San Francisco
Water Power Sewer
Services of the San Francisco Public Utilities Commission

San Francisco Public Utilities Commission



2026-2028 Wildfire Mitigation Plan

San Francisco Water Power Sewer
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Appendix 2 SFPUC Wildfire Mitigation Metrics

Acronyms

AFDR	Adjective Fire Danger Rating
AGM	Assistant General Manager
AI	Artificial Intelligence
ANSI	American National Standards Institute
AVMWP	Annual Vegetation Management Work Plan
BES	Bulk Electric System
BLM	Bureau of Land Management
BMP	Best Management Practice
CAISO	California Independent System Operator
CALFIRE	California Department of Forestry and Fire Protection

CCA	Community Choice Aggregator
CCAA	Candidate Conservation Agreement with Assurances
CCSF	City and County of San Francisco
CEQA	California Environmental Quality Act
Commission	San Francisco Public Utilities Commission (SFPUC)
CM	Corrective Maintenance
CMMS	Computerized Maintenance Management System - SFPUC uses Maximo (IBM™) as the enterprise CMMS
CPUC	California Public Utilities Commission
CUEA	California Utilities Emergency Association
DVMP	Distribution Vegetation Management Plan
e-Logger	Electronic Log used by Hetch Hetchy Water to collect, store, and distribute real-time data
ESF	Emergency Support Functions
ESO	Electrical Safety Orders, State of California
ESRI	Environmental Systems Research Institute, Inc. - A geographic information system software company
FAC-003	NERC Reliability Standard: Transmission Vegetation Management Program
FHSZ	Fire Hazard Severity Zone
FPI	Fire Potential Index
FY	Fiscal Year
GO	CPUC General Order
HFT / HFTD	High Fire Threat / High Fire Threat District
HHWP	Hetch Hetchy Water and Power
HHW	Hetch Hetchy Water - This Division of Hetch Hetchy Water and Power is managed by the Water Enterprise, commonly referred to as Hetch Hetchy Water and Power (HHWP)
HHZ	High Hazard Zone

HRRR	NOAA's High-Resolution Rapid Refresh Model
ICS	Incident Command System
IE	Independent Evaluator
IOU	Investor-Owned Utility
ISA	International Society of Arboriculture
IVM	Integrated Vegetation Management
kV	Kilovolt (1,000 volts)
LiDAR	Light Detection and Ranging - Survey technology for the evaluation of existing overhead electrical lines
LiveEO	Software that provides artificial intelligence satellite observation data specific to infrastructure assets, such as overhead electrical lines
LTO	Licensed Timber Operator
Maximo	Maximo (IBM™) SFPUC's enterprise Computerized Maintenance Management System or CMMS
MID	Modesto Irrigation District
MVCD	Minimum Vegetation Clearance Distance
NEC	National Electrical Code
NERC	North American Electric Reliability Corporation
NESC	National Electrical Safety Code
NIMS	National Incident Management System
NOAA	National Oceanic and Atmospheric Administration
NRF	National Response Framework
NRLMD	Natural Resources and Lands Management, a division of the Water Enterprise
NWS	National Weather Service
OEIS	Office of Energy Infrastructure Safety (or Energy Safety) – Ensures electrical utilities are taking effective actions to reduce utility-related wildfire risk

OH	Overhead
PAL	Project Activity Level
PG&E	Pacific Gas & Electric Company
PIO	Public Information Officer
Plan	Wildfire Mitigation Plan (WMP)
PM	Preventative Maintenance
POU	Publicly Owned Utility
PRC	Public Resources Code
PSPS	Public Safety Power Shutoff
PUC	Public Utilities Code
QA/QC	Quality Assurance/Quality Control
QEW	Qualified Electrical Worker
RAWS	Remote Automatic Weather Station – Provides local weather data used primarily in fire management
RFW	Red Flag Warning – Issued by the National Weather Service when warm temperatures, very low humidity, and strong winds are forecasted and combined are expected to produce an increased risk of fire danger
ROW	Right of Way
SCADA	Supervisory Control and Data Acquisition
SEMS	Standardized Emergency Management System
SFPUC	San Francisco Public Utilities Commission
SRA	State Responsibility Area
SVWTP	Sunol Valley Water Treatment Plant
SWIFT	Southwest Interface Team
TRAQ	ISA Tree Risk Assessment Qualified
TVMP	Transmission Vegetation Management Program
UC	Unified Command

UCSD	University of California San Diego
USFS	United States Forest Service
VM	Vegetation Management
WMP	Wildfire Mitigation Plan
WSAB	Wildfire Safety Advisory Board
WSTD	Water Supply & Treatment, a division of the Water Enterprise

Photo Credit

Cover photo courtesy of Troy Harris, Transmission Line Supervisor – Hetch Hetchy Water and Power.

1. EXECUTIVE SUMMARY

The San Francisco Public Utilities Commission (SFPUC) 2026–2028 Wildfire Mitigation Plan (WMP or Plan) describes the programs, practices, and investments SFPUC uses to minimize the risk that its electrical facilities could be the origin or contributing source of a catastrophic wildfire. This Plan is the first submitted under the new schedule established by the Wildfire Safety Advisory Board.[1] The Plan reflects SFPUC's continued commitment to operating a safe, reliable, and resilient electrical system while adapting its wildfire mitigation practices to changing environmental conditions, emerging technologies, lessons learned, and industry best practices.

SFPUC owns and operates hydroelectric generation facilities and approximately 324 circuit miles of overhead transmission lines and 48.9 circuit miles of overhead distribution lines extending from the Sierra Nevada mountains through the Central Valley and into the San Francisco Bay Area. Portions of this infrastructure are in areas designated by the California Public Utilities Commission as Tier 2 and Tier 3 High Fire-Threat Districts. SFPUC's wildfire risk varies considerably across this geographically diverse system and is influenced by factors including drought, high temperatures, wind, steep terrain, vegetation type and density, lightning, aging infrastructure, and the location of electrical facilities in fire-prone areas.

SFPUC's wildfire mitigation strategy emphasizes prevention, situational awareness, system resilience, and preparedness. Key measures include routine inspection and maintenance of transmission and distribution assets; vegetation management; system hardening and replacement of equipment to reduce ignition potential; weather and fire-risk monitoring; workforce training; emergency response coordination; and protocols for recloser operations and de-energization during critical fire weather conditions. Vegetation management remains a cornerstone of the program, supported by annual inspections, hazard-tree removal, Integrated Vegetation Management, satellite vegetation monitoring, prescribed burning and fuel-reduction activities, and quality assurance and quality control.

[1] See Office of Energy Infrastructure Safety Wildfire Safety Advisory Board, *2026–2029 Wildfire Mitigation Plan Schedule for Publicly Owned Utilities and Electrical Cooperatives* (Dec. 2025).

SFPUC has also expanded its use of technology to support risk-informed operational decisions. Technosylva Wildfire Operations (Professional)™ provides daily Fire Potential Index ratings across nine geographic zones and forecasts potential wildfire consequences for individual SFPUC assets. The platform integrates weather information, fire incidents, weather stations, and ALERTCalifornia camera feeds to improve situational awareness and inform operational restrictions, inspection priorities, vegetation management, system hardening, and potential de-energization decisions.

During 2025, SFPUC continued routine inspection, maintenance, vegetation management, and operational activities while advancing several wildfire mitigation initiatives. SFPUC expanded its use of Wildfire Operations (Professional)™, refined vegetation inspection and tracking through ArcGIS Field Maps and satellite imagery, and continued infrastructure-hardening efforts. The Plan reports completion of scheduled distribution and transmission patrol and vegetation inspections during 2025, including approximately 46 circuit miles of distribution patrol and vegetation inspections and 324 circuit miles of transmission patrol and vegetation inspections.

For the 2026–2028 planning period, SFPUC will continue to mature its wildfire mitigation program while maintaining compliance with California Public Utilities Code (Pub. Util. Code) § 8387. Priorities include further development of wildfire risk modeling capabilities, continued use of performance metrics to evaluate program effectiveness, and evaluation and prioritization of system-hardening opportunities. Planned and ongoing investments include transmission life-extension and distribution-upgrade programs, vegetation and fuel-reduction projects, replacement of non-exempt electrical equipment, pole protection, backup generation, and targeted conversion of overhead distribution facilities to underground facilities where appropriate.

SFPUC evaluates the effectiveness of these efforts through performance and outcome metrics and uses the results to refine future mitigation activities. The Plan reports that wildfire-related risk indicators have generally improved over the past seven years, including reductions in wire-down events and de-energization events and no reportable ignitions in High Fire-Threat District areas from 2022 through 2025. The largest

contributor to improving the risk indicators is vegetation management. SFPUC will continue monitoring Plan implementation, including vegetation management, evaluating new technologies and industry practices, and using performance data to guide future investments and operational decisions.

Through this Plan, SFPUC continues a risk-informed and continuously improving approach to wildfire mitigation that combines established utility practices with enhanced technology, vegetation management, infrastructure investment, emergency preparedness, and coordination with fire agencies and other stakeholders. These efforts are intended to reduce wildfire ignition potential while maintaining the reliability and resilience of the electrical infrastructure that supports SFPUC's water and power operations.

2. OBJECTIVES OF THE WILDFIRE MITIGATION PLAN

This Plan provides a comprehensive overview of the SFPUC programs and initiatives that seek to minimize the risk that SFPUC electrical assets will be the origin or contributing source for a catastrophic wildfire. It is the goal of the SFPUC to maintain compliance with our statutory obligation as specified in Pub. Util. Code § 8387(a) which requires each local publicly owned electric utility and electrical cooperative to:

> "Construct, maintain, and operate its electrical lines and equipment in a manner that will minimize the risk of wildfire posed by those electrical lines and equipment."

2.1 Minimizing Sources of Ignition

The first objective continues to be inspections, maintenance, and replacement of our physical assets, to minimize the risk of SFPUC electrical assets being the origin or contributing source for a catastrophic wildfire. Programs being evaluated or currently implemented include, but are not limited to, evaluating strategic system hardening, increased situational awareness capabilities by adding more strategically placed weather stations, leveraging the existing California network of high-definition mountaintop cameras, evaluating enhanced vegetation management opportunities, and proactive de-energization of lines during critical fire weather conditions. We will continue to evaluate wildfire risk reduction tools, processes, and utility best practices, and implement them over time through Plan evaluation and metric analysis.

2.2 Improve Grid Reliability and Resiliency

The second objective of the SFPUC's wildfire mitigation programs and initiatives is to improve the reliability and resiliency of the SFPUC-owned and operated electric facilities. In addition to reducing wildfire ignition risks, programs such as grid hardening and enhanced vegetation management provide additional benefits such as improved reliability and resiliency. We will continue to assess the industry's best practices and new technologies that could help reduce the likelihood of a disruption in service due to planned

or unplanned events and expedite grid recovery efforts following a significant event, such as wildfire.

2.3 Measuring Plan Effectiveness

The third objective of the SFPUC's wildfire mitigation programs and initiatives is to measure the effectiveness and performance of the programs and initiatives as described in this Plan. We will monitor the performance of our Plan and make Plan modifications, as necessary, to improve the safety, reliability, and resilience of the SFPUC system. This Plan will also help determine if more cost-effective measures could produce the same or better results to reduce the risk of SFPUC electrical assets being the origin or contributing source of a catastrophic wildfire.

2.4 Statutory Cross-Reference Table

Our Plan complies with Pub. Util. Code § 8387 statutory requirements listed in Table 1. The table also provides a reference to where the requirements are described in the Plan (Plan Section column).

Table 1 – Pub. Util. Code § 8387 Statutory Requirements

PUC Code 8387	Compliance Requirements	Plan Section
(a)	Each local publicly owned electric utility and electrical cooperative shall construct, maintain, and operate its electrical lines and equipment in a manner that will minimize the risk of wildfire posed by those electrical lines and equipment.	All
(b) (1)	The local publicly owned electric utility or electrical cooperative shall, before January 1, 2020, prepare a wildfire mitigation plan. After January 1, 2026, a local publicly owned electric utility or electrical cooperative shall prepare a wildfire mitigation plan and shall submit the plan to the California Wildfire Safety Advisory Board at least once every four years on a schedule determined by the California Wildfire Safety Advisory Board	1
(b)(2)	The wildfire mitigation plan shall consider as necessary, at minimum, all of the following:	
(b)(2)(A)	An accounting of the responsibilities of persons responsible for executing the plan.	5
(b)(2)(B)	The objectives of the wildfire mitigation plan.	2.0

PUC Code 8387	Compliance Requirements	Plan Section
(b)(2)(C)	A description of the preventative strategies and programs to be adopted by the local publicly owned electric utility or electrical cooperative to minimize the risk of its electrical lines and equipment causing catastrophic wildfires, including consideration of dynamic climate change risks.	7
(b)(2)(D)	A description of the metrics the local publicly owned electric utility or electrical cooperative plans to use to measure and track the implementation of the plan and the assumptions that underlie the use of those metrics.	9.1
(b)(2)(E)	A discussion of how the application of previously identified metrics to previous wildfire mitigation plan performances has informed the wildfire mitigation plan.	9.2
(b)(2)(F)	Protocols for disabling reclosers and deenergizing portions of the electrical distribution system that consider the associated impacts on public safety, and protocols related to mitigating the public safety impacts of those protocols, including impacts on critical first responders and on health and communication infrastructure.	7.8, 7.11, and 8.1
(b)(2)(G)	Appropriate and feasible procedures for notifying a customer who may be impacted by the de-energizing of electrical lines. The procedures shall direct notification to all public safety offices, critical first responders, health care facilities, and operators of telecommunications infrastructure with premises within the footprint of potential de-energization for a given event.	7.11.2
(b)(2)(H)	Plans for vegetation management.	7.4
(b)(2)(I)	Plans for inspections of the local publicly owned electric utility's or electrical cooperative's electrical infrastructure.	7.5 and 7.6
(b)(2)(J)	A list that identifies, describes, and prioritizes all wildfire risks, and drivers for those risks, throughout the local publicly owned electric utility's or electrical cooperative's service territory. The list shall include, but not be limited, to both of the following:	6
(b)(2)(J)(i)	Risks and risk drivers associated with design, construction, operation, and maintenance of the local publicly owned electric utility's or electrical cooperative's equipment and facilities.	6.3
(b)(2)(J)(ii)	Particular risks and risk drivers associated with topographic and climatological risk factors throughout the different parts of the local publicly owned electric utility's or electrical cooperative's service territory.	6.2
(b)(2)(K)	Identification of any geographic area in the local publicly owned electric utility's or electrical cooperative's service territory that is a higher wildfire threat than is identified in a commission fire threat map, and identification of where the commission should expand a high-fire threat district based on new information or changes to the environment.	6.4 and 6.5
(b)(2)(L)	A methodology for identifying and presenting enterprise-wide safety risk and wildfire-related risk.	6.1

PUC Code 8387	Compliance Requirements	Plan Section
(b)(2)(M)	A statement of how the local publicly owned electric utility or electrical cooperative will restore service after a wildfire.	7.11.3
(b)(2)(N)	A description of the processes and procedures the local publicly owned electric utility or electrical cooperative shall use to do all of the following:	
(b)(2)(N)(i)	Monitor and audit the implementation of the wildfire mitigation plan.	9.3
(b)(2)(N)(ii)	Identify any deficiencies in the wildfire mitigation plan or its implementation and correct those deficiencies.	9.4
(b)(2)(N)(iii)	Monitor and audit the effectiveness of electrical line and equipment inspections, including inspections performed by contractors, that are carried out under the plan, other applicable statutes, or commission rules.	7.4.12
(3)	In each year it is required to submit a plan, the local publicly owned electric utility or electrical cooperative shall present its wildfire mitigation plan in an appropriately noticed public meeting. The local publicly owned electric utility or electrical cooperative shall accept comments on its wildfire mitigation plan from the public, other local and state agencies, and interested parties, and shall verify that the wildfire mitigation plan complies with all applicable rules, regulations, and standards, as appropriate.	5.2
(3)(c)	The local publicly owned electric utility or electrical cooperative shall contract with a qualified independent evaluator with experience in assessing the safe operation of electrical infrastructure to review and assess the comprehensiveness of its wildfire mitigation plan. The independent evaluator shall issue a report that shall be made available on the internet website of the local publicly owned electric utility or electrical cooperative and shall present the report at a public meeting of the local publicly owned electric utility's or electrical cooperative's governing board.	10

2.5 Utility Overview and Context Setting Table

The SFPUC, a department of the City and County of San Francisco (CCSF), provides power to the residents and businesses of San Francisco through the CleanPowerSF Community Choice Aggregation (CCA) program[2] and serves CCSF municipal load and other retail customers through Hetch Hetchy Power, another division of the SFPUC. Additionally, the SFPUC provides retail drinking water and wastewater services to the City of San Francisco and wholesale water to three Bay Area counties.

[2] https://www.cleanpowersf.org/

The SFPUC is comprised of six business functions, or enterprises, including the Water Enterprise. The Water Enterprise has six divisions, including Hetch Hetchy Water (HHW), Water Supply & Treatment Division (WSTD), and Natural Resources and Lands Management Division (NRLMD) (Figure 1). HHW, WSTD, and NRLMD have defined responsibilities for managing and maintaining the electrical assets, and land on which they reside, which are described in this Plan. The Water Enterprise is responsible for the development, execution, and oversight of this WMP.

HHW is responsible for managing, operating, and maintaining the Hetch Hetchy Water and Power (HHWP) Project. The HHWP Project consists of four hydroelectric powerhouses (generator facilities). HHWP transmits this power through SFPUC-owned and operated 230 kV and 115 kV transmission lines to the Bulk Electric System[3] (BES). A portion of the transmission facilities are within Pacific Gas & Electric Company's (PG&E) and Modesto Irrigation District's (MID) service territories. A detailed breakdown of overhead lines in the HFTD is included in Table 2.

WSTD is responsible for managing, operating, and maintaining the Bay Area portion of the system which includes water storage, treatment, water transmission facilities, a switchyard, and power distribution assets in Alameda and San Mateo counties. The SFPUC owns the watersheds above reservoirs in Alameda and San Mateo counties.

NRLMD is responsible for managing, operating, and maintaining Bay Area lands and watersheds. NRLMD does not operate and maintain electrical assets; however, they do perform vegetation management around the distribution poles and overhead lines in Alameda and San Mateo counties.

