2026 – 2028 Wildfire Mitigation Plan Revision 1

Our 2026-2028 WMP Entails 14 Sections

1   Executive Summary

2   Responsible Persons

3   Overview of WMP

4   Overview of Service Territory

5   Risk Methodology and Assessment

6   Wildfire Mitigation Strategy

7   Public Safety Power Shutoff

8   Grid Design, Operations, and Maintenance

9   Vegetation Management and Inspections

10   Situational Awareness and Forecasting

11   Emergency Preparedness, Collaboration, and Community Outreach

12   Enterprise Systems

13   Lessons Learned

14   Areas for Continued Improvement

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

Section 1: Executive Summary

WMP Executive Summary

Our 2026 – 2028 WMP is a comprehensive strategic plan to reduce wildfire risk, prevent ignitions and maintain reliable electric service with minimal disruptions to our customers.

- It builds on protections in place since 2019 and incorporates industry best practices, lessons learned and the recent wildfire risk analysis in our Risk Assessment and Mitigation Phase (RAMP) reports.
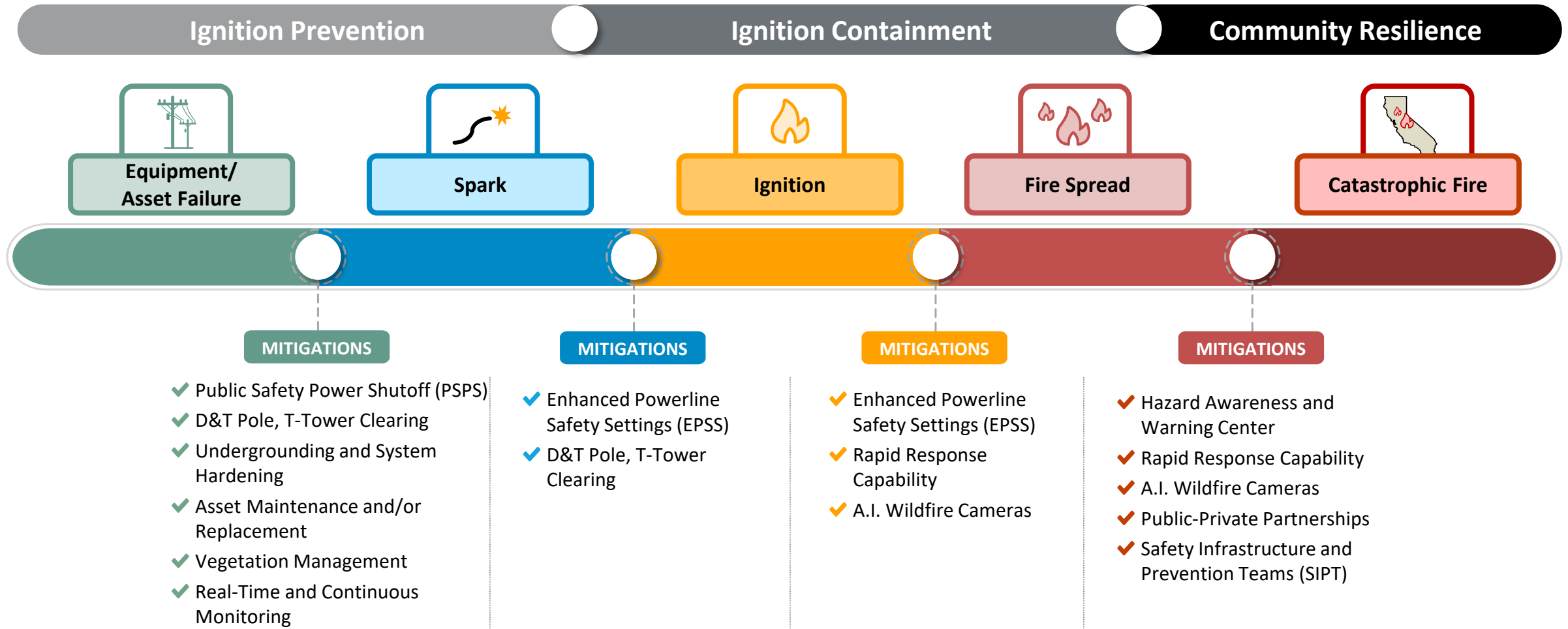
- The plan incorporates new technology, system upgrades and community collaboration to build a more resilient infrastructure and safer environment.

- We recognize ongoing adaptation and innovation, learning from the past events and collaborating with other utilities to proactively address rapidly evolving wildfire risks.

Interrupting the Wildfire Sequence

Fire from electrical equipment follow a common sequence. Interrupting that sequence is key. We implement mitigations to prevent ignitions and contain those that do occur.

Ignition Prevention | **Ignition Containment** | **Community Resilience**

| Equipment/ Asset Failure | Spark | Ignition | Fire Spread | Catastrophic Fire |

MITIGATIONS

- ✔ Public Safety Power Shutoff (PSPS)
- ✔ D&T Pole, T-Tower Clearing
- ✔ Undergrounding and System Hardening
- ✔ Asset Maintenance and/or Replacement
- ✔ Vegetation Management
- ✔ Real-Time and Continuous Monitoring

MITIGATIONS

- ✔ Enhanced Powerline Safety Settings (EPSS)
- ✔ D&T Pole, T-Tower Clearing

MITIGATIONS

- ✔ Enhanced Powerline Safety Settings (EPSS)
- ✔ Rapid Response Capability
- ✔ A.I. Wildfire Cameras

MITIGATIONS

- ✔ Hazard Awareness and Warning Center
- ✔ Rapid Response Capability
- ✔ A.I. Wildfire Cameras
- ✔ Public-Private Partnerships
- ✔ Safety Infrastructure and Prevention Teams (SIPT)

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

Section 2: Responsible Persons

Responsible Program Owners

Sections

Andy Abranches
Vice President, Wildfire Mitigation

Section(s): 1, 2, 3, 4, 5, 6, 13

Kristin Manz
Vice President, Finance and Planning

Section(s): 3

Jadwindar Singh
Senior Director, Electric Asset Knowledge Management and Analytics

Section(s): 4

Mark Quinlan
Senior Vice President, Wildfire, Emergency and Operations

Section(s): 4, 7

Jim Gill
Interim Lead, Electric Asset Management

Section(s): 8

Angela Sanford
Vice President, Vegetation Management

Section(s): 9

Scott Strenfel
Senior Director, Meteorology and Fire Science

Section(s): 10

Angie Gibson
Vice President, Emergency Preparedness and Response

Section(s): 11

Tahir Paroo
Senior Director, IT Grid Systems and Smart Meter Operations

Section(s): 12

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Program owner information as of of 7/8/2025.

