Meeting Slides and Recording

Workshop on Wildfire Mitigation Plans of PG&E, SCE, and SDG&E

The Office of Energy Infrastructure Safety held a public workshop on the 2023-2025 Wildfire Mitigation Plans of Pacific Gas and Electric (PG&E), Southern California Edison (SCE), and San Diego Gas & Electric (SDG&E) on April 27 and 28, 2023. A recording of the meeting can be found on Energy Safety's YouTube channel.

Day 1, Part 1 of 2: https://www.youtube.com/watch?v=Fyz_uaYwox0
Day 1, Part 2 of 2: https://www.youtube.com/watch?v=88GWdwlyDM4
Day 2: https://www.youtube.com/watch?v=vawNYcb-Ixo

The slides presented during the meeting are attached to this document.

2023-2025 WILDFIRE MITIGATION PLAN PUBLIC WORKSHOP

For Large Electrical Corporation Submissions

April 27 & April 28, 2023
DAY ONE

INTRODUCTION

SAFETY MESSAGE

- Be aware of your surroundings
- Know your evacuation route(s)
- Feel something, say something
- Stand up and move occasionally

OPENING REMARKS

- Electrical corporations are required to prepare and submit Wildfire Mitigation Plans (WMPs) to Energy Safety.
- WMPs describe how the electrical corporation is constructing, maintaining, and operating its electrical lines and equipment in a manner that will minimize the risk of catastrophic wildfires.

WORKSHOP OBJECTIVES

- Receive presentations on key areas of the large electrical corporations' 2023-2025 Wildfire Mitigation Plans.
- Provide the public and other stakeholders with the opportunity to ask questions about the electrical corporations' WMPs.

WORKSHOP AGENDA (1/3)

Total of 5 panels over 2 days.

Each panel will consist of:

1. Utility presentations
2. Panel discussion
3. Short break
4. Public questions

WORKSHOP AGENDA (2/3)

Thursday 4/27:

- **Morning:** Vegetation Management Panel
- **Lunch:** 11:30am – 12:30pm
- **Afternoon:**
  - Grid Operations, Design, and Maintenance Panel
  - Emergency Preparedness, Community Outreach, and Public Safety Power Shutoffs Panel
- **Open Q&A**
- **Adjourn:** 5:00pm

WORKSHOP AGENDA (3/3)

Friday 4/28:

- **Morning:** Situational Awareness and Forecasting Panel
- **Lunch:** 12:00pm – 1:00pm
- **Afternoon:** Risk Assessment and Mitigation Selection Strategy Panel
- **Open Q&A**
- **Adjourn:** 3:40pm

WORKSHOP LOGISTICS

Asking Questions

- Ask written questions in the Zoom Q&A at any time
- Raise your hand during the public questions portion of the panels
- Hold questions for Q&A session at the end of each day

ENERGY SAFETY PANEL MODERATORS

Energy Safety Panel Moderators – Day One

- Vegetation Management – Colin Lang
- Grid Operations, Design, and Maintenance – Andie Biggs
- Emergency Preparedness, Community Outreach, and Public Safety Power Shutoffs – Jessica McHale

AGENDA – DAY ONE

9:25am – 11:30am	Vegetation Management Panel
10:35am, 10-minute break	
11:30am – 12:30pm	*Lunch*
12:30pm – 2:30pm	Grid Operations, Design, and Maintenance Panel
1:35pm, 10-minute break	
2:30pm – 4:30pm	Emergency Preparedness, Community Outreach, and Public Safety Power Shutoffs Panel
3:35pm, 10-minute break	
4:30pm – 5:00pm	Open Q&A (all panels)
5:00pm	*Adjourn*

VEGETATION
MANAGEMENT
PANEL

PG&E

Pacific Gas and Electric Company

2023 Wildfire Mitigation Plan Public Workshop

Vegetation Management

April 27, 2023

Discussion Topics and Presenters

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PG&E SPEAKERS

Andy Abranches
Senior Director, Wildfire Risk Management

Kamran Rasheed
Director, Vegetation Asset Strategy and Analytics

Stephen Simon
Senior Director, MID Quality Management

Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

Overview

Two prong strategy for Vegetation Management for this WMP period – (1) Improve the base veg management work via improved tools, processes and training; (2) Utilize field input and risk models to targeted vegetation work for maximum benefit

Current Development

- Over the course of 2022, the PG&E Vegetation Management program inspected and mitigated vegetation encroachment and dead and dying trees across approximately 100,000 miles of overhead distribution and transmission electric facilities via the routine program. A second patrol was also performed within the HFTD (25,000 distribution miles and 5000 transmission miles).
- PG&E also performs removal/clearing of vegetation around select Transmission and Distribution poles and towers in accordance with PRC Section 4292, to maintain a firebreak of at least 10 ft in radius (out from the pole) up to 8 ft up from the ground per Title14 CCR 1254.
- During 2022 PG&E completed the deployment of EPSS capabilities across the HFTD and HFRA areas. The Enhanced Vegetation Management (EVM) program was sunset at the end of 2022
- PG&E VM currently uses multiple centrally managed- systems to document planned and completed vegetation work. We are building a tool to manage and support our various program requirements and work processes. This started in 2021 and will continue in 2023

Planned Developments

- PG&E has outlined a Focused Tree Inspection program for Areas of Concern (AOC) to target VM work in areas at higher risk of vegetation failure The pilot will focus on the highest risk areas and may be adjusted annually based on prior years events.
- VM for Operational Mitigations is intended to reduce outages and potential ignitions by performing targeted VM work on EPSS-enabled circuits based on historic vegetation outages. Additional tree work may be prescribed on 2023 EPSS-enabled circuits that experience higher degree of vegetation outages.
- A transitional program is being created to re-inspect and work trees previously identified for abatement in the EVM program, but that have not yet been worked, based on a risk informed approach.
- The Vegetation Management program standards and procedures will be updated and operationalized in 2023 to drive standardization and best practice adoption across all vegetation work.

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Ongoing Vegetation Management Programs

Standard Vegetation Programs

Transmission programs include Routine NERC and Routine Non-NERC. These are annual Integrated Vegetation Management (IVM) Programs recurring according to the vegetation growth response. PG&E's Transmission vegetation inspection capabilities use technologies such as Light Detection and Ranging (LiDAR). *See Section 8.2.2.1*;

Distribution programs include Routine patrols which occur annually, and Second Patrol which occurs approximately six months offset from Routine patrols. *See Section 8.2.2.2*;

Substations: PG&E assesses the area around Electric Transmission (ET) Substations in High Fire Threat District (HFTD) and High Fire Risk Area (HFRA) areas to identify potential flammable fuels and vegetation for removal. *See Section 8.2.2.3*;

Vegetation and Fuels Management: PG&E's VM has various programs supporting vegetation and fuels management activities. *See Section 8.2.3*;

Quality Assurance/Quality Control: PG&E's VM Quality Team encompasses Quality Assurance (QA), Quality Verification (QV), and Quality Control (QC). *See Section 8.2.5*;

Supporting Improved Execution of Standard Programs

VM Enterprise System

PG&E's VM team is implementing a multi-year project to centralize the capture of inspection, trimming and removal activities into a single software platform

Centralized Constraint Management

PG&E's VM team is building out processes to address three types of constraints:
(1) customer constraints, (2) environmental constraints, and (3) permitting constraints

Workforce Training & Planning

- PG&E has developed Tree Crew and Inspector Training programs to develop a steady pipeline of qualified personnel who may later join our contract or internal VM workforce
- PG&E's PI basics training path and related training courses provide personnel with an opportunity to earn continuing education credit that can be used towards obtaining ISA certification
- PG&E's educational partnerships allow us to provide employees and contractors with a direct path of obtaining certification
- To bolster recruitment and the pipeline of qualified personnel, PG&E has partnered with the IBEW and educational institutions, such as the California Community College system, to establish a training program designed to provide the skills and knowledge necessary to perform tree crew work safely & competently

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Specific, Targeted Programs to Replace EVM

Reason for Replacing EVM

EVM Scope

Initiated in 2019, EVM Represents a process by which PG&E went above and beyond regulatory requirements, through technologies such as LiDAR, to address the highest risk Circuit Protection Zones (CPZs)

VM Mitigation RSE Comparison

14.5 For EVM **<** **105.7** For EPSS

Given the significantly higher RSE through EPSS relative to EVM, the vegetation management program decided to switch away from EVM to Distribution Routine Patrol

Programs Replacing EVM

Focused Tree Inspections

Specific areas of focus were developed, primarily in the HFRA, where efforts will be concentrated to inspect and address high-risk locations impacted by vegetation

VM for Operational Mitigations

This program is intended to help reduce outages and potential ignitions using a risk informed, targeted plan to mitigate potential vegetation contacts based on historic vegetation caused outages

Tree Removal Inventory

This program is intended to systemically work down trees that were previously identified through EVM inspections. Annual risk-ranked workplans will be developed to mitigate highest risk

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Focused Tree Inspections (FTI) Program in Areas of Concern (AOC)

Purpose

Scope of Work

Initial set of 300 OH line miles for the pilot to inform and shape the future Focused Tree Inspection Program

Changes Since the Last WMP

Developed Areas of Concern to identify highest-risk miles associated with potential tree falls using all available data and local inputs (includes 4,800 miles in 20 counties)

2023 Prioritization

- ~300 Pilot miles will address 16% of total score reduction
- Pilot AOCs are ranked 2, 5, 6, and 15 from overall AOC WDRM v3 Ranking
- Pilot Project is distributed across 4 Regions
- The full program target scope addresses ~93% of total score reduction

Data Sets used to Develop FTI

PSS: Circuit Review and Scoring by County

Meteorology: 30 Year Re-analysis packages and PSPS lookback polygons

VM: PSPS Damage, Outage Clusters 2018-2021, Ignitions and Regional Review of Second Patrol Areas with requests and recommendations

HFRA: High Fire Risk Area (HFRA) v5.1 - Baseline

EPSS: EPSS Buffer v5.1 – Additional areas outside HFTD/HFRA that are subject to EPSS execution under specific conditions

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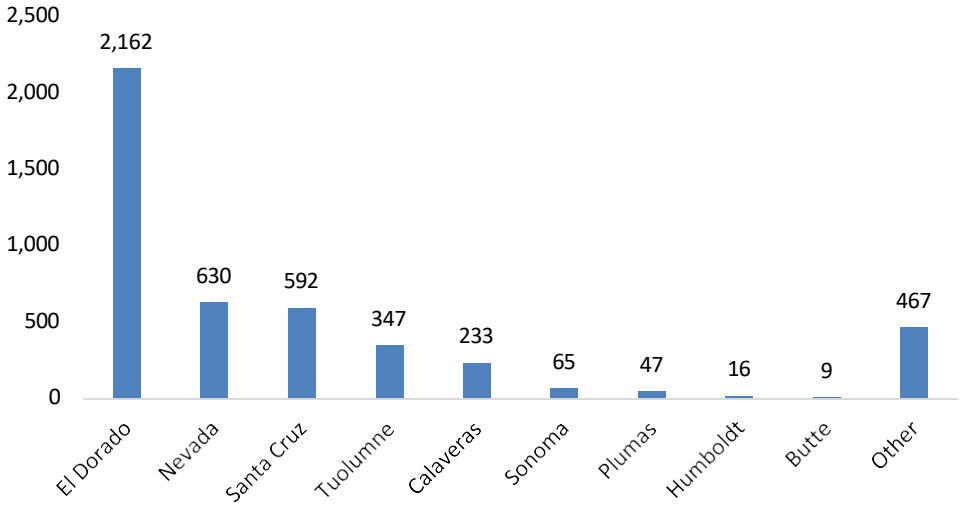
VM for Operational Mitigation (EPSS)

Purpose

Scope of Work

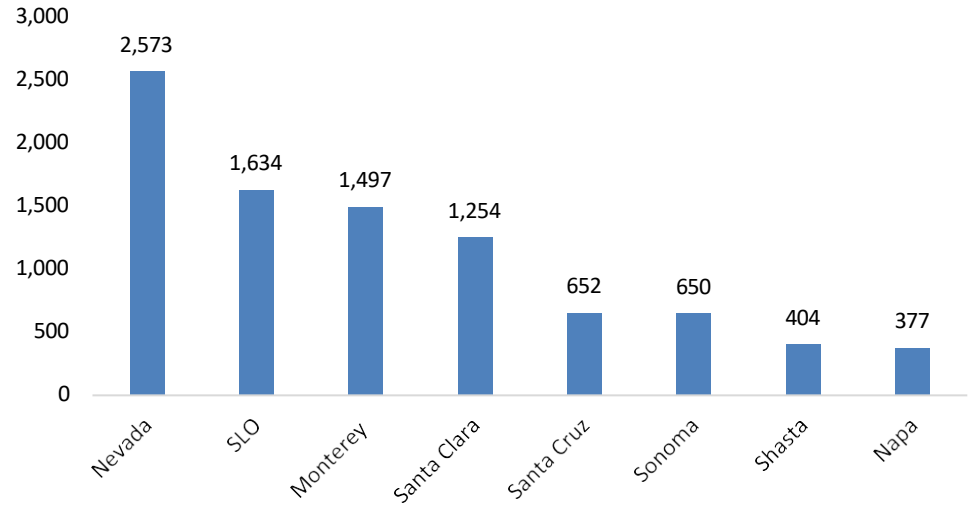
- **Extent of Condition Patrols –** Patrols conducted after veg related EPSS outages to mitigate future veg outages
- **EPSS CEMI 8+ Locations** – Targeted vegetation work in areas where customers experienced 8 or more EPSS outages in 2022

Reactive Work – Extent of Condition Patrols
Estimated Trees by County †



† *Units reflected are estimates based on known reactive work*

EPSS CEMI 8+ Locations Estimated
Trees by County †



† *Units reflected are estimates based on known work*

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Tree Removal Inventory (TRI) Program

Purpose

Removing trees that were marked for abatement under the EVM program

Scope of Work

TRI is intended to work down the inventory of EVM marked trees starting with 15,000 trees in 2023

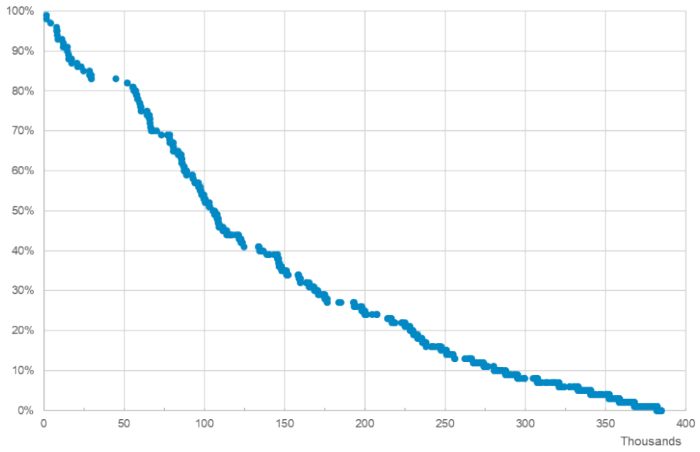
Changes Since the Last WMP

Created this targeted program, the Tree Removal Inventory program, to address trees previously marked under EVM using WDRM Trunk model v3.0 to prioritize

2023 Prioritization

- The 2023 WMP Commitment target is to remove 15,000 EVM trees and will lead to a reduction in ignition risk of >10%;
- The 2023 scope of work provides 45,000 trees in 8 counties to ensure that 15,000 are removed given customer and permitting constrains on this work

EVM Inventory Estimated Risk Buy Down



Total inventory risk is reduced by:

- **2023:** ~10% w/ 15k trees removed
- **2024:** ~15% w/ 35k trees removed
- **2025:** ~25% w/ 60k trees removed
- **2026:** ~35% w/ 85k trees removed
- **2027:** ~55% w/ 110k trees removed

Removals are subject to constraint resolution

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Vegetation Management Quality Verification (QV)*

Purpose of VM Quality Management

Assure safety, risk reduction, continuous improvement and deliver for our customers and hometowns.

Scope of Work

Performance of Quality assessments of completed wildfire mitigation work to ensure safety, compliance and data informed continuous improvement.

Changes Since the Last WMP

Implementation of a robust Quality Management System (QMS) across the VM Distribution, Transmission and Vegetation Clearing programs in HFTD areas.

Quality Targets and Results

Program	2023 Target	2023 YTD Actual (as of 4/21/2023)	2022 Performance	Change
VM – Distribution HFTD	95.00%	99.64%	91.34%	↑ +8.3pp
VM – Transmission HFTD	95.00%	100.00%	94.21%	↑ +5.8pp
VM – Vegetation Control (VC) HFTD	95.00%	99.14%	90.26%	↑ +8.9pp

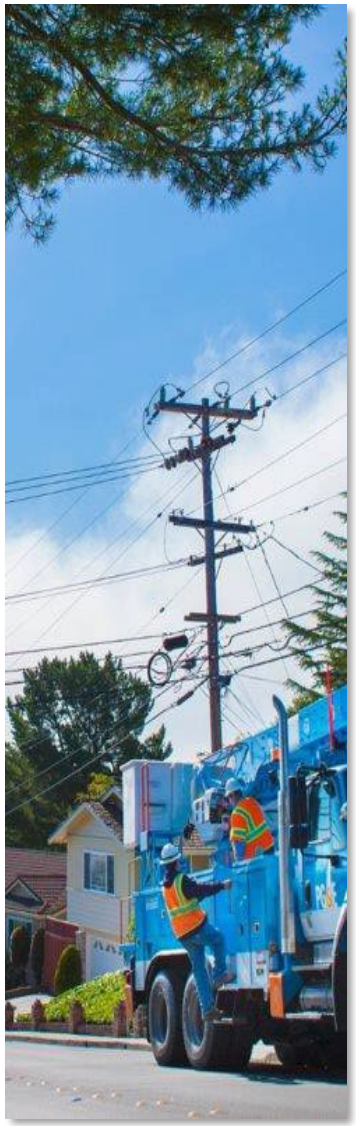
*Quality Verification (QV) is a subpart of Quality Assurance within PG&E's QMS

Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

Questions?

Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

Objectives – Vegetation Management



ID	Objective Name & Description	Timeframe
VM-03	**Focused Tree Inspection Program** Identify areas of concern (AOCs). Initiate a pilot in at least one AOC, and fully implement a cross sectional functional team to determine value of a multi-year historical tree data set.	3 Year Objective
VM-09	**Constraint Resolution Procedural Guideline** Develop a process of centralizing constraint resolutions, focused on customer, environmental, and permitting constraints. Once identified, develop a process to mitigate constraints.	3 Year Objective
VM-10	**Inspection in HFTD and HFRA supporting key vegetation management initiatives** Continue multiple inspection activities in HFTD and HFRA supporting key vegetation management initiatives.	10 Year Objective
VM-11	**Enhance and refine Focus Tree Inspection – Areas of Concern (AOC)** Enhance and refine Focus Tree Inspection – Areas of Concern (AOC) development criteria and application of the AOCs to vegetation management programs.	10 Year Objective
VM-12	**Evaluate emerging technologies** Evaluate emerging technologies to enhance focus of and streamline execution of vegetation management inspections.	10 Year Objective

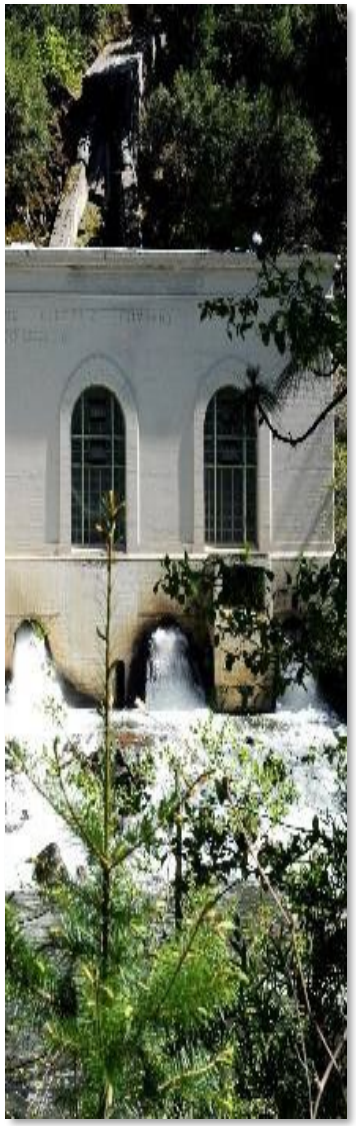
Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

Targets – Vegetation Management

ID	Target Name & Description	2023	2024	2025
VM-01	**LiDAR Data Collection - Transmission** Collect LiDAR data of transmission system, to include both HFTD/ HFRA and non-HFTD miles.	17,500 miles	17,500 miles	17,500 miles
VM-02	**Pole Clearing Program** Inspect, clear, and maintain, where necessary on poles per Vegetation Control Standard TD-7112S.	77,503 poles	2023 YE	2024 YE
VM-04	**Tree Removal** Removal of trees identified from the legacy Enhanced Vegetation Management (EVM) program.	15,000 trees	20,000 trees	25,000 trees
VM-05	**Defensible Space Inspections (DSI) – Distribution Substation** Complete defensible space inspections in alignment with the guidelines set forth in LAND 4001P-01.	131 distribution substations	131 distribution substations	131 distribution substations

Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

Targets – Vegetation Management (Continued)



ID	Target Name & Description	2023	2024	2025
VM-06	**Defensible Space Inspections (DSI) – Transmission Substation** Collect LiDAR data of transmission system, to include both HFTD/ HFRA and non-HFTD miles.	55 transmission substations	55 transmission substations	55 transmission substations
VM-07	**Defensible Space Inspections (DSI) – Hydroelectric Substations and Powerhouses** Inspect, clear, and maintain, where necessary on poles per Vegetation Control Standard TD-7112S.	61 hydroelectric substations	61 hydroelectric substations	61 hydroelectric substations
VM-08	**Vegetation Management – Quality Verification (QV)** Removal of trees identified from the legacy Enhanced Vegetation Management (EVM) program.	95% verification pass rate	95% verification pass rate	95% verification pass rate

Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

SCE

Vegetation Management (4/27)

SCE: VEGETATION MANAGEMENT

Consolidated Inspection Strategy

Centralized tree inspection schedule for Routine Line Clearing, Hazard Tree, and Dead and Dying Tree Removal Program

Improve Risk-Informed Processes

Improve scheduling capability and increase granularity for work prioritization based on risk factors (e.g., species, clearance)

Remote Sensing

Transition majority of ground inspection for vegetation line clearing in HFRA to remote sensing technology (e.g., LiDAR, satellite)

2023 Initiatives

- VM-1 Hazard Tree Management Program
- VM-2 Structure Brushing
- VM-3 Expanded Clearance Legacy Facilities
- VM-4 Dead and Dying Tree Removal
- VM-6 Work Management Tool
- VM-7 Distribution Inspections
- VM-8 Transmission Inspections
- VM-9 LiDAR for Distribution
- VM-10 LiDAR for Transmission

SCE Wildfire Fact Sheets

SDG&E

2023 – 2025 Wildfire Mitigation Plan

Our programs | Our impact

Vegetation Management

Michael Daleo, Vegetation Management WMP Program Manager

Vegetation Management

Continue to safely, effectively & proactively mitigate fire risk through multiple, annual Vegetation Management activities

2022 Accomplishments

- **Zero** contractor-caused outages on distribution system
- **Zero** tree-related ignitions on distribution system
- **~11k** targeted trees trimmed or removed to enhanced clearances in HFTD
- **~11k** trees distributed to promote sustainability & environmental enhancement
- Two tree inspection activities within entire HFTD
- Completed fuels management on **500** elevated-risk poles in HFTD
- Sustainability - **51%** of all green waste diverted from landfill to recycling centers

2023 Planning

- Modify off-cycle HFTD inspection schedule using risk-based model
- Proof of concept initiative using satellite imagery technology
- Further engage customers through interactive online survey
- Plant or distribute 10k trees, supporting company sustainability initiative

Preparing for 2023 Wildfire Season

Mitigating wildfire risk through Enhanced Vegetation Management

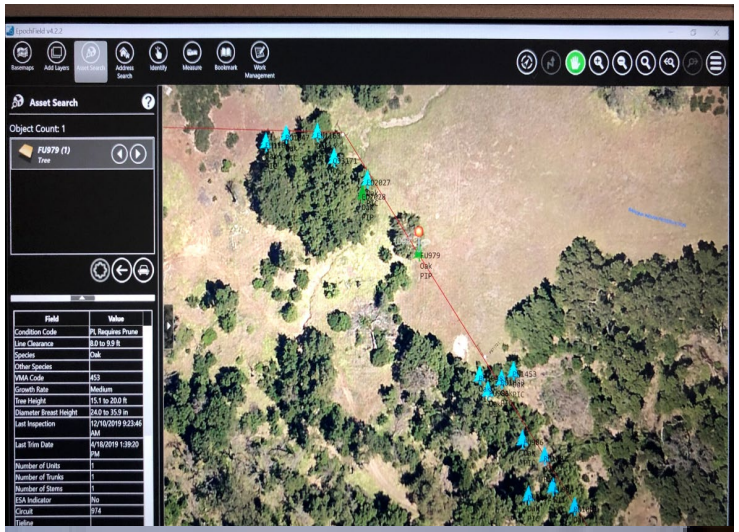
- **~490,000 inventory trees** in service territory
- **~250,000 trees** in HFTD annually receive a second, "Level 2 inspection"
- **~11,000 trees** targeted for enhanced clearances in 2023
- **~2,000** additional poles brushed in non-SRA
- **500 poles** targeted for Fuels Management

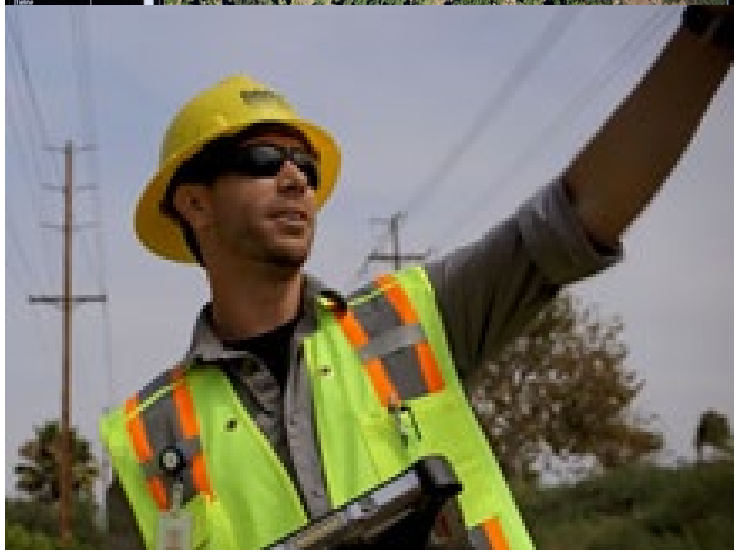
Tree Inventory Database

- Data-rich inventory database of all tree and pole brush records going back over 20 years
- All contractor activities (pre-inspection, tree trimming, auditing) uploaded to server nightly
- Outage investigation documentation within tree records

2022 Improvements

- Accurate GPS positioning of inventory tree assets
- Electronic documentation of customer refusals and deferred work
- Multiple database enhancements including Genus-species capture; new electronic work orders for off-cycle activities; additional GIS mapping layers for visualization and situational awareness





VEGETATION MANAGEMENT PANEL DISCUSSION

PANEL MEMBER or UTILITY REPRESENTATIVE	ORGANIZATION / TITLE
Andy Abranches	PG&E / Sr. Director – Wildfire Risk Management
Henry Sweat	CPUC SPD
Gregg Morris	GPI
Mike Esposito	CalFire

10 MINUTE BREAK

Back at 10:45am

OPEN QUESTIONS AND ANSWERS

Reminder to raise hand or use Q&A function in Zoom.

LUNCH BREAK

Back at 12:30pm

GRID OPERATIONS, DESIGN, AND MAINTENANCE PANEL

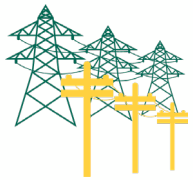
SCE

Grid Operation, Design & Maintenance (4/27)

SCE SERVICE AREA & HIGH FIRE RISK AREAS

50,000 SQ. MI.
of SCE service area across southern, central and coastal California

14,000 SQ. MI.
of high fire risk areas



51,000 MI.
of SCE overhead distribution and transmission lines

14,000 MI.
in high fire risk areas

5M
customer accounts or 15M residents in SCE's service area

1.3M
customer accounts or 3.9M residents served by circuits in high fire risk areas

1.4M
power poles and towers

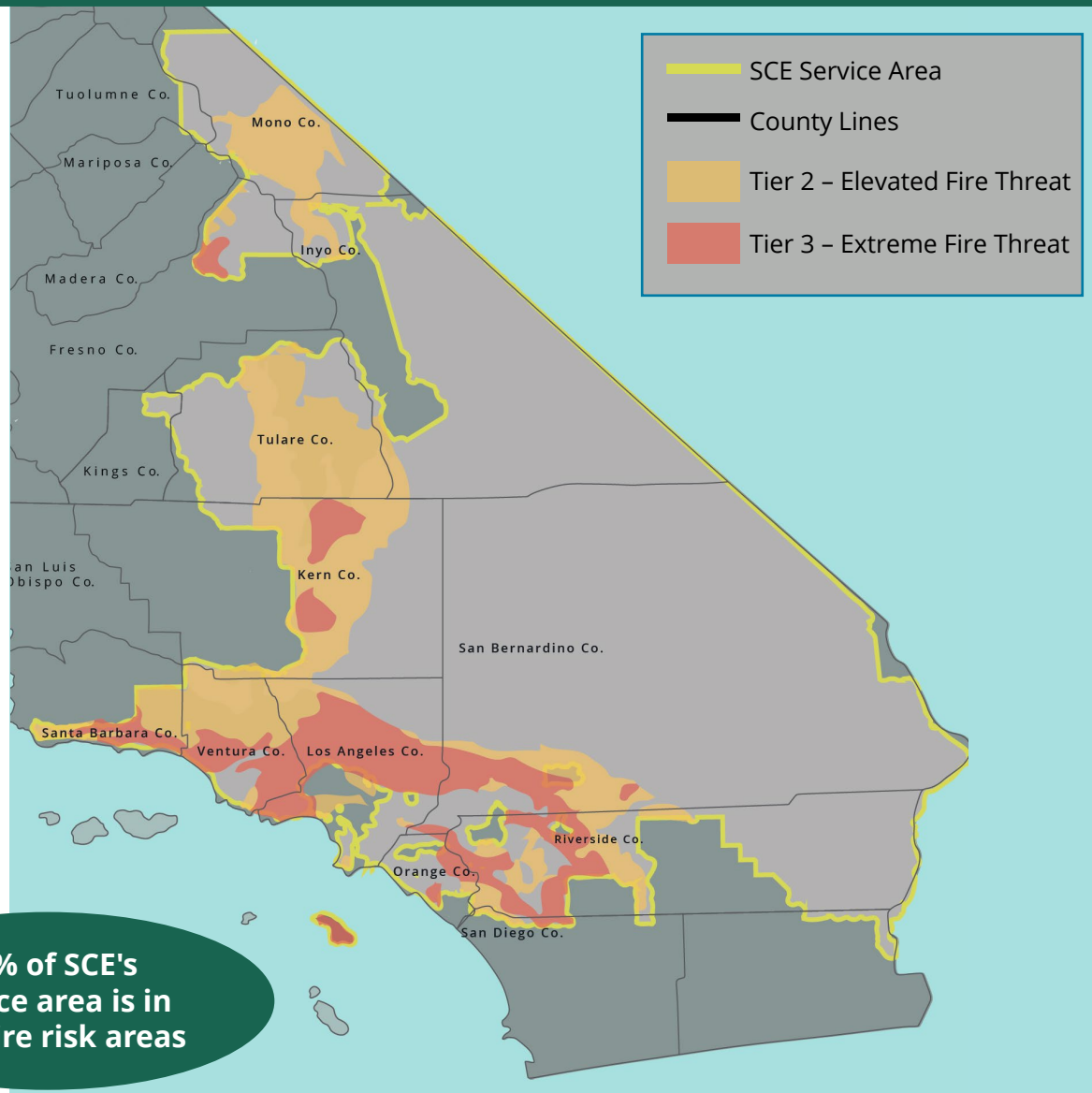
311,000
in high fire risk areas

Counties with high fire risk area served by SCE

Fresno
Inyo
Kern
Los Angeles
Mono
Orange
Riverside
San Bernardino
Santa Barbara
Tulare
Ventura

Counties with no or limited high fire risk areas served by SCE

Imperial
Kings
Madera
Tuolumne



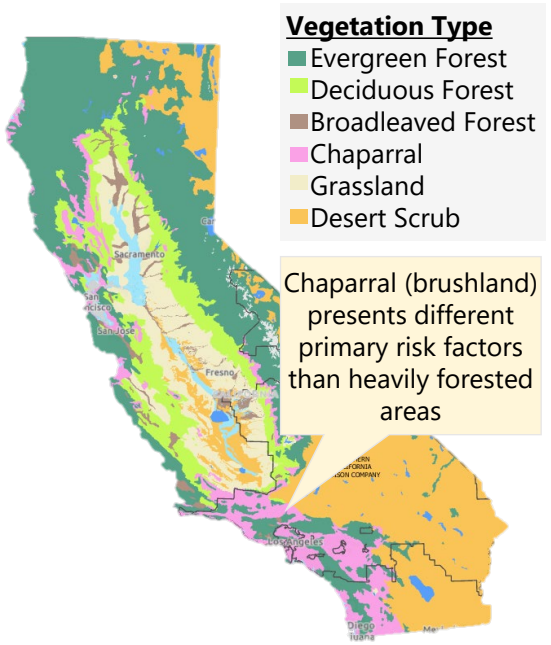
27% of SCE's service area is in high fire risk areas

COVERED CONDUCTOR AND TARGETED UNDERGROUNDING ARE EFFECTIVE MEASURES TO REDUCE WILDFIRE & PSPS RISKS

Continue to implement covered conductor to expeditiously reduce wildfire risk specific to SCE.

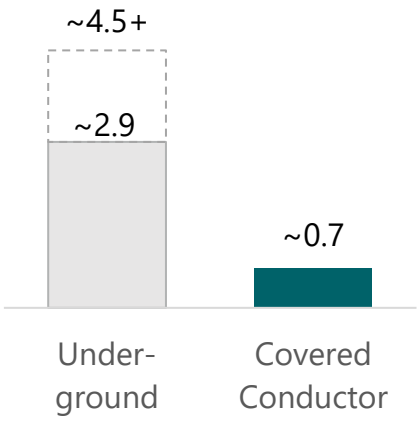
Undergrounding pursued for certain locations based on unique risk factors.

Geography



Cost to Implement

Cost per mile[1]
$ in Millions



Execution Speed

Avg. Implementation Time
In Months

	Covered Conductor	Under-ground
Initiate	~2–3	~2–3
Plan	~6–9	~9–15
Schedule	~6–9	~9–15
Execute	~2–3	~5–15
Total	**16–24+**	**25–48+**

Unique Factors

Undergrounding is considered where there is:

- Communities of elevated fire concern
- High burn frequency
- Limited egress
- Wind speeds exceeding covered conductor PSPS thresholds
- Exceptionally high potential consequence (>10,000 acres)
- Operational feasibility

1. Based on data provided in SCE's 2023-25 WMP

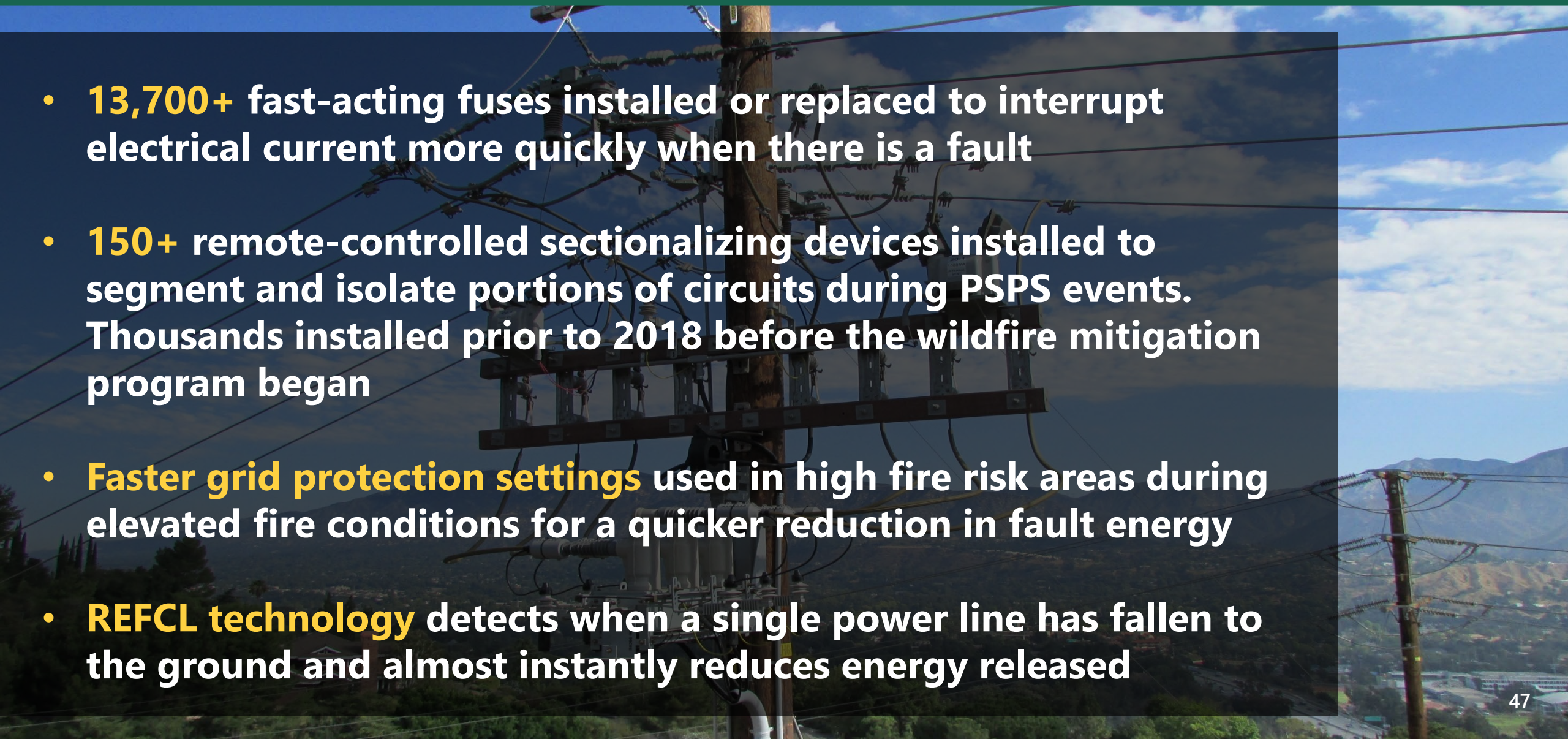
COVERED CONDUCTOR

- About 4,400 miles of covered conductor, covering about 45% of SCE's overhead distribution lines in high fire risk areas
- Covered conductor estimated to be about 70% effective in mitigating ignition risk
- SCE targeting 2,850 additional miles over 2023-2025