[3] https://nercipedia.com/glossary/bulk-electric-system/

Figure 1 – SFPUC Organization

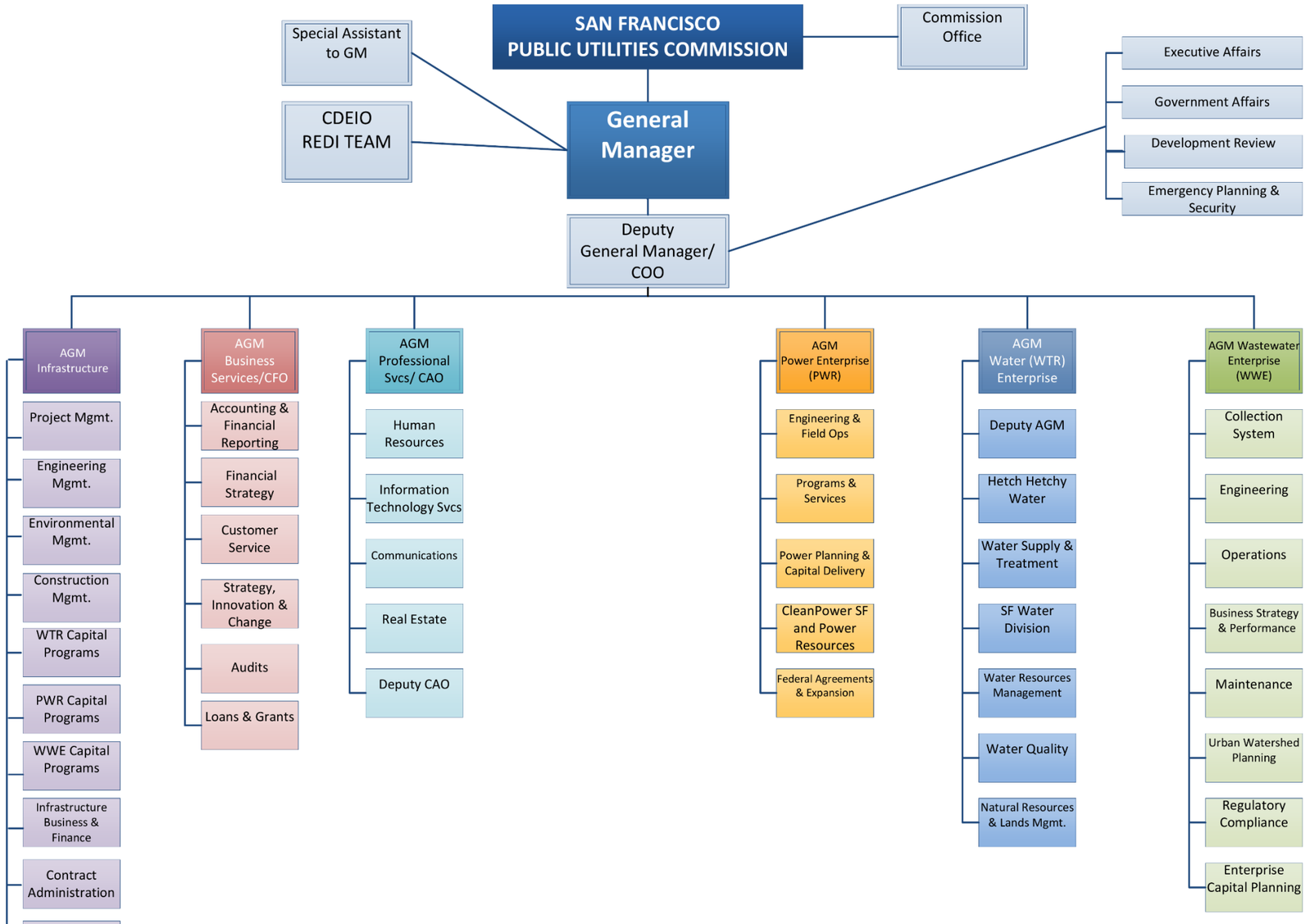


Table 2 – Context Setting Table SFPUC

Utility Name	San Francisco Public Utilities Commission All line lengths are defined as circuit miles
Service Territory Size	The SFPUC is primarily a hydro-generation and transmission provider. The SFPUC has no defined "service territory" with boundaries like a traditional utility serving distribution load.
Owned Assets	Generation, Transmission, and Distribution
Number of Customers Served	Five customer accounts served from a distribution line in Tier 2 HFTD, and one served off the transmission in non-HFTD.
Population Within Service Territory	N/A

Customer Class Makeup

Number of Accounts	Share of Total Load (MWh)
0% Residential 0% Government 0% Agricultural 100% Small/Medium Business 0% Commercial/Industrial	N/A

Service Territory Location/Topography[4]

4% Agriculture
27% Barren/Other
25% Conifer Forest
0% Conifer Woodland
0% Desert
3% Hardwood Forest
16% Hardwood Woodland
18% Herbaceous
0% Shrub
7% Urban
0% Water

Service Territory Wildland Urban Interface[5] (based on total area)

1% Wildland Urban Interface 1% Wildland Urban Intermix The percentages above refer to overhead transmission and distribution circuit miles.

[4] This data was determined by using the California Department of Forestry and Fire Protection, California Multi-Source Vegetation Layer Map, depicting WHR13 Types (Wildlife Habitat Relationship classes grouped into 13 major land cover types), available at: https://www.arcgis.com/home/item.html?id=b7ec5d68d8114b1fb2bfbf4665989eb3.

[5] This data was determined by using the definitions and maps maintained by the United States Department of Agriculture, as most recently assembled in *The 2010 Wildland-Urban Interface of the Conterminous United States*, available at https://www.fs.usda.gov/nrs/pubs/rmap/rmap_nrs8.pdf.

Prevailing Wind Directions & Speeds by Season

Generally, the coast range has higher average wind speeds throughout the year, which are typically from the west, with strong east wind events in the winter. The Central Valley typically has lower average wind speeds, with a predominantly westerly direction. The mountain region has moderate average wind speeds, also typically westerly, with very strong easterly (Mono) wind events in the winter. In the table below, winter is considered from October-April and summer from May to September.

		Average		Max	
Region	Season	Wind Speed (mph)	Direction	Wind Speed (mph)	Direction
Coast Range	Winter	30	W	60	E
Coast Range	Summer	20	W	30	W
Central Valley	Winter	10	W	20	E
Central Valley	Summer	5	W	10	W
Sierra Nevada Foothills	Winter	15	W	70	E
Sierra Nevada Foothills	Summer	15	W	20	W

Miles of Owned Lines Underground and/or Overhead[6]

Overhead Dist.: 48.9 miles / 1,300 Distribution Poles Overhead Trans.: 324.4 miles / 834 Transmission Poles/Structures Underground Dist.: 5.3 miles Underground Trans.: 0 miles
Explanatory Note 1 - Methodology for Measuring "Miles": ***Circuit Miles***
Explanatory Note 2 – Description of Unique Ownership Circumstances: *The following SFPUC distribution lines are supplied from PG&E lines to serve SFPUC facilities. Bay Area region: San Andreas Lake Line (4.16 kV), Pilarcitos Line (4.16 kV), Sawyer Camp Line (4.16 kV), Crystal Springs Line (7.2 kV), Pulgas Line (4.16 kV). Central Valley region: Tesla Portal Line (12 kV).*

[6] In early 2025, we recalculated our overhead line mileage. All mileage is now listed as circuit miles.

Percent of Owned Lines in CPUC High Fire Threat Districts
(percentages reflect overhead line length).

Overhead Distribution Lines as % of Total Distribution System (Inside and Outside Service Territory):
Tier 2: 86.7% Tier 3: 8.5% Non-HFTD: 4.8%

Overhead Transmission Lines as % of Total Transmission System (Inside and Outside Service Territory):

Tier 2: 26.1% Tier 3: 2% Non-HFTD: 71.9%
Explanatory Note 3 – Additional Relevant Context: [e.g., explain any difference from data reported in WMP due to different numerator used for this form]. We periodically review and update our GIS layers, which results in more accurate representations of the actual circuit miles.

Have SFPUC customers ever lost service due to an IOU PSPS event?	**No**. If yes, then provide the following data for the calendar year 2025: Number of shut-off events**: 0.** Customer Accounts that lost service for >10 minutes: 0. For prior response, average duration before service restored: N/A
Have SFPUC customers ever been notified of a potential loss of service due to a forecast IOU PSPS event?	**No.**
SFPUC has developed protocols to pre-emptively shut off electricity in response to elevated wildfire risks?	**Yes.** Our de-energization protocols are explained in Section 7.11
SFPUC has previously preemptively shut off electricity in response to elevated wildfire risk?	Yes, prior to 2025. Calendar year 2025: Number of shut-off events: **0.** Customer Accounts that lost service for >10 minutes: **0.** For prior response, average duration before service restored: **N/A.**

3. OVERARCHING INITIATIVES FOR THE 2026-2028 WMP

The 2026-2028 SFPUC WMP programs and initiatives are built upon leveraging the successes and lessons learned from previous Plans. Our primary goal continues to be to construct, operate, and maintain a safe and resilient electrical grid and continue to minimize the risk of our assets being the origin or contributing source for a catastrophic wildfire.

Our primary initiatives for the 2026-2028 Plan are to:

1. Maintain compliance with Pub. Util. Code § 8387 and continue to mature our wildfire mitigation initiatives.
2. Continue to develop improvements to the Wildfire Operations (Professional)™ risk modeling software.
3. Continue to track metrics to inform the SFPUC on how the WMP programs and initiatives are performing.
4. Evaluate and assign priorities to system hardening options and create implementation time frames.

3.1 Wildfire Mitigation Operating and Capital Budgets[7]

The SFPUC's Operating and Capital Budgets for Fiscal Years FY 2026-27 and FY 2027-28 went into effect July 1, 2026. Operating Budgets include continued funding for wildfire mitigation initiatives and activities including vegetation management and tree-removal contracts, satellite imaging to help gather and analyze data for potential threats to select overhead transmission and distribution system areas, and funding for software and wildfire-related equipment.

Wildfire mitigation Capital Budget investments are incorporated across the Water, Power, and Joint program classification categories rather than managed as a standalone

[7] Approved operating and capital budgets are published on the SFPUC website. See Operating and Capital Budgets.

category[8]. In addition to a two-year Capital Budget, the SFPUC prepares a 10-Year Capital Plan. The adopted Capital Budget and Capital Plan reflect a long-term commitment, with investments projected throughout the 10-year capital planning period, consistent with ongoing resilience objectives and regulatory requirements. The 10-year Capital Plan is reviewed every two years. Capital Plan updates could adjust project timing and project reprioritization but does not reduce overall program scope.

Line items in the 10-year Capital Plan that represent investments in the Transmission and Distribution systems include Power Transmission Life Extension, Power Distribution Upgrades, Wildfire Mitigation (Power), Wildfire Mitigation (Joint), and O'Shaughnessy Dam Micro-Hydro Generation Units. Descriptions of these projects and budgets are as follows:

- Power Transmission Life Extension:
  - Budget: $14.5M over ten years, with an average of $1.45M available per year. This is an ongoing project with continuous funding over the ten-year period.
  - Project Description: Deliver capital improvement projects to sustain the reliability of HHWP's electric transmission assets from the generator step-up transformer across transmission lines to the terminal substations and switchyards. HHWP has developed a program to extend the life of these assets prior to wholesale replacement. The program will include inspections, condition assessments, design, environmental evaluations, construction when appropriate to maintain the reliability of the electric transmission system, and development of a business plan for transmission system rebuild.
- Power Distribution Upgrades:

[8] Projects classified as "Water" are funded 100% by Water customers. Projects classified as "Power" are funded 100% by Power customers. Projects classified as "Joint" are funded 55% by Power customers and 45% by Water customers.

  - Budget: $18.5M over ten years, with an average of $1.85M available per year. This is an ongoing project with continuous funding over the ten-year period.

  - Project Description: Deliver capital improvement projects to maintain the reliability of HHWP's electric distribution lines. HHWP owns and maintains about 40 miles of distribution lines which power operational facilities on the HHWP Project. About 60 percent of the distribution system has exceeded its life expectancy. In addition, new loads to support operations at Moccasin Compound and remote sites (e.g., Ultraviolet systems, Moccasin Fish Hatchery Recirculation System, and new buildings/offices) are taxing the current system, requiring mitigation. This project funds load studies and condition assessments to evaluate current and future needs; replacement of aging facilities; design to meet current/future needs; and procurement of critical spare equipment to ensure reliable 24/7 water and power operations at Moccasin Compound and remote sites.

- Wildfire Mitigation (Power):

  - Budget: $3.25M over three years, with an average of $1M available per year. This project has a specific scope with a defined end date.

    Project Description: HHWP owns assets in areas designated by the CPUC as "High Fire Threat Zones." HHWP has evaluated prevention, mitigation, and response strategies to mitigate the threat of wildfire. This project will fund wildfire mitigation vegetation management projects, including fuel breaks and Integrated Vegetation Management (IVM) projects to protect assets classified as "Power" only.

- Wildfire Mitigation (Joint):

  - Budget: $5M over six years, with an average of $850k available per year. This project has a specific scope with a defined end date.

Project Description: SFPUC owns assets in areas designated by CALFIRE as "High Fire Threat Zones." This project will mitigate the risk posed by uncontrolled wildfire to "Joint" assets by constructing fuel breaks and completing fuels reduction projects near HHWP Project facilities and other “Joint” assets.

- O’Shaughnessy Dam Micro-Hydro Generation Units
  - Budget: $3.3M is available during the current ten-year period and will extend into the next iteration of the Capital Plan. The overall project budget is estimated at $16M.
  - Project Description: Installation of two (2) micro-hydro generation units inside O'Shaughnessy Dam, supplied by the Instream Flow Release (IFR) pipes in the diversion tunnel upstream of the IFR valves. These units would provide a primary power source for the estimated 128 kilowatts of total capacity required for O’Shaughnessy Dam operations and O'Shaughnessy Compound, with redundancy to supply camp during any maintenance required on generation units. Installation of these units reduces the SFPUC’s wildland fire risk by allowing for the de-energization or removal of the existing overhead power distribution lines between Camp Mather and O’Shaughnessy Compound. Removal of the overhead lines would reduce annual maintenance costs associated with the overhead power lines and increase dependance on a backup generator system for dam operations when the micro-hydro units were unavailable.

Examples of the Wildfire Mitigation work done under these Capital projects include:

- Transmission Right-of-Way (ROW) Bio Audit: HHWP is in the process of converting electrical transmission right-of-way plant dynamics to more compatible and beneficial species. This will support our wildfire mitigation activities as well as reduce our maintenance requirements. HHWP applied for and received the Candidate Conservation Agreement with Assurances (CCAA) for the monarch

butterfly and bumblebee which will require conservation plots to be created and maintained. A bio-audit is being completed under this project to support this activity. **(Project is ongoing.)**

- Transmission Line Integrated Vegetation Management (IVM) Transmission ROW Hazard Vegetation Removal: Hazard trees pose a risk to HHWP transmission infrastructure. This project will remove fire prone brush species and any hazard fall-in risk potential trees (including immediately outside the ROW) along HHWP transmission lines, creating a fire break. The ROW vegetation will be replanted with low growing native grass and pollinator species. In areas with increased conductor height, the project will re-plant conifer and hardwood trees. **(Project is ongoing.)**

- Water Quality IVM – Priest Reservoir Vegetation Clearing: This project would clear undesirable woody species; dead, diseased, or otherwise hazardous trees; and foliar herbicides including but not limited to Yellow Star Thistle and Himalayan Blackberry around Priest Reservoir, to create a fire break. Vegetation along roadways and parking areas will be thinned and scaffold branches lifted to ensure adequate access during fire events. The project will include introduction of native vegetation including milkweed, black oak, and ponderosa pines in appropriate areas to promote diversity, pollinator habitat and fire resilience. **(Project is ongoing.)**

- Distribution ROW: A land review of the distribution system needs to be performed to identify areas where the assets deviate from the Raker Act alignment (The Raker Act is a 1913 U.S. federal law that authorized the construction of the O'Shaughnessy Dam and the creation of the Hetch Hetchy Reservoir within Yosemite National Park). Next, an environmental review will be conducted pursuant to the California Environmental Quality Act (CEQA) for all activities that occur to maintain regulatory compliance around the electrical distribution system. These activities include the replacement of aging poles and infrastructure. They also support wildfire mitigation activities including removal of vegetation and

targeted application of herbicides on undesirable vegetation, then replanting of compatible and beneficial species. A bio-audit of the electrical distribution system will be conducted to guide the plant conversion from incompatible to compatible. The bio audit of the distribution ROW will assist in the replanting of species that will thrive along the ROW, increase pollinator habitat, and lower maintenance costs. This audit would analyze soil, invertebrates and vegetation along the distribution system. This activity will also assist in planning and maintaining our conservation plots that are enrolled in the CCAA project, which began in early 2025. The final CEQA report will include any necessary mitigation for all the activities listed above. **(Project is ongoing.)**

- O'Shaughnessy Compound Backup Generator: SFPUC facilities at O'Shaughnessy Compound include the O'Shaughnessy Dam and spillway controls, water treatment plant, lift station, HHWP office, National Park Service (NPS) housing/law enforcement office, campground, communications systems, security systems, and lighting systems. Electric distribution circuits from Early Intake Switchyard service the Compound. Power outages on the overhead distribution lines could be caused by fire weather conditions, storm events, down powerlines, and maintenance outages. The outages could impair law enforcement, security, and core infrastructure operations. This project will install a backup generator at the Compound servicing local electrical demand when the overhead distribution circuits are de-energized for maintenance and during extreme weather events. **(Project is ongoing.)**

- Distribution Power Pole Protection (Pole Wrap): This project added Hexion Pole Wrap to 297 poles along HHWP distribution lines. This wrap provides protection against damage due to wildfire. The HHW portion of the project is completed. WSTD will be wrapping their poles in 2026-27.

- Overhead to Underground Conversion Assessment: This project developed a cost estimate to underground Hetch Hetchy Water & Power's and Water Supply & Treatment's overhead distribution lines and equipment through various ground

conditions, terrain, and vegetation densities. This project was an assessment only. **(Project is complete.)**

- PRC § 4292 Non-Exempt Equipment Replacement: Non-exempt equipment may arc, spark, or fail, causing hot particles to fall to the ground, potentially resulting in an ignition. This project will evaluate the current equipment in service on distribution power poles that are subject to PRC § 4292[9] in Moccasin, the Cherry Ridge Line and the Mather Line with the intent of installing CALFIRE approved exempt equipment. **(Project is ongoing.)**

[9] PRC § 4292 mandates that any person who owns, controls, operates or maintains electrical transmission or distribution lines on mountainous, forested, brush-covered, or grass-covered land must maintain a firebreak of at least 10 feet in all directions from the outer circumference of poles or towers supporting transmission and distribution equipment. California Public Resources Code (PRC) § 4292.