Section 3: Overview of Wildfire Mitigation Program

Our objectives for our 2026-2028 WMP are to:

1 Reduce wildfire risk attributable to vegetation or other objects contacting PG&E's power lines, balancing both system resilience and operational programs.

2 Reduce wildfire risk attributable to equipment failure through detailed inspection programs and new technologies to quickly detect potential issues.

3 Implement programs to limit customer disruption from our mitigation efforts, including reducing the scale and scope of outage programs.

4 Mature enterprise systems that support our risk reduction objectives by improving data accuracy, data governance practices and the systems overall.

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Determining Key Risk Drivers

PG&E utilizes both CPUC-reportable and non-reportable ignitions to determine key risk drivers. The frequency of wildfires is assessed across 10 categories.

1. **Equipment Failure:** Failure of a PG&E asset, such as a conductor, arrester, insulator, breaker or transformer

2. **Vegetation Contact:** Trees, tree limbs or other vegetation contact a PG&E asset

3. **Contact From Objects:** Objects (like birds and other animals, mylar balloons or vehicles) contact PG&E line equipment and create ignitions

4. **Unable to Determine:** Events associated with PG&E assets which led to an ignition where the main driver of the ignition is undetermined

5. **Contamination:** Ignitions caused by batteries and contaminated insulators

6. **Other:** Failure event without known equipment causes

7. **Wire-to-Wire Contact:** Ignitions caused by wire-to-wire contact, commonly known as line slap

8. **Seismic Scenario:** Failure events caused by seismic activity

9. **Utility Work/Operation:** Activities around utility processes

10. **Vandalism/Theft:** Theft or vandalism from outside parties

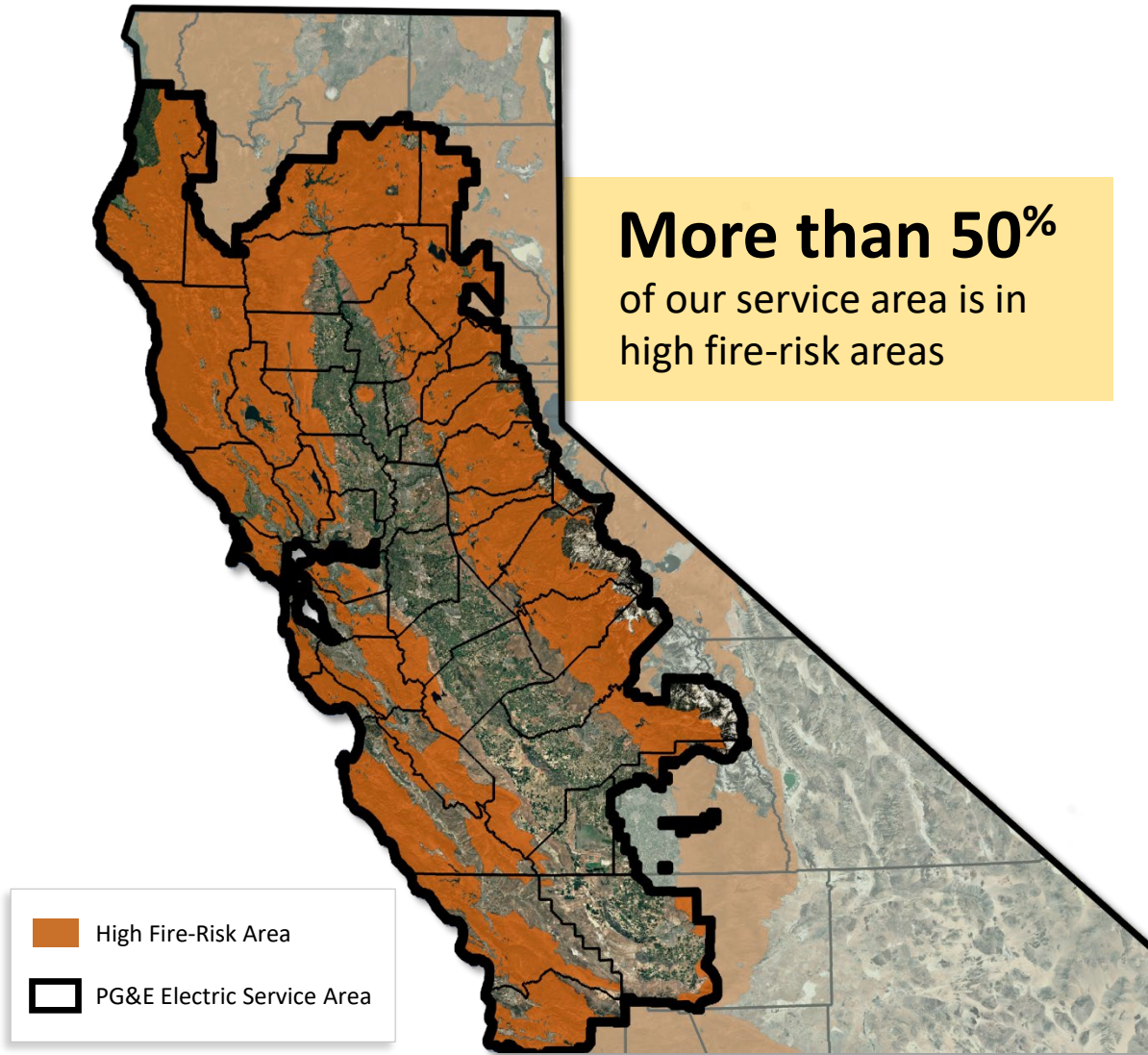# Pillars of Our Wildfire Mitigation Strategy