TARGETED UNDERGROUNDING

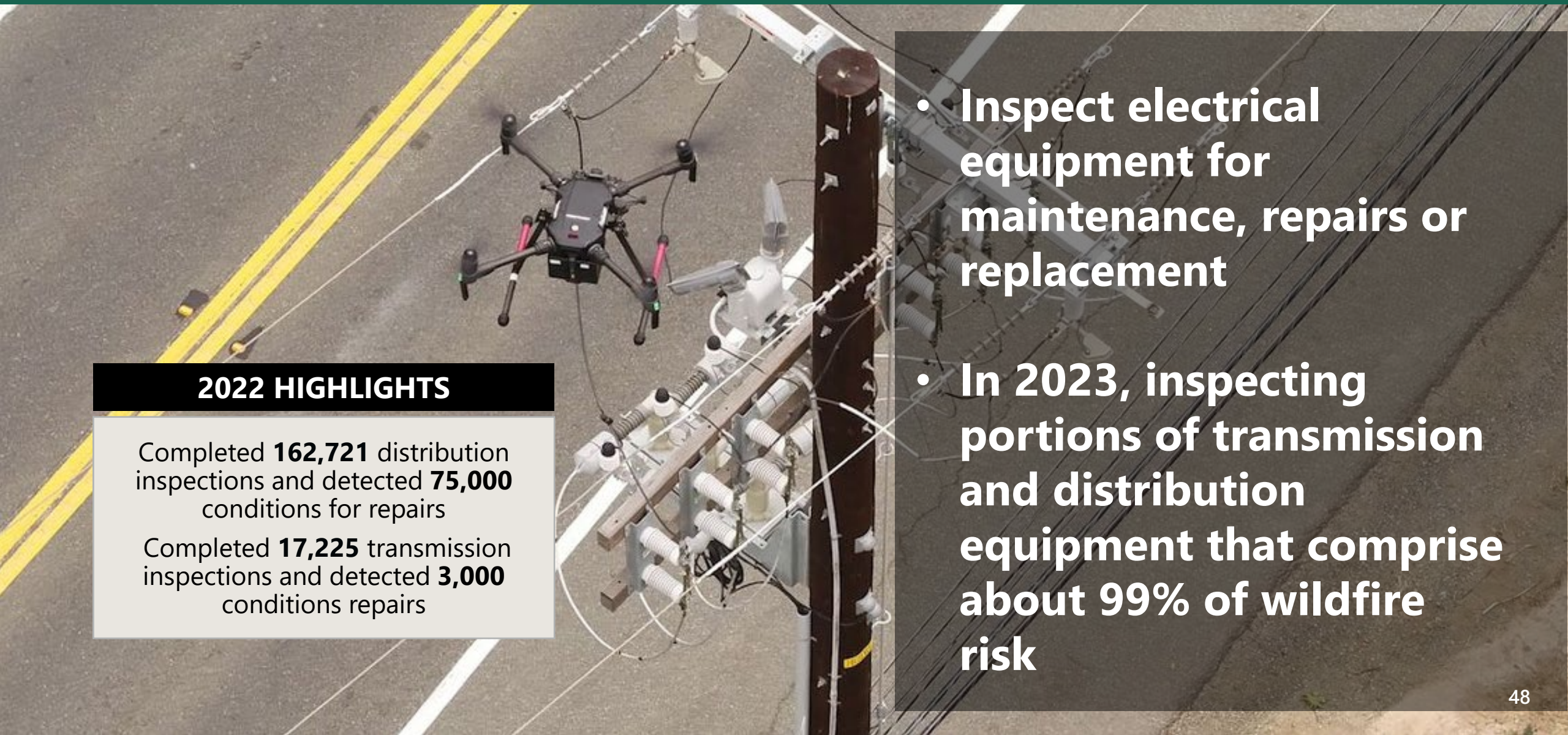
- Completed more than 20 miles of undergrounding in targeted high fire risk areas based on risk criteria and feasibility
- Ramping up scope in the coming years
- About 7,200 miles, or about 43% of primary distribution lines in high fire risk areas, already undergrounded
- SCE is targeting 75 additional miles over 2023-2025

PROTECTIVE DEVICES & SETTINGS



- **13,700+** fast-acting fuses installed or replaced to interrupt electrical current more quickly when there is a fault
- **150+** remote-controlled sectionalizing devices installed to segment and isolate portions of circuits during PSPS events. Thousands installed prior to 2018 before the wildfire mitigation program began
- **Faster grid protection settings** used in high fire risk areas during elevated fire conditions for a quicker reduction in fault energy
- **REFCL technology** detects when a single power line has fallen to the ground and almost instantly reduces energy released

HIGH FIRE RISK INSPECTIONS



2022 HIGHLIGHTS

Completed **162,721** distribution inspections and detected **75,000** conditions for repairs

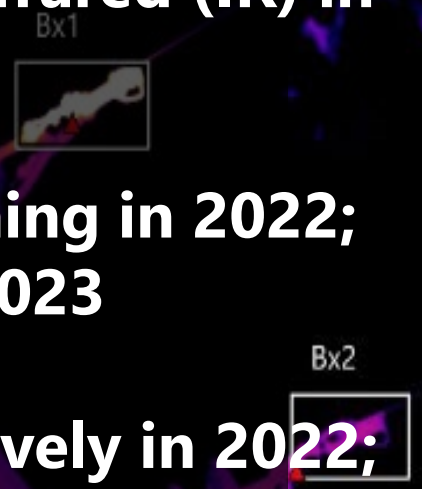
Completed **17,225** transmission inspections and detected **3,000** conditions repairs

- **Inspect electrical equipment for maintenance, repairs or replacement**
- **In 2023, inspecting portions of transmission and distribution equipment that comprise about 99% of wildfire risk**

ADDITIONAL INSPECTION METHODS

In addition to high fire risk ground and aerial inspections, SCE utilizes the following risk-informed inspection methods to identify anomalies not visible to the naked eye:

- **4,400+ overhead distribution circuit miles in HFRA with infrared (IR) in 2022; targeting approximately 5,300 circuit miles in 2023**
- **1,000+ transmission circuit miles with IR and corona scanning in 2022; continuing to target approximately 1,000 circuit miles in 2023**
- **75+ spans and 60+ splices with LineVue and X-ray respectively in 2022; targeting approximately 50 spans (LineVue) and 50 splices (X-ray) in 2023**



PG&E

Panel 2: Grid Design, Operations, and Maintenance

PG&E's Grid Design and System Hardening initiatives focus on mitigating wildfire risk in Tier 2 and 3 HFTD and HFRA areas within PG&E's service territory

Current Development

- In 2022, PG&E completed 180 miles of undergrounding compared to the target of 175 miles. Of the undergrounding miles completed in 2022, approximately 60 of those miles were completed as part of the Butte County Rebuild Program
- Since 2019, PG&E has installed 960 miles of hardened distribution overhead conductor, including 335 overhead system hardening miles in 2022
- In 2022, EPSS settings for 4,830 distribution protection devices were engineered and installed across more than 44,000 miles of conductor to provide EPSS protection, leading to a 68% reduction in CPUC-reportable ignitions in HFTD while EPSS was enabled. Protection devices on another 47 transmission lines were also engineered to provide EPSS protection
- In 2021 and 2022 PG&E closed more than 350,000 tags across the distribution system, including approximately 195,000 tags in the HFTD/HFRA

Planned Developments

- PG&E's larger plan is to complete 2,285 miles of overall system hardening work from 2023-2026.
- PG&E has current annual targets for undergrounding 2,100 miles for 2023-2026. These targets include the undergrounding work as part of the Butte County Rebuild which will be complete by 2025
- PG&E's estimated overhead covered conductor mileage from 2023-2026 is 285 miles, which is in line with our strategy to focus on undergrounding
- In 2023, Down Conductor Detection (DCD) settings will be installed on more than 500 devices to further enhance EPSS protection
- PG&E will clear approximately 130,000 ignition-risk HFTD/HFRA tags by the end of the 2023-2025 WMP cycle

Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

SDG&E

2023 – 2025 Wildfire Mitigation Plan

Our programs | Our impact

Grid Design, Operations & Maintenance

Shaun Gahagan, Wildfire Mitigation Program Manager

Grid Hardening

Transmission

93 **miles hardened** on transmission lines 2020-2022

45 **miles planned** for completion 2023 - 2025

2026 **planned completion** of tier 2 and tier 3 areas

84% **effectiveness** of hardening against wildfires.

Strategic Undergrounding

125 **miles** installed 2020-2022

359 **miles planned** for completion by 2025

6,600 **customers** expected to remove impact of PSPS

98% **reduction in risk** against wildfires.

Covered Conductor

88 **miles** installed 2020-2022

160 **miles planned** for completion 2023 - 2025

65% **reduction in risk** against wildfires

Asset Replacement

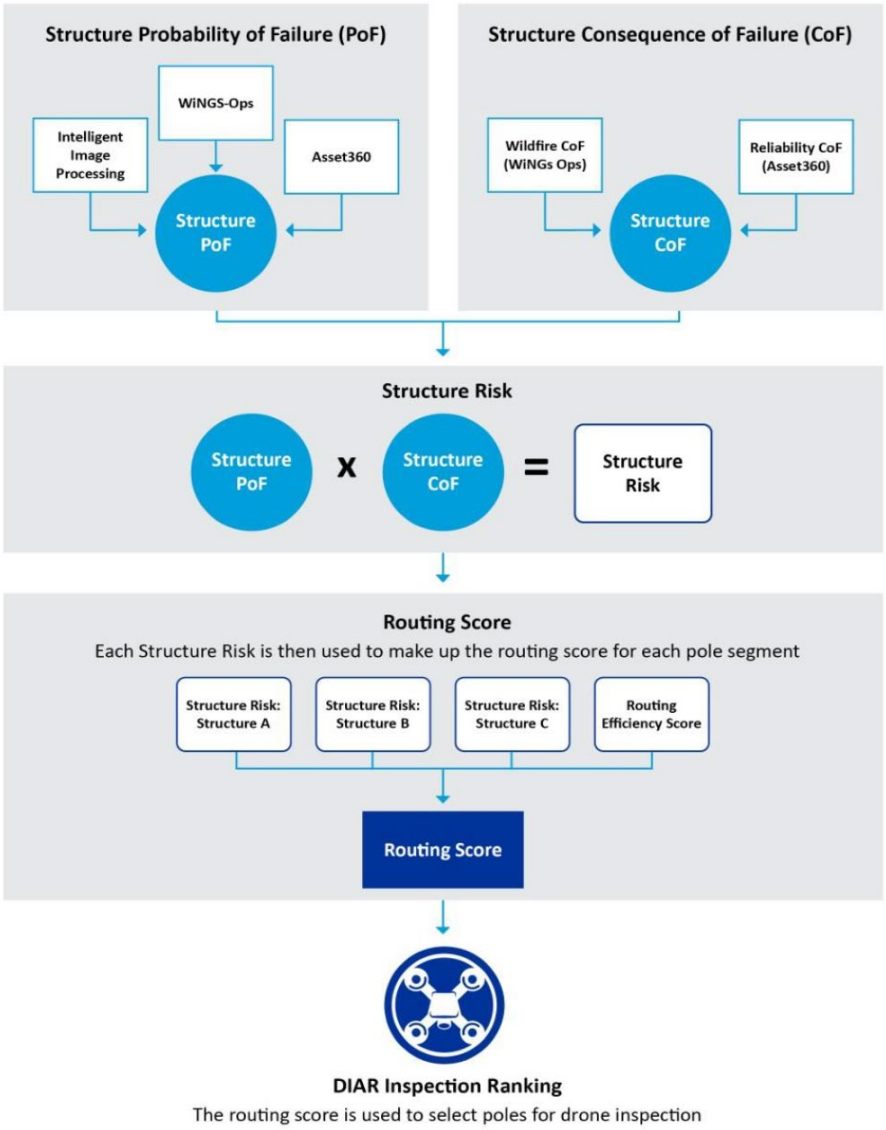
Risk-informed drone inspections

2.3 **million images** captured

85k **structures photographed** in tier 2 and tier 3 of the HFTD

96 **machine learning models** created

41% **reduction** in field time



GRID OPERATIONS, DESIGN, AND MAINTENANCE PANEL DISCUSSION

PANEL MEMBER or UTILITY REPRESENTATIVE	ORGANIZATION / TITLE
Ray Fugere	SCE / Director
Holly Wehrman	CPUC CalAdvocates
Wendy Al-Mukdad	CPUC SPD
Thomas Long	TURN

10 MINUTE BREAK

Back at 1:45pm

OPEN QUESTIONS AND ANSWERS

Reminder to raise hand, use Q&A function in Zoom.

EMERGENCY PREPAREDNESS, COMMUNITY OUTREACH, AND PSPS PANEL

SDG&E

Emergency Preparedness

Mona Freels, Emergency Services Manager

ICS Integration

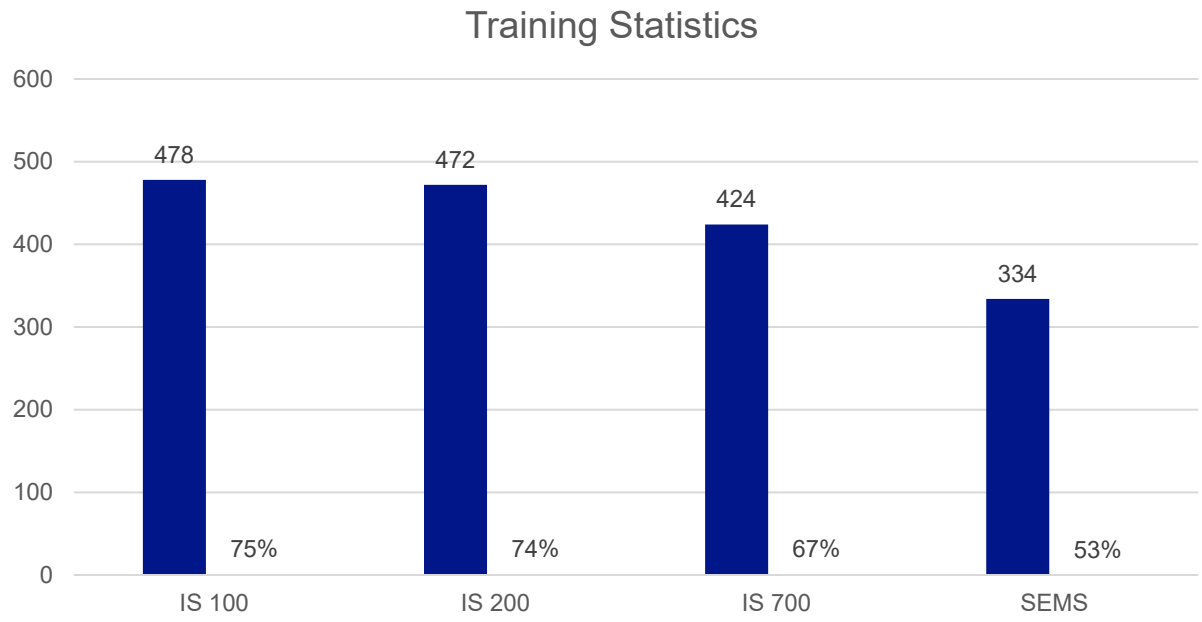
- ICS Training:
  - EOC Responders
  - Field Responders
  - Utility Field Commander
  - Field Safety Officer
  - ICS Field Mentoring

- First Responder Training:
  - Fire Personnel
  - Law Enforcement Personnel

634 EOC Responders

Required FEMA/CAL OES trainings:
- SEMS Intro
- IS 100
- IS 200
- IS 700

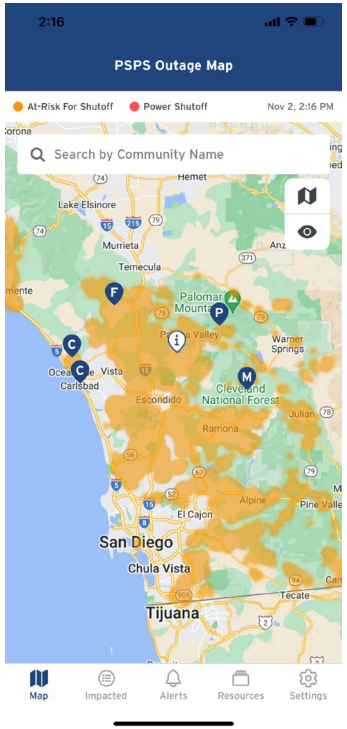
Required internal trainings:
- EOC orientation
- Summer readiness
- Section-specific

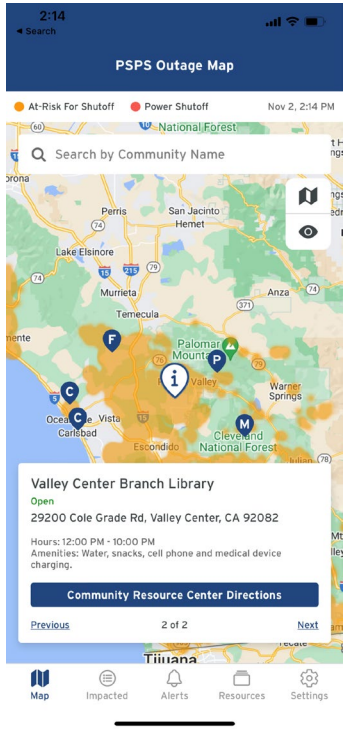


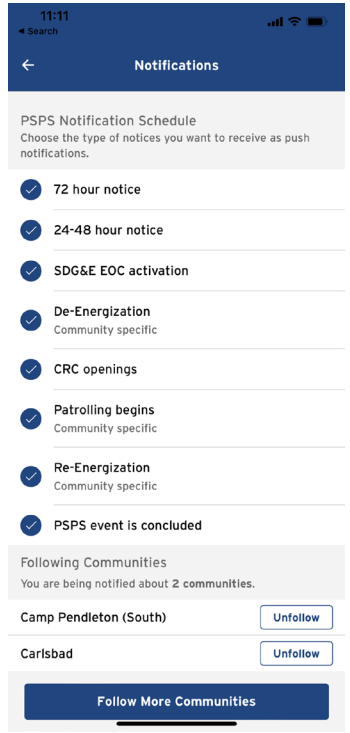
Public Safety Partner Portal

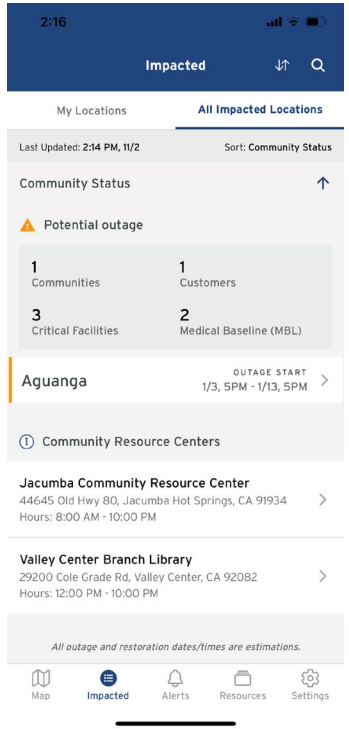
- Will be all-hazards, including wildfire by **Sep. 1, 2023**
- Information by device
- Partners can follow communities
- Customized push notifications