4. SUMMARY OF 2025 WILDFIRE MITIGATION ACTIVITIES

This section provides details on our programs and initiatives conducted in the calendar year 2025 to reduce the risk of a catastrophic fire caused by SFPUC assets.

4.1 Risk Assessment

In 2025, the SFPUC continued refining and expanding its use of Technosylva's Wildfire Operations (Professional)™ application, previously referred to as Wildfire Analyst, leveraging it to monitor fire weather conditions that could impact the entire SFPUC overhead electrical system. Technosylva is a recognized leader in advanced GIS-based wildfire planning and emergency response software, used by CALFIRE, the CPUC, and most of California's investor-owned utilities.

Wildfire Operations (Professional)™ evaluates each SFPUC asset daily, assigning a Fire Potential Index (FPI) rating and predicting the potential consequences if an ignition were to occur. The application models four key consequence metrics: Fire Size Potential, Population Impacted, Buildings Threatened, and Estimated Buildings Destroyed. These data-driven insights enable SFPUC personnel to proactively identify risk conditions and make informed decisions about operational changes, work restrictions, or de-energization to protect communities and critical infrastructure.

The Wildfire Operations (Professional)™ application is explained in detail in Section 7.1.1.

4.2 Situational Awareness

In 2025 SFPUC continued to evaluate and augment its situational awareness capabilities by leveraging the Wildfire Operations (Professional)™ application.

Using Wildfire Operations (Professional)™, we have an integrated view of weather stations and high-definition cameras hosted through the ALERTCalifornia network. Approximately 80% of our overhead electrical system is within a camera viewshed, enabling faster detection of ignition, hazardous wildfire smoke, and other conditions that could negatively impact our operations and prompt timely dispatch of fire personnel.

Additionally, the platform provides real-time information on active fire incidents that may threaten our assets, allowing us to monitor fire growth more effectively. The application also overlays alerts from the National Weather Service (NWS), including Extreme Fire Danger, Extreme Wind Warnings, Red Flag Warnings (RFW), and Excessive Heat Warnings—directly onto the base map. In 2025, SFPUC worked with University of California San Diego (UCSD) to install Starlink satellite internet on the Moccasin Peak ALERTCalifornia camera. Starlink offers a faster and less interruptible camera live feed.

4.3 Vegetation Management

In 2025, HHW Vegetation Management Right of Way (VM ROW) Department continued to refine the use of ArcGIS Field Maps to accurately track and document tree and vegetation inspections. The Field Map application allows the inspector to plot trees using geographical position system latitudes and longitudes, as well as a customized form for notating tree species, type of treatment (trim, removal, grow-in, etc.), and set a remediation schedule. This information is then used to create work orders for the vegetation management group to perform the specified tree work. Using the data collected in Field Maps, a dashboard is generated to track vegetation inspection progress (see Section 7.4.8 for dashboard screenshot).

Since 2023, SFPUC has utilized satellite-based vegetation monitoring through a contract with LiveEO, receiving updated imagery on an annual basis. This high-resolution data enables enhanced visibility into vegetation conditions, including growth patterns and proximity to electrical conductors. This capability strengthens targeted ground patrols and supports the identification of areas of elevated concern, including those within High Fire Threat Districts (HFTDs). Additional details regarding the SFPUC's use of LiveEO are provided in Section 7.4.7.

Our internal E-Logger system is managed by the HHW Power System Operators and sends automated alerts to the ROW Manager and Forester when there is an outage detected on our transmission or distribution line(s). The Power System Operators dispatch linemen, a tree crew, and Forester to investigate the cause of the outage. In 2025, we refined the summary of findings reports which the Forester completes if the

outage is vegetation related. The reports are now accessible via mobile devices so trees or vegetation can be marked with latitude and longitude for tracking remediation and auditing. This allows for more informed decisions regarding vegetation management based on historical outage information caused by vegetation contact. This information is also used to inform the outcome metrics.

4.4 Construction, Operations, and Maintenance

In 2025, SFPUC installed Hexion ArmorBuilt™ pole wrap on 297 distribution poles in the HFTD. These poles are in areas where access is limited due to terrain and the line(s) supply power to critical facilities. Pole wrapping is also discussed in Section 7.3.2.

As part of our WMP, we are actively working to replace all non-exempt equipment with exempt equipment as identified in the CALFIRE California Power Line Fire Prevention Field Guide, 2021 Edition. By systematically upgrading non-exempt components to designs that meet current ignition-resistant standards, we are strengthening system reliability while minimizing the potential for equipment-related ignitions. This effort reflects our ongoing commitment to reducing wildfire risk associated with overhead electrical infrastructure, particularly in high fire-threat areas.

To advance this objective, we have placed orders for replacement materials to support two concurrent projects scheduled to begin in 2026 and be completed in 2027. One project will focus on poles in Tuolumne County. The second will address poles in Alameda County. Table 3 summarizes the details of these projects. The selected equipment incorporates improved insulation, shielding, and wildlife protection features that reduce the likelihood of an ignition.

While we have taken proactive steps to procure these materials, manufacturers are currently experiencing extended production and delivery lead times due to high demand and supply chain constraints. As a result, installation timelines are dependent on material availability. We are closely coordinating with suppliers to track production schedules and prioritize delivery to complete the work. Through this phased approach, we are making

measurable progress toward eliminating all non-exempt equipment from our system and further reducing wildfire risk across our system.

Table 3 – Proposed Distribution System Hardening

Various Locations (Tuolumne County)

Asset Type	Total Quantity Scheduled for Replacement	Purpose
Fuses PRC 4292 Exempt	157	Improve circuit protection and fault isolation
Fuse Cutouts PRC 4292 Exempt	115	Replace aging protective devices and improve system reliability
Surge Arrestors PRC 4292 Exempt	110	Protect equipment from voltage surges and reduce equipment failure risk
Vibration Dampers	568	Reduce conductor vibration and mechanical fatigue caused by wind
Avian Protection	121	Prevent wildlife contact with energized equipment
Anti-Perch Devices	95	Reduce bird activity on energized equipment to prevent faults

Sunol (Alameda County)

Asset Type	Total Quantity Scheduled for Replacement	Purpose
Fuses PRC 4292 Exempt	28	Improve circuit protection and fault isolation
Surge Arrestors PRC 4292 Exempt	21	Protect equipment from voltage surges and reduce equipment failure risk

5. ROLES AND RESPONSIBILITIES

5.1 SFPUC Division Responsibilities

This section identifies the SFPUC management staff responsible for the development, approval, and implementation of this Plan and lists, in Table 4, the operating divisions accountable for carrying out the various activities described in the Plan.

The HHW Fire Mitigation Specialist is the lead of the SFPUC's Wildfire Mitigation Planning Group (WMPG) comprised of managers and field staff from HHW, NRLMD, and WSTD. The group's purpose is to review and monitor the progress of the SFPUC wildfire mitigation programs, monitor the effectiveness of the Plan, and coordinate wildfire mitigation projects, activities, and best practices across all SFPUC divisions. The group meets bi-monthly, with an agenda prepared before each meeting and the opportunity for each member to provide discussion topics. The SFPUC divisions responsible for performing wildfire mitigation activities cover a significant geographical area. The coordination of work performed by this planning group has proven to be an efficient and effective way to share resources, provide project updates, and coordinate programs to ensure the SFPUC consistently complies with all local, state, federal laws, and regulatory requirements in a continuous effort to reduce the risk of SFPUC assets being the origin or contributing source for a catastrophic wildfire. The Fire Mitigation Specialist is also a primary SFPUC liaison with the California Municipal Utilities Association (CMUA) and attends the monthly CMUA-hosted Wildfire Preparedness, Response, and Recovery Working Group calls.

- The SFPUC Commission has the responsibility for approving this Plan.
- The SFPUC Assistant General Manager (AGM) of the Water Enterprise has overall accountability for developing and implementing the Plan.

Table 4 – Plan Activities, Roles and Responsibilities

Activity	HHW Division: All SFPUC Transmission Facilities; and Distribution Facilities Located within Tuolumne, Stanislaus, Mariposa, and San Joaquin Counties	WSTD and NRLMD Divisions: Distribution Facilities Located in Alameda and San Mateo Counties
Transmission Line Vegetation Clearance Inspections	HHW Right of Way Manager; and Vegetation Manager	N/A
Distribution Line Vegetation Clearance Inspections	HHW Right of Way Manager; and Vegetation Manager	NRLMD and Peninsula Area Manager
Vegetation Management and Removal	HHW Operations and Maintenance Manager	NRLMD Division Manager
Transmission Asset Inspections Transmission Line Maintenance	HHW Power Generation & Transmission Manager	N/A
Distribution Asset Inspections	HHW Power Generation & Transmission Manager	HHW Power Generation & Transmission Manager
Distribution Line Operations and Maintenance Inspections	HHW Power Generation & Transmission Manager	WSTD Maintenance Section Manager and HHW Power Generation & Transmission Manager
Substation Inspections; Recloser Policy; and De-energization	HHW Operations and Maintenance Manager	HHW Operations and Maintenance Manager
Plan Coordination and Updates	Fire Mitigation Specialist	Fire Mitigation Specialist
Plan Review	HHW Division Manager, NRLMD Division Manager, WSTD Division Manager, CCSF City Attorney's Office; and SFPUC Assistant General Manager of Water	HHW Division Manager, NRLMD Division Manager, WSTD Division Manager, CCSF City Attorney's Office; and SFPUC Assistant General Manager of Water
Plan Approval	SFPUC Commission	SFPUC Commission

SFPUC staff have the following responsibilities regarding fire prevention, response, and investigation:

- Conduct work in a manner that will minimize the risk of ignition for a utility-caused wildfire.
- Take all reasonable and practicable actions to prevent and suppress fires resulting from SFPUC electric facilities.
- Coordinate with federal, state, and local fire management personnel to ensure that appropriate preventative measures are in place.

- Immediately report fires, pursuant to specified procedures.
- Take corrective action when observing or having been notified that fire protection measures have not been properly installed or maintained.
- Ensure compliance with relevant federal, state, and industry-standard requirements.
- Ensure that relevant incident data is appropriately and timely collected when a utility asset is suspected to be the cause or contributing source for the ignition of wildfire.
- Ensure that evidence is appropriately preserved when a utility asset is suspected to be the cause or contributing source for the ignition of wildfire.
- Require adequate wildfire mitigation training programs for all relevant SFPUC employees and require SFPUC contractors to implement wildfire mitigation training and procedures.

5.2 WMP Adoption Process

This Plan meets the requirements of Pub. Util. Code § 8387 for POUs.[10] The public can comment on the WMP during a scheduled SFPUC Commission meeting, in which the Commission will review the WMP. The SFPUC Commission Secretary publishes all upcoming Commission agendas on its website a week before the Commission meeting date.[11] Additionally, each agenda item has time set aside for public comment. The SFPUC Commission and staff will consider all public comments for inclusion in the final version of the Plan. The meeting agenda includes a weblink to view the meetings live and a call-in number to ensure the public has an opportunity to comment on agenda items. The final approved WMP will be submitted to the WSAB and posted to the SFPUC website, which also includes prior WMPs and independent evaluator (IE) report(s).[12]

[10] Pub. Util. Code § 8387(b)(3)
[11] See https://sfpuc.org/about-us/boards-commissions-committees/sfpuc-commission
[12] https://www.sfpuc.gov/about-us/policies-plans/wildfire-mitigation-plan

6. WILDFIRE RISKS AND RISK DRIVERS

The Office of Energy Infrastructure Safety (OEIS) defines risk as "a measure of the anticipated adverse effects from a hazard considering the consequences and frequency of the hazard occurring."

6.1 Enterprise-Wide Safety Risks

The SFPUC's risk evaluation approach leverages the institutional knowledge of our personnel familiar with the historical events that previously impacted our operations. Our risk reduction approach is designed to meet the requirements of industry-recognized standards, i.e., CPUC General Orders (GO), North American Electric Reliability Corporation (NERC) Operating Standards, National Electric Safety Code (NESC), and best practices utilized by other utilities with more mature wildfire mitigation programs.

The SFPUC has operationalized the use of Technosylva's Wildfire Operations (Professional)™ application to support our operations and planning groups as described in Section 7.1.1. The Wildfire Operations (Professional) application is now the foundational tool for forecasting and identifying fire weather risks, forecasting potential consequences of the fire, supporting de-energization decision-making, and supporting prioritization of risk reduction measures.

6.2 Risks and Risk Drivers Associated with Topographic and Climatological Risk Factors

The SFPUC owns electrical assets in the foothills of the Sierra Nevada Mountain range, through the San Joaquin Valley, Coast Range, and into the lower elevation San Francisco Peninsula region.

Our primary topographic and climatological risk drivers identified for wildfire risk are:

- Extended drought,
- Lightning,

- Lack of early fall rains,
- Hot temperatures,
- High winds,
- Steep terrain, and
- Vegetation type and density.

6.3 *Risks and Risk Drivers Associated with Design, Construction, Operations, and Maintenance*

SFPUC's wildfire risk is influenced by decisions made throughout the lifecycle of our electrical infrastructure from initial system design through construction, daily operations, and ongoing maintenance. Each phase presents unique risks and corresponding risk drivers that may affect the likelihood of wildfire ignition or the consequences of a wildfire event. Understanding these factors enables SFPUC to prioritize mitigation activities, allocate resources effectively, and continuously improve wildfire resilience.

Design-related risks arise from the configuration, location, and engineering of electrical facilities. Design decisions can influence both ignition potential and system resilience over the life of an asset. Primary risk drivers include facilities located within the Tier 2 and 3 HFTDs, aging infrastructure and legacy equipment, use of CALFIRE non-exempt equipment where replacement has not yet occurred, terrain, vegetation density, and environmental constraints affecting facility location, and exposure to high winds, falling trees, and severe weather. The most common risks for overhead lines in the HFTDs include equipment failure, vegetation contact, reduced operational flexibility during RFW events, and increased wildfire exposure because of facilities location (heavily forested or canyon areas).

Construction risks and risk drivers are activities that may temporarily increase wildfire risk through equipment use, ground disturbance, and contractor operators, especially during days where the FPI is Elevated or Extreme. Primary risk driver activities are welding,

grinding, cutting, and other spark-producing activities, heavy equipment operating in dry vegetation, construction activities, and access limitations for firefighting resources.

SFPUC has excellent system reliability. Most unplanned outages have occurred in the upper elevations during the winter months when snow loads break trees and branches adjacent to the ROW. HHW tracks planned and unplanned overhead transmission and distribution outages through e-Logger. The HHW Moccasin Control Center staff is responsible for monitoring de-energization thresholds and communicating fire weather risk events to WSTD staff for lines operated and maintained by WSTD.

SFPUC has programs and initiatives to address these risks and risk drivers. These programs and initiatives are further described in Section 7.

6.4 High Fire Threat District

SFPUC participated in the development of the CPUC's Fire-Threat Map[13] which designates a High-Fire Threat District (HFTD) (Figure 2). The CPUC describes the HFTD as follows:

1. Tier 1 High Hazard Zones (HHZs) on the U.S. Forest Service-CALFIRE joint map of Tree Mortality HHZs ("Tree Mortality HHZ Map").
    a. The Tree Mortality HHZ Map is an off-the-shelf map. Tier 1 HHZs are zones near communities, roads, and utility lines, and are a direct threat to public safety.
2. Tier 2 and Tier 3 fire-threat areas on the CPUC Fire-Threat Map.
    a. Tier 2 fire-threat areas outline areas where there is an elevated risk (including likelihood and potential impacts on people and property) from utility-related wildfires.

[13] https://www.cpuc.ca.gov/industries-and-topics/wildfires/fire-threat-maps-and-fire-safety-rulemaking

b. Tier 3 fire-threat areas outline areas where there is an extreme risk (including likelihood and potential impacts on people and property) from utility-related wildfires.

As part of the map development process, the SFPUC conducted a thorough review of the proposed fire-threat area boundaries. Based on local conditions and historical fire data, we confirmed that all SFPUC assets are appropriately classified within the correct fire-threat areas (Figure 3). The SFPUC continues to rely on the High Fire-Threat District (HFTD) maps and designations to guide wildfire mitigation policies and operational practices.