Our 2026-2028 wildfire mitigation strategy builds on our prior progress through four key approaches:

Continuous Monitoring
- ✔ Ignition risk drivers
- ✔ Fire detection alerting
- ✔ Asset inspections

Operational Mitigations
- ✔ Public Safety Power Shutoffs
- ✔ Enhanced Powerline Safety Settings
- ✔ Downed conductor detection

System Resiliency
- ✔ System upgrades (undergrounding and hardening)
- ✔ Vegetation management

Community Support
- ✔ Backup power support
- ✔ Local community-based organization partnerships
- ✔ Support before, during and after wildfire events

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Section 4: Overview of Service Territory

Wildfire Risk Across Our Service Area

More than 50%
of our service area is in high fire-risk areas

Legend:
- High Fire-Risk Area
- PG&E Electric Service Area

		PG&E SYSTEMWIDE	HIGH FIRE-RISK AREAS (HFRA)
	Electric customers served	5,800,000	505,000
Overhead	Distribution line miles	80,000	25,100
Overhead	Transmission line miles	19,000	5,700
Underground	Distribution line miles	29,000	3,600
Underground	Transmission line miles	200	10

Values are approximate as of 4/1/2025.

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Evolving Wildfire Risk Across California

Historic Drought

Driest period in California history

~102M trees dead due to drought
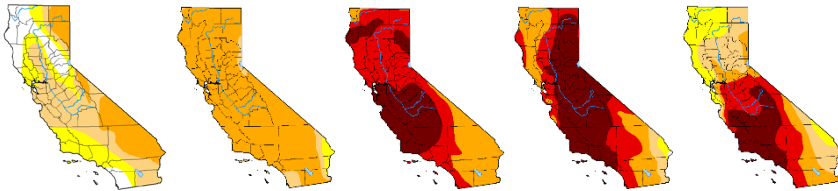
Severe Wind and Weather

Third hottest summer in California history
(76.5ºF Avg temperature)
2017

Historic fire weather conditions
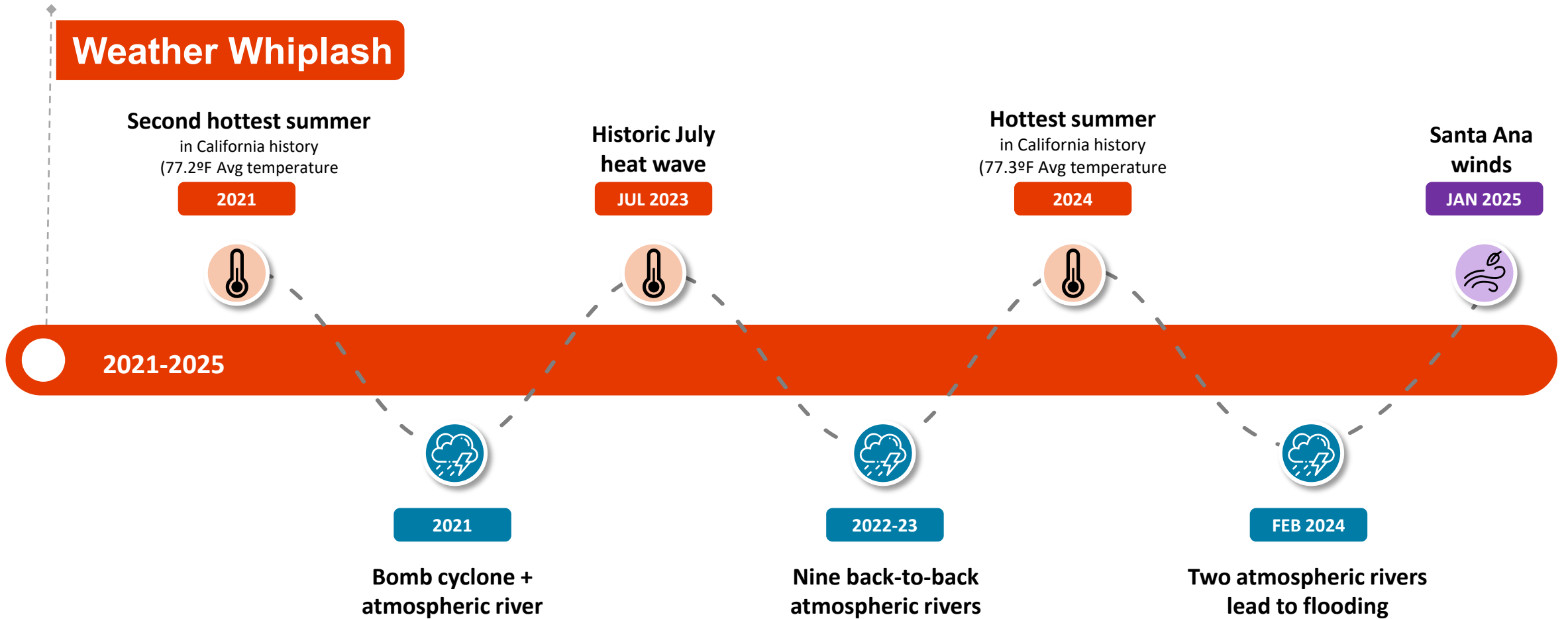**OCT 2019**