- Mapping
- Social Media Kits
- Links to external resources like 211 San Diego
- 24/7 contacts into the EOC



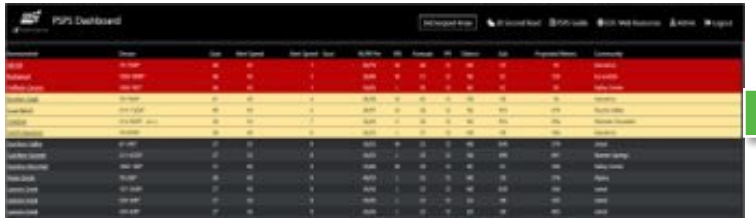






Human Factor Engineering – EOC Dashboards

Pre-Redesign



PSPS Dashboard

DeEnergized Areas | Critical Facility Details | 30 Second Read | PSPS Guide | EOC Web Resources | Admin

Anemometer	Notification to DeEnergize	Device	Gust Alert Speed		Gust - Alert Speed	95/99 Per	VRI	Forecast	FPI	District	Sub	Projected Meters	MBL Count	Community
o Dump	☐	MN-12KV-231*	15	10	+5	24/30	H	17	12	NE	MN	3022	132	Fallbrook
cado	☐	520-22R*	14	10	+4	22/27	H	17	12	NE	AV	2475	127	Fallbrook
Volcan Mountain	☐	221-19R*	14	10	+4	40/50	L	34	13	RA	ST	0	-	Julian
Hellhole Canyon	☐	1030-987*	13	10	+3	50/63	L	49	12	NE	VC	0	-	Valley Center
Julian	☐	221-31R* (JU1, OK1, SL1)	11	10	+1	30/37	H	26	13	RA	ST	1624	85	Julian
Julian	☐	222-1364R*	11	10	+1	30/37	H	26	13	RA	ST	0	62	Julian
Cameron Corners	☐	448-9R*	18	20	-2	29/35	M	26	13	ME	CN	2042	99	Campo

EOC Outage Board

Critical Facility Details | Outage Board Guide | EOC Web Resources

ISO STATUS	Current Load 41584 at 10-Aug-2021 17:15		Today's Peak 41538		Forecast Peak 41772	
SDGE STATUS	Current Load 3255 at 10-Aug-2021 17:15		Today's Peak 3285		Forecast Peak 3293	Frequency 0.00 Hz

Overall Outage Summary

Last Updated: **08/10/2021 17:16**

Outages	Circuits	Communities	Districts	Affected Meters	% of Meters Affected
2	2	6	2	59	Less Than 1%

PSPS Impacts — Last Updated: **08/10/21 17:15**

Meters	MBL	Telecom	Fire Stations	Hospitals
0	0	0	0	0

Static List By Circuit | Static List By Time

Primary Outage Summary

Export | Report

Circuit	Sect Device	Status	Community	District	Outage Reason/Damage	Affected Meters	MBL Count	Outage Start	Estimated Restoration
1049	<inline_jumper.17297>		City Heights/ Chollas Creek/ Oak Park	EA	Our crews have found a need to repair SDG&E equipment.	36	0	08/10/21 17:00	08/10/21 20:00
0442	F30663		Japatul Valley/ Buckman Springs/ Morena Village	ME	SDG&E is assessing the outage to determine the cause.	23	0	08/10/21 15:03	08/10/21 18:00

= Nominal - or - Outage < 30 Minutes Old | = Outage > 20 Hours | = PSPS Outage | = ERT Within 1 Hour

PRODUCTION

Community Outreach

Robb Henderson, Senior Marketing Communications Advisor
Danielle De Clercq, AFN Customer Strategy Manager

Public Education & Outreach

Diverse Communications & Outreach Channels

- Dedicated PSPS education campaign
- Service territory-wide, year-round campaign (Mar-Dec)
  - Customized Tribal and AFN communications
  - Increase understanding of PSPS criteria
  - Leverage 20+ diverse communication platforms
- Communicate in 21 prevalent languages in service territory and American Sign Language
- Dedicated Spanish Communications Manager

Customer Notifications

- Enhanced Accessibility, Available in 21 prevalent languages
- American Sign Language (audio & text)
- Address level notifications available through PSPS mobile app including non-account holders

Research

- Post-season Research (Q1/Q2)
- Pre-season and Post-season Research planned for Q3/Q4

MARKETING TACTICS	Q1	Q2	Q3	Q4
Print Advertising		X	X	X
Outdoor Advertising		X	X	X
Television/ Radio		X	X	X
Social Media Advertising		X	X	X
Digital Advertising		X	X	X
Customized AFN Campaign			X	X
Website & Video Update	X	X	X	
Updated PSPS Notifications		X	X	
In-studio Media Interviews		X	X	X
Strategic Story Pitching		X	X	X
Social Media (Organic)	X	X	X	X
Print Collateral	X	X	X	

Mitigation of impacts on individuals with AFN

SDG&E has identified ~423k unique AFN customers, which is ~33%(1) of our residential customer base

- **Mapped "AFN" customers** across database
  - ~423,000 total customer accounts with AFN (~33%)
  - ~44,000 customer accounts with AFN in HFTD (~10%)
- Continued AFN **customer research**

- AFN Statewide and Collaborative Councils, Regional Working Groups and Core Planning team
- AFN **Support Partners** (e.g., 211)
- Partnerships with State, County and Local Orgs
- Enhanced **Tribal Support**
- **Increased AFN CBOs** & focus on PSPS support

AFN Database Fields	
CARE	Hearing Impairment
FERA	Vision Impairment
Medical Baseline	Disability
Life Support	Seniors
Temperature Sensitive	Non-English
Large Font Bill	Durable Medical Equipment(2)
Braille Bill	Assistive Technology(2)

- Broadened **ability to "self-identify"** as having an AFN
- **Enhanced messaging** and communication materials
- Newly added **self-ID webform** on SDG&E website
- To date, **~7,850** customers identified through self-ID

(1) Based on residential customer accounts (1.3m). Note Many AFN customers fall into multiple categories (e.g. CARE + MBL)
(2) Additional identifiers to be added in Q2 2023

Support for individuals with AFN

New and continued enhancements to further reach and support individuals with Access and Functional Needs

PSPS Support Services

- Community Resource Centers
- Pantry and Warm Food Options
- Centralized Resource Hub
- Transportation and Hotel Stays
- Wellness Checks

Customer Communications

- PrepareforPowerDown.com
- Targeted Marketing
- AFN Self-Identification
- Amplified Notifications through CBOs

Accessibility

- Digital Accessibility
- Video Remote Interpreting (VRI) for Customer-Facing Representatives
- Accessible Hazard Alert System (AHAS)

Community Engagement

- Wildfire Safety Fairs
- Tribal Partnerships
- Resiliency Resources
- Outreach through CBOs

Public Safety Power Shutoff (PSPS)

Jonathan Woldemariam, Director – Wildfire Mitigation & Vegetation Management

WiNGS Ops

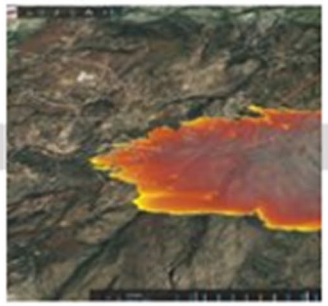
Assisting PSPS decision-making

WiNGS Ops results and high-level summary shared with Meteorology Team

Integration into PSPS decision dashboard via "Conductor Risk Index"

Post-event Patrols and Reporting

3 days ahead



72-Hour: EOC Activation; High-level weather briefing to provide two full days of daylight for pre-patrols

2 days ahead

48-Hour: Receive circuit list from Meteorology; Continue pre-patrol and gather damage assessments

1 day ahead

24-Hour: Placement of Observers

Day of power shutoff

Weather arrives: De-energization

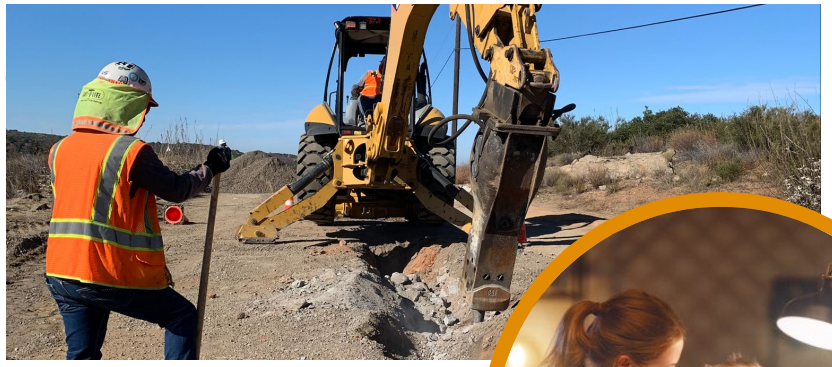
Power restored

Weather passes: Post-patrol and re-energization

Programs reduce PSPS impacts on top 15 frequently de-energized circuits

Strategic Undergrounding	• **68** miles completed in 2022 • **571** miles to be completed by 2032 • **650** customers mitigated in 2022 • **5,000** customers to be mitigated by 2032
PSPS Sectionalizing	• **71** SCADA devices installed • **2,400-8,000** customers mitigated
Backup Resiliency Programs	• **1,540** customers participated

A CASE STUDY:



Hell Hole Canyon saw wind gusts of 61 mph during the November 2021 PSPS. The customers on this portion of the circuit were able to **avoid a PSPS de-energization due to strategic undergrounding efforts that were completed in June 2021.**

*Frequently de-energized circuit is defined by OEIS as a circuit experiencing three or more PSPS de-energizations in a calendar year
Using a timeframe of 2018-2022, 15 circuits totaling 8,320 customers have been identified as "frequently de-energized"

PG&E

Panel 3: Emergency Preparedness, Community Outreach and PSPS

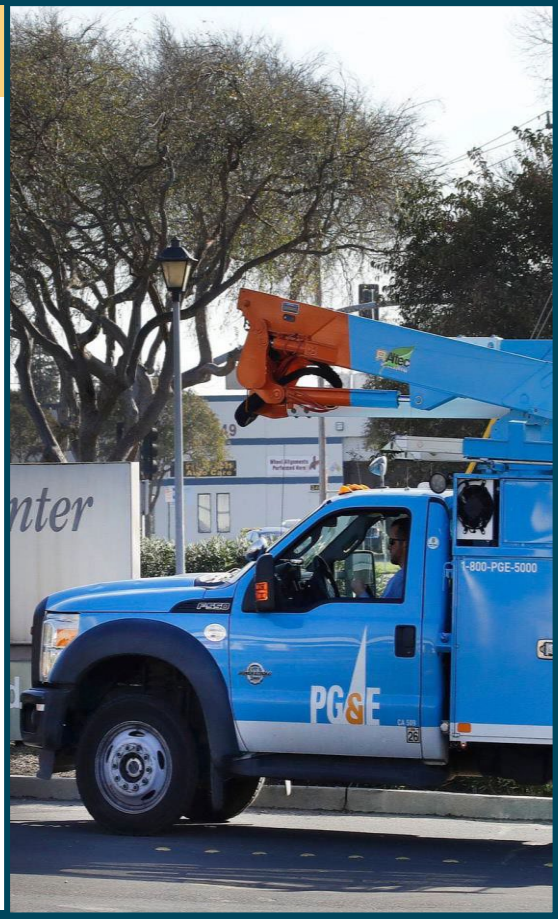
PG&E's Emergency Preparedness and Response (EP&R) Plan bolsters the response to emergencies by improving governance, strengthening coordination among functional areas, and improving collaboration with external partners. PG&E's community outreach and public awareness initiatives focus on ensuring that all stakeholders understand the wildfire safety programs, their benefits, the potential impacts, and the support that is available to them. PSPS initiatives demonstrate a focus on more accurately modeling the need for a PSPS events, reducing the impact to customers, and hardening systems to prevent PSPS events.

Current Development

- PG&E has implemented various communications and media channels to inform the public of emergency events, including direct customer notifications, PSPS address alerts, PSPS portal, updated PG&E website information, local media press releases, and live agent call center customer support.
- PG&E collaborates with community-based organizations (CBOs) and critical facilities to enact a localized education strategy, leveraging automated outage notifications, follow-up Interactive Voice Recording (IVR) messages, customer e-mails, social media posts, and community meetings.
- In 2022, because of favorable weather, PG&E reported 0 events where de-energization was initiated, which represents the first time since before 2018 that this occurred.
- In 2021, the FPI model and IPW models were enhanced with better data and improved analytical modeling, which guides PSPS decision-making

Planned Developments

- PG&E annually reviews, and if appropriate, revises the Company Emergency Response Plan (CERP) and the two wildfire-related annexes (the Wildfire Annex and the PSPS Annex) to improve emergency response.
- Over the next 10 years, PG&E aims to hold community engagement meetings within the five PG&E regions of service that will include, but are not limited to, a mix of webinars, open houses, town halls, and/or answer centers.
- PG&E has a plan in place to reduce PSPS impacts by approximately 55,000 customer events for the 2023-2025 period by completing Wildfire mitigation projects including undergrounding.
- PG&E is working to provide portable batteries to customers at risk of more frequent EPSS outages or PSPS events with a focus on AFN, MBL, and self-identified vulnerable populations.
- Further improvements are planned for the PSPS decision making including updates to the IPW and FPI models and continued updates to the base datasets feeding the models



Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

SCE

Emergency Preparedness, Community Outreach & PSPS (4/27)

SCE: Emergency Preparedness, Community Outreach & PSPS

Emergency Preparedness

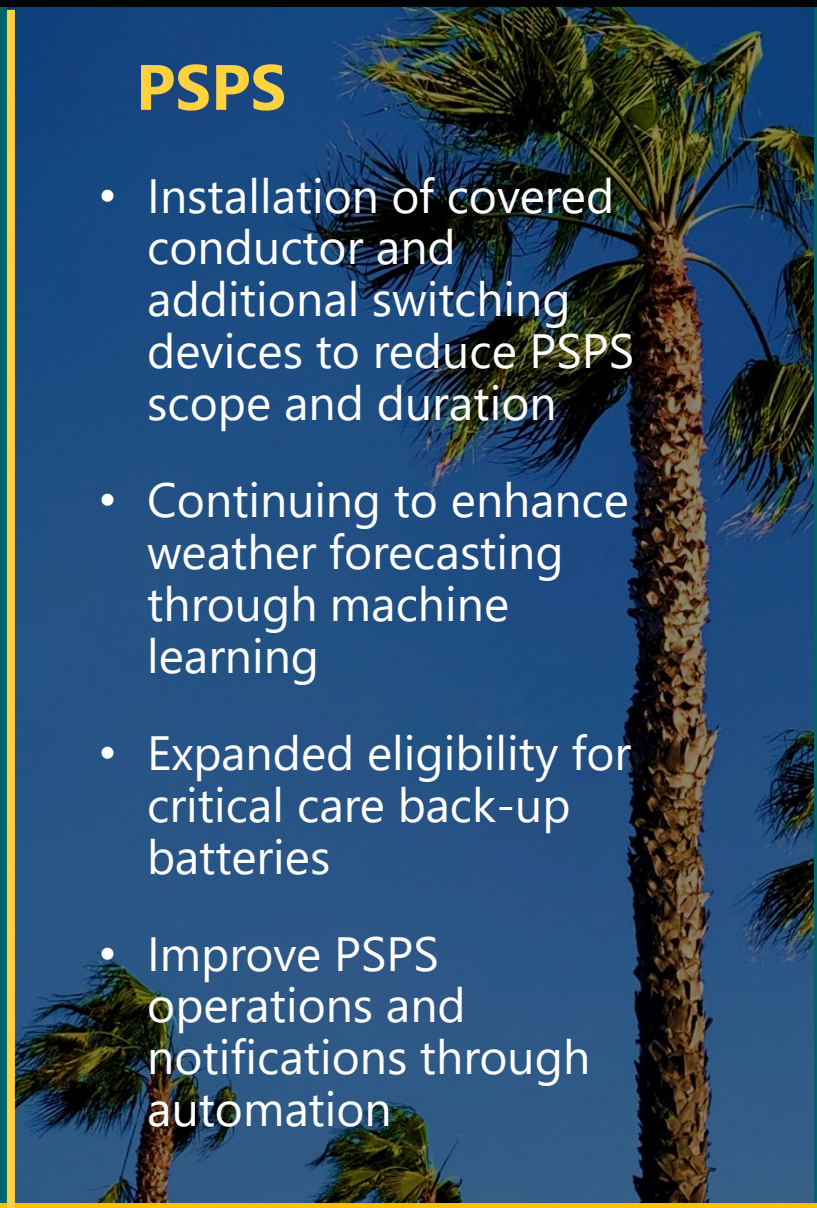
- Training: On track for all IMT members to be fully qualified by 7/1, including position-specific training across key functions
- PSPS Full-Scale exercises with observers, functional and tabletop exercises in May
- Improving customer-provided contact data
- Maintaining and expanding aerial firefighting resource availability

Community Outreach

- Issuing Resource Guides for all tribal and local governments (May distribution)
- Community wildfire meetings
- Critical infrastructure workshops
- Emergency preparedness plan sharing with public safety partners, encompassing PSPS, AHP, EEAP, WMP
- Self-identification pilot to better identify AFN customers
- Expanding CBO network to better serve AFN communities

PSPS

- Installation of covered conductor and additional switching devices to reduce PSPS scope and duration
- Continuing to enhance weather forecasting through machine learning
- Expanded eligibility for critical care back-up batteries
- Improve PSPS operations and notifications through automation



EMERGENCY PREPAREDNESS, COMMUNITY OUTREACH, AND PSPS PANEL DISCUSSION

PANEL MEMBER or UTILITY REPRESENTATIVE	ORGANIZATION / TITLE
Mona Freels	SDG&E / Emergency Services Manager
Justin Hagler	CPUC CalAdvocates
Will Abrams	Self
Megan Somogyi	Local Governments Representative

10 MINUTE BREAK

Back at 3:45pm

OPEN QUESTIONS AND ANSWERS

Reminder to raise hand, use Q&A function in Zoom.