Figure 2 – CPUC High Fire-Threat District Map

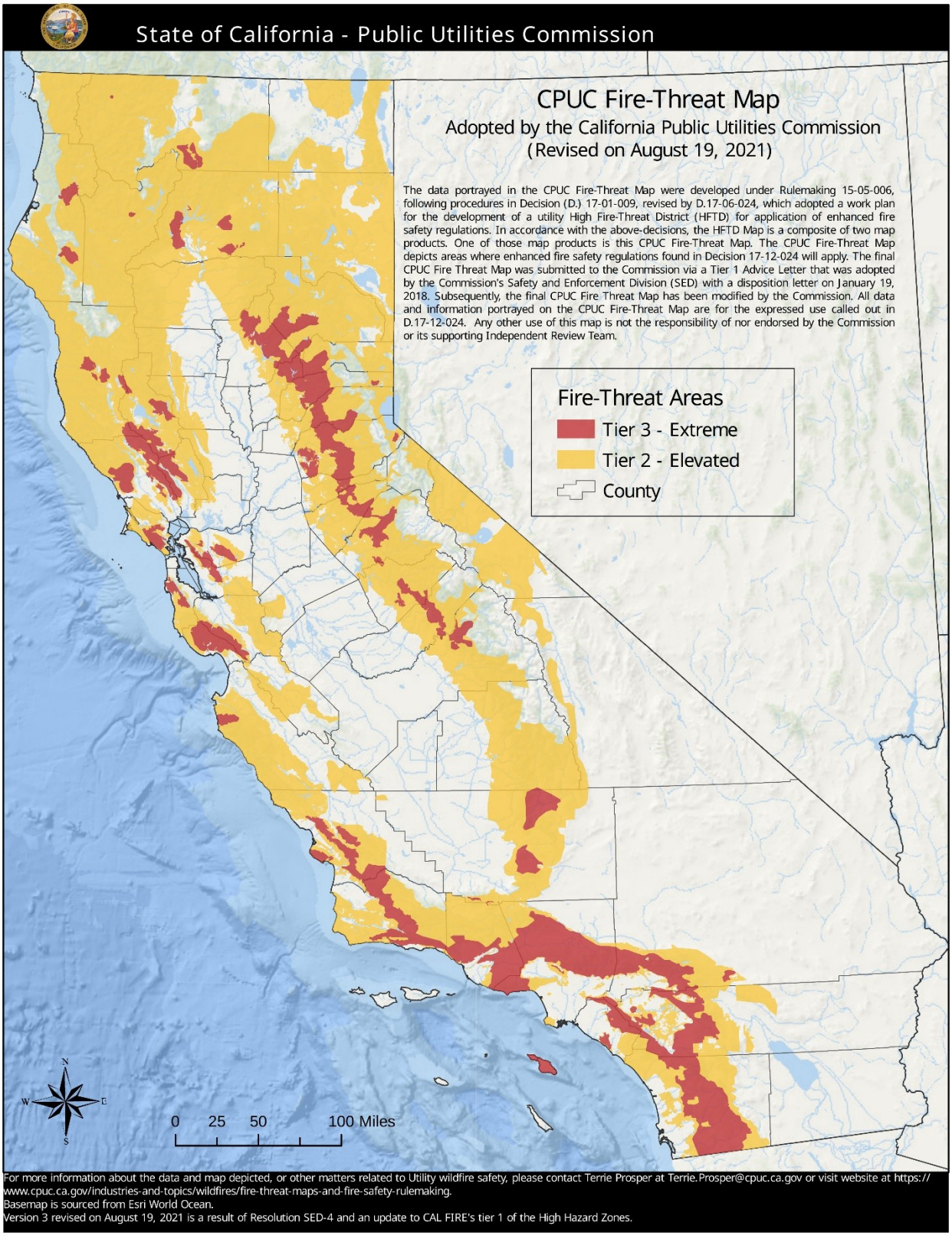
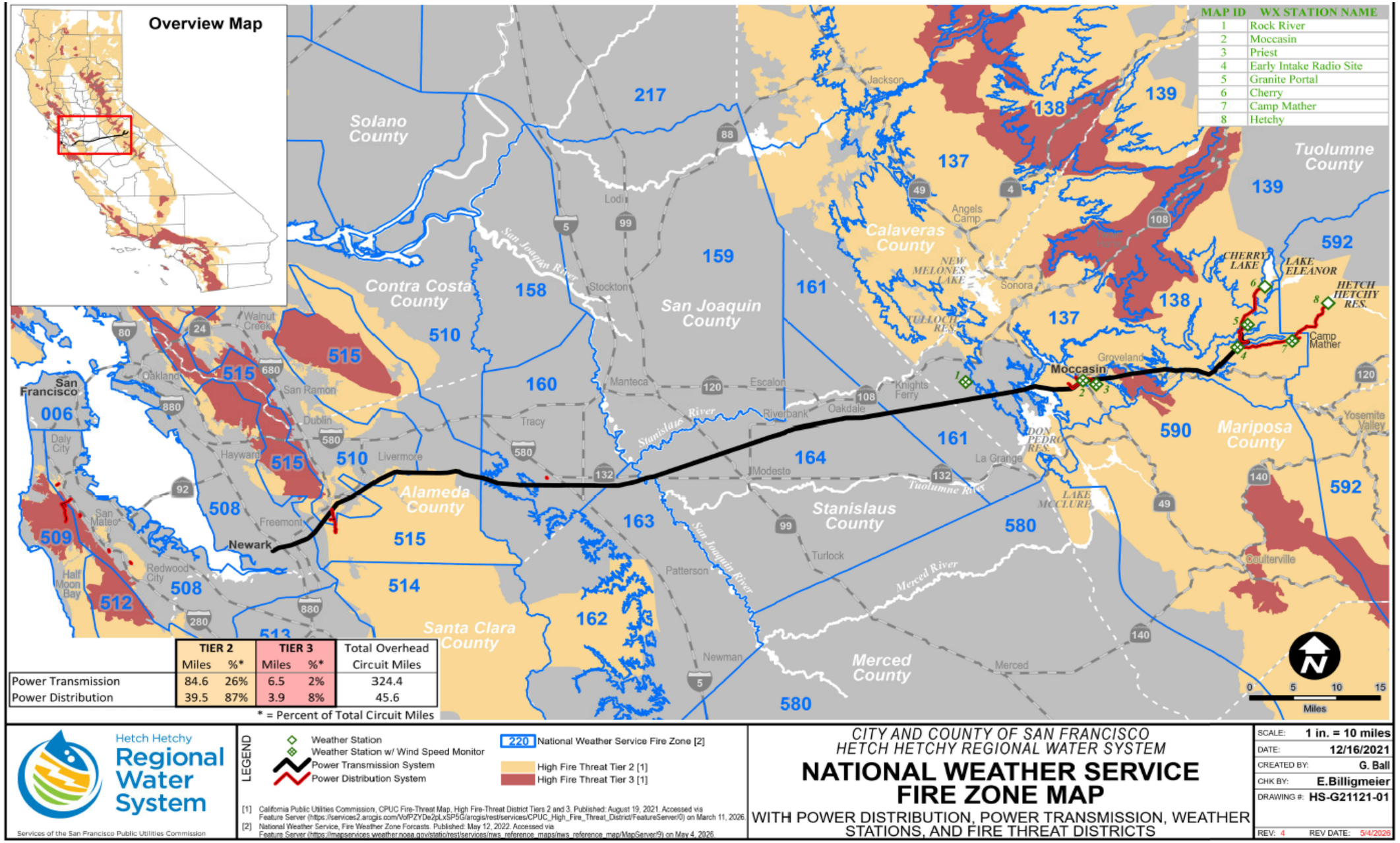


Figure 3 – SFPUC Electrical Assets and HFTDs



6.5 Changes to CPUC Fire Threat Map

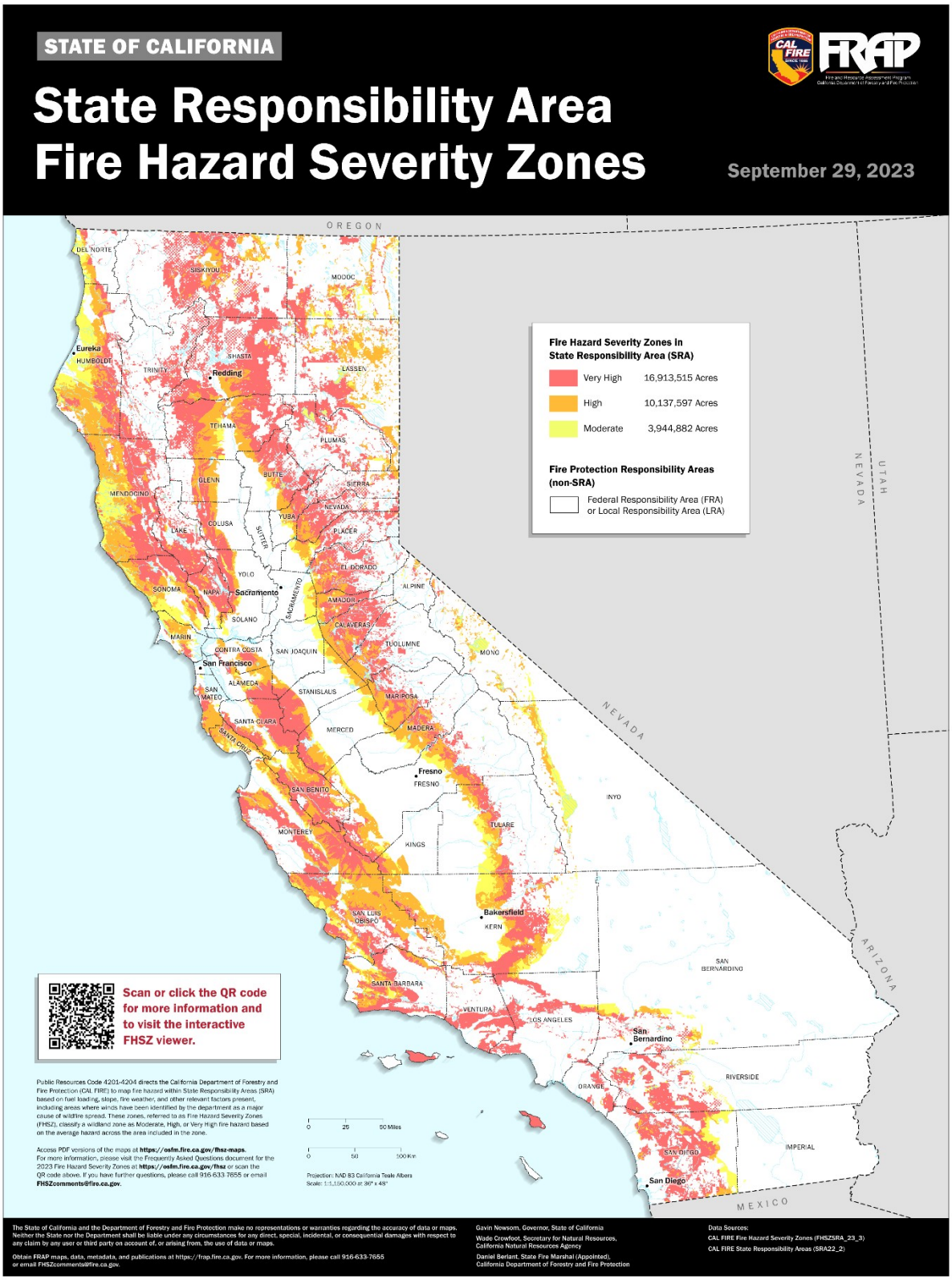
The CPUC fire threat map accurately reflects the wildfire threat area near SFPUC's electrical asset. The SFPUC agrees with the existing CPUC HFTD boundaries and makes no recommendation for expanding or minimizing the current HFTD.

6.6 Fire Hazard Severity Zone Map

SFPUC reviewed the CALFIRE Fire Hazard Severity Zone (FHSZ) map (Figure 4). The map provided additional validation on areas of greater fire risk. Analyzing this map in conjunction with the HFTD map provides a better understanding of the areas where the highest risk is. Figure 4 on the next page shows the FHSZ with an approximate overlay of where SFPUC electrical assets are located.

The FHSZ map is designed to plan for wildfire prevention at a community level. Additional information on community preparedness is discussed in Section 8 of this Plan.

Figure 4 – CALFIRE SRA FHSZ Map



6.7 Climate Change / Weather Risks

The National Oceanic and Atmospheric Administration (NOAA) defines climate change as long-term changes in the characteristics of Earth's climate system, including shifts in temperature, precipitation, sea level, ocean heat, ice cover, and atmospheric patterns over decades or longer. These changes affect natural systems and human activities worldwide.

NOAA reports that Earth's average surface temperature has increased by approximately 2°F (about 1°C) since the late 19th century (1850–1900), with the rate of warming accelerating in recent decades. The 10 warmest years in the global record have all occurred within the past decade, and 2024 was the warmest year observed to date. Climate change encompasses more than rising temperatures; it also includes sea level rise, shrinking snowpack and sea ice, increasing ocean heat content, and changes in the frequency and intensity of extreme weather events such as droughts, floods, and heat waves. These changes are already affecting critical systems that society depends on, including water resources, energy, transportation, ecosystems, agriculture, and human health.

Climate change has significantly increased the frequency, intensity, and duration of wildfires in California. Rising temperatures, prolonged droughts, and shifting precipitation patterns have created drier conditions, making vegetation more flammable. In higher elevations, reduced snowpack and earlier snowmelt extend the duration of fire seasons, in some cases well into the winter months. Unpredictable wind events, such as Diablo winds, can further accelerate wildfire spread. As climate change continues, wildfire risk in California is expected to increase.

Extended droughts are an ongoing reality for utilities operating in California and will continue to influence decision-making for the SFPUC wildfire mitigation programs and activities. A core mission of the SFPUC is to deliver high-quality drinking water to San Francisco residents. To support this mission, the SFPUC closely monitors precipitation patterns and snowpack conditions to ensure reliable water supply. Because drought is a natural component of California's climate variability, the SFPUC recognizes that periods

of severe and prolonged drought are often associated with elevated risk of large, catastrophic wildfires. SFPUC will continue collaborating with CMUA and other participating POUs in CMUA's Climate Change working group to evaluate future risks.

7. WILDFIRE PREVENTATIVE STRATEGIES

7.1 Situational Awareness

We continue to make significant advancements to enhance our ability to forecast and monitor real-time weather conditions to make daily operational decisions. This section describes our current situational awareness methods.

7.1.1 Technosylva Wildfire Operations (Professional)™ / Fire Potential Index (FPI)

Technosylva Wildfire Operations (Professional)™ performs a wildfire risk analysis on each SFPUC asset and produces a Fire Potential Index (FPI) rating for that asset. The SFPUC Fire Potential Index (FPI) is a predictive metric utilized to quantify wildfire ignition probability and subsequent fire behavior. Generated daily via the Technosylva Wildfire Operations platform, this zone-specific forecast classifies localized risk into three discrete operational conditions: Normal, Elevated, and Extreme. The underlying algorithm is derived from the Pacific Gas and Electric (PG&E) FPI framework, synthesizing historical fire occurrence data with real-time environmental conditions, including fuel moisture content, relative humidity, wind velocity, and ambient air temperature. The benefit of PG&E sharing its FPI data is that using the same data sources will allow the SFPUC to have an FPI model consistent with the PG&E FPI model, which has been tested and validated.

Operating Condition	Description
Normal	Large wildfires are not likely
Elevated	Large wildfires are possible, should an ignition occur
Extreme	Large, damaging wildfires are likely should an ignition occur.

Additionally, the application forecasts four different consequence risk metrics if an ignition were to occur at a specific asset. The four consequence risk metrics are (1) Fire Size Potential, (2) Population Impacted, (3) Buildings Threatened, and (4) Estimated Number of Buildings Destroyed.

SFPUC established a zonal framework that segments the overhead electrical system into nine distinct geographic zones. Each zone was delineated based on a combination of vegetation characteristics, topographic conditions, and proximity to HFTDs.

This methodology enables a more meaningful characterization of wildfire risk drivers across our service territory. Vegetation type informs fuel loading and combustibility, topography influences fire spread potential and wind behavior, and proximity to HFTDs reflects areas of elevated baseline risk as defined by state fire threat modeling.

Using these inputs, zone-specific FPIs are generated and provide a granular, data-driven assessment of relative wildfire risk. This approach supports operational and mitigation strategies, including inspection prioritization, vegetation management, system hardening, and situational awareness protocols.

By moving from a uniform system-wide assessment to a differentiated, zone-based framework, we enhance our ability to proactively manage wildfire risk and allocate resources in a manner that is commensurate with localized conditions.

Wildfire Operations (Professional)™, in conjunction with existing critical fire weather monitoring tools, will be used to support HHW, NRLMD, and WSTD field operations' daily work schedules and inform personnel of areas of risk and if any operating restrictions should be implemented. Additionally, Technosylva provides us with an automated daily FPI summary report for each of our nine zones. The reports are generated each day before 6:00 am PST and sent to users on the distribution list for operational planning.

7.1.2 Weather Monitoring

The SFPUC uses Technosylva and publicly available weather forecasts to support real-time operating decisions. In conjunction with Wildfire Operations (Professional)™, HHW obtains wind speed forecasts from NOAA's High-Resolution Rapid Refresh (HRRR) model, retrieving average and peak wind forecasts for the next 24-hour operating period. The automated process generates an hourly email with the forecast and sends it to HHW operations managers. Wind and weather data is reviewed daily and used to support operational strategies for the HHW overhead electrical lines to determine if any

operational restrictions should be implemented or if lines should be de-energized for public safety.

NRLMD also uses the Technosylva Wildfire Operations (Professional)™ to monitor weather for the Bay Area and Peninsula regions. This information is used to determine any operational restrictions for NRLMD field staff. Weather forecasts are distributed to staff through the Millbrae dispatch center via i-INFO.[14]

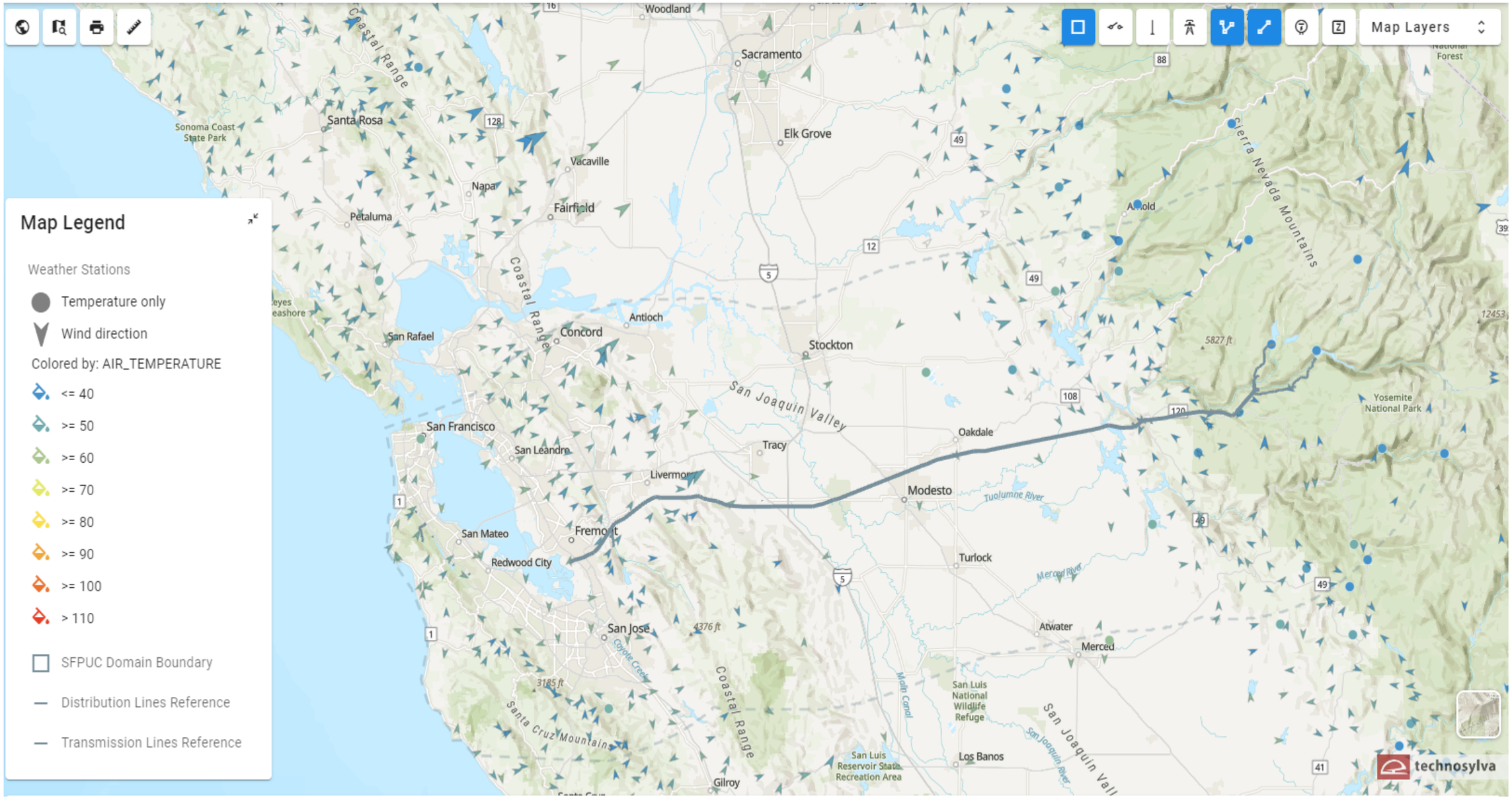
In addition to Wildfire Operations (Professional)™, HHW and NRLMD staff monitor fuel (vegetation) conditions by accessing publicly available information provided by the NWS, United States Forest Service (USFS), daily Project Activity Level[15] (PAL) rating, Bureau of Land Management (BLM), NOAA, and CALFIRE. SFPUC staff monitor the NWS for Red Flag Warnings.