Lightning storm
2020

2012-2016

2017-2020

OCT 2017
North Bay wind events

2018
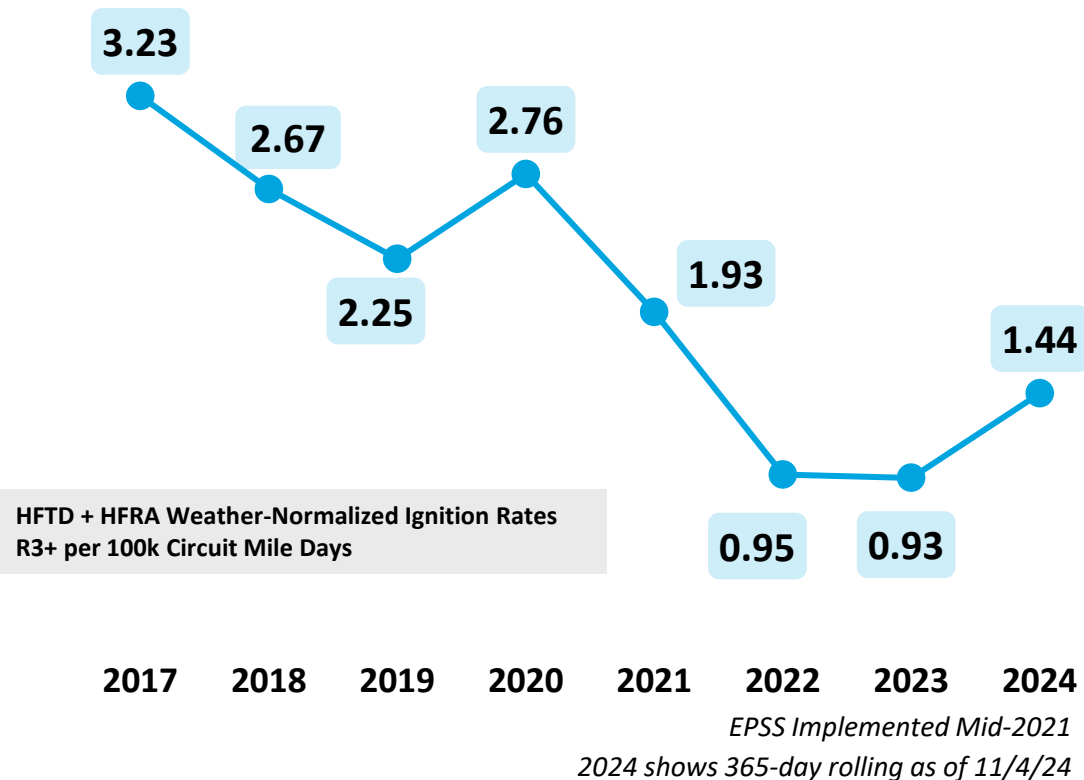**Most destructive wildfire season to date driven by severe winds**
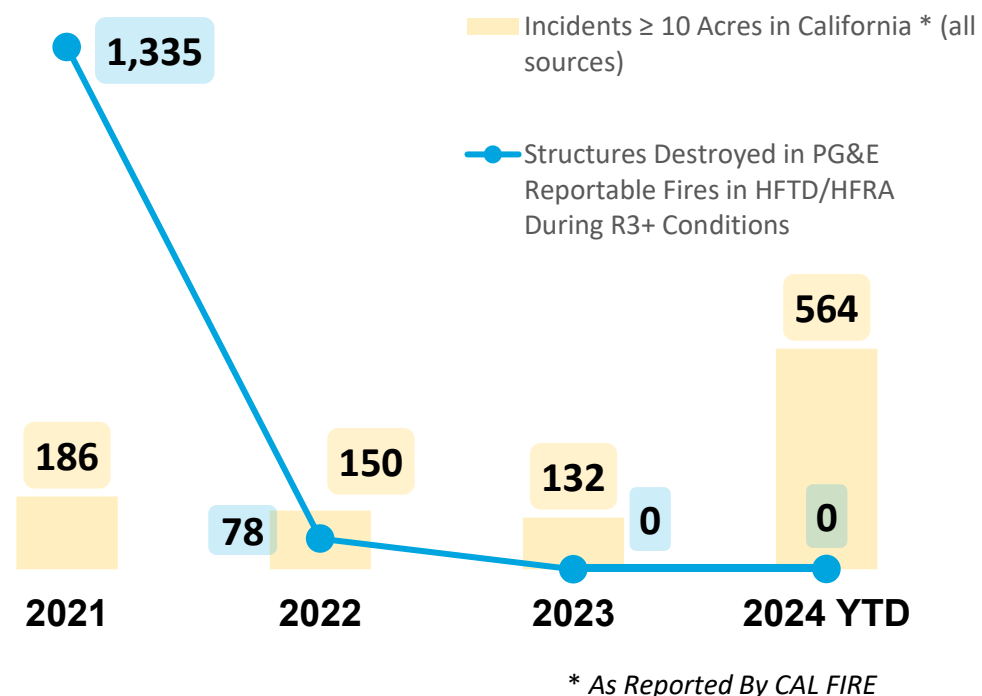
2020
4M+ acres burned by wildfires

Legend:
- ☐ None
- ☐ D0 Abnormally Dry
- ☐ D1 Moderate Drought
- ☐ D2 Severe Drought
- ☐ D3 Extreme Drought
- ☐ D4 Exceptional Drought

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Weather Whiplash

Weather Whiplash

Second hottest summer
in California history
(77.2ºF Avg temperature

2021

Historic July heat wave

JUL 2023

Hottest summer
in California history
(77.3ºF Avg temperature

2024

Santa Ana winds

JAN 2025

2021-2025

2021

Bomb cyclone + atmospheric river

2022-23

Nine back-to-back atmospheric rivers

FEB 2024

Two atmospheric rivers lead to flooding

Physical Risk Mitigations Make Our System Safer Every Day

Weather-Normalized* Ignition Rate

- 2017: 3.23
- 2018: 2.67
- 2019: 2.25
- 2020: 2.76
- 2021: 1.93
- 2022: 0.95
- 2023: 0.93
- 2024: 1.44

HFTD + HFRA Weather-Normalized Ignition Rates R3+ per 100k Circuit Mile Days

EPSS Implemented Mid-2021
2024 shows 365-day rolling as of 11/4/24

Riskier Wildfire Season…
…But Layers of Protection Delivered

Incidents ≥ 10 Acres in California * (all sources)

Structures Destroyed in PG&E Reportable Fires in HFTD/HFRA During R3+ Conditions

Year	Incidents ≥ 10 Acres	Structures Destroyed
2021	186	1,335
2022	150	78
2023	132	0
2024 YTD	564	0

* As Reported By CAL FIRE
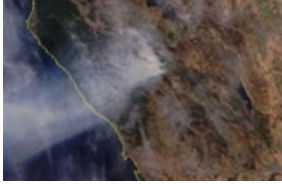
*Weather normalization involves adjusting data to remove the impact of weather variations to support comparison across different years or periods.