OPEN QUESTIONS AND ANSWERS – ALL PANELS

PUBLIC PARTICIPATION

- Docket 2023-2025-WMPs is your primary source of information regarding WMP evaluations: https://efiling.energysafety.ca.gov/EFiling/DocketInformation.aspx?docketnumber=2023-2025-WMPs

- Data Request (DR) responses are available at each electrical corporation's website and summaries of DRs received by the utilities are available at: https://efiling.energysafety.ca.gov/EFiling/DocketInformation.aspx?docketnumber=2023-2025-WMP-DRs

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A California Natural Resources Agency

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Sacramento, CA 95814
916.902.6000

2023-2025 WILDFIRE MITIGATION PLAN PUBLIC WORKSHOP

For Large Electrical Corporation Submissions

April 27 & April 28, 2023
DAY ONE

INTRODUCTION

SAFETY MESSAGE

- Be aware of your surroundings
- Know your evacuation route(s)
- Feel something, say something
- Stand up and move occasionally

OPENING REMARKS

- Electrical corporations are required to prepare and submit Wildfire Mitigation Plans (WMPs) to Energy Safety.
- WMPs describe how the electrical corporation is constructing, maintaining, and operating its electrical lines and equipment in a manner that will minimize the risk of catastrophic wildfires.

WORKSHOP OBJECTIVES

- Receive presentations on key areas of the large electrical corporations' 2023-2025 Wildfire Mitigation Plans.
- Provide the public and other stakeholders with the opportunity to ask questions about the electrical corporations' WMPs.

WORKSHOP AGENDA (1/3)

Total of 5 panels over 2 days.

Each panel will consist of:

1. Utility presentations
2. Panel discussion
3. Short break
4. Public questions

WORKSHOP AGENDA (2/3)

Thursday 4/27:

- **Morning:** Vegetation Management Panel
- **Lunch:** 11:30am – 12:30pm
- **Afternoon:**
  - Grid Operations, Design, and Maintenance Panel
  - Emergency Preparedness, Community Outreach, and Public Safety Power Shutoffs Panel
- **Open Q&A**
- **Adjourn:** 5:00pm

WORKSHOP AGENDA (3/3)

Friday 4/28:

- **Morning:** Situational Awareness and Forecasting Panel
- **Lunch:** 12:00pm – 1:00pm
- **Afternoon:** Risk Assessment and Mitigation Selection Strategy Panel
- **Open Q&A**
- **Adjourn:** 3:40pm

WORKSHOP LOGISTICS

Asking Questions

- Ask written questions in the Zoom Q&A at any time
- Raise your hand during the public questions portion of the panels
- Hold questions for Q&A session at the end of each day

ENERGY SAFETY PANEL MODERATORS

Energy Safety Panel Moderators – Day One

- Vegetation Management – Colin Lang
- Grid Operations, Design, and Maintenance – Andie Biggs
- Emergency Preparedness, Community Outreach, and Public Safety Power Shutoffs – Jessica McHale

AGENDA – DAY ONE

9:25am – 11:30am	Vegetation Management Panel
10:35am, 10-minute break	
11:30am – 12:30pm	*Lunch*
12:30pm – 2:30pm	Grid Operations, Design, and Maintenance Panel
1:35pm, 10-minute break	
2:30pm – 4:30pm	Emergency Preparedness, Community Outreach, and Public Safety Power Shutoffs Panel
3:35pm, 10-minute break	
4:30pm – 5:00pm	Open Q&A (all panels)
5:00pm	*Adjourn*

VEGETATION
MANAGEMENT
PANEL

PG&E

Pacific Gas and Electric Company

2023 Wildfire Mitigation Plan Public Workshop

Vegetation Management

April 27, 2023

Discussion Topics and Presenters

1	Overview	3
2	Background and Shift from EVM	4-5
3	Focused Tree Inspections Program	6
4	VM for Operational Mitigation (EPSS)	7
5	Tree Removal Inventory Program	8
6	Quality Verification	9
7	Q&A	10
8	Appendix: Targets & Objectives	11-13

PG&E SPEAKERS

Andy Abranches
Senior Director, Wildfire Risk Management

Kamran Rasheed
Director, Vegetation Asset Strategy and Analytics

Stephen Simon
Senior Director, MID Quality Management

Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

Overview

Two prong strategy for Vegetation Management for this WMP period – (1) Improve the base veg management work via improved tools, processes and training; (2) Utilize field input and risk models to targeted vegetation work for maximum benefit

Current Development

- Over the course of 2022, the PG&E Vegetation Management program inspected and mitigated vegetation encroachment and dead and dying trees across approximately 100,000 miles of overhead distribution and transmission electric facilities via the routine program. A second patrol was also performed within the HFTD (25,000 distribution miles and 5000 transmission miles).
- PG&E also performs removal/clearing of vegetation around select Transmission and Distribution poles and towers in accordance with PRC Section 4292, to maintain a firebreak of at least 10 ft in radius (out from the pole) up to 8 ft up from the ground per Title14 CCR 1254.
- During 2022 PG&E completed the deployment of EPSS capabilities across the HFTD and HFRA areas. The Enhanced Vegetation Management (EVM) program was sunset at the end of 2022
- PG&E VM currently uses multiple centrally managed- systems to document planned and completed vegetation work. We are building a tool to manage and support our various program requirements and work processes. This started in 2021 and will continue in 2023

Planned Developments

- PG&E has outlined a Focused Tree Inspection program for Areas of Concern (AOC) to target VM work in areas at higher risk of vegetation failure The pilot will focus on the highest risk areas and may be adjusted annually based on prior years events.
- VM for Operational Mitigations is intended to reduce outages and potential ignitions by performing targeted VM work on EPSS-enabled circuits based on historic vegetation outages. Additional tree work may be prescribed on 2023 EPSS-enabled circuits that experience higher degree of vegetation outages.
- A transitional program is being created to re-inspect and work trees previously identified for abatement in the EVM program, but that have not yet been worked, based on a risk informed approach.
- The Vegetation Management program standards and procedures will be updated and operationalized in 2023 to drive standardization and best practice adoption across all vegetation work.

Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

Ongoing Vegetation Management Programs

Standard Vegetation Programs

Transmission programs include Routine NERC and Routine Non-NERC. These are annual Integrated Vegetation Management (IVM) Programs recurring according to the vegetation growth response. PG&E's Transmission vegetation inspection capabilities use technologies such as Light Detection and Ranging (LiDAR). *See Section 8.2.2.1*;

Distribution programs include Routine patrols which occur annually, and Second Patrol which occurs approximately six months offset from Routine patrols. *See Section 8.2.2.2*;

Substations: PG&E assesses the area around Electric Transmission (ET) Substations in High Fire Threat District (HFTD) and High Fire Risk Area (HFRA) areas to identify potential flammable fuels and vegetation for removal. *See Section 8.2.2.3*;

Vegetation and Fuels Management: PG&E's VM has various programs supporting vegetation and fuels management activities. *See Section 8.2.3*;

Quality Assurance/Quality Control: PG&E's VM Quality Team encompasses Quality Assurance (QA), Quality Verification (QV), and Quality Control (QC). *See Section 8.2.5*;

Supporting Improved Execution of Standard Programs

VM Enterprise System

PG&E's VM team is implementing a multi-year project to centralize the capture of inspection, trimming and removal activities into a single software platform

Centralized Constraint Management

PG&E's VM team is building out processes to address three types of constraints:
(1) customer constraints, (2) environmental constraints, and (3) permitting constraints

Workforce Training & Planning

- PG&E has developed Tree Crew and Inspector Training programs to develop a steady pipeline of qualified personnel who may later join our contract or internal VM workforce
- PG&E's PI basics training path and related training courses provide personnel with an opportunity to earn continuing education credit that can be used towards obtaining ISA certification
- PG&E's educational partnerships allow us to provide employees and contractors with a direct path of obtaining certification
- To bolster recruitment and the pipeline of qualified personnel, PG&E has partnered with the IBEW and educational institutions, such as the California Community College system, to establish a training program designed to provide the skills and knowledge necessary to perform tree crew work safely & competently

Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

Specific, Targeted Programs to Replace EVM

Reason for Replacing EVM

EVM Scope

Initiated in 2019, EVM Represents a process by which PG&E went above and beyond regulatory requirements, through technologies such as LiDAR, to address the highest risk Circuit Protection Zones (CPZs)

VM Mitigation RSE Comparison

14.5 For EVM **<** **105.7** For EPSS

Given the significantly higher RSE through EPSS relative to EVM, the vegetation management program decided to switch away from EVM to Distribution Routine Patrol

Programs Replacing EVM

Focused Tree Inspections

Specific areas of focus were developed, primarily in the HFRA, where efforts will be concentrated to inspect and address high-risk locations impacted by vegetation

VM for Operational Mitigations

This program is intended to help reduce outages and potential ignitions using a risk informed, targeted plan to mitigate potential vegetation contacts based on historic vegetation caused outages

Tree Removal Inventory

This program is intended to systemically work down trees that were previously identified through EVM inspections. Annual risk-ranked workplans will be developed to mitigate highest risk

Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

Focused Tree Inspections (FTI) Program in Areas of Concern (AOC)

Purpose

Scope of Work

Initial set of 300 OH line miles for the pilot to inform and shape the future Focused Tree Inspection Program

Changes Since the Last WMP

Developed Areas of Concern to identify highest-risk miles associated with potential tree falls using all available data and local inputs (includes 4,800 miles in 20 counties)

2023 Prioritization

- ~300 Pilot miles will address 16% of total score reduction
- Pilot AOCs are ranked 2, 5, 6, and 15 from overall AOC WDRM v3 Ranking
- Pilot Project is distributed across 4 Regions
- The full program target scope addresses ~93% of total score reduction

Data Sets used to Develop FTI

PSS: Circuit Review and Scoring by County

Meteorology: 30 Year Re-analysis packages and PSPS lookback polygons

VM: PSPS Damage, Outage Clusters 2018-2021, Ignitions and Regional Review of Second Patrol Areas with requests and recommendations

HFRA: High Fire Risk Area (HFRA) v5.1 - Baseline

EPSS: EPSS Buffer v5.1 – Additional areas outside HFTD/HFRA that are subject to EPSS execution under specific conditions

Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

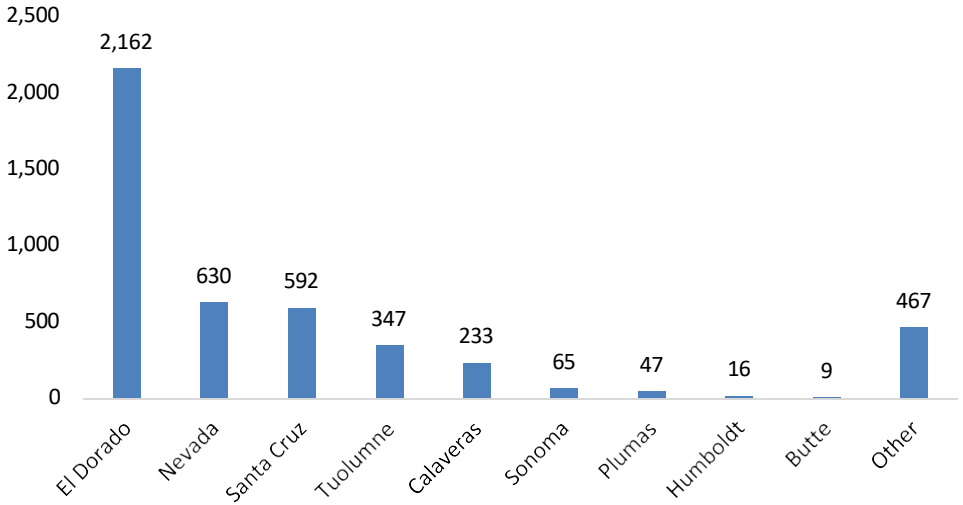
VM for Operational Mitigation (EPSS)

Purpose

Scope of Work

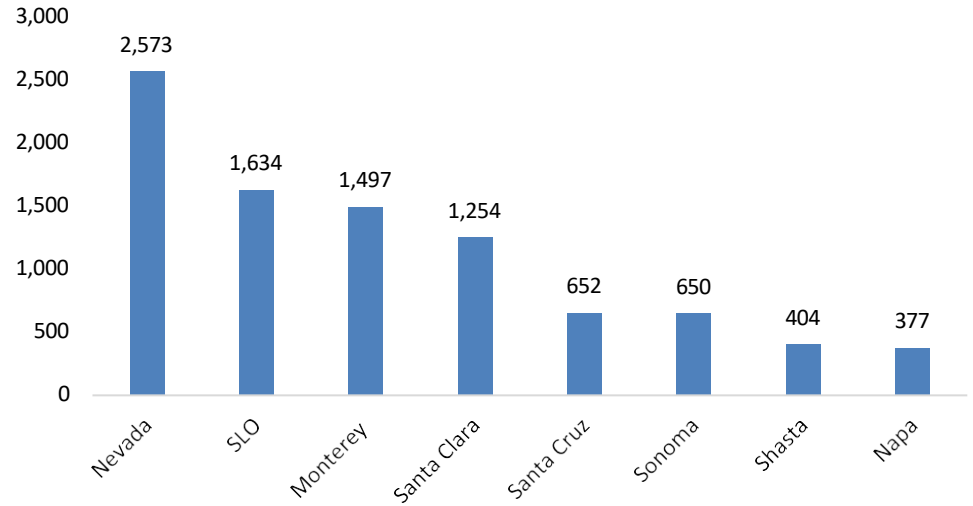
- **Extent of Condition Patrols –** Patrols conducted after veg related EPSS outages to mitigate future veg outages
- **EPSS CEMI 8+ Locations** – Targeted vegetation work in areas where customers experienced 8 or more EPSS outages in 2022

Reactive Work – Extent of Condition Patrols
Estimated Trees by County †



† *Units reflected are estimates based on known reactive work*

EPSS CEMI 8+ Locations Estimated
Trees by County †



† *Units reflected are estimates based on known work*

Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

Tree Removal Inventory (TRI) Program

Purpose

Removing trees that were marked for abatement under the EVM program

Scope of Work

TRI is intended to work down the inventory of EVM marked trees starting with 15,000 trees in 2023

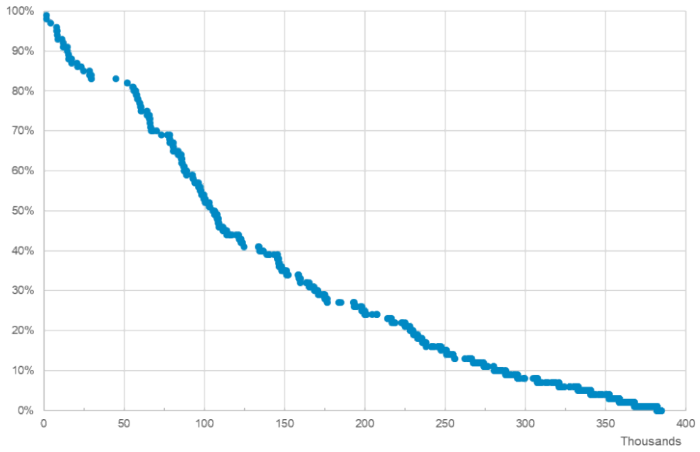
Changes Since the Last WMP

Created this targeted program, the Tree Removal Inventory program, to address trees previously marked under EVM using WDRM Trunk model v3.0 to prioritize

2023 Prioritization

- The 2023 WMP Commitment target is to remove 15,000 EVM trees and will lead to a reduction in ignition risk of >10%;
- The 2023 scope of work provides 45,000 trees in 8 counties to ensure that 15,000 are removed given customer and permitting constrains on this work

EVM Inventory Estimated Risk Buy Down



Total inventory risk is reduced by:

- **2023:** ~10% w/ 15k trees removed
- **2024:** ~15% w/ 35k trees removed
- **2025:** ~25% w/ 60k trees removed
- **2026:** ~35% w/ 85k trees removed
- **2027:** ~55% w/ 110k trees removed

Removals are subject to constraint resolution

Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

Vegetation Management Quality Verification (QV)*

Purpose of VM Quality Management

Assure safety, risk reduction, continuous improvement and deliver for our customers and hometowns.

Scope of Work

Performance of Quality assessments of completed wildfire mitigation work to ensure safety, compliance and data informed continuous improvement.

Changes Since the Last WMP

Implementation of a robust Quality Management System (QMS) across the VM Distribution, Transmission and Vegetation Clearing programs in HFTD areas.

Quality Targets and Results

Program	2023 Target	2023 YTD Actual (as of 4/21/2023)	2022 Performance	Change
VM – Distribution HFTD	95.00%	99.64%	91.34%	↑ +8.3pp
VM – Transmission HFTD	95.00%	100.00%	94.21%	↑ +5.8pp
VM – Vegetation Control (VC) HFTD	95.00%	99.14%	90.26%	↑ +8.9pp

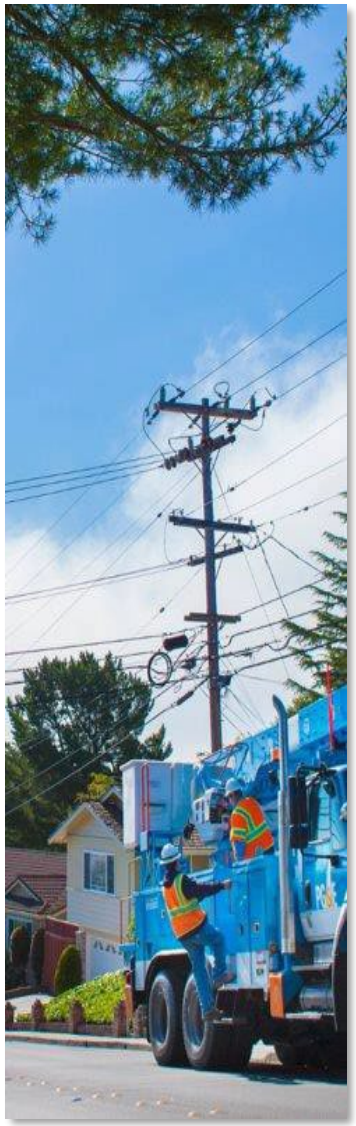
*Quality Verification (QV) is a subpart of Quality Assurance within PG&E's QMS

Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

Questions?

Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

Objectives – Vegetation Management



ID	Objective Name & Description	Timeframe
VM-03	**Focused Tree Inspection Program** Identify areas of concern (AOCs). Initiate a pilot in at least one AOC, and fully implement a cross sectional functional team to determine value of a multi-year historical tree data set.	3 Year Objective
VM-09	**Constraint Resolution Procedural Guideline** Develop a process of centralizing constraint resolutions, focused on customer, environmental, and permitting constraints. Once identified, develop a process to mitigate constraints.	3 Year Objective
VM-10	**Inspection in HFTD and HFRA supporting key vegetation management initiatives** Continue multiple inspection activities in HFTD and HFRA supporting key vegetation management initiatives.	10 Year Objective
VM-11	**Enhance and refine Focus Tree Inspection – Areas of Concern (AOC)** Enhance and refine Focus Tree Inspection – Areas of Concern (AOC) development criteria and application of the AOCs to vegetation management programs.	10 Year Objective
VM-12	**Evaluate emerging technologies** Evaluate emerging technologies to enhance focus of and streamline execution of vegetation management inspections.	10 Year Objective

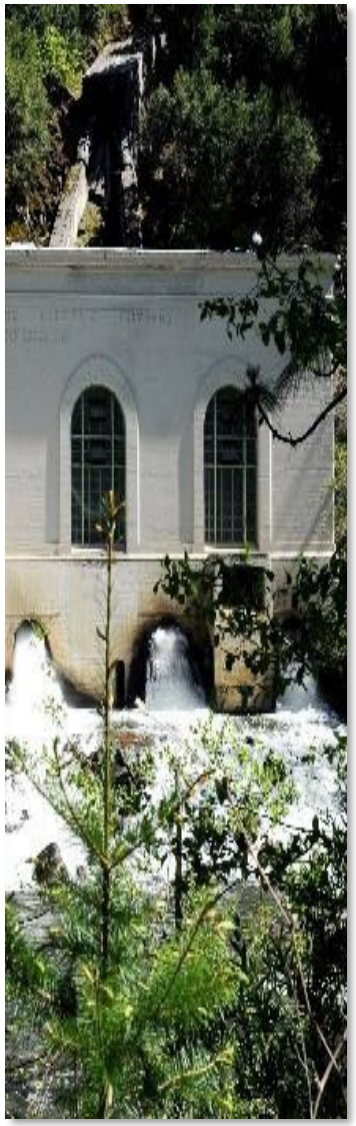
Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

Targets – Vegetation Management

ID	Target Name & Description	2023	2024	2025
VM-01	**LiDAR Data Collection - Transmission** Collect LiDAR data of transmission system, to include both HFTD/ HFRA and non-HFTD miles.	17,500 miles	17,500 miles	17,500 miles
VM-02	**Pole Clearing Program** Inspect, clear, and maintain, where necessary on poles per Vegetation Control Standard TD-7112S.	77,503 poles	2023 YE	2024 YE
VM-04	**Tree Removal** Removal of trees identified from the legacy Enhanced Vegetation Management (EVM) program.	15,000 trees	20,000 trees	25,000 trees
VM-05	**Defensible Space Inspections (DSI) – Distribution Substation** Complete defensible space inspections in alignment with the guidelines set forth in LAND 4001P-01.	131 distribution substations	131 distribution substations	131 distribution substations

Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

Targets – Vegetation Management (Continued)



ID	Target Name & Description	2023	2024	2025
VM-06	**Defensible Space Inspections (DSI) – Transmission Substation** Collect LiDAR data of transmission system, to include both HFTD/ HFRA and non-HFTD miles.	55 transmission substations	55 transmission substations	55 transmission substations
VM-07	**Defensible Space Inspections (DSI) – Hydroelectric Substations and Powerhouses** Inspect, clear, and maintain, where necessary on poles per Vegetation Control Standard TD-7112S.	61 hydroelectric substations	61 hydroelectric substations	61 hydroelectric substations
VM-08	**Vegetation Management – Quality Verification (QV)** Removal of trees identified from the legacy Enhanced Vegetation Management (EVM) program.	95% verification pass rate	95% verification pass rate	95% verification pass rate

Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

SCE

Vegetation Management (4/27)

SCE: VEGETATION MANAGEMENT

Consolidated Inspection Strategy

Centralized tree inspection schedule for Routine Line Clearing, Hazard Tree, and Dead and Dying Tree Removal Program

Improve Risk-Informed Processes

Improve scheduling capability and increase granularity for work prioritization based on risk factors (e.g., species, clearance)

Remote Sensing

Transition majority of ground inspection for vegetation line clearing in HFRA to remote sensing technology (e.g., LiDAR, satellite)

2023 Initiatives

- VM-1 Hazard Tree Management Program
- VM-2 Structure Brushing
- VM-3 Expanded Clearance Legacy Facilities
- VM-4 Dead and Dying Tree Removal
- VM-6 Work Management Tool
- VM-7 Distribution Inspections
- VM-8 Transmission Inspections
- VM-9 LiDAR for Distribution
- VM-10 LiDAR for Transmission

SCE Wildfire Fact Sheets

SDG&E

2023 – 2025 Wildfire Mitigation Plan

Our programs | Our impact

Vegetation Management

Michael Daleo, Vegetation Management WMP Program Manager

Vegetation Management

Continue to safely, effectively & proactively mitigate fire risk through multiple, annual Vegetation Management activities

2022 Accomplishments

- **Zero** contractor-caused outages on distribution system
- **Zero** tree-related ignitions on distribution system
- **~11k** targeted trees trimmed or removed to enhanced clearances in HFTD
- **~11k** trees distributed to promote sustainability & environmental enhancement
- Two tree inspection activities within entire HFTD
- Completed fuels management on **500** elevated-risk poles in HFTD
- Sustainability - **51%** of all green waste diverted from landfill to recycling centers

2023 Planning

- Modify off-cycle HFTD inspection schedule using risk-based model
- Proof of concept initiative using satellite imagery technology
- Further engage customers through interactive online survey
- Plant or distribute 10k trees, supporting company sustainability initiative

Preparing for 2023 Wildfire Season

Mitigating wildfire risk through Enhanced Vegetation Management

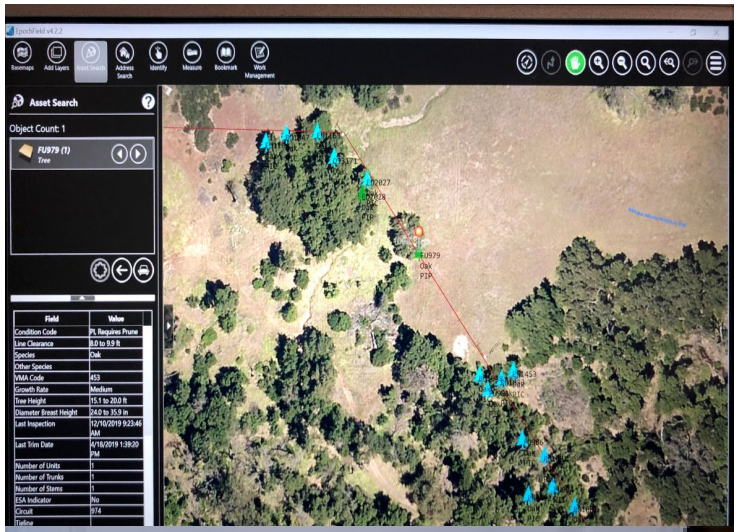
- **~490,000 inventory trees** in service territory
- **~250,000 trees** in HFTD annually receive a second, "Level 2 inspection"
- **~11,000 trees** targeted for enhanced clearances in 2023
- **~2,000** additional poles brushed in non-SRA
- **500 poles** targeted for Fuels Management

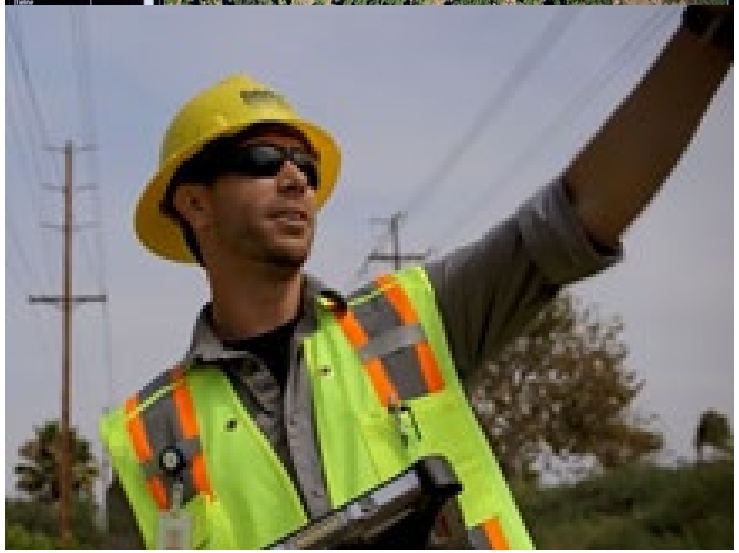
Tree Inventory Database

- Data-rich inventory database of all tree and pole brush records going back over 20 years
- All contractor activities (pre-inspection, tree trimming, auditing) uploaded to server nightly
- Outage investigation documentation within tree records

2022 Improvements

- Accurate GPS positioning of inventory tree assets
- Electronic documentation of customer refusals and deferred work
- Multiple database enhancements including Genus-species capture; new electronic work orders for off-cycle activities; additional GIS mapping layers for visualization and situational awareness





VEGETATION MANAGEMENT PANEL DISCUSSION

PANEL MEMBER or UTILITY REPRESENTATIVE	ORGANIZATION / TITLE
Andy Abranches	PG&E / Sr. Director – Wildfire Risk Management
Henry Sweat	CPUC SPD
Gregg Morris	GPI
Mike Esposito	CalFire

10 MINUTE BREAK

Back at 10:45am

OPEN QUESTIONS AND ANSWERS

Reminder to raise hand or use Q&A function in Zoom.

LUNCH BREAK

Back at 12:30pm

GRID OPERATIONS, DESIGN, AND MAINTENANCE PANEL

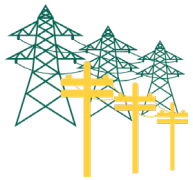
SCE

Grid Operation, Design & Maintenance (4/27)

SCE SERVICE AREA & HIGH FIRE RISK AREAS

50,000 SQ. MI.
of SCE service area across southern, central and coastal California

14,000 SQ. MI.
of high fire risk areas



51,000 MI.
of SCE overhead distribution and transmission lines

14,000 MI.
in high fire risk areas

5M
customer accounts or 15M residents in SCE's service area

1.3M
customer accounts or 3.9M residents served by circuits in high fire risk areas

1.4M
power poles and towers

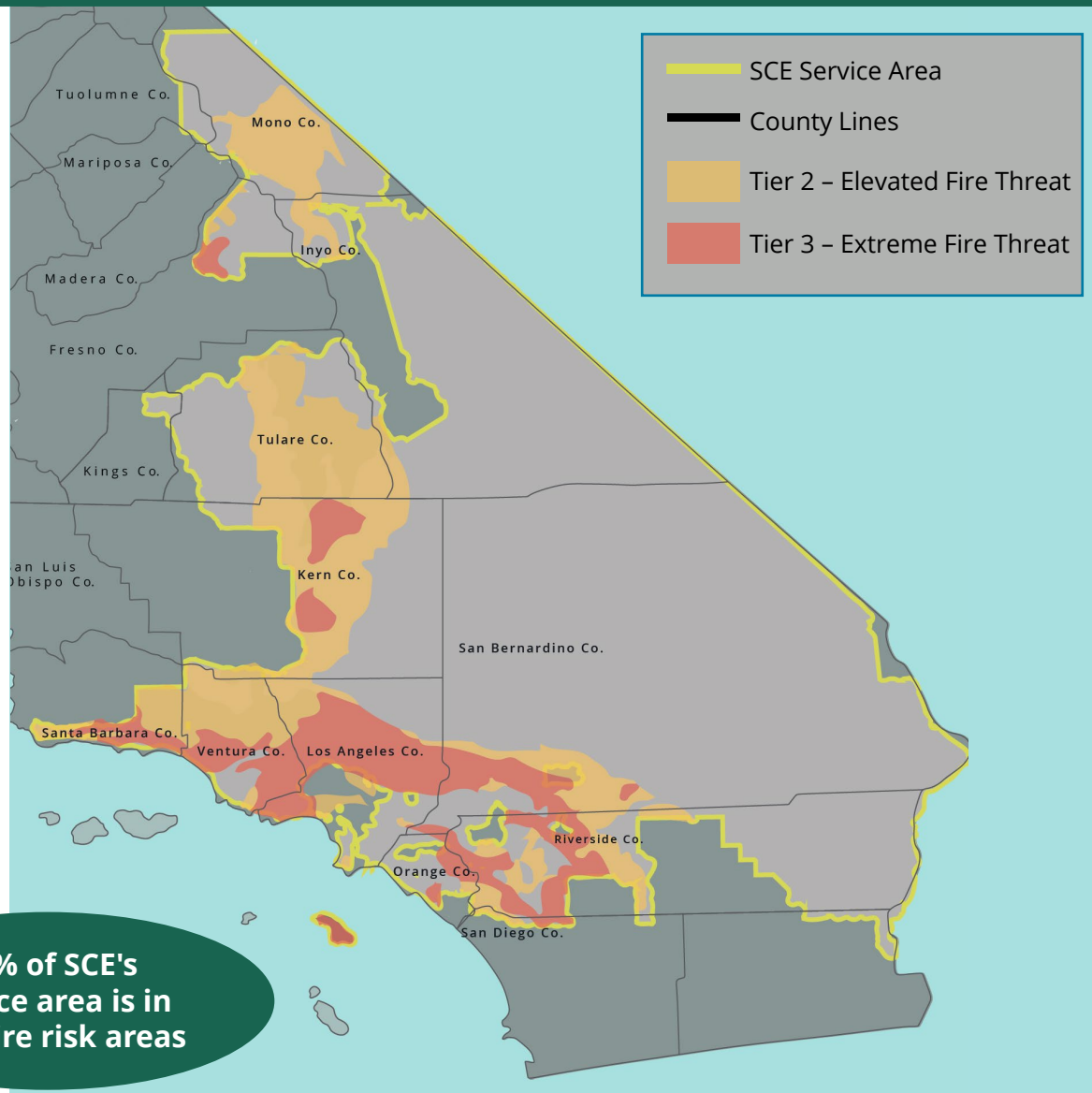
311,000
in high fire risk areas

Counties with high fire risk area served by SCE

Fresno
Inyo
Kern
Los Angeles
Mono
Orange
Riverside
San Bernardino
Santa Barbara
Tulare
Ventura

Counties with no or limited high fire risk areas served by SCE

Imperial
Kings
Madera
Tuolumne



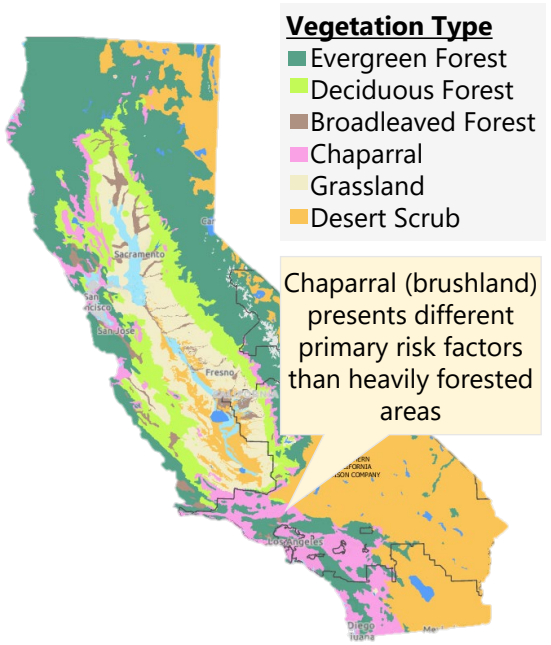
27% of SCE's service area is in high fire risk areas

COVERED CONDUCTOR AND TARGETED UNDERGROUNDING ARE EFFECTIVE MEASURES TO REDUCE WILDFIRE & PSPS RISKS

Continue to implement covered conductor to expeditiously reduce wildfire risk specific to SCE.

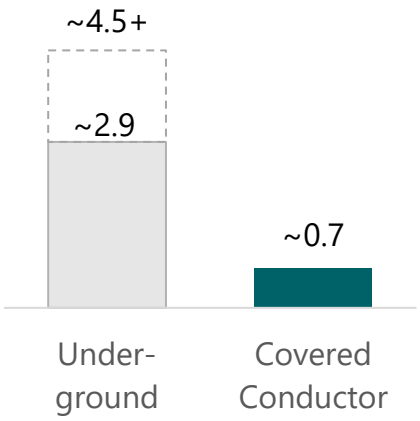
Undergrounding pursued for certain locations based on unique risk factors.

Geography



Cost to Implement

Cost per mile[1]
$ in Millions



Execution Speed

Avg. Implementation Time
In Months

	Covered Conductor	Under-ground
Initiate	~2–3	~2–3
Plan	~6–9	~9–15
Schedule	~6–9	~9–15
Execute	~2–3	~5–15
Total	**16–24+**	**25–48+**

Unique Factors

Undergrounding is considered where there is:

- Communities of elevated fire concern
- High burn frequency
- Limited egress
- Wind speeds exceeding covered conductor PSPS thresholds
- Exceptionally high potential consequence (>10,000 acres)
- Operational feasibility

1. Based on data provided in SCE's 2023-25 WMP

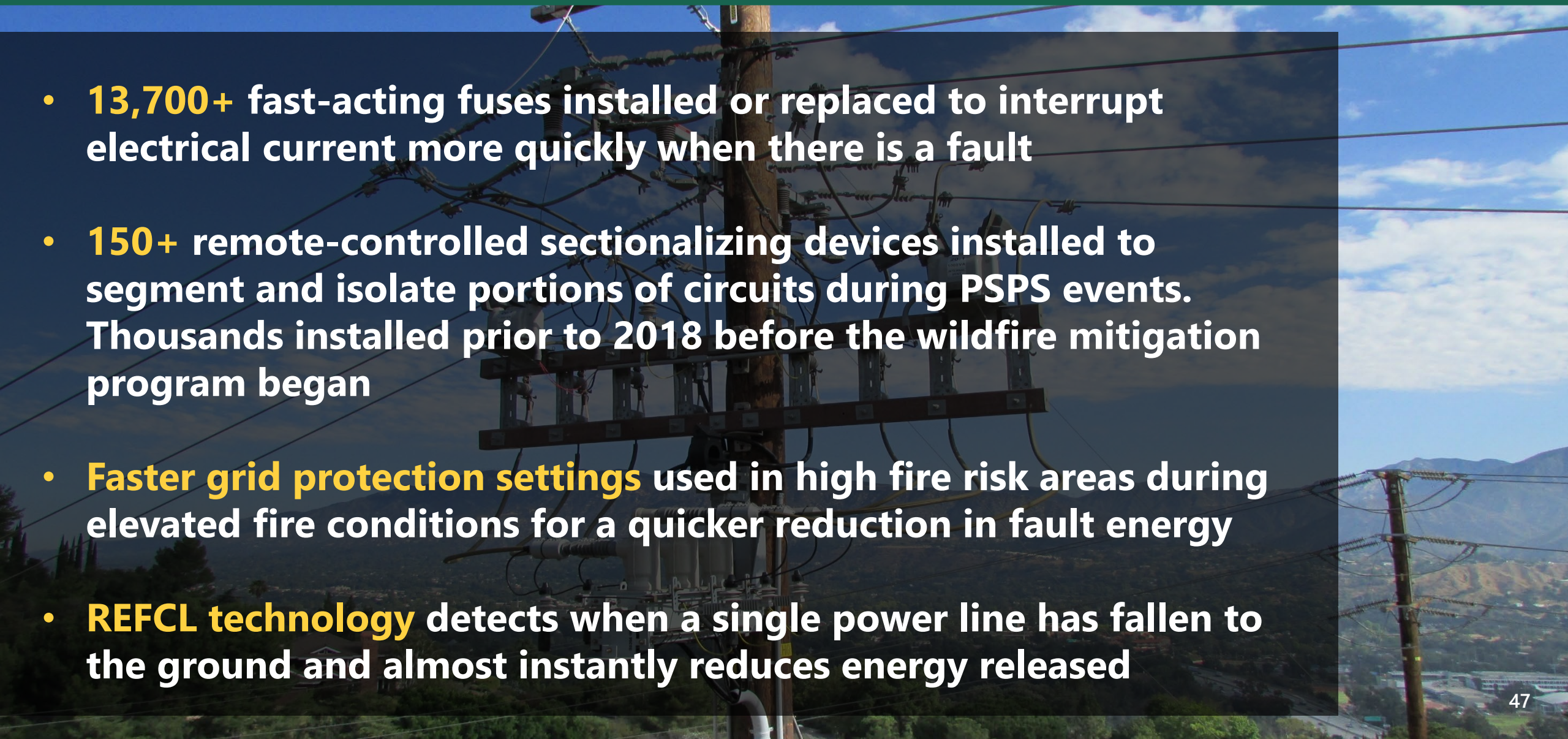
COVERED CONDUCTOR

- About 4,400 miles of covered conductor, covering about 45% of SCE's overhead distribution lines in high fire risk areas
- Covered conductor estimated to be about 70% effective in mitigating ignition risk
- SCE targeting 2,850 additional miles over 2023-2025

