1.1-4, 4.2, 4.2.1, 4.3, 4.4, 5, 5.1, 5.2, 5.2.2, 5.2.4, 5.2.5, 5.3, 5.3.1-11, 5.4, 5.4.1-3, 5.5. 5.6, 5.6.1, 6, 6.1-5, 7, 8

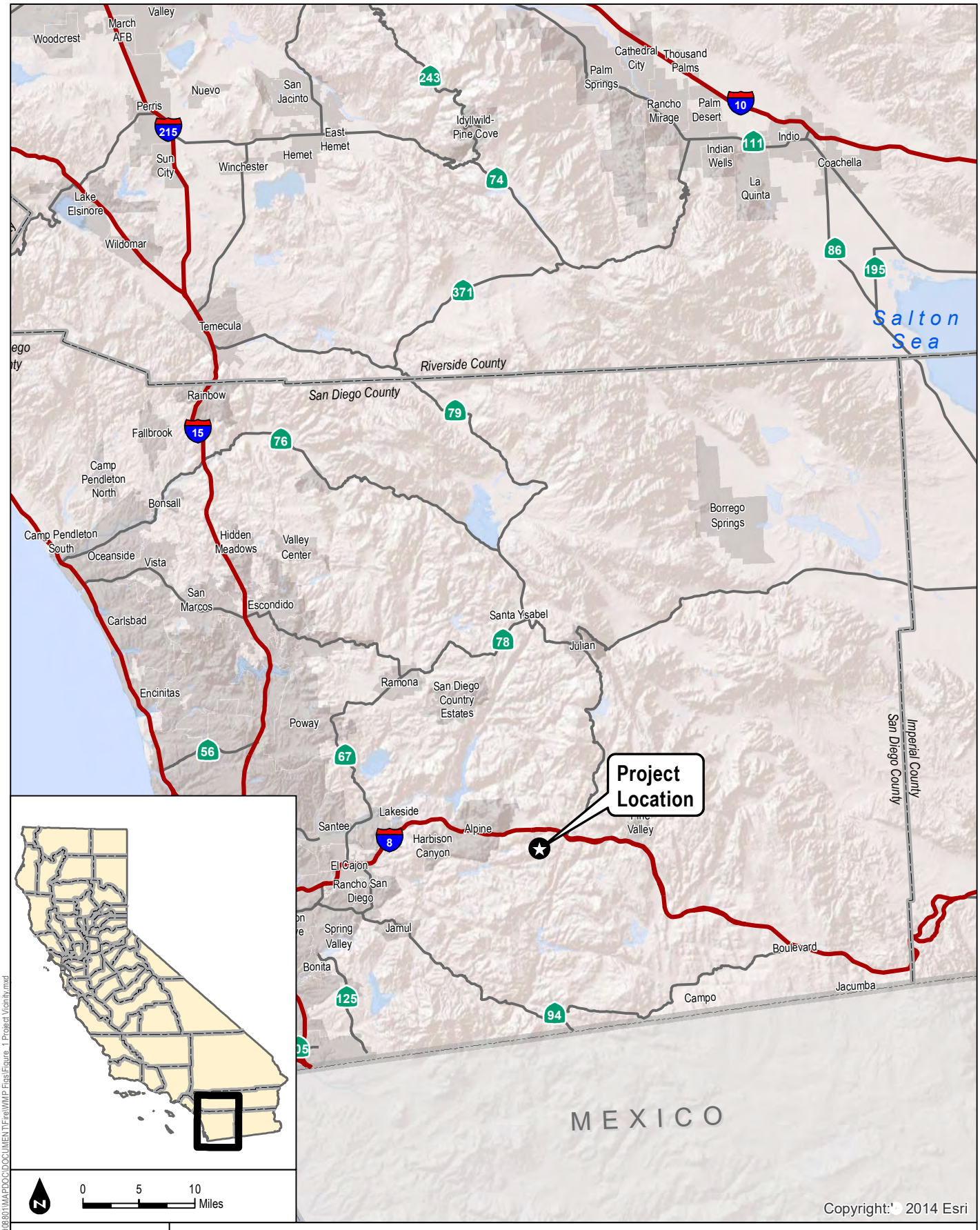
Principal Attorney • Communications with CPUC • WMP Compliance Reporting • WMP review	1