7.1.3 Weather Stations

In addition to SFPUC-owned weather stations, the Wildfire Operations (Professional)™ application provides us with access to more than 300 publicly available weather stations providing, at minimum, temperature, relative humidity, and wind speed readings. These weather stations are situated near SFPUC assets, with up to a 25-mile buffer zone from those assets. Figure 5 shows a graphic of the weather station data now available to the SFPUC through the Wildfire Operations (Professional)™ application.

[14] https://dashboard.i-info.com/
[15] Project Activity Level is a decision support tool designed to help fire and timber resource managers establish the level of industrial precaution for the following day. This tool utilizes outputs from the National Fire Danger Rating System (NFDRS).

Figure 5 – Weather Stations



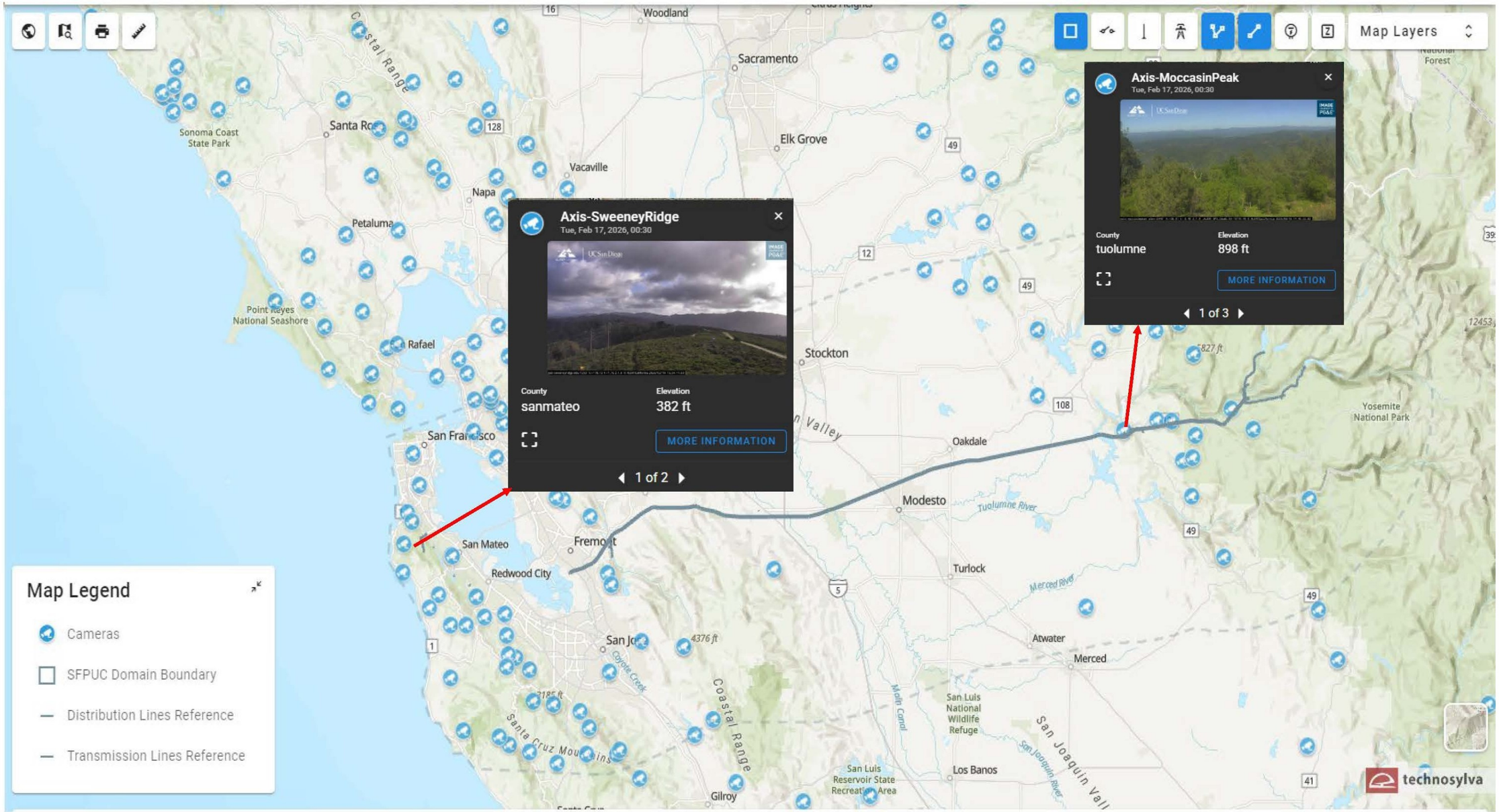
7.1.4 ALERTCalifornia Cameras[16]

The Wildfire Operations (Professional)™ application has integrated live feeds to more than 100 cameras providing viewsheds of areas in proximity to SFPUC electrical assets. Figure 6 displays the cameras and live feeds available to the SFPUC in the application.

In previous WMPs, the SFPUC reported on an ongoing project to install three additional ALERTCalifornia cameras at Poopenaut Peak near the O'Shaughnessy Dam site in Yosemite National Park, Burnout Ridge near Cherry Lake, and Intake Ridge near Kirkwood Powerhouse.[17] These areas are in Tier 2 and 3 HFTDs where the SFPUC operates overhead lines. The increased monitoring of the area will enhance our situational awareness, and these cameras will be added to the Wildfire Operations (Professional)™ application. The ALERTCalifornia cameras are an important situational awareness tool for HHW. To streamline the licensing and leasing process for these three cameras, HHW has decided to install and operate them internally, rather than going through a third-party vendor. In 2025, we coordinated with UCSD to replace one camera that is connected to the ALERTCalifornia system via Starlink satellite internet. We are continuing to coordinate with UCSD to install the additional stations mentioned above.

[16] ALERTCalifornia
[17] SFPUC 2024 Wildfire Mitigation Plan, Sec. 5.1.14

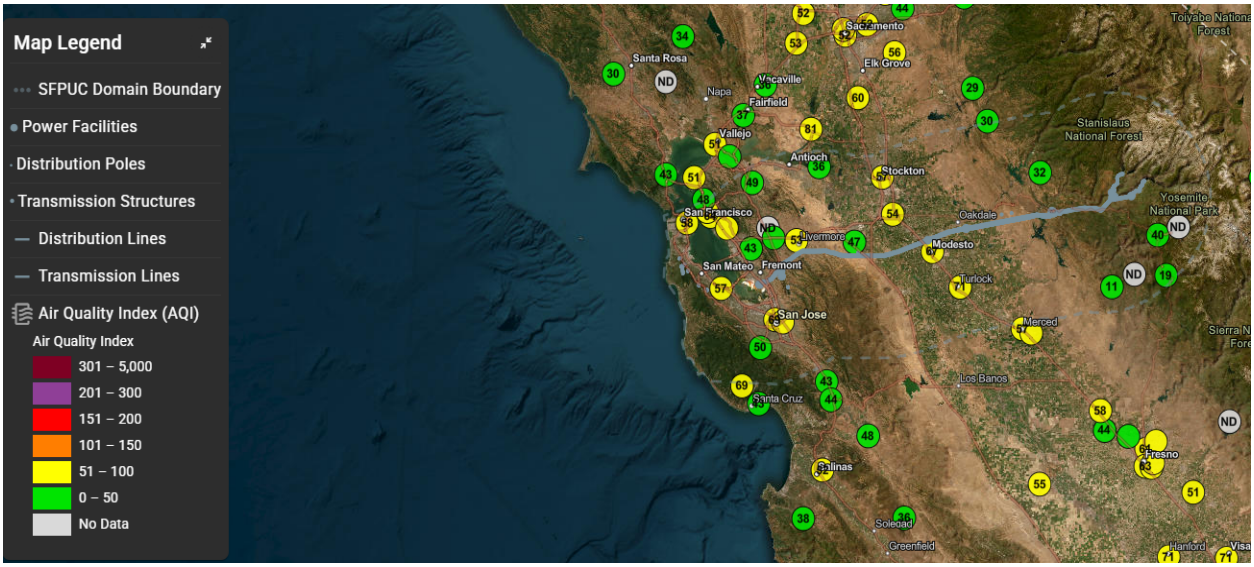
Figure 6 – ALERTCalifornia Cameras



7.1.5 Air Quality Monitoring

Air quality is monitored for staff safety, especially when nearby wildfire smoke or other known air quality pollutants are present. We use services such as PurpleAir.com,[18] to view air quality index monitors in all SFPUC regions. Additionally, The Wildfire Operations (Professional)™ application also has an air quality alert module, which can be used to supplement other data sources (Figure 7).

Figure 7 – Air Quality Monitors



7.2 Design and Construction Standards

The SFPUC uses the requirements of CPUC GOs 95,[19] 165,[20] 174,[21] NERC Transmission Vegetation Management Program FAC-003,[22] and applicable NESC guidelines to guide construction and maintenance, and operate a safe, reliable, and resilient grid. The SFPUC has effective programs for construction, inspections, and maintenance of transmission, distribution, generation, and substation assets within the HFTD, and for taking corrective action within specified timeframes for all issues that require remediation.

[18] PurpleAir.com
[19] GO 95 – Overhead Electric Line Construction
[20] GO 165 – Inspection Cycles for Electric Distribution Facilities
[21] GO 174 – Rules for Electric Utility Substations
[22] NERC, FAC-003-5 Transmission Vegetation Management Program

Our "Overhead Distribution Construction Standards" specify that all new construction shall be built to provide maximum clearances (based on raptor construction principles), and SFPUC wildfire mitigation requirements to provide phase separation and maximum long-term durability. Additionally, the standards require that any new construction or corrective maintenance of non-exempt equipment in HFTDs shall have CALFIRE-approved exempt equipment and infrastructure hardening. Composite cross-arms, pole wrap, and composite poles are considered during the job planning phase.

To support more risk-informed decisions for the construction and maintenance of our electrical assets, the Wildfire Operations (Professional)™ application was used to help inform the updated Overhead Distribution Construction Standards. The lines we have identified that provide power to critical water infrastructure were overlaid with the HFTD boundaries and SFPUC zones to determine the potential wildfire risk. This also informed us where system hardening measures would be of most benefit during replacement.

7.3 System Hardening

To reduce wildfire risk and improve system reliability, SFPUC is implementing a range of system hardening projects. The sections below describe these efforts and their impact.

7.3.1 Replace Wood Poles

The SFPUC has updated its Overhead Distribution Construction Standards to state that when replacing poles in the HFTD, consideration will be given to replacement with composite poles and composite cross-arms.

7.3.2 Pole Wrap

In 2025, HHW installed Hexion ArmorBuilt™ pole wrap on distribution poles. This brings our total to 255 distribution poles wrapped in the Tier 2 HFTD. These poles are in areas where access is limited due to terrain and serve critical facilities which require backup generators if distribution power is lost. Hexion ArmorBuilt™ is "[d]esigned to extend the lifespan of wood utility poles by protecting them from the effects of wildfire and rot."[23] In

[23] armorbuilt-retrofit-sheet.pdf

2026, 67 poles in the Sunol area (Tier 2 HFTD), will be wrapped, adding additional protection to the distribution system.

7.3.3 Replacement of Non-Exempt Equipment

SFPUC is working on replacing non-exempt equipment with exempt equipment on distribution poles, because non-exempt equipment could pose a higher risk for ignition. We have identified 85 poles that host non-exempt equipment. The first project to replace this equipment in Tier 2 HFTD started in May 2026.

Long lead times for procuring equipment has made timing of construction a challenge. The work for these projects will be performed by both HHW line crews and contractors.

7.3.4 Avian Protection

In 2023, our Overhead Distribution Construction Standards were updated to include a section addressing raptor-safe construction and wildlife protection. The policy states that bird and raptor protection shall be primary consideration in the design of new and reconstructed distribution facilities.

7.3.5 Overhead to Underground Conversion

An HHW project to extend an existing underground water pipeline to a campground in Yosemite National Park was reassessed in November 2024 to include the conversion of approximately 4,123 feet of existing 22 kV overhead distribution line to underground.

SFPUC completed geotechnical investigations and construction drawings were completed in 2025. Based on these drawings, a construction contract is currently being developed that will go out to bid in fall 2026. The project management team anticipates construction will begin in spring/summer 2027 and be completed in 2028. Undergrounding this overhead line will reduce SFPUC's wildfire risk profile within a Tier 2 HFTD.

7.3.6 Alternate Generation Source

SFPUC has included a candidate micro-hydropower project in the 10-Year Capital Budget. The project scope includes installing two micro-hydropower generation units

within O'Shaughnessy Dam. Once operational, these units will reduce wildfire risk by enabling the de-energization or removal of existing overhead power distribution lines between Camp Mather and the O'Shaughnessy Compound.

Project funding is not expected to be appropriated until Fiscal Year 2034–35. In the meantime, we are proceeding with the replacement of non-exempt equipment on the existing distribution poles within the project area.

7.4 Vegetation Management

The SFPUC considers vegetation management the keystone of its wildfire mitigations. Previous wire down events were primarily from downed trees and branches. Trimming and removal of trees and vegetation has reduced these events and has been cost-effective. SFPUC meets or exceeds the industry standards for vegetation management around transmission lines, distribution lines, and substation facilities, and maintains compliance with the SFPUC internal Hetch Hetchy Water and Power Transmission Vegetation Management Program (TVMP). SFPUC exceeds vegetation management industry standards by removing trees and brush from outside of our ROW to reduce the possibility of these becoming a fire risk, setting vegetation trimming thresholds to account for three or more years of growth, versus a reactive trimming that just keeps the vegetation out of the regulated non-compliance zone, which is based on voltage. By utilizing the IVM principles, non-compatible vegetation is selectively thinned or applied with herbicide, which benefits the growth of lower risk tree and brush species. Transmission-level facilities comply with NERC FAC-003, where applicable.

For vegetation management on both transmission and distribution level facilities, the SFPUC uses the standards in California PRC[24] §§§ 4291, 4292, and 4293[25] as well as in

- CPUC GO 95 Rule 35[26]

[25] PRC §§§ 4291–93
[26] GO 95 – Overhead Electric Line Construction

- CPUC GO 95 Appendix E Guidelines to Rule 35[27]
- CALFIRE's Power Line Fire Prevention Field Guide – 2021 edition[28]
- American National Standards Institute (ANSI) A300[29]

The recommended "time-of-trimming" guidelines in CPUC GO 95 do not establish a mandatory standard for vegetation clearances but provide helpful guidance to utilities. We use specific knowledge of tree growth rates and tree species to determine the appropriate time-of-trimming clearance in each circumstance.

The SFPUC performs VM with two groups: 1) the HHW group inspects and maintains vegetation on the HHWP Project from O'Shaughnessy Dam to Newark (see Figure 8); and 2) the NRLMD maintains the vegetation around the WSTD facilities and distribution poles and lines in San Mateo and Alameda County.

[27] CPUC GO 95 § 3 Rule 35 – Vegetation Management
[28] California Power Line Field Prevention Field Guide, 2021 Edition
[29] ANSI A300 Tree Care Standards

Figure 8 – Example Distribution ROW



The HHW ROW VM labor crew is made up of one Water and Power Maintenance Supervisor, one laborer supervisor, one operating engineer, two certified arborists, and five laborers. A Certified Arborist with certifications from the International Society of Arboriculture (ISA), ISA Certified Utility Arborist, and ISA Tree Risk Assessment Qualified (TRAQ) complete the inspections.

The NRLMD VM crew is comprised of three arborists and three to five seasonal watershed workers responsible for the Alameda and Peninsula Watershed. Two registered professional foresters support the work (one for the Alameda Watershed and one for the Peninsula Watershed).

Additionally, HHW and NRLMD hire 12 to 15 seasonal employees to remove undesirable vegetation around SFPUC facilities and the ROWs. These positions usually start work in early June and end in October.

7.4.1 Annual Vegetation Management Work Plan

The Annual Vegetation Management Work Plan (AVMWP) is created by the ROW Manager and identifies the facilities to be managed and any proposed work, with start and completion dates. VM work across the ROW is planned and scheduled annually. VM activities are listed and described in the Annual Vegetation Management Work Plan (AVMWP) to ensure VM work is conducted as scheduled. The AVMWP is reviewed quarterly and modified as needed in response to changing conditions or findings from vegetation inspections. The work plan identifies the facilities inspected the previous year, proposed work, and completed work. HHW and WSTD use Maximo (IBM™) to generate VM work orders. Maximo is a computerized asset and maintenance management system (CMMS) for managing our programmatic maintenance and repair program. Preventative Maintenance (PM) work orders for detailed transmission and distribution line inspections and substation inspections are managed through Maximo. NRLMD uses ArcGIS Field Maps to track vegetation signed up for treatment.

7.4.2 Vegetation Inspections for Transmission Lines

Ground or aerial inspections (patrol) of all vegetation near the 115 kV and 230 kV transmission lines, both in the HFTD and non-HFTD, are performed annually. Inspection details, including the name of the inspector and date and line section, are documented in ArcGIS Field Maps, and noted on the HHW AVMWP. These inspections identify conditions where vegetation may encroach within the Minimum Vegetation Clearance Distance (MVCD) for energized facilities before the next scheduled predictive control treatment. Attention is given to visual assessments of trees within the strike zone of energized facilities to identify tree defects that could cause a tree, or parts of a tree, to fall directly onto overhead high-voltage conductors. These trees undergo additional inspections, including a detailed 360-degree visual evaluation to determine the presence, significance, and severity of tree defects and risks.

The most common corrective maintenance work identified in 2025 were routine topping of almond and walnut trees and hazard tree removals of Ponderosa Pine. A portion of the SFPUC transmission ROW travels through the Central Valley, which is a non-HFTD.

HHW inspectors and the ROW Permit Liaison consistently work with the farmers to educate them on maintaining proper planting distance from our transmission ROW. A challenge we face is keeping an updated contact database for all the property owners. Ownership can change, and often those who plant the orchards may not necessarily be the owner(s). We strive to contact each landowner before any trees need to be trimmed or removed.