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

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Significant Wildfires and Improvements Since 2017

	2017	2018	2019	2020	2021	2022	2023	2024
	North Bay Fires	Camp Fire	Kincade Fire	Zogg Fire	Dixie Fire	Mosquito Fire*	No catastrophic wildfires	Sites Fire*
Acres Burned	387,551	153,336	77,758	56,338	963,309	76,788	-	19,195
Structures Impacted	3,379	19,558	434	231	1,405	78	-	0
Mitigations		• Launched Community Wildfire Safety Program • Public Safety Power Shutoff (PSPS) • Enhanced Vegetation Management (EVM) • Camera/Weather Station Network	• Expanded PSPS • Enhanced asset inspections • Improved risk modeling • Overhead system hardening	• Removed idle facilities and open jumpers • Improved risk modeling • Shorter, smaller, smarter PSPS	• Enhanced Powerline Safety Settings (EPSS) • 10,000-mile Undergrounding Program • Improved operational and risk modeling	• Expanded EPSS • Catastrophic wildfire behavior modeling	• Enhanced EPSS with Down Conductor Detection • Targeted vegetation management • Implemented AI on HD cameras	• Expanded pole clearing • Introduced real-time monitoring • Rapid response capability

*This ignition is under investigation. PG&E filed an Electric Incident Report (EIR) for the event out of an abundance of caution.
Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.
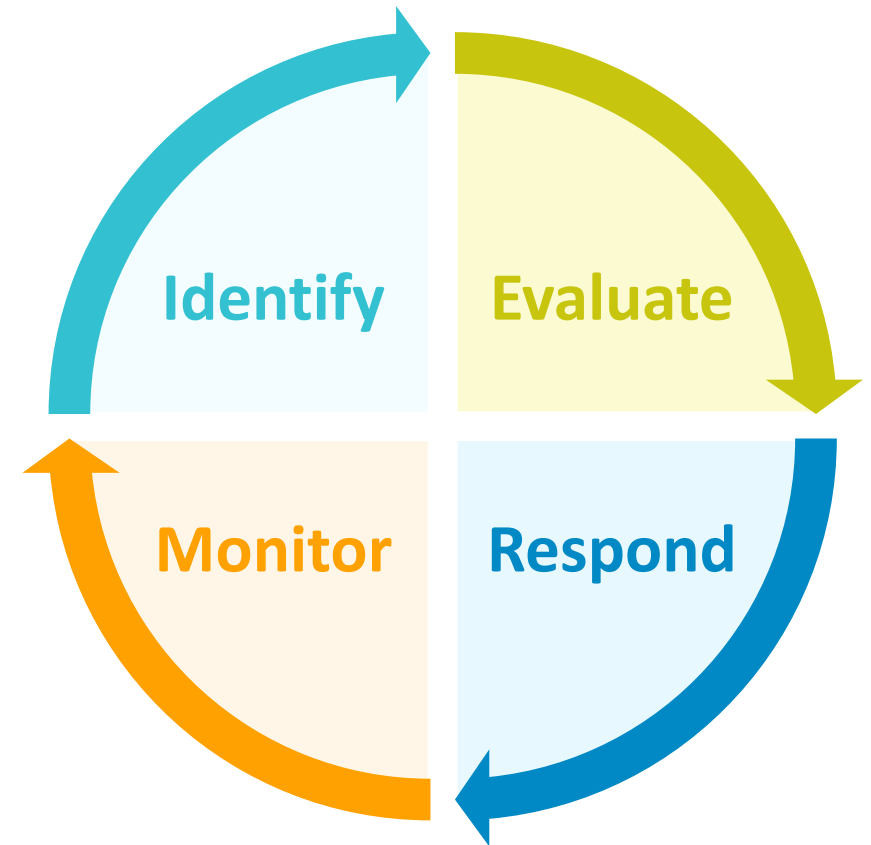
Section 5: Risk Methodology and Assessment

Wildfire risk is the top priority on our risk register and analyzed in the 2024 Risk Assessment and Mitigation Phase (RAMP)

We begin our risk assessment for wildfire by evaluating our overall utility risk from wildfires and adding in Public Safety Power Shutoff (PSPS), and Enhanced Powerline Safety Settings (EPSS) impacts across our PG&E's service area.

We use the results of this analysis to:
- ✔ Understand overall utility risk
- ✔ Measure associated risk components of PSPS, and EPSS events
- ✔ Develop a comprehensive wildfire mitigation strategy to stop catastrophic wildfires
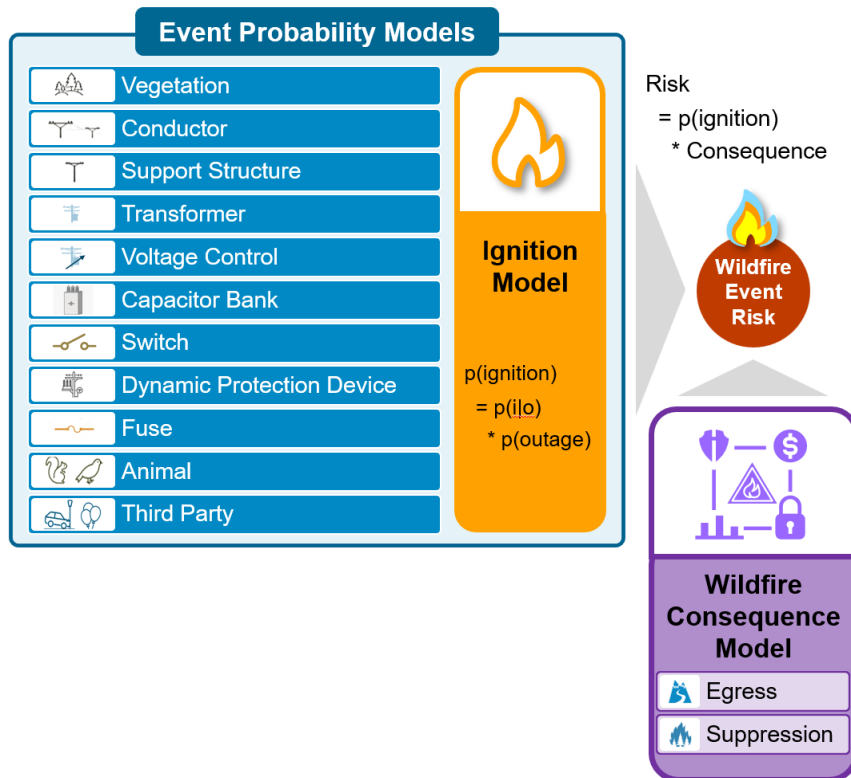
Our Enterprise Risk Management Process