Table 32 – WMP Roles and Responsibilities

Position / Roles and Responsibilities	Specific WMP Sections and Subsections

Operations Lead
• Communications with CAISO
  ○ Operating Plans
  ○ Maintenance
• Operations Plan
• Inspection Plan and Conduct
  ○ Monitoring
  ○ Auditing
  ○ Training
• Maintenance Plan and Conduct
  ○ Monitoring
  ○ Auditing
  ○ Training
• Vegetative Fuel Abatement
• Hot Work Protocols and Procedures
• Site Safety Officer
• Emergency Response Plan and Training
• Fire Safety and Protection Training
• WMP On-site Compliance Assurance
• WMP Metrics Tracking
• Plan performance
	1, 2.2, 2.3, 2.5. 2.6, 3.2, 3.3. 3.4.1, 3.4.2, 3.4.3, 5.2.1, 5.2.2, 5.2.3, 5.2.5

HWT System Operator
• System Operation
• Real-Time Condition Monitoring
  ○ Weather
  ○ RFW Days
  ○ Bulk Electric System Conditions
  ○ Active Fires
• Communications with CAISO – Real Time Operations
• Initial Emergency Response
  ○ Controlling Actions
  ○ System Shutdown
	1, 5.2.5



Document Path: Z:\Projects\808801\MAPDOC\DOCUMENT\FinalWMP Figs\Figure_1 Project Vicinity.mxd

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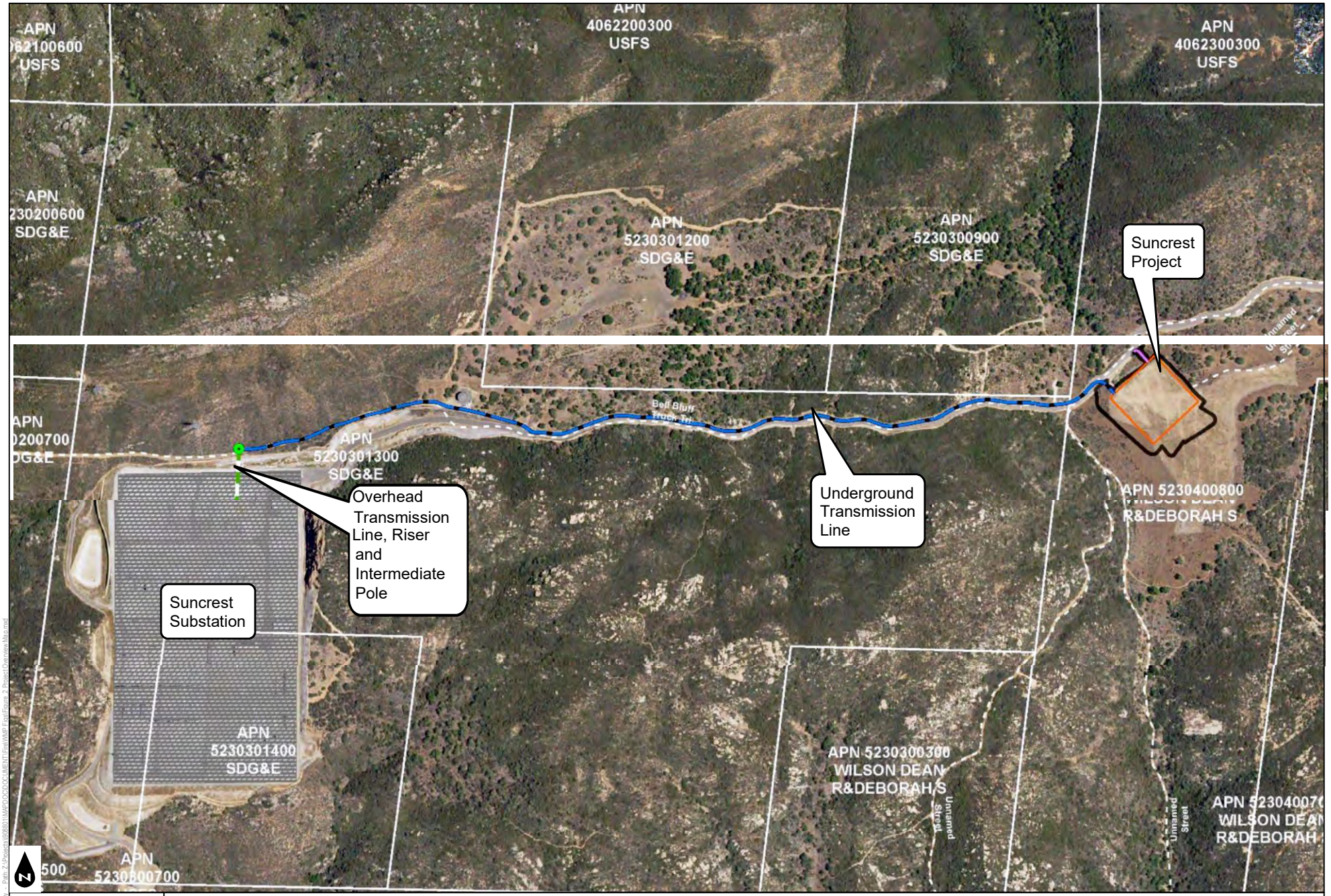
FIGURE 1