7.4.3 Vegetation Inspections for Distribution Lines

The HHW distribution lines are annually patrolled and inspected by ground and air for vegetation clearances. The HHW arborist performs ground inspections. The aerial inspections allow the arborist and VM crew to inspect vegetation that may be encroaching within the MVCD, which may require corrective maintenance work.

The NRLMD-certified arborist performs annual inspections of vegetation in proximity to WSTD distribution lines in the Alameda and Peninsula watersheds. The arborist submits corrective maintenance work order prescriptions to the NRLMD tree crews for mitigation.

Inspection details, including the inspector's name, date, and line section are documented using Maximo, ArcGIS Field Maps, and noted on the HHW AVMWP. The HHW line crew, VM Crew, and Watershed Keepers report additional corrective maintenance items observed during daily work to the ROW VM Manager to generate a corrective maintenance work order through Maximo.

The most common VM corrective maintenance work along the distribution lines in the HFTD was hazard tree removal of Ponderosa Pine to meet the standards in GO 95 Rule 35.

7.4.4 Vegetation Inspections for Substations, Switchyards, Powerhouses, and Habitable Structures

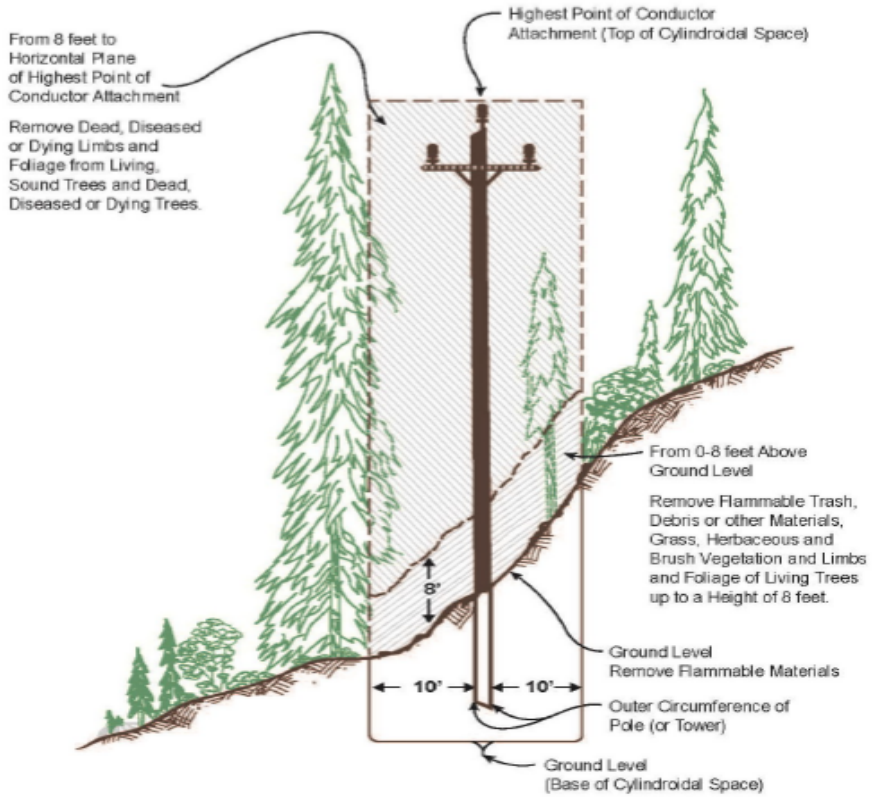
The SFPUC performs annual defensible space inspections around substations, switchyards, powerhouses, and habitable structures in compliance with PRC § 4291, including jointly operated substations with a neighboring utility. We use a CALFIRE-

developed inspection form attached to the inspection work order. Any follow-up work is documented on the inspection work order, and a follow-up work order is created for the vegetation management crew to trim or remove any vegetation that is non-compliant. The powerhouses and switchyards are inspected twice each year, once during the annual overhead conductor inspection and again when they are inspected for PRC § 4291 compliance.

7.4.5 PRC § 4292 Firebreak Clearance Requirements

The SFPUC meets the requirements of PRC § 4292. Poles that are identified as having non-exempt equipment (e.g., expulsion fuses, lightning arrestors, etc.) have annual PM work orders to clear the base of the pole of all flammable materials and vegetation with a 10-foot radial circle down to bare mineral soil as well as removing all limbs and foliage up to a height of eight feet (Figure 9). The SFPUC maintains an inventory in Maximo of all poles that host both exempt and non-exempt equipment, including equipment types such as cut-outs, switches, and lightning arrestors.

Figure 9 – PRC § 4292 Firebreak Clearance Requirements



7.4.6 Herbicide Use

SFPUC applies herbicides on the 230 kV Right-of-Way in Tuolumne and Stanislaus counties; these applications conform with the San Francisco Integrated Pest Management Ordinance[30] and the SFPUC's TVMP. To ensure environmental compliance with State and Federal requirements, all herbicide application activities follow mitigation and monitoring requirements of the California Environmental Quality Act under the Reliable Power Project Mitigated Negative Declaration. All targeted herbicide treatments are performed by a Qualified Applicator in accordance with written recommendations from a California Licensed Pest Control Advisor.

[30] Chapter 3: Integrated Pest Management Program, San Francisco Environment Code

7.4.7 Satellite Vegetation Monitoring

Following a successful pilot project, HHW has continued its contract with LiveEO to provide satellite vegetation imaging services.

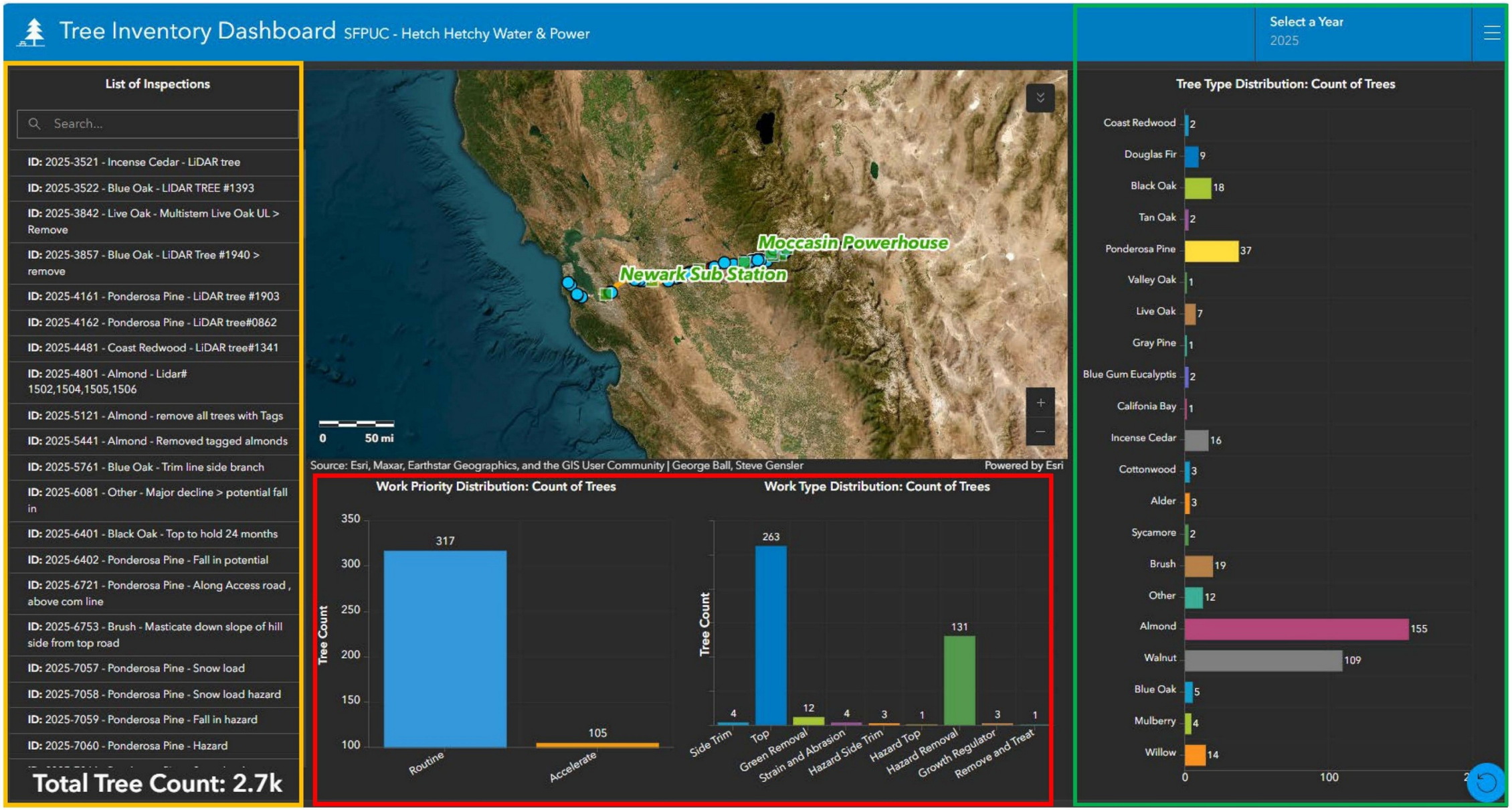
HHW uses this data to track trends on growth and future vegetation work needs. Additionally, HHW shares satellite imagery information with the NRLMD vegetation management team and consults with them on any areas where vegetation may be a concern.

7.4.8 Vegetation Management Dashboard

SFPUC tracks vegetation inspections across its transmission and distribution systems using ArcGIS Field Maps data and Maximo, with results displayed in a dashboard format. The dashboard displays data captured in a calendar year.

The modules display overall inspection progress by circuit miles for both transmission and distribution and further separate inspection tracking by distribution and transmission, switchyards, substations, and powerhouses. From left to right, Figure 10 shows the total number of trees that have been tracked in the application since 2021 (orange highlight). The center graph (red highlight) shows the work priority and type. Finally, the right-hand column (green highlight) shows the types of tree species. HHW regularly reviews the dashboard to analyze important ROW trends including inspections by work priority and count of trees by work type to reduce high-priority and hazard tree work.

Figure 10 – Vegetation Management Dashboard



7.4.9 Defensible Space Inspections

HHW performs annual PM defensible space inspections that conform with PRC § 4291 around buildings and structures. These inspections include areas around substations, switchyards, and powerhouses. Vegetation is removed around facilities to maintain, at minimum, a 100-foot radius of defensible space.

7.4.10 Integrated Vegetation Management (IVM)

The SFPUC has a ROW IVM Policy that applies to the entire SFPUC 230/115 kV transmission ROW, and the distribution ROW. Federal and state land management agencies consider the IVM used by SFPUC to be the utility industry's best management practice (BMP).

7.4.11 Vegetation Management Contracts

The SFPUC has two master as-needed tree service contracts that cover projects in the Central Valley going east to O'Shaughnessy Dam and projects in the Bay Area and Peninsula areas. The firms under contract hold D49 Tree Service Contractor Licenses[31] and are Licensed Timber Operators (LTOs)[32] with an "A" license or have an LTO available as a subcontractor.

From January 2023 to December 31, 2025, SFPUC contracted 22 projects under the master as-needed agreements for a total cost of $7,059,801. These projects range from removing undesirable brush species and replanting desirable vegetation, to the removal of hazard trees along the transmission and distribution ROW. All 22 projects were completed to satisfactory standards. There are four additional projects planned for bidding in 2026.

In addition to the master as-needed contracts, NRLMD maintains contracts for mowing and mastication. In 2025, 130 acres of mastication and 90 acres of roadside mowing were

[31] https://www.contractorsischool.com/learning-resources/c49-tree-and-palm-contractors-license-2024
[32] https://www.fire.ca.gov/what-we-do/natural-resource-management/forest-practice/licensed-timber-operators

addressed under these contracts. These projects occurred in various locations in Alameda and San Mateo counties, which encompasses areas of Tier 2 and 3 HFTD.

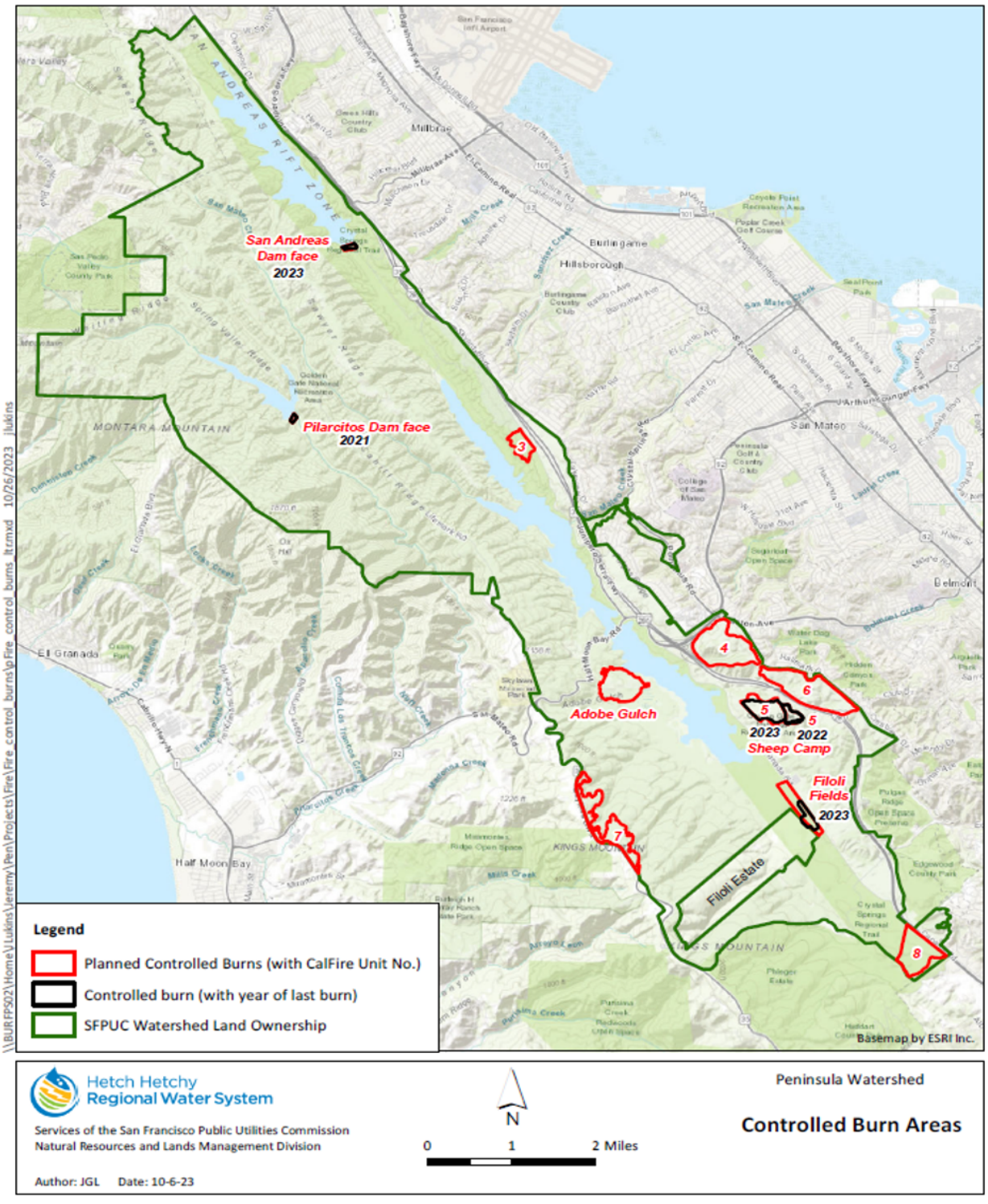
In 2025, NRLMD continued their partnership with CALFIRE to conduct more than 52 acres of prescribed burning in the Peninsula Watershed (see Figure 11). The primary objective of the burn is to reduce brush densities and fuels within the Highway 280 corridor and the Wildland Urban Interface, manage non-native and invasive weeds in grasslands, and promote habitat enhancement while reducing brush encroachment in native grasslands. The 2025 burn was limited to six acres due to dangerous wind conditions. NRLMD and CALFIRE intend to revisit the project area in 2026 to complete the additional 45 acres.

Figure 12 shows completed prescribed burn areas that have taken place in previous years. This is the fourth year that CALFIRE and NRLMD have partnered to conduct prescribed burns as part of an overall 700-acre fuels reduction project, which is planned to take place through 2030. The map was not updated in 2025 because the burn was not completed. It will be updated following its completion in 2026.

Figure 11 – 2025 NRLMD/CALFIRE Prescribed Burn Area



Figure 12 – Previous NRLM/CALFIRE Prescribed Burn Areas



7.4.12 Quality Assurance / Quality Control (QA/QC)

HHW performs Quality Assurance / Quality Control (QA/QC) on its VM work for both transmission and distribution facilities. The QA/QC requires 5% of the distribution and transmission system VM work to be audited annually and the findings reported to the ROW manager. The auditor will evaluate the quality of the inspection as well as the VM that was completed. All VM work shall comply with ANSI A300 standards and applicable regulatory requirements. The audit shall document the assets audited, auditor, date, and details of findings. This process aims to identify areas for improvement and facilitate training based on the findings to improve the quality of the DVMP and TVMP.

HHW VM work performed under contract is monitored by our internal Construction Inspectors. At least one inspector is at the job site daily to ensure work is being performed to SFPUC standards, and safety protocols are being followed. A final job walkthrough is required before the project can be deemed complete, and payment is issued.

When VM work is performed in the Peninsula and Alameda watersheds by NRLMD, the Project Manager is onsite at each job to ensure the work is being performed to SFPUC standards and safety protocols are being followed. All specifications must be met for payment to be issued to the contractor.

7.5 Overhead Asset Inspections

The SFPUC follows the inspection requirements provided in CPUC GO 165[33] and CPUC GO 95 Rule 18.[34]

7.5.1 Asset Management System

HHWP and WSTD use IBM Maximo as the system of record that connects the electrical asset, the required inspection, the inspection results, and any corrective work that results from the inspection. The two types of work orders (preventative maintenance and corrective) serve different purposes. The basic workflow is, Electrical Asset → Preventive

[33] GO 165 – Inspection Cycles for Electric Distribution Facilities
[34] CPUC GO 95 Rule 18 – Resolution of Safety Hazards Discovered by Utilities

Maintenance (PM) Program → Inspection Work Order → Inspection Results → Deficiency Identified? → Corrective Work Order → Repair/Resolution → Maintenance History. Table 5 below further illustrates this workflow.