Identify — Evaluate — Respond — Monitor

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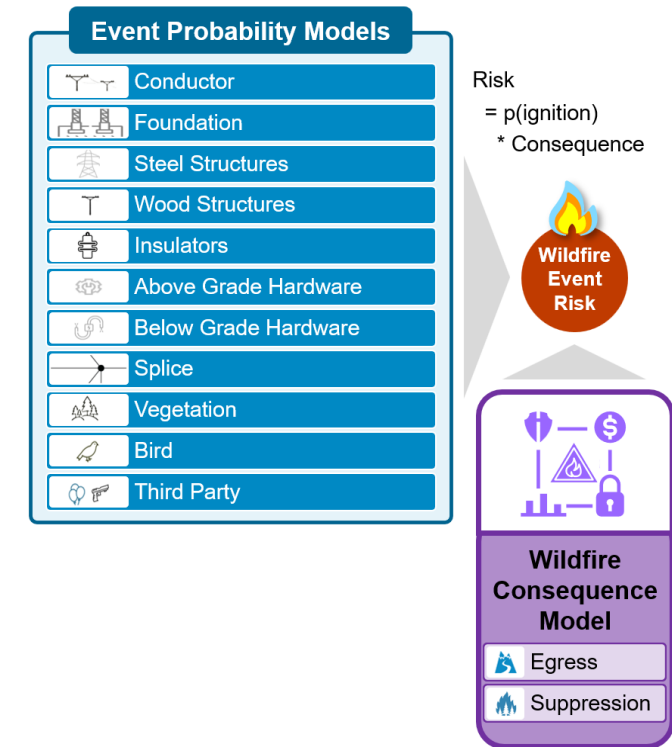
Asset-Level Risk Modeling

PG&E's risk models evaluate the total risk associated with wildfire, PSPS, and EPSS consistent with the CPUC's Risk-Based Decision-Making Framework. This risk is calibrated to our models, which we use to calculate risk reduction for our wildfire mitigation programs.

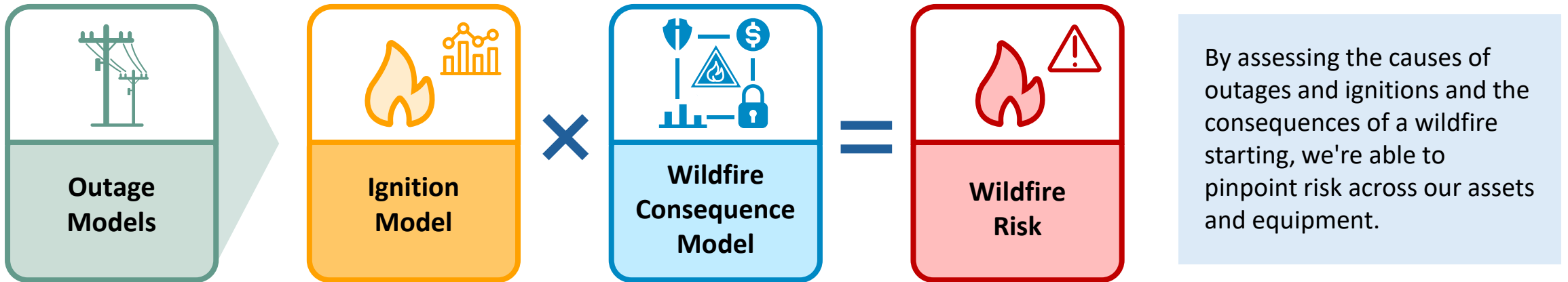## Risk Analysis Framework for Wildfire Distribution Risk Model v4

Event Probability Models
- Vegetation
- Conductor
- Support Structure
- Transformer
- Voltage Control
- Capacitor Bank
- Switch
- Dynamic Protection Device
- Fuse
- Animal
- Third Party

Ignition Model

$p(ignition)$
$= p(i|o)$
$* p(outage)$

Risk
$= p(ignition)$
$* Consequence$

Wildfire Event Risk

Wildfire Consequence Model
- Egress
- Suppression

Risk Analysis Framework for Wildfire Transmission Risk Model v2

Event Probability Models
- Conductor
- Foundation
- Steel Structures
- Wood Structures
- Insulators
- Above Grade Hardware
- Below Grade Hardware
- Splice
- Vegetation
- Bird
- Third Party

Risk
$= p(ignition)$
$* Consequence$

Wildfire Event Risk

Wildfire Consequence Model
- Egress
- Suppression

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

Risk Methodology

We determine wildfire risk through our risk models – these models have been improved in our upcoming WMP.

How Our Distribution Risk Model Works

Outage Models ➤ **Ignition Model** × **Wildfire Consequence Model** = **Wildfire Risk**

By assessing the causes of outages and ignitions and the consequences of a wildfire starting, we're able to pinpoint risk across our assets and equipment.

Risk Modeling Improvements In 2026 - 2028

✓ Refined outage models to account for equipment installed on each distribution pole individually

✓ Improved consequence modeling to simulate 24 hours and account for suppression and egress

✓ Adding additional data to outage, ignitions and consequence models to refine findings

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

How Models Improve

Our models improve every time we update data and account for additional variables. These changes incrementally improve the predictive confidence of our models as they mature.

Incorporating New Data

Our models change as updated data becomes available.

Tracking Additional Risk Factors

We include new variables in our risk calculations, such as local suppression resources and health risks associated with smoke.