Project Vicinity Map

Suncrest Dynamic Reactive Power Support WMP



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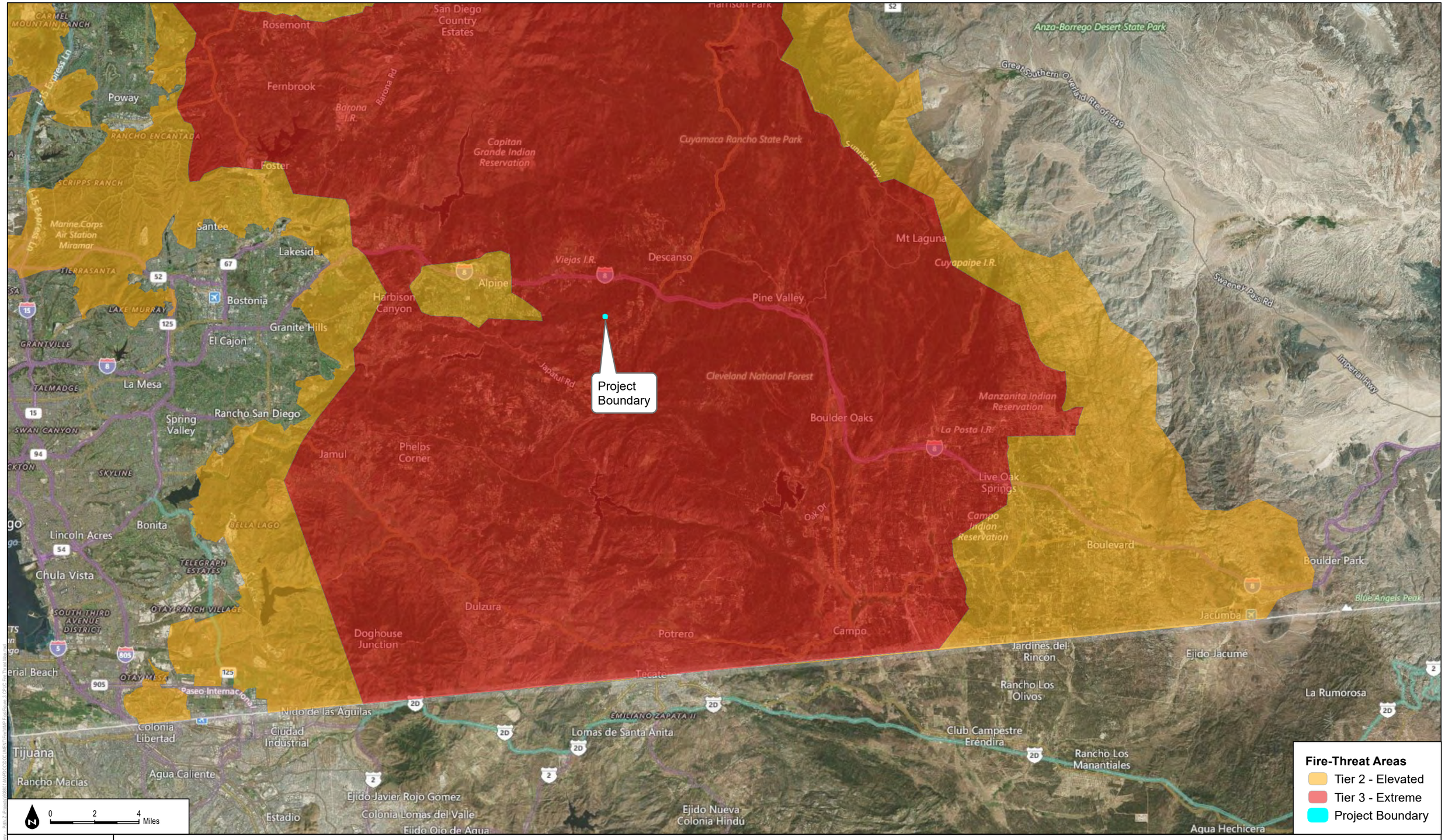
SOURCE: Nextera Energy