Table 5 – Maximo Workflow

Maximo Function	Preventive Maintenance / Inspection WO	Corrective WO
Purpose	Perform the required recurring inspection	Address a problem identified during an inspection
Trigger	Established inspection cycle or PM schedule	A deficiency or condition requiring corrective action
Typical activity	Inspect pole, conductor, hardware, equipment, clearances, condition, etc.	Repair, replace, adjust, or otherwise mitigate deficient equipment
Result	Documents that the inspection occurred and records findings	Documents how the identified condition was resolved
Asset history	Establishes inspection history	Establishes repair/corrective-maintenance history

All transmission, distribution, and substation assets are documented in Maximo with a current count of all primary and secondary distribution poles with height, class, installation date, and installed equipment, including whether the poles support telecom equipment.

7.5.2 Transmission Inspections and Maintenance

SFPUC owns and maintains transmission structures/assets, and detailed ground inspections are performed over a five-year cycle. Detailed ground inspections consist of checking the condition of access roads and gates, tower numbers, tower danger signs, tower concrete footings, grounding condition, steel tower members (checking for rust and condition of metal), and powerline tree and limb encroachments.

Additionally, Aerial patrols of all transmission lines and structures are performed annually by the HHW Line Crew and consist of a visual inspection of tower members and related hardware, dampers, conductors, and insulators. Thermal infrared scans of tower equipment are performed on an annual basis. Any defects or deficiencies discovered through these patrols are reported to the Planning work group, and a work order to correct

the issue is generated through Maximo. See Appendix 2 – SFPUC Wildfire Mitigation Metrics for annual detailed transmission tower inspections scheduled and completed, and the corrective maintenance orders generated and completed. The transmission system's most common corrective maintenance work orders were to replace tower numbers and danger signs.

7.5.3 Hot or Cold Wash

The SFPUC conducts annual PM by performing hot or cold wash of overhead line towers, insulators, switches, and equipment in substations/switchyards. The purpose of washing is to remove contaminants from the insulators and other associated hardware, which reduces the likelihood of tracking or arcing, which could degrade the equipment and ultimately lead to failure (Figure 13). The assignment and completion of hot or cold washing work orders are tracked in Maximo. The line crew supervisor verifies the completion of the work orders.

7.5.4 Distribution Inspections and Maintenance

The SFPUC meets the inspection requirements of CPUC GO 165[35] and GO 95, Rule 18[36] for distribution lines. GO 165 establishes minimum requirements for electrical distribution facilities regarding inspections (patrols, detailed, and intrusive inspections), condition ratings, schedule, remediation of corrective actions, and reporting and record-keeping to ensure safe and reliable electrical service. The SFPUC contracts with a helicopter vendor to patrol distribution lines annually with a SFPUC QEW. During the aerial patrols, the QEW looks at the tops of the poles for rot and damage. Intrusive pole inspections are performed on a 10-year cycle. Corrective maintenance work orders are created during the inspection and assigned a priority rank for remediation. See Appendix 2 – SFPUC Wildfire Mitigation Metrics for corrective maintenance performed in 2025.

[35] GO 165 – Inspection Cycles for Electric Distribution Facilities
[36] GO 95 Rule 18 – Reporting and Resolution of Safety Hazards Discovered by Utilities

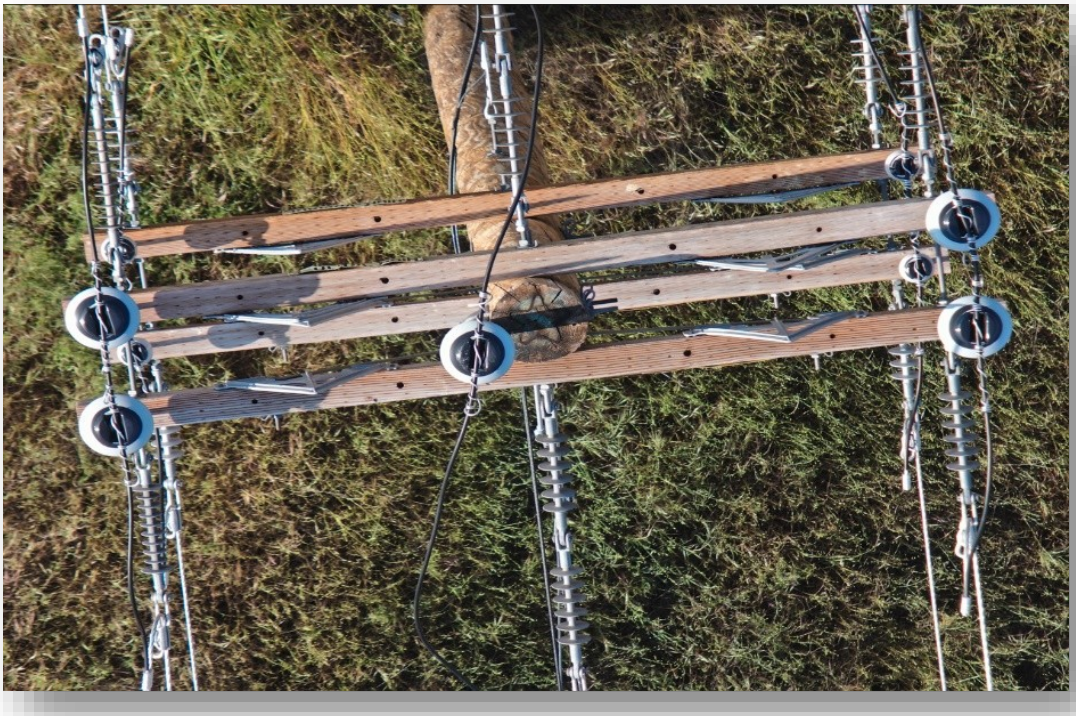
Figure 13 – HHW Line Crew Hot Washing



7.5.5 *Drone Inspections*

SFPUC expanded its drone use in 2025. Drone flights are now being used for a variety of projects for both water and power. The drone camera is capable of 200x zoom, which allows the drone to be flown a safe distance from the overhead conductors. Based on the clarity and detail of the images, the pilot proved to be successful, and we continue to evaluate a routine inspection schedule on specific distribution segments in the HFTD that are difficult to access on foot. We will continue to perform annual helicopter inspections as the drone has limited flight distances based on battery capacity and safety. Figure 14 illustrates the capabilities of drone images.

Figure 14 – Drone Photo of a Distribution Pole



7.6 Powerhouse / Substation / Switchyard Inspections and Maintenance

SFPUC meets the requirements of CPUC GO 174, Rules for Electric Utility Substations.[37] The SFPUC performs detailed substation/switchyard inspections monthly (See Appendix 2 – SFPUC Wildfire Mitigation Metrics) and records findings and completion dates in Maximo. Any maintenance or repairs are reported to the Planning team, and a corrective maintenance work order is generated in Maximo.

PM work orders are set up in Maximo. Table 6 below shows the assets, equipment, and frequency of infrared inspections.

[37] CPUC GO 174 – Rules for Electric Utility Substations

Table 6 – Infrared Inspections

Asset	Equipment	Frequency
Powerhouses	Connectors, Switches, and Circuit Breakers	Annual
Powerhouses	13.8 kV bus way between GSU and Switchgear	3 Month
Switchyards/Sub stations	Connectors, Switches, and Circuit Breakers	Annual
Towers	Test Shoes, Connectors, and Splices	Annual
Transmission Line Segments	Test Shoes, Connectors, and Splices	Annual

7.7 Workforce Training

The SFPUC has implemented complementary training programs for our workforce to support a safer work environment, ensure continuous improvement, and help reduce the risk of our facilities being the origin or contributing source for the ignition of a catastrophic wildfire.

7.7.1 Basic Fire Training

Each spring, HHW requires staff to attend a basic fire training workshop. The training consists of basic fire training regarding minimizing potential fire dangers, practicable actions to suppress fires, the importance of reporting fires, basic fire safety, and the use of fire mitigation and suppression equipment, including hand tools, fire extinguishers, and water pumps. This training supports the increased fire preparation and response capabilities of the HHW field staff and other support staff.

7.7.2 VM Training

VM training is conducted on an annual basis for ROW VM crew(s). The training covers all current vegetation clearance regulations per GO 95 Rule 35, PRC §§§ 4291- 93, NERC FAC-003, and herbicide application.

7.8 Recloser Policy

The SFPUC utilizes automatic reclosers for system reliability. Reclosers are used to attempt to automatically restore service following a risk event that results in the recloser

operating. For certain types of faults, the automatic operation of the recloser could introduce a higher degree of risk for ignition of a wildfire during elevated or extreme fire weather conditions.

The SFPUC will disable all automatic reclosers when the Adjective Fire Danger Rating (AFDR) condition changes to “High” and the FPI changes to “Elevated.” The automatic reclose function will remain off until the AFDR condition is reporting “Low,” and the FPI changes to Normal, usually following the onset of fall/winter precipitation.

When a line outage occurs during periods when reclosing is disabled, field personnel will perform an aerial or ground patrol of the line, from the recloser to the end of the line, prior to restoring service. If a fault (failure) is identified, it will be repaired or made safe before re-energizing the line.

7.9 Operational / Emergency Response Procedure

The SFPUC has three primary methods for being notified of a system event. When the SFPUC learns of a system event, they will dispatch the appropriate field personnel to investigate.

1. Notification via the SFPUC Supervisory Control and Data Acquisition (SCADA) system.
    a. The Control Center personnel will dispatch the appropriate field personnel to investigate the cause of the SCADA alarm.
2. Notification by personnel when the issue is identified on a patrol.
    a. When an issue is identified on a field patrol, the issue will be corrected as follows:
        i. Immediate remediation if the issue poses or could pose a threat to public safety or continuity of service

ii. If the issue does not pose a threat to public safety or continuity of service, it will be reported to the Planning team, and a work order will be generated through Maximo to correct the issue based on established remediation timelines.

3. Public Notification.

   a. The SFPUC will dispatch field personnel anytime the public alerts us to a potential hazard.

During wildfire events, the SFPUC may assign a Liaison Officer to coordinate with emergency response agencies and local government agencies. If the wildfire is near SFPUC assets, an Incident Command Post or Emergency Operations Center could be activated, and an ICS organization could be used to manage the operational periods of the event.

7.10 Standardized Emergency Management System

The SFPUC is Standardized Emergency Management System (SEMS) and National Incident Management System (NIMS) compliant and utilizes the ICS structure to respond to local and regional emergencies. The SFPUC has staff that are trained to fulfill certain roles under the ICS and can be integrated into an ICS structure.

The SFPUC does not initiate our ICS structure during RFWs. When critical fire weather forecasts meet or exceed internal thresholds, the Control Center may dispatch QEWs to patrol power lines and stand by for potential de-energization. The Control Center maintains constant communication with SFPUC management regarding changing weather conditions and may execute a de-energization event if those triggers are met.

Our coordination and response to external PSPS events is discussed in the following Section.

7.11 De-energization for Public Safety

During critical fire weather conditions, the SFPUC may de-energize transmission and/or distribution lines to reduce the risk that SFPUC facilities could be the origin or contributing source for the ignition of a catastrophic wildfire. This strategy does not have significant impacts on the SFPUC's water delivery operations to the Bay Area since there are hydrogenator bypass systems and the presence of backup generators at critical facilities. The SFPUC transmission lines are considered gen-ties. As a result, de-energization has no impact the California Independent System Operator (CAISO) grid operations.

The SFPUC distribution lines in the Stanislaus National Forest are in HFTD Tier 2 and provide power to four customers. Bay Area distribution lines are in HFTD Tier 2 and 3 and have interconnections with neighboring utilities providing alternate delivery paths which do not traverse an HFTD. When SFPUC de-energizes distribution or transmission lines for public safety, it has no consequences on first responder, critical health, or communication infrastructure.

The SFPUC continues to evaluate the de-energization criteria other utilities use in decision-making processes and leverage best practices most applicable to the fire risks associated with SFPUC facilities. The SFPUC currently considers the daily FPI, CALFIRE and USFS fire danger ratings, NWS weather forecasts including RFWs, forecasted sustained wind speeds and wind gusts, temperature, and relative humidity (these criteria are also used to generate the daily FPI) as inputs for deciding when to de-energize a line for public safety. Additionally, the weather forecast, and fuel information described below, relating to potential fire risk conditions, are automatically provided via email notifications to SFPUC staff as additional inputs to inform decisions to de-energize SFPUC facilities:

1. Adjective Fire Danger Indices (i.e., "Low," "Moderate," "High," "Very High," and "Extreme") from regional Remote Automatic Weather Station(s) (RAWS).

2. Average wind speed and maximum wind gust gridded forecasts, obtained from HRRR Model 3-km; hourly resolution, issued once per hour.

3. Technosylva Wildfire Operations (Professional)™ FPI and Circuit Forecast Tool.

- The Circuit Forecast Tool allows SFPUC to run simulated events for different weather thresholds. The Wildfire Operations (Professional)™ application will then forecast four days out and show which circuits could be impacted, based on the thresholds chosen. We commonly use the thresholds below as a baseline for predicting the need to de-energize distribution circuits.

When the thresholds specified below are forecasted to be met, an email message is generated automatically and is sent to the HHW Moccasin Control Center mailing list and additional SFPUC staff. These thresholds are comprised of:

1. Wind thresholds; either of two conditions:
    a. Hourly sustained wind speeds greater than 25 mph, or
    b. Wind gusts greater than 45 mph.
2. Adjective Fire Danger Rating Indices of any severity greater than "Low" (i.e., "Moderate," "High," "Very High," or "Extreme").

SFPUC staff will evaluate the above weather information, and based on operating experience and historical system performance, decide if de-energizing electrical facilities for public safety is warranted. If it is decided to de-energize transmission and/or distribution facilities, SFPUC staff will direct the operations personnel to de-energize specific circuit(s).

The HHW staff will continue monitoring the critical fire weather conditions. When fire risk conditions improve, they will direct operations personnel to begin the process to re-energize the circuit(s) as outlined in Section 7.11.3.

SFPUC-initiated de-energization events are tracked as a metric and can be found in Appendix 2 – SFPUC Wildfire Mitigation Metrics. Historical de-energization events can be found in previous year WMPs.[38]

[38] See SFPUC 2025 Wildfire Mitigation Plan, p.66

PG&E is the source feed to some SFPUC distribution line segments in the Peninsula and Bay Area that provide electrical service to SFPUC-owned and operated facilities. These SFPUC lines are maintained by WSTD. A PG&E-initiated PSPS in the Peninsula and Bay area could de-energize the source feed to SFPUC distribution line segments, impacting SFPUC facilities. PG&E coordinates with SFPUC before, during, and after a PG&E-initiated PSPS event.

The SFPUC has provided a list of SFPUC-owned critical facilities to PG&E with the associated contact person(s). PG&E and SFPUC have exchanged company representative contact information for communication during a potential PSPS event. SFPUC staff also have access to the PG&E PSPS Portal and can review pertinent information in real time. SFPUC staff also participate in coordination calls that occur during an active PG&E PSPS. To prevent miscommunication and prepare internally, the SFPUC is very proactive and will often contact the PG&E representative before PG&E makes notifications regarding a potential PSPS.

Based on lessons learned from previous PG&E de-energization events, SFPUC worked with PG&E to identify lines and meters where SFPUC lines interconnect with PG&E lines. This will help pinpoint which SFPUC lines could be shut off during a PG&E PSPS event and provide more accurate pre-planning and deployment of field staff to patrol lines before and after the event.

The SFPUC has a combination of permanent and mobile backup generators for locations identified as having the potential for being impacted by a PG&E PSPS. SFPUC communicates with PG&E before a PSPS event and can mobilize generators to those facilities that do not have permanent standby generators.

7.11.1 Impacts on Public Safety

The SFPUC has not identified any impact to public safety when the SFPUC de-energizes power lines during critical fire weather events.

7.11.2 Customer Notification Protocols

The SFPUC is primarily a generation and transmission provider that transmits SFPUC-generated hydropower over our transmission network and into the CAISO market. Other than the six retail customers, the SFPUC distribution system serves all SFPUC-owned and operated loads (facilities). Five customers are connected directly to the distribution system, and one is connected to the transmission system. The five customers served by the distribution line are located within HFTD and have backup generators. The sixth customer is in the non-HFTD and is served through the transmission system.

The SFPUC uses internal notification protocols when critical fire weather conditions are met or forecasted to be met. The HHW Control Center notifies affected entities for both planned and unplanned outages.

7.11.3 Restoration of Service

During an IOU PSPS or SFPUC de-energization event, SFPUC leadership will continue to monitor critical fire weather conditions throughout the region. When critical fire weather conditions subside, the Division leadership will give an “all clear” to begin the process of returning the lines to service. Staff must conduct an entire line patrol, from the point of de-energization to the end of the line, to ensure the line is safe to energize. Line patrols will be conducted via helicopter, drone, vehicle, or foot, depending on weather conditions and access to facilities. Priority for patrols and restoration will be given to the transmission system first, followed by the distribution system, or as determined by operational needs.

The SFPUC maintains a contract task order with a helicopter service and can call on them to conduct aerial patrols. Using a helicopter for patrols significantly reduces the time required to complete a patrol, provided weather conditions have improved enough for safe flight operations. Following a wildfire event, we will restore service when it is safe for staff to access the damaged area(s). The SFPUC will not access burn areas until the Authority Having Jurisdiction (i.e., CALFIRE, USFS, local fire agency) grants permission to enter the burn area to conduct a damage assessment. Following a full damage

assessment, if required, we will perform repairs, and restoration will proceed following established priority and restoration procedures.

8. STAKEHOLDER OUTREACH AND ENGAGEMENT

8.1 Coordination with Critical Infrastructure Sectors

- Water and Wastewater Systems sector
- Communications sector
- Healthcare and Public Health sectors

8.1.1 Water and Wastewater Systems Sectors

The SFPUC does not provide electric service to any non-SFPUC-owned and operated water or wastewater department customers, nor does it impact any non-SFPUC-owned and operated water or wastewater facilities. All SFPUC-owned and operated water facilities have redundant power supplies to maintain operations during a planned or unplanned power outage. Internal SFPUC communications during emergencies are described in the SFPUC Emergency Operations Plan.

8.1.2 Communications Sector

SFPUC supplies power to two cellular towers owned and operated by an independent cellular provider. During planned or unplanned interruptions of the SFPUC lines that could impact these cellular sites, the SFPUC will communicate with the cellular provider on the expected timing and duration of the outage. Both sites have backup generators to avoid disruption to services during planned and unplanned outages.

8.1.3 Healthcare and Public Health Sectors

The SFPUC does not provide services to any healthcare or public health facilities.