Accounting for Equipment Installs

When we install new equipment such as sectionalizing devices, circuit configurations change, and risk is reallocated.
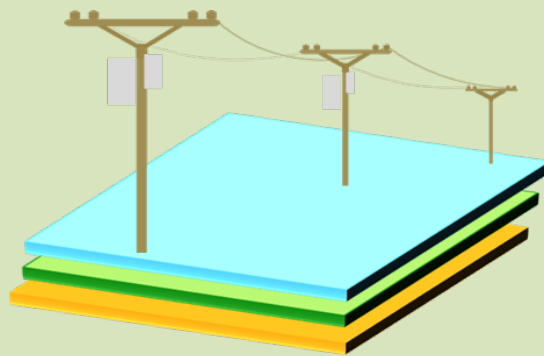
Changes to Wildfire Distribution Risk Model (WDRM)

Our next evolution of the WDRM (v4) adds new data and calculates equipment risk at the asset level to align more closely with work planning

2023 – 2025 WMP

Wildfire Distribution Risk Model v3

Risk calculated and composited at 100m x 100m "pixel" level

Consequence modeling incorporates eight-hour fire simulation
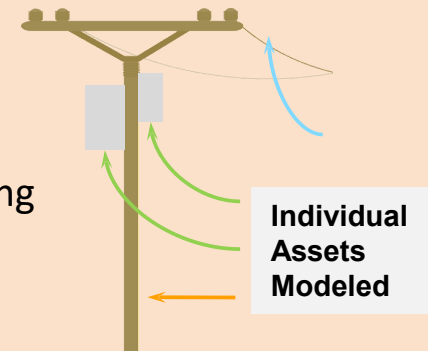
Data included:
GIS Vintage: Jan 2022
Previous risk events incorporated: 2015-2021

2026 – 2028 WMP

Wildfire Distribution Risk Model v4

Asset risk calculated at asset level
Better aligns with work planning and asset inspections

Individual Assets Modeled

Improved consequence modeling incorporates 24-hour fire modeling and suppression and egress

Data updates:
GIS Vintage: Jan 2023
Previous risk events incorporated: 2015-2022

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

Changes to Wildfire Transmission Risk Model (WTRM)

Our next evolution of the WTRM (v2) receives similar benefits as the WDRM, like improved consequence modeling and updated data, to better assess risk on our system

Improvements over previous WMP

☑ The model accounts for asset age to determine fragility in the face of environmental and third-party hazards.

☑ Uses the improved Wildfire Consequence Model v4 that accounts for suppression and egress.

☑ WTRM v2 model uses Notifications as an indicator of asset health.

Section 6: Wildfire Mitigation Strategy

Risk Assessment

Our risk management is based on a quantitative assessment to determine our overall utility risk from wildfire and outage program events. Our approach continuously evaluates outcomes and is informed by:

1 Comprehensive monitoring and data collection of meteorological and environmental data alongside an analysis of history and trends

2 Robust asset inspection program that includes inspections by drone, helicopter, or aerial lift to identify asset conditions

3 Thorough investigation of all CPUC-reportable ignitions to determine the root cause and identify gaps

4 Build wildfire risk models to help guide longer-term mitigations that improve the resiliency of our systems

We prioritize all HFTD/HFRA areas when considering mitigation activities. Our analysis shows that **just 90 circuit segments contribute to the top 20 percent of overall utility risk.**

2026-2028 Layers of Wildfire Protection

Continuous Monitoring

A **New Tools and Technology:** Installing additional weather stations and high-definition cameras monitored by trained professionals to better predict and respond to wildfires and severe weather.
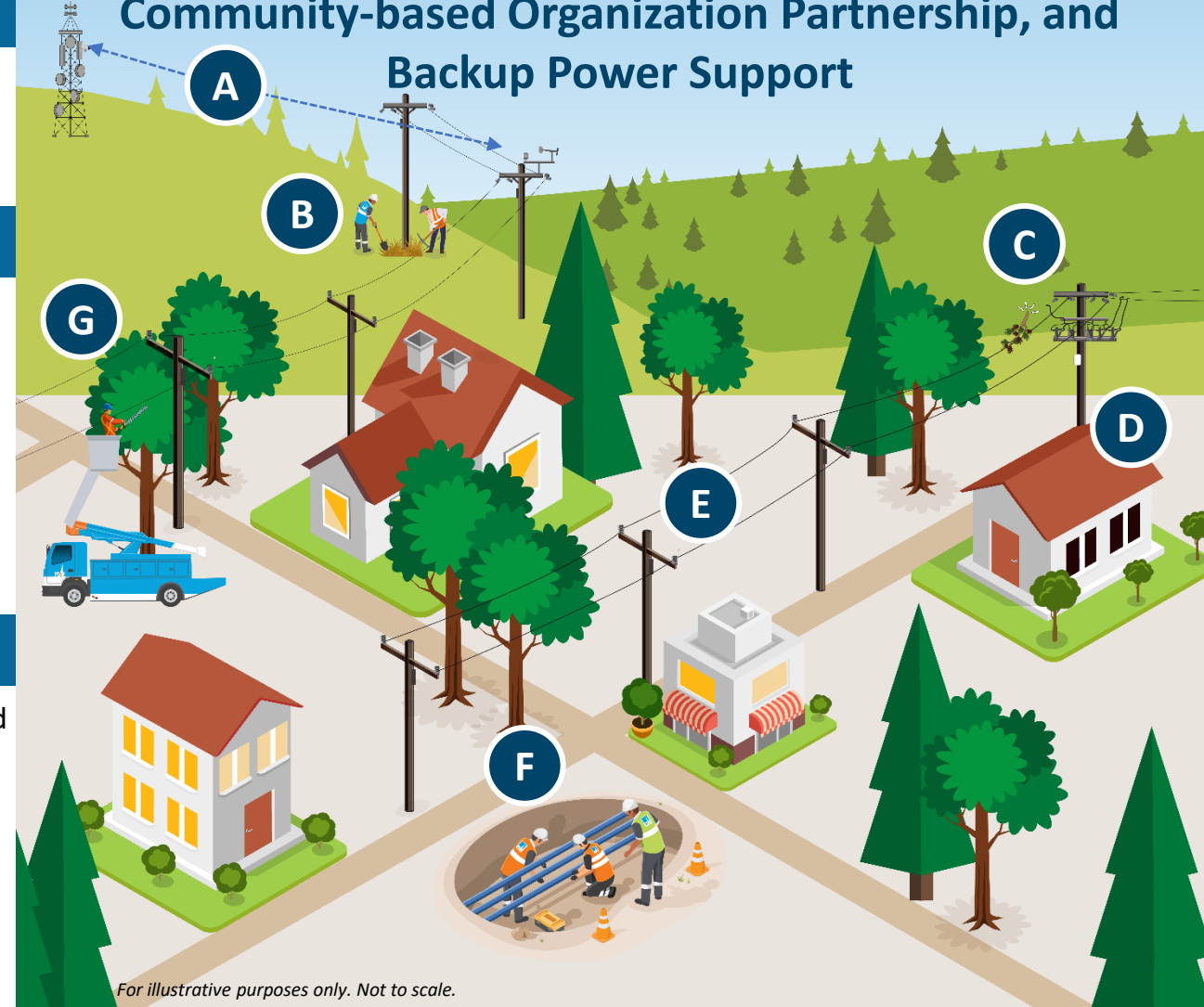
Operational Mitigations