TARGETED UNDERGROUNDING

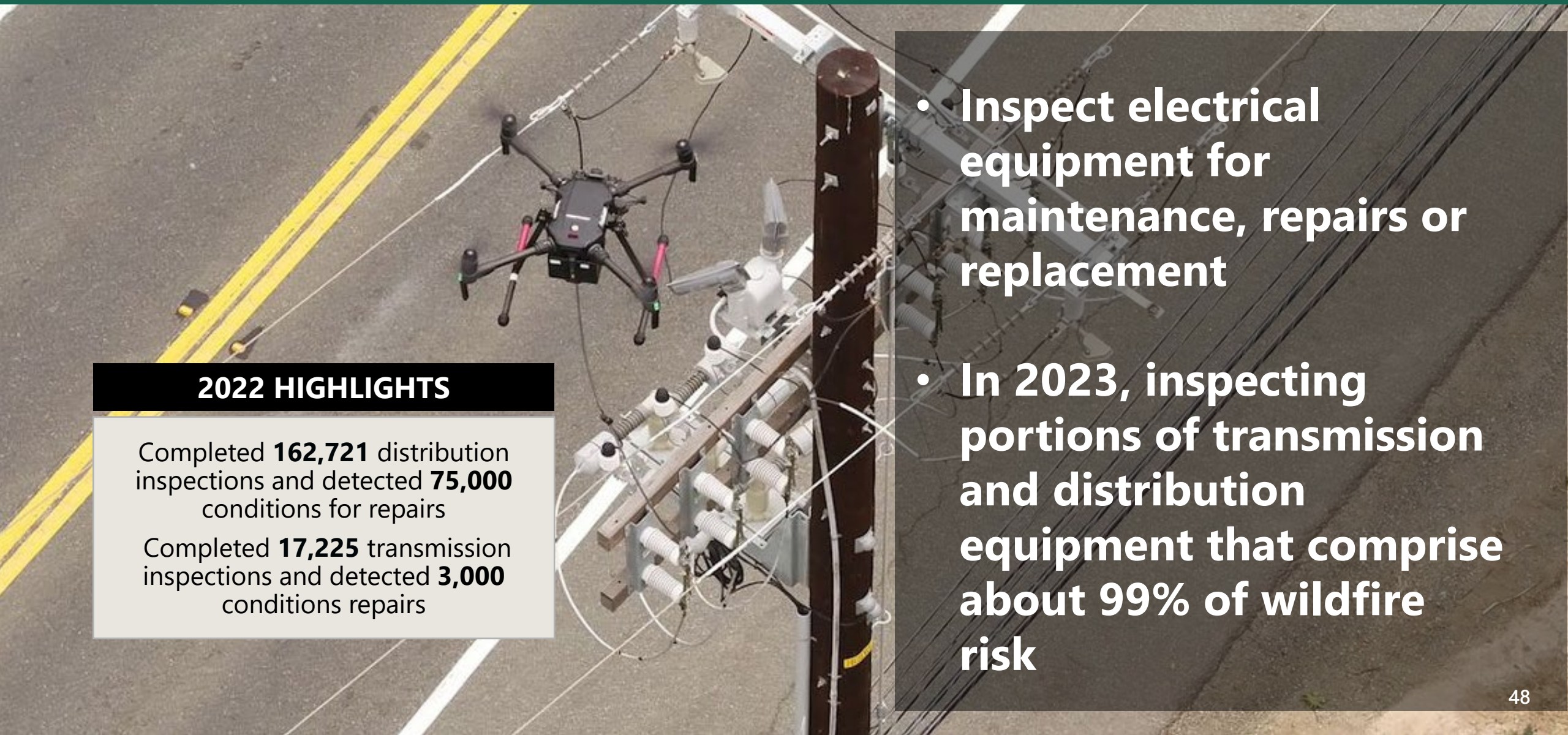
- Completed more than 20 miles of undergrounding in targeted high fire risk areas based on risk criteria and feasibility
- Ramping up scope in the coming years
- About 7,200 miles, or about 43% of primary distribution lines in high fire risk areas, already undergrounded
- SCE is targeting 75 additional miles over 2023-2025

PROTECTIVE DEVICES & SETTINGS



- **13,700+** fast-acting fuses installed or replaced to interrupt electrical current more quickly when there is a fault
- **150+** remote-controlled sectionalizing devices installed to segment and isolate portions of circuits during PSPS events. Thousands installed prior to 2018 before the wildfire mitigation program began
- **Faster grid protection settings** used in high fire risk areas during elevated fire conditions for a quicker reduction in fault energy
- **REFCL technology** detects when a single power line has fallen to the ground and almost instantly reduces energy released

HIGH FIRE RISK INSPECTIONS



2022 HIGHLIGHTS

Completed **162,721** distribution inspections and detected **75,000** conditions for repairs

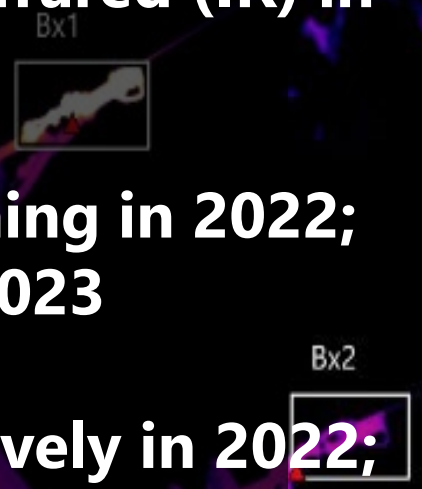
Completed **17,225** transmission inspections and detected **3,000** conditions repairs

- **Inspect electrical equipment for maintenance, repairs or replacement**
- **In 2023, inspecting portions of transmission and distribution equipment that comprise about 99% of wildfire risk**

ADDITIONAL INSPECTION METHODS

In addition to high fire risk ground and aerial inspections, SCE utilizes the following risk-informed inspection methods to identify anomalies not visible to the naked eye:

- **4,400+ overhead distribution circuit miles in HFRA with infrared (IR) in 2022; targeting approximately 5,300 circuit miles in 2023**
- **1,000+ transmission circuit miles with IR and corona scanning in 2022; continuing to target approximately 1,000 circuit miles in 2023**
- **75+ spans and 60+ splices with LineVue and X-ray respectively in 2022; targeting approximately 50 spans (LineVue) and 50 splices (X-ray) in 2023**



PG&E

Panel 2: Grid Design, Operations, and Maintenance

PG&E's Grid Design and System Hardening initiatives focus on mitigating wildfire risk in Tier 2 and 3 HFTD and HFRA areas within PG&E's service territory

Current Development

- In 2022, PG&E completed 180 miles of undergrounding compared to the target of 175 miles. Of the undergrounding miles completed in 2022, approximately 60 of those miles were completed as part of the Butte County Rebuild Program
- Since 2019, PG&E has installed 960 miles of hardened distribution overhead conductor, including 335 overhead system hardening miles in 2022
- In 2022, EPSS settings for 4,830 distribution protection devices were engineered and installed across more than 44,000 miles of conductor to provide EPSS protection, leading to a 68% reduction in CPUC-reportable ignitions in HFTD while EPSS was enabled. Protection devices on another 47 transmission lines were also engineered to provide EPSS protection
- In 2021 and 2022 PG&E closed more than 350,000 tags across the distribution system, including approximately 195,000 tags in the HFTD/HFRA

Planned Developments

- PG&E's larger plan is to complete 2,285 miles of overall system hardening work from 2023-2026.
- PG&E has current annual targets for undergrounding 2,100 miles for 2023-2026. These targets include the undergrounding work as part of the Butte County Rebuild which will be complete by 2025
- PG&E's estimated overhead covered conductor mileage from 2023-2026 is 285 miles, which is in line with our strategy to focus on undergrounding
- In 2023, Down Conductor Detection (DCD) settings will be installed on more than 500 devices to further enhance EPSS protection
- PG&E will clear approximately 130,000 ignition-risk HFTD/HFRA tags by the end of the 2023-2025 WMP cycle

Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

SDG&E

2023 – 2025 Wildfire Mitigation Plan

Our programs | Our impact

Grid Design, Operations & Maintenance

Shaun Gahagan, Wildfire Mitigation Program Manager

Grid Hardening

Transmission

93 **miles hardened** on transmission lines 2020-2022

45 **miles planned** for completion 2023 - 2025

2026 **planned completion** of tier 2 and tier 3 areas

84% **effectiveness** of hardening against wildfires.

Strategic Undergrounding

125 **miles** installed 2020-2022

359 **miles planned** for completion by 2025

6,600 **customers** expected to remove impact of PSPS

98% **reduction in risk** against wildfires.

Covered Conductor

88 **miles** installed 2020-2022

160 **miles planned** for completion 2023 - 2025

65% **reduction in risk** against wildfires

Asset Replacement

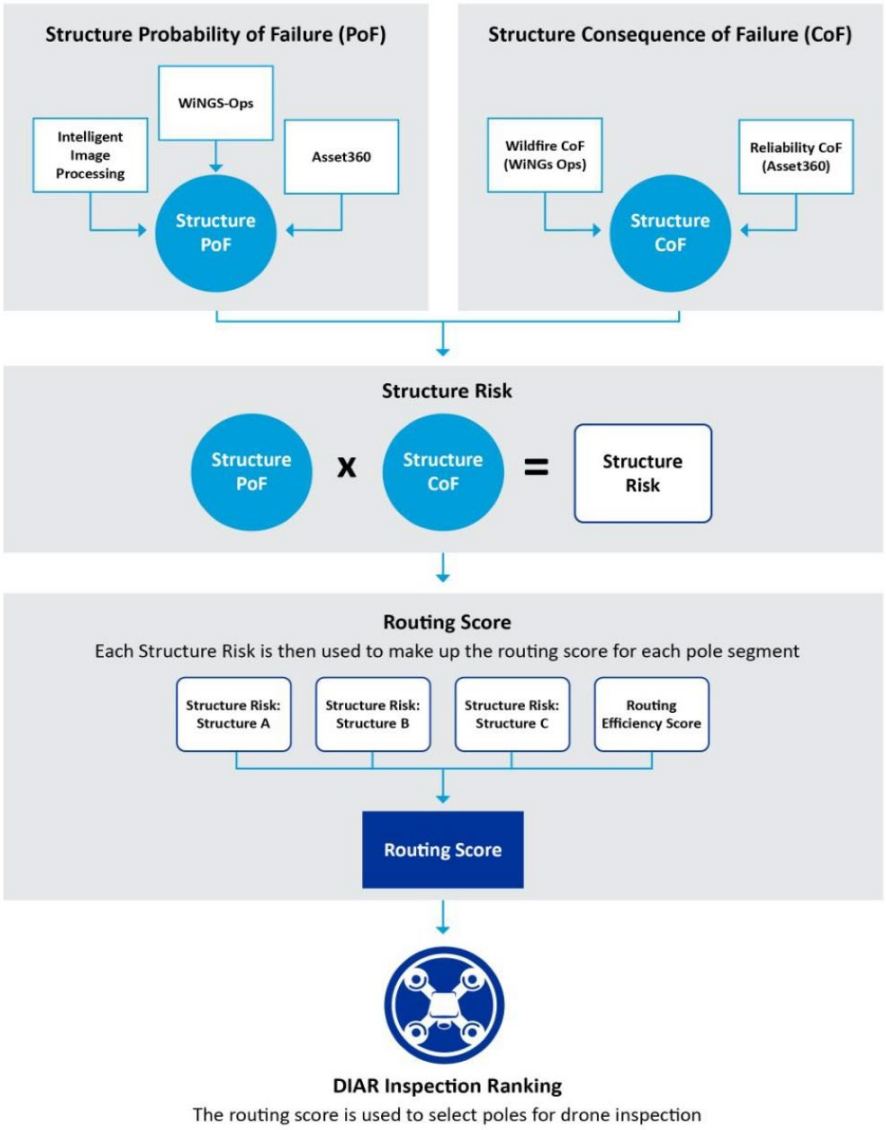
Risk-informed drone inspections

2.3 **million images** captured

85k **structures photographed** in tier 2 and tier 3 of the HFTD

96 **machine learning models** created

41% **reduction** in field time



GRID OPERATIONS, DESIGN, AND MAINTENANCE PANEL DISCUSSION

PANEL MEMBER or UTILITY REPRESENTATIVE	ORGANIZATION / TITLE
Ray Fugere	SCE / Director
Holly Wehrman	CPUC CalAdvocates
Wendy Al-Mukdad	CPUC SPD
Thomas Long	TURN

10 MINUTE BREAK

Back at 1:45pm

OPEN QUESTIONS AND ANSWERS

Reminder to raise hand, use Q&A function in Zoom.

EMERGENCY PREPAREDNESS, COMMUNITY OUTREACH, AND PSPS PANEL

SDG&E

Emergency Preparedness

Mona Freels, Emergency Services Manager

ICS Integration

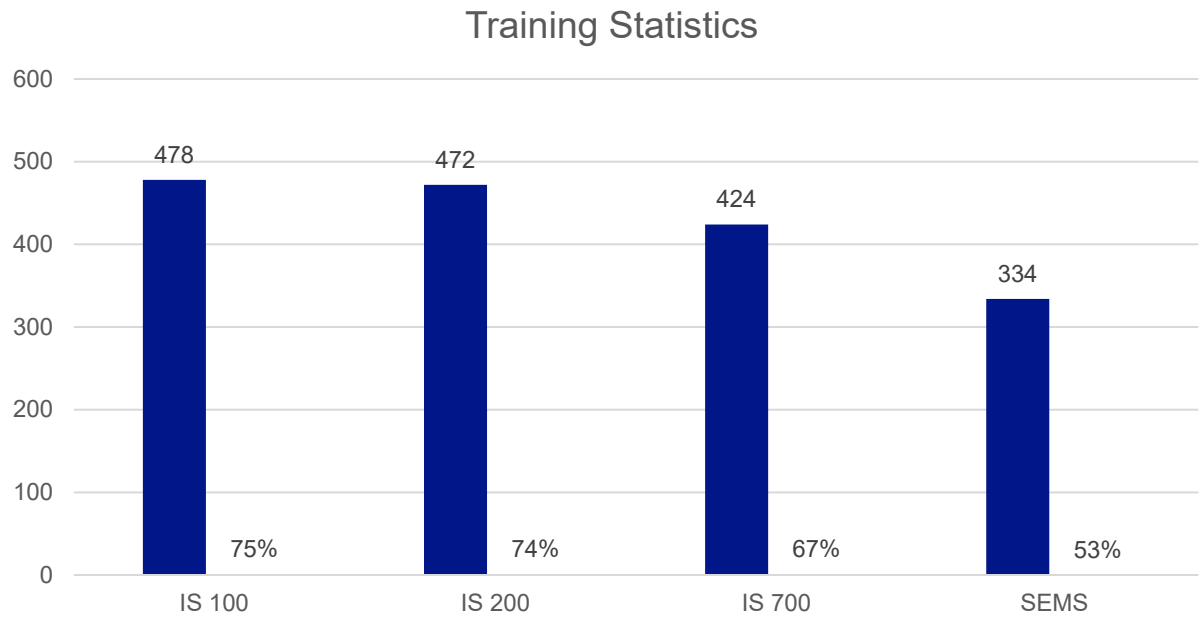
- ICS Training:
  - EOC Responders
  - Field Responders
  - Utility Field Commander
  - Field Safety Officer
  - ICS Field Mentoring

- First Responder Training:
  - Fire Personnel
  - Law Enforcement Personnel

634 EOC Responders

Required FEMA/CAL OES trainings:
- SEMS Intro
- IS 100
- IS 200
- IS 700

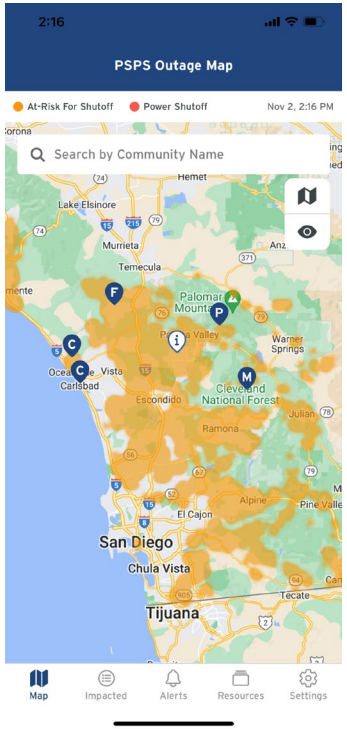
Required internal trainings:
- EOC orientation
- Summer readiness
- Section-specific

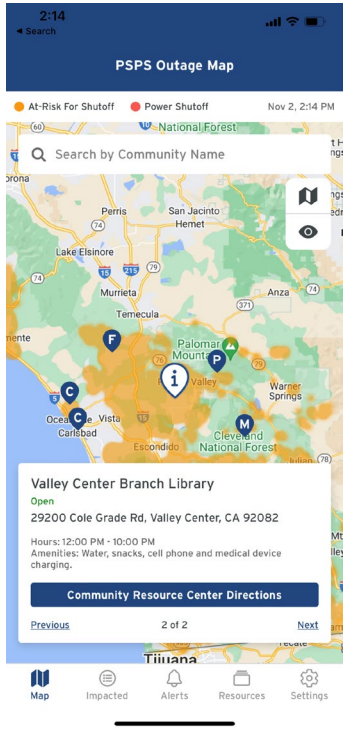


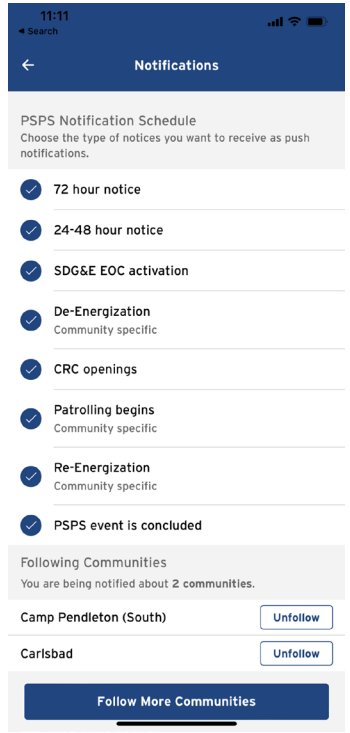
Public Safety Partner Portal

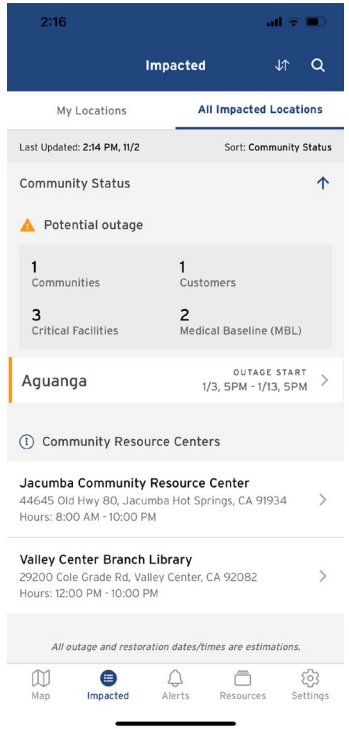
- Will be all-hazards, including wildfire by **Sep. 1, 2023**
- Information by device
- Partners can follow communities
- Customized push notifications