8.2 Fire Agency (First Responder) Collaboration

The SFPUC continues to collaborate with multiple stakeholders to assess areas where there is or could be a risk for catastrophic wildfire. This work supports our continuous effort to improve wildfire mitigation strategies and enhance fire safety throughout the region. The SFPUC participates as a partner on the USFS Southwest Interface Team

(SWIFT), a partnership that includes CALFIRE, BLM, Tuolumne County, and private landowners. SWIFT is a group comprised of a variety of government and external partners that work collaboratively to create fire-adapted communities. SWIFT meets every month and, since 1999, has planned and implemented wildfire protection activities within the 132,000-acre (~206 sq. mi.) area of southern Tuolumne County and western Mariposa County. Additionally, they cooperatively plan and implement strategic firebreak systems designed to reduce the threat of loss of life, property, and resources in the southern Tuolumne and western Mariposa County wildland-urban interface.

In Alameda and San Mateo counties, the SFPUC organizes an annual first responder liaison meeting in coordination with CALFIRE to supplement ongoing communication with all first responders, including the county sheriff's office and local fire departments. The SFPUC watershed lands in these two counties are State Responsibility Areas (SRA), and SFPUC staff are in regular communication with local CALFIRE staff throughout the calendar year.

CALFIRE’s Tuolumne-Calaveras Unit owns and operates a Firehawk helicopter (Figure 15) stationed at Columbia Airport, approximately 22 miles from the SFPUC Moccasin Powerhouse / Switchyard / Control Center. The primary benefit of the Firehawk helicopter is the increased water-carrying capacity of up to 800 gallons. If a wildland fire ignites near SFPUC assets, the Firehawk helicopter could be deployed and arrive within minutes and conduct an initial attack to reduce fire spread potential. Additionally, the National Park Service and USFS have helicopters for firefighting. Having these three agencies near SFPUC assets increases their initial attack capabilities.

Figure 15 – CALFIRE Firehawk Helicopter



SFPUC developed a Fire Dipping Strategy procedure that is shared with CALFIRE, Yosemite National Park, and the USFS. The purpose and scope of the procedure is to provide a reservoir dipping strategy that considers protection of water quality and the need for firefighting efforts. Fire response agencies use these SFPUC reservoirs to pull water during fire suppression activities. Because of water quality risks, SFPUC has ensured that partner agencies understand the benefits and risks and require the appropriate staff to be contacted before dipping from SFPUC reservoirs.

8.3 California Municipal Utilities Association (CMUA) Collaboration

CMUA hosts a monthly working group call, specific to the development of the WMPs. SFPUC actively participates in these calls, along with other POUs. These collaborative calls have helped shape the development of the SPFUC WMP and the sharing of resources, best practices, and lessons learned since the inception of the WMPs in 2019.

8.4 Mutual Assistance Agreements

The SFPUC is a member of the California Utilities Emergency Association (CUEA), which plays a key role in ensuring communication between utilities during emergencies and has agreements in place to support utilities requesting mutual assistance.

9. EVALUATING THE PERFORMANCE OF THE PLAN

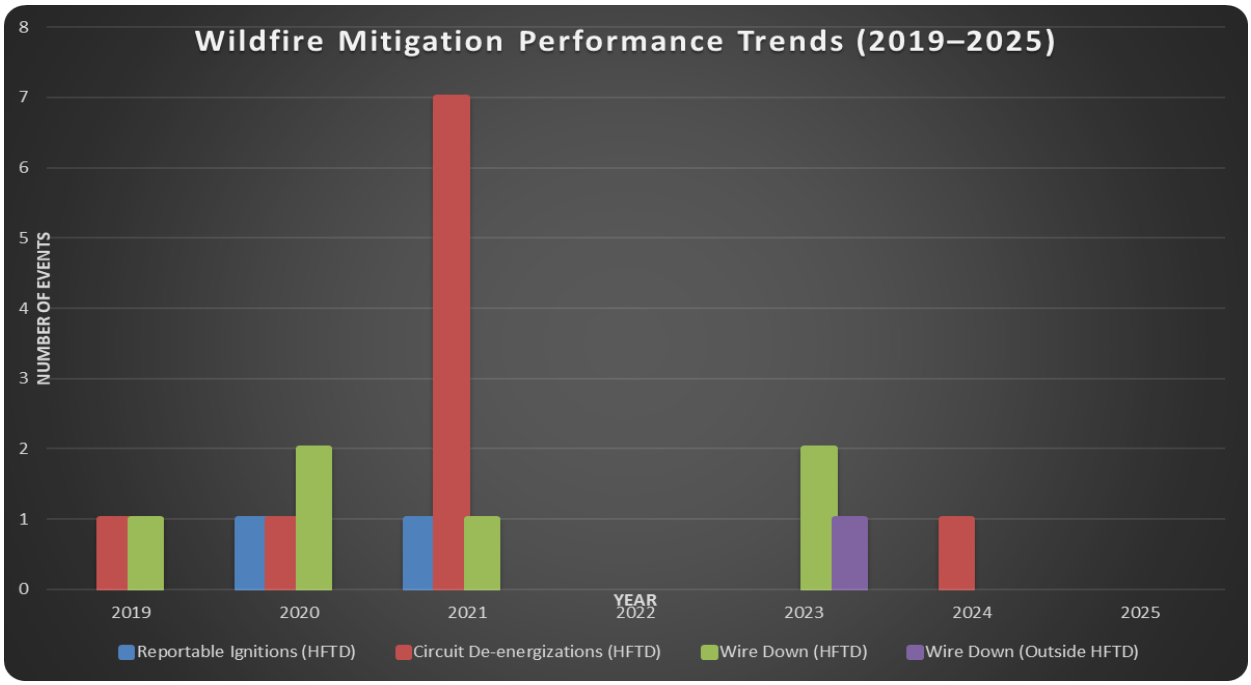
9.1 Metrics and Assumptions for Measuring Plan Performance

We track performance and outcome metrics for the transmission and primary distribution system that measure the performance and effectiveness of our Plan in reducing the risk of SFPUC facilities being the origin or contributing source for the ignition of a catastrophic wildfire. For this 2026-2028 WMP, we have implemented the performance and outcome metric tables developed by CMUA with input from participating utilities (including the SFPUC). For reference, we have moved all the metrics to appendices that are found at the end of this WMP.

9.2 Impact of Metrics on Plan

The SFPUC will continue to evaluate system performance and identify additional metrics as needed to measure fire risk reduction gained year after year. Figure 16 shows the metrics trends since 2019.

Figure 16 – Performance Metrics Trends Since 2019



The performance metrics demonstrate a reduction in wildfire-related risk exposure across SFPUC's system over the past five years. Reportable ignitions within HFTD areas declined from isolated occurrences in 2020 and 2021 to zero incidents from 2022 to 2025 indicating improved system performance due to enhanced situational awareness capabilities, system hardening, VM, asset inspection and maintenance programs.

While circuit de-energization events peaked in 2021, subsequent years show a significant decline and stabilization. This is due to tree removal projects in Camp Mather and Yosemite National Park that reduced our risk of trees striking power lines. Following the removal of the trees, we re-evaluated our de-energization thresholds, which resulted in a decrease in de-energization events. Similarly, wire-down incidents within HFTD areas trended downward overall, with zero occurrences in 2022 and 2025. Wire-down events outside HFTD areas remained minimal throughout the reporting period. Collectively, these trends suggest that wildfire mitigation strategies are contributing to reduced ignition potential and improved operational resilience in high-risk areas.

9.3 Monitoring and Auditing the Plan

The SFPUC is committed to operating a safe and reliable power grid while reducing the risk of SFPUC facilities being the source of ignition to a catastrophic wildfire. To achieve this, SFPUC staff continuously monitor projects and metrics outlined in this WMP to identify areas of improvement with the continuous goal of reducing the risk of SFPUC facilities being the origin or contributing source of a catastrophic wildfire. Execution of hardening projects, proactive inspection programs, PM programs, and data collected will inform the SFPUC staff of system improvements and areas that need additional attention.

9.4 Monitoring the Effectiveness of the Plan

We are committed to continuous improvement to minimize the risk of SFPUC facilities igniting or contributing to catastrophic wildfires. Through ongoing monitoring and evaluation of the mitigation strategies outlined in this Plan, we actively identify opportunities to strengthen our approach in pursuit of our core mission: delivering safe, reliable water and power to the region.

As our WMP has matured, we have refined how we categorize and track mitigation work to improve the accuracy and usefulness of our performance metrics. For example, early Plan evaluations revealed the need to consistently flag all inspections, as well as preventative and corrective maintenance activities that pertain to wildfire mitigation efforts. This enhancement has strengthened our ability to track compliance, ensure work completion, and rely on high-quality data to drive informed decision-making and continuous improvement of both our processes and this Plan.

9.5 Corrective Action Program

The SFPUC is committed to making the Plan effective and robust. We also understand that identifying gaps and areas for improvement in the Plan is a continuous process, learned through experience and monitoring industry best practices. As the WMP continues to mature, we will make changes to our Plan to integrate new policies, strategies, changes in technology, or identify previously unidentified risks. We will continue to correct any gaps or deficiencies in a timely manner. Changes will be incorporated into our Plan and submitted to the SFPUC Commission for approval bi-annually and subsequently submitted to the WSAB bi-annually.

10. INDEPENDENT EVALUATOR REPORT

PUC § 8387(c) requires the SFPUC to contract with a qualified Independent Evaluator (IE) with experience in assessing the safe operation of electrical infrastructure to review and assess the comprehensiveness of this Plan.[39]

The last IE report was submitted to SFPUC's Commission in 2023, along with the request for final approval of the 2023 SFPUC WMP. The IE presented his favorable report to the SFPUC at a Commission meeting. The Commission adopted both the WMP and IE Report.[40]

The SFPUC's Plan will be reviewed annually by internal stakeholders. The Plan will be evaluated by an IE once every four years. This 2026-2028 Plan has been independently evaluated, and IE recommendations will be implemented and included in the 2029-2031 WMP.

[39] Pub. Util. Code § 8387(c)
[40] SFPUC Resolution 23-0134

Appendix 1

Revision Log

Section	Title	Description
Acronyms		Updated acronyms list.
List of Figures		Updated List of Figures.
List of Tables		Updated List of Tables.
All		Reorganized sections to improve readability.
1	Executive Summary	Updated with new language pursuant to SB 254.
2	Overview of the WMP	Moved this section and re-worded for clarity.
2.1.1-2.1.3	Objectives of the WMP	Reorganized section and re-worded for clarity.
2.2	Statutory Cross-Reference Table	Updated to reflect SB254 changes.
2.3	Utility Overview and Context Setting	Updated with 2025 data. Re-worded for clarity.
3	Overarching Initiatives for 2025-2029 WMP	Updated entire section to include current and future initiatives. Updated budget section.
4	Summary of 2025 WMP Activities	Updated entire section with 2025 project updates.
5	Roles and Responsibilities	Moved section towards beginning of WMP and re-worded for clarity.
6	Wildfire Risk and Risk Drivers	Updated section with 2025 data. Included Fire Hazard Severity Zone map. Included updated SFPUC map with HFTD boundaries.
7-7.14.3	Wildfire Prevention Strategies	Updated entire section. Updated FPI language. Updated System Hardening projects for 2025. Updated Vegetation Management section with 2025 data.
8.2	Fire Agency (First Responder) Training	Updated with 2025 language.
8.5	Mutual Assistance Agreements	Removed participation in Western Energy Institute's Western Region Mutual Assistance Agreement.
9.1	Metrics and Assumptions for Measuring Plan Performance	Updated with 2025 data. Included graph for Plan performance.
9.2	Impacts of Metrics on Plan	Re-worded for clarity and assessment of previous years' metrics.
10	Independent Evaluator Report	Re-worded for clarity.
Appendix 1	Revision Log	Updated with changes for 2026 WMP submittal.
Appendix 2	Metrics	Adopted CMUA metrics format and moved all metrics to Appendix 2. Updated metrics with 2025 data.

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Appendix 2

SFPUC Wildfire Mitigation Metrics

Table 1. External Wildfire Risk Metrics

Red Flag Warnings	Number of Red Flag Warning Days in the National Weather Service (NWS) Weather Zone(s) encompassing the Utility's Service Territory	0	-	-	-	-	Days	The number of days is applicable to Red Flag Warnings issued within HFTD zones containing overhead transmission and distribution lines.
Wind Conditions	Number of High Wind Warning Days in the National Weather Service (NWS) Weather Zone(s) encompassing the Utility's Service Territory	11	-	-	-	-	Days	The number of days is applicable to High Wind Warnings issued within HFTD zones containing overhead transmission and distribution lines.

Notes:

Red Flag Warnings and High Wind Warnings are issued by the National Weather Service (NWS).

Table displays the total number of warning days per calendar year.

Fire Weather Zones monitored (within HFTD) – 220, 221, 508, 509, 510, 511, 512, 590, and 592.

Table 2. Performance Metrics

Distribution Inspections												
Progress Metric	**2025 Scheduled**	**2025 Completed**	**2026 Scheduled**	**2026 Completed**	**2027 Scheduled**	**2027 Completed**	**2028 Scheduled**	**2028 Completed**	**2029 Scheduled**	**2029 Completed**	**Units**	**Comments**
Patrol Inspections	45.9	45.9	-	-	-	-	-	-	-	-	Circuit Miles	Completed through a combination of ground and aerial patrol.
Detailed Inspections	19	19	-	-	-	-	-	-	-	-	Work Orders	19 work orders totaling 438 poles inspected resulting in 3 cross arms replaced due to wood rot. Cross arms replacements are fiberglass.
Intrusive Inspections	17	17	-	-	-	-	-	-	-	-	Poles	17 work orders totaling 336 poles tested. 6 poles replaced due to failed tests.
Vegetation Inspections	45.9	45.9	-	-	-	-	-	-	-	-	Circuit Miles	Results of inspections are included in Section 7.4.8 – Vegetation Management Dashboard.
Vegetation Maintenance Work Orders	334	334	-	-	-	-	-	-	-	-	Work Orders	Each work order encompasses multiple trees. The vegetation Dashboard in Section 7.4.8 provides the number of trees trimmed or removed.

Transmission Inspections												
Progress Metric	**2025 Scheduled**	**2025 Completed**	**2026 Scheduled**	**2026 Completed**	**2027 Scheduled**	**2027 Completed**	**2028 Scheduled**	**2028 Completed**	**2029 Scheduled**	**2029 Completed**	**Units**	**Comments**
Patrol Inspections	324.4	324.4	-	-	-	-	-	-	-	-	Circuit Miles	Completed through a combination of ground and aerial patrol.
Detailed Inspections	180	180	-	-	-	-	-	-	-	-	Towers	
Vegetation Inspections	324.4	324.4	-	-	-	-	-	-	-	-	Circuit Miles	
Vegetation Maintenance Work Orders	8	8	-	-	-	-	-	-	-	-	Work Orders	Each work order contains multiple trees as they are inspected by span distance (tower to tower). For 2025, 273 trees were trimmed or removed through eight work orders.

Tower Hot Wash*												
Progress Metric	2025 Scheduled	2025 Completed	2026 Scheduled	2026 Completed	2027 Scheduled	2027 Completed	2028 Scheduled	2028 Completed	2029 Scheduled	2029 Completed	Units	Comments
GO 95/165	11	11	-	-	-	-	-	-	-	-	Work Orders	* These numbers reflect the total number of work orders that were generated to hot wash towers in 2025. Each work order encompasses multiple towers.

Substation/Switchyard Inspections												
Progress Metric	2025 Scheduled	2025 Completed	2026 Scheduled	2026 Completed	2027 Scheduled	2027 Completed	2028 Scheduled	2028 Completed	2029 Scheduled	2029 Completed	Units	Comments
GO 95/165	11	11	-	-	-	-	-	-	-	-	Work Orders	* These numbers reflect the total number of work orders that were generated to hot wash towers in 2025. Each work order encompasses multiple towers.

***Notes**

All metrics reflect work performed within and outside the High Fire Threat District (HFTD).

“Scheduled” represents the planned annual work target.

“Completed” represents actual work performed during the calendar year.

Units are reported in circuit miles unless otherwise specified.

Table 3. Outcome Metrics

Outage Events – Distribution							
Metric Description	2025	2026	2027	2028	2029	Units	Comments
Vegetation-Caused	0	-	-	-	-	# Outages	
Wire Down – Inside HFTD	0	-	-	-	-	# Outages	
Wire Down – Outside HFTD	0	-	-	-	-	#Outages	
Preemptive De-Energizations	0					#Events	
Other	5	-	-	-	-	# Outages	Unplanned outages are tracked in our e-Logger system. Three of the five outage events occurred during winter storms where no probability of wildfire could occur due to snow on the ground. The remaining 2 events were blown fuses but did not cause ignitions.
Unknown	0					# Outages	

Outage Events – Transmission							
Metric Description	2025	2026	2027	2028	2029	Units	Comments
Vegetation-Caused	0	-	-	-	-	# Outages	
Wire Down – Inside HFTD[1]	0	-	-	-	-	# Outages	
Wire Down – Outside HFTD	0	-	-	-	-	# Outages	
Preemptive De-Energizations	0	-	-	-	-	# Events	
Other	0	-	-	-	-	# Outages	
Unknown	0					# Outages	

Ignitions – Distribution[2]							
Metric Description	**2025**	**2026**	**2027**	**2028**	**2029**	**Units**	**Comments**
Vegetation-Caused	0					# Ignitions	
Other	0					# Ignitions	
Unknown	1	-	-	-	-	# Ignitions	On August 5, 2025, at approximately 1500 hours, a vegetation fire was reported near San Antonio Reservoir. Dispatch notifications were initiated and contractors in the San Antonio watershed were directed to evacuate. Upon arrival, access was established for responding agencies and coordinated suppression efforts with CALFIRE and Alameda County Fire successfully halted forward progression in multiple areas, preventing the fire from spreading toward critical infrastructure, including the dam and surrounding roadways. Additional resources contained the fire at approximately 16 acres. Fire watch personnel, supported by CALFIRE and WSTD resources, remained on site overnight to monitor and address any remaining hot spots. The cause is still under investigation.

Ignitions – Transmission							
Metric Description	**2025**	**2026**	**2027**	**2028**	**2029**	**Units**	**Comments**
Vegetation-Caused	0					# Ignitions	
Other	0					# Ignitions	
Unknown	0					# Ignitions	

Notes:

[1] A wire-down event includes any instance where an electric transmission or primary distribution conductor falls to the ground or onto a foreign object. We differentiate this metric into wires down “inside” and “outside” a HFTD.

[2] A fire ignition must meet the following criteria: (1) SFPUC facility was associated with the ignition of the fire. (2) The fire was self-propagating and of material other than electrical and/or communication facilities. (3) The resulting fire traveled greater than one linear meter from the ignition point. (4) SFPUC has knowledge that the fire occurred.