B **Safety and Infrastructure Protection Teams:** Deploying trained response professionals who protect PG&E equipment to increase safety and enhance community recovery.

C **Enhanced Powerline Safety Settings:** Enabling safety settings during elevated wildfire risk to automatically shut off power quickly if a hazard is detected.

D **Public Safety Power Shutoff:** Turning off power for safety as a last resort during severe weather.

Resiliency Work

E **New, Strengthened Equipment:** Installing strengthened poles and covered powerlines on over 600 miles of overhead powerlines.

F **Undergrounding Powerlines:** Completing over 1,000 miles of undergrounding in the highest wildfire risk areas.

G **Vegetation Management:** Removing or pruning trees yearly to ensure they are a safe distance from powerlines.
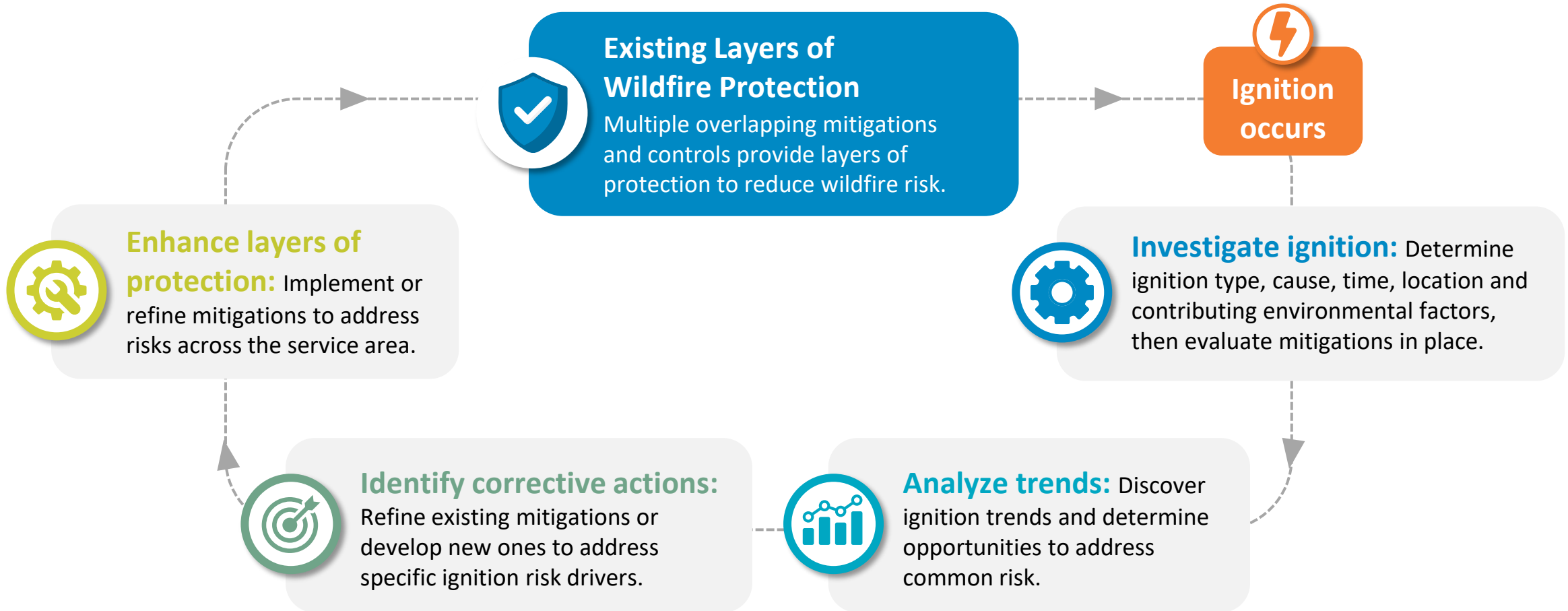
Providing Community Support through Local Community-based Organization Partnership, and Backup Power Support

For illustrative purposes only. Not to scale.

Work plans are subject to change due to weather, access or other schedule constraints
Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

We are staying vigilant and learning everyday by continually improving on our existing layers of protection through investigating ignitions, analyzing our findings and implementing corrective actions.

Existing Layers of Wildfire Protection
Multiple overlapping mitigations and controls provide layers of protection to reduce wildfire risk.

Ignition occurs

Investigate ignition: Determine ignition type, cause, time, location and contributing environmental factors, then evaluate mitigations in place.

Enhance layers of protection: Implement or refine mitigations to address risks across the service area.

Identify corrective actions: Refine existing mitigations or develop new ones to address specific ignition risk drivers.

Analyze trends: Discover ignition trends and determine opportunities to address common risk.

We project significant risk reduction driven by our systemwide resilience and operational mitigation programs over the next ten years.

As we implement resiliency improvements, the need for operational mitigations decreases, leading to both lower wildfire risk and a better experience for our customers.