FIGURE 2

Project Overview Map

Suncrest Dynamic Reactive Power Support WMP



SOURCE: AERIAL-BING MAPPING SERVICE 2017; FIRE-THREAT-CPUC 2018

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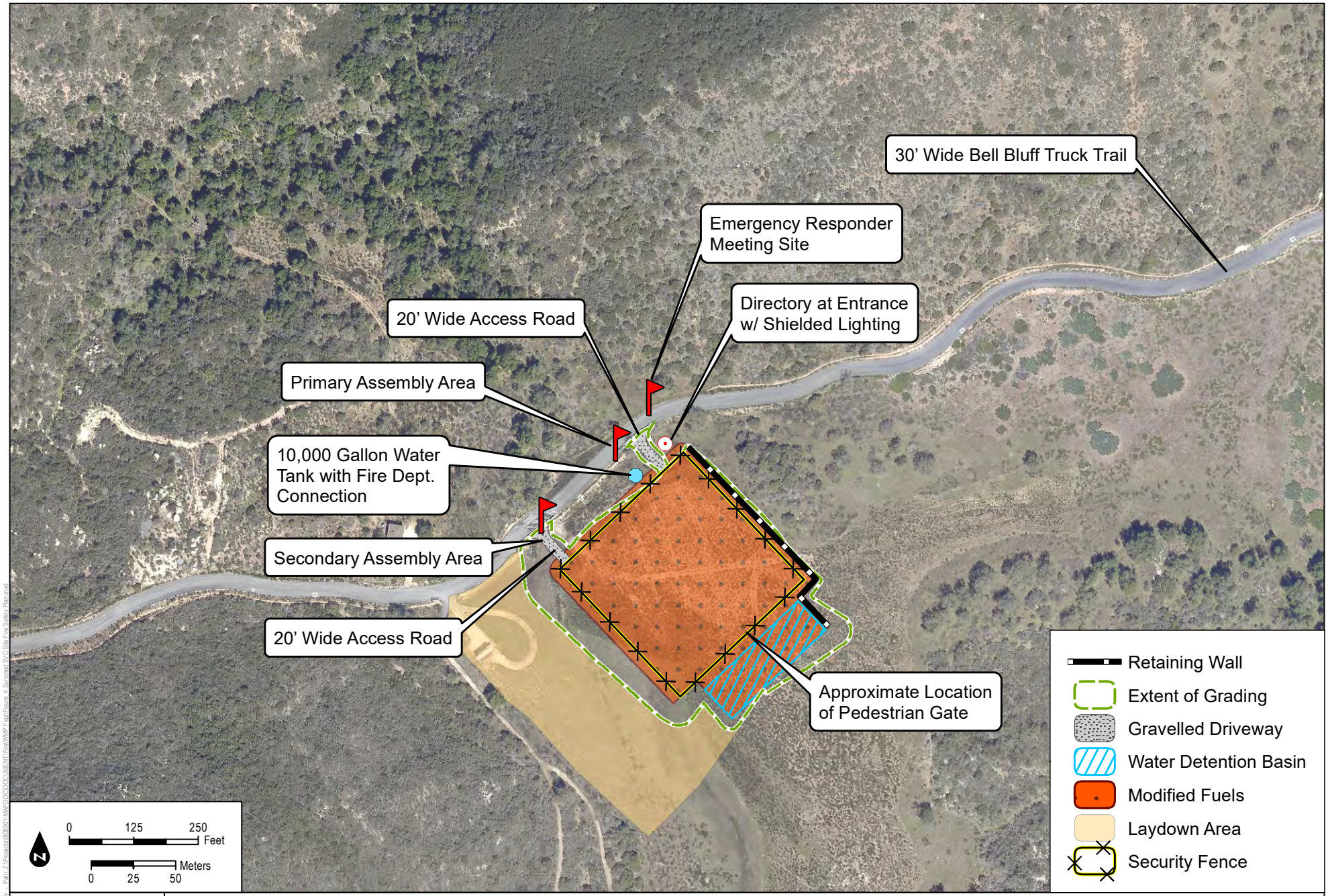
FIGURE 3

CPUC Fire Threat Map

Suncrest Dynamic Reactive Power Support WMP



SOURCE: Nextera, 2015; Aerial-SANGIS, 2017

FIGURE 4

Suncrest SVC Site Fire Safety Plan

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Suncrest Dynamic Reactive Power Support WMP