- Mapping
- Social Media Kits
- Links to external resources like 211 San Diego
- 24/7 contacts into the EOC



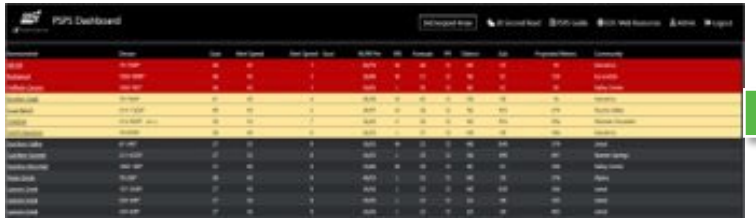






Human Factor Engineering – EOC Dashboards

Pre-Redesign



PSPS Dashboard

DeEnergized Areas | Critical Facility Details | 30 Second Read | PSPS Guide | EOC Web Resources | Admin

Anemometer	Notification to DeEnergize	Device	Gust Alert Speed		Gust - Alert Speed	95/99 Per	VRI	Forecast	FPI	District	Sub	Projected Meters	MBL Count	Community
o Dump	☐	MN-12KV-231*	15	10	+5	24/30	H	17	12	NE	MN	3022	132	Fallbrook
cado	☐	520-22R*	14	10	+4	22/27	H	17	12	NE	AV	2475	127	Fallbrook
Volcan Mountain	☐	221-19R*	14	10	+4	40/50	L	34	13	RA	ST	0	-	Julian
Hellhole Canyon	☐	1030-987*	13	10	+3	50/63	L	49	12	NE	VC	0	-	Valley Center
Julian	☐	221-31R* (JU1, OK1, SL1)	11	10	+1	30/37	H	26	13	RA	ST	1624	85	Julian
Julian	☐	222-1364R*	11	10	+1	30/37	H	26	13	RA	ST	0	62	Julian
Cameron Corners	☐	448-9R*	18	20	-2	29/35	M	26	13	ME	CN	2042	99	Campo

EOC Outage Board

Critical Facility Details | Outage Board Guide | EOC Web Resources

ISO STATUS	Current Load 41584 at 10-Aug-2021 17:15		Today's Peak 41538		Forecast Peak 41772	
SDGE STATUS	Current Load 3255 at 10-Aug-2021 17:15		Today's Peak 3285		Forecast Peak 3293	Frequency 0.00 Hz

Overall Outage Summary

Last Updated: **08/10/2021 17:16**

Outages	Circuits	Communities	Districts	Affected Meters	% of Meters Affected
2	2	6	2	59	Less Than 1%

PSPS Impacts — Last Updated: **08/10/21 17:15**

Meters	MBL	Telecom	Fire Stations	Hospitals
0	0	0	0	0

Static List By Circuit | Static List By Time

Primary Outage Summary

Export | Report

Circuit	Sect Device	Status	Community	District	Outage Reason/Damage	Affected Meters	MBL Count	Outage Start	Estimated Restoration
1049	<inline_jumper.17297>		City Heights/ Chollas Creek/ Oak Park	EA	Our crews have found a need to repair SDG&E equipment.	36	0	08/10/21 17:00	08/10/21 20:00
0442	F30663		Japatul Valley/ Buckman Springs/ Morena Village	ME	SDG&E is assessing the outage to determine the cause.	23	0	08/10/21 15:03	08/10/21 18:00

= Nominal - or - Outage < 30 Minutes Old | = Outage > 20 Hours | = PSPS Outage | = ERT Within 1 Hour

PRODUCTION

Community Outreach

Robb Henderson, Senior Marketing Communications Advisor
Danielle De Clercq, AFN Customer Strategy Manager

Public Education & Outreach

Diverse Communications & Outreach Channels

- Dedicated PSPS education campaign
- Service territory-wide, year-round campaign (Mar-Dec)
  - Customized Tribal and AFN communications
  - Increase understanding of PSPS criteria
  - Leverage 20+ diverse communication platforms
- Communicate in 21 prevalent languages in service territory and American Sign Language
- Dedicated Spanish Communications Manager

Customer Notifications

- Enhanced Accessibility, Available in 21 prevalent languages
- American Sign Language (audio & text)
- Address level notifications available through PSPS mobile app including non-account holders

Research

- Post-season Research (Q1/Q2)
- Pre-season and Post-season Research planned for Q3/Q4

MARKETING TACTICS	Q1	Q2	Q3	Q4
Print Advertising		X	X	X
Outdoor Advertising		X	X	X
Television/ Radio		X	X	X
Social Media Advertising		X	X	X
Digital Advertising		X	X	X
Customized AFN Campaign			X	X
Website & Video Update	X	X	X	
Updated PSPS Notifications		X	X	
In-studio Media Interviews		X	X	X
Strategic Story Pitching		X	X	X
Social Media (Organic)	X	X	X	X
Print Collateral	X	X	X	

Mitigation of impacts on individuals with AFN

SDG&E has identified ~423k unique AFN customers, which is ~33%(1) of our residential customer base

- **Mapped "AFN" customers** across database
  - ~423,000 total customer accounts with AFN (~33%)
  - ~44,000 customer accounts with AFN in HFTD (~10%)
- Continued AFN **customer research**

- AFN Statewide and Collaborative Councils, Regional Working Groups and Core Planning team
- AFN **Support Partners** (e.g., 211)
- Partnerships with State, County and Local Orgs
- Enhanced **Tribal Support**
- **Increased AFN CBOs** & focus on PSPS support

AFN Database Fields	
CARE	Hearing Impairment
FERA	Vision Impairment
Medical Baseline	Disability
Life Support	Seniors
Temperature Sensitive	Non-English
Large Font Bill	Durable Medical Equipment(2)
Braille Bill	Assistive Technology(2)

- Broadened **ability to "self-identify"** as having an AFN
- **Enhanced messaging** and communication materials
- Newly added **self-ID webform** on SDG&E website
- To date, **~7,850** customers identified through self-ID

(1) Based on residential customer accounts (1.3m). Note Many AFN customers fall into multiple categories (e.g. CARE + MBL)
(2) Additional identifiers to be added in Q2 2023

Support for individuals with AFN

New and continued enhancements to further reach and support individuals with Access and Functional Needs

PSPS Support Services

- Community Resource Centers
- Pantry and Warm Food Options
- Centralized Resource Hub
- Transportation and Hotel Stays
- Wellness Checks

Customer Communications

- PrepareforPowerDown.com
- Targeted Marketing
- AFN Self-Identification
- Amplified Notifications through CBOs

Accessibility

- Digital Accessibility
- Video Remote Interpreting (VRI) for Customer-Facing Representatives
- Accessible Hazard Alert System (AHAS)

Community Engagement

- Wildfire Safety Fairs
- Tribal Partnerships
- Resiliency Resources
- Outreach through CBOs

Public Safety Power Shutoff (PSPS)

Jonathan Woldemariam, Director – Wildfire Mitigation & Vegetation Management

WiNGS Ops

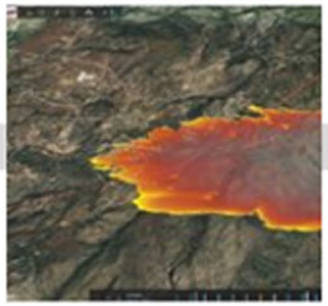
Assisting PSPS decision-making

WiNGS Ops results and high-level summary shared with Meteorology Team

Integration into PSPS decision dashboard via "Conductor Risk Index"

Post-event Patrols and Reporting

3 days ahead



72-Hour: EOC Activation; High-level weather briefing to provide two full days of daylight for pre-patrols

2 days ahead

48-Hour: Receive circuit list from Meteorology; Continue pre-patrol and gather damage assessments

1 day ahead

24-Hour: Placement of Observers

Day of power shutoff

Weather arrives: De-energization

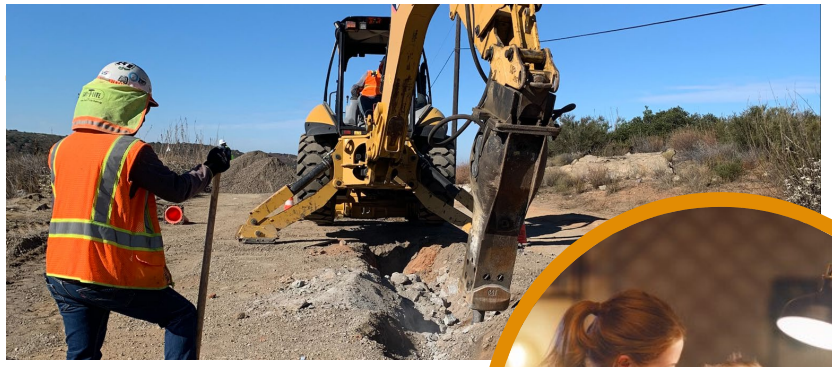
Power restored

Weather passes: Post-patrol and re-energization

Programs reduce PSPS impacts on top 15 frequently de-energized circuits

Strategic Undergrounding	• **68** miles completed in 2022 • **571** miles to be completed by 2032 • **650** customers mitigated in 2022 • **5,000** customers to be mitigated by 2032
PSPS Sectionalizing	• **71** SCADA devices installed • **2,400-8,000** customers mitigated
Backup Resiliency Programs	• **1,540** customers participated

A CASE STUDY:



Hell Hole Canyon saw wind gusts of 61 mph during the November 2021 PSPS. The customers on this portion of the circuit were able to **avoid a PSPS de-energization due to strategic undergrounding efforts that were completed in June 2021.**

*Frequently de-energized circuit is defined by OEIS as a circuit experiencing three or more PSPS de-energizations in a calendar year
Using a timeframe of 2018-2022, 15 circuits totaling 8,320 customers have been identified as "frequently de-energized"

PG&E

Panel 3: Emergency Preparedness, Community Outreach and PSPS

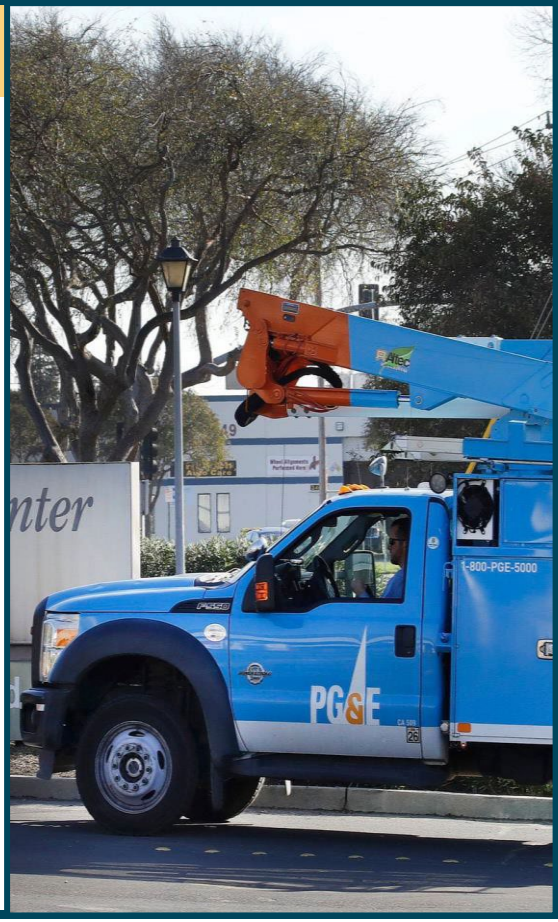
PG&E's Emergency Preparedness and Response (EP&R) Plan bolsters the response to emergencies by improving governance, strengthening coordination among functional areas, and improving collaboration with external partners. PG&E's community outreach and public awareness initiatives focus on ensuring that all stakeholders understand the wildfire safety programs, their benefits, the potential impacts, and the support that is available to them. PSPS initiatives demonstrate a focus on more accurately modeling the need for a PSPS events, reducing the impact to customers, and hardening systems to prevent PSPS events.

Current Development

- PG&E has implemented various communications and media channels to inform the public of emergency events, including direct customer notifications, PSPS address alerts, PSPS portal, updated PG&E website information, local media press releases, and live agent call center customer support.
- PG&E collaborates with community-based organizations (CBOs) and critical facilities to enact a localized education strategy, leveraging automated outage notifications, follow-up Interactive Voice Recording (IVR) messages, customer e-mails, social media posts, and community meetings.
- In 2022, because of favorable weather, PG&E reported 0 events where de-energization was initiated, which represents the first time since before 2018 that this occurred.
- In 2021, the FPI model and IPW models were enhanced with better data and improved analytical modeling, which guides PSPS decision-making

Planned Developments

- PG&E annually reviews, and if appropriate, revises the Company Emergency Response Plan (CERP) and the two wildfire-related annexes (the Wildfire Annex and the PSPS Annex) to improve emergency response.
- Over the next 10 years, PG&E aims to hold community engagement meetings within the five PG&E regions of service that will include, but are not limited to, a mix of webinars, open houses, town halls, and/or answer centers.
- PG&E has a plan in place to reduce PSPS impacts by approximately 55,000 customer events for the 2023-2025 period by completing Wildfire mitigation projects including undergrounding.
- PG&E is working to provide portable batteries to customers at risk of more frequent EPSS outages or PSPS events with a focus on AFN, MBL, and self-identified vulnerable populations.
- Further improvements are planned for the PSPS decision making including updates to the IPW and FPI models and continued updates to the base datasets feeding the models



Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

SCE

Emergency Preparedness, Community Outreach & PSPS (4/27)

SCE: Emergency Preparedness, Community Outreach & PSPS

Emergency Preparedness

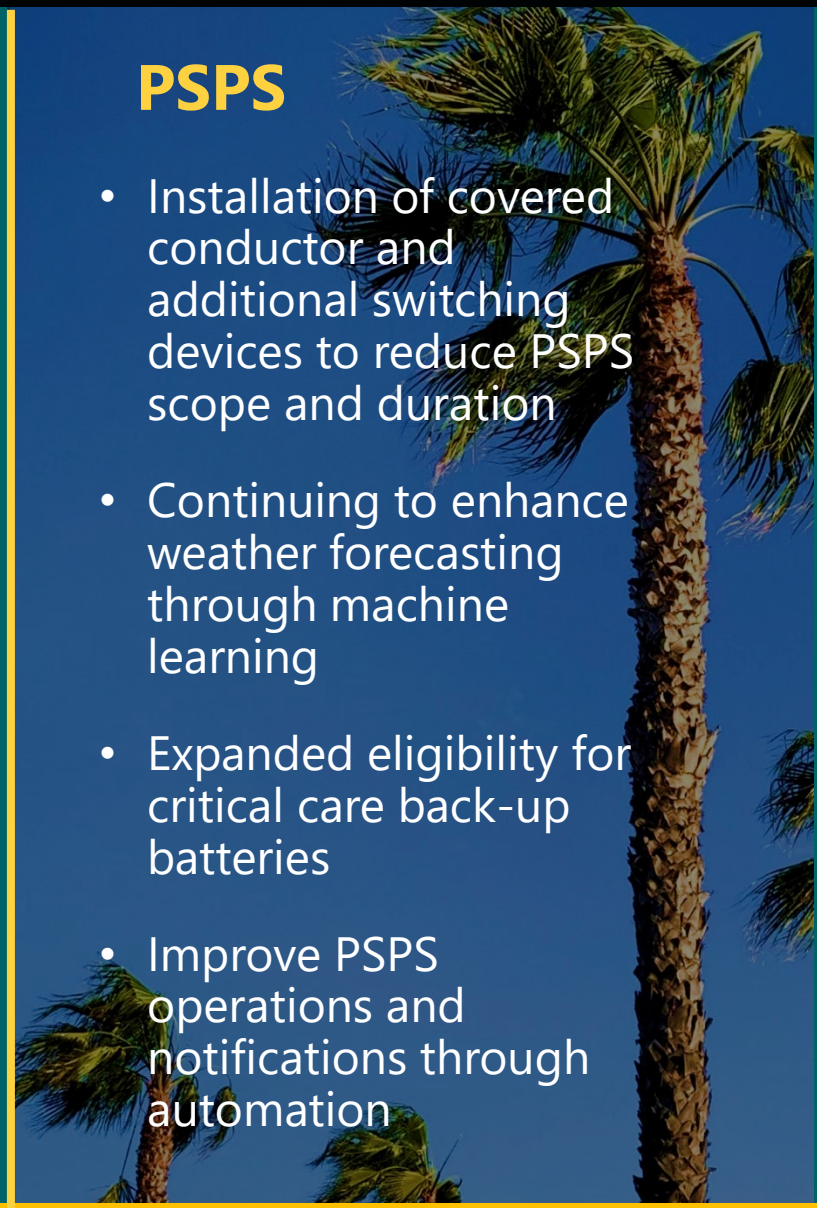
- Training: On track for all IMT members to be fully qualified by 7/1, including position-specific training across key functions
- PSPS Full-Scale exercises with observers, functional and tabletop exercises in May
- Improving customer-provided contact data
- Maintaining and expanding aerial firefighting resource availability

Community Outreach

- Issuing Resource Guides for all tribal and local governments (May distribution)
- Community wildfire meetings
- Critical infrastructure workshops
- Emergency preparedness plan sharing with public safety partners, encompassing PSPS, AHP, EEAP, WMP
- Self-identification pilot to better identify AFN customers
- Expanding CBO network to better serve AFN communities

PSPS

- Installation of covered conductor and additional switching devices to reduce PSPS scope and duration
- Continuing to enhance weather forecasting through machine learning
- Expanded eligibility for critical care back-up batteries
- Improve PSPS operations and notifications through automation



EMERGENCY PREPAREDNESS, COMMUNITY OUTREACH, AND PSPS PANEL DISCUSSION

PANEL MEMBER or UTILITY REPRESENTATIVE	ORGANIZATION / TITLE
Mona Freels	SDG&E / Emergency Services Manager
Justin Hagler	CPUC CalAdvocates
Will Abrams	Self
Megan Somogyi	Local Governments Representative

10 MINUTE BREAK

Back at 3:45pm

OPEN QUESTIONS AND ANSWERS

Reminder to raise hand, use Q&A function in Zoom.

OPEN QUESTIONS AND ANSWERS – ALL PANELS

PUBLIC PARTICIPATION

- Docket 2023-2025-WMPs is your primary source of information regarding WMP evaluations: https://efiling.energysafety.ca.gov/EFiling/DocketInformation.aspx?docketnumber=2023-2025-WMPs

- Data Request (DR) responses are available at each electrical corporation's website and summaries of DRs received by the utilities are available at: https://efiling.energysafety.ca.gov/EFiling/DocketInformation.aspx?docketnumber=2023-2025-WMP-DRs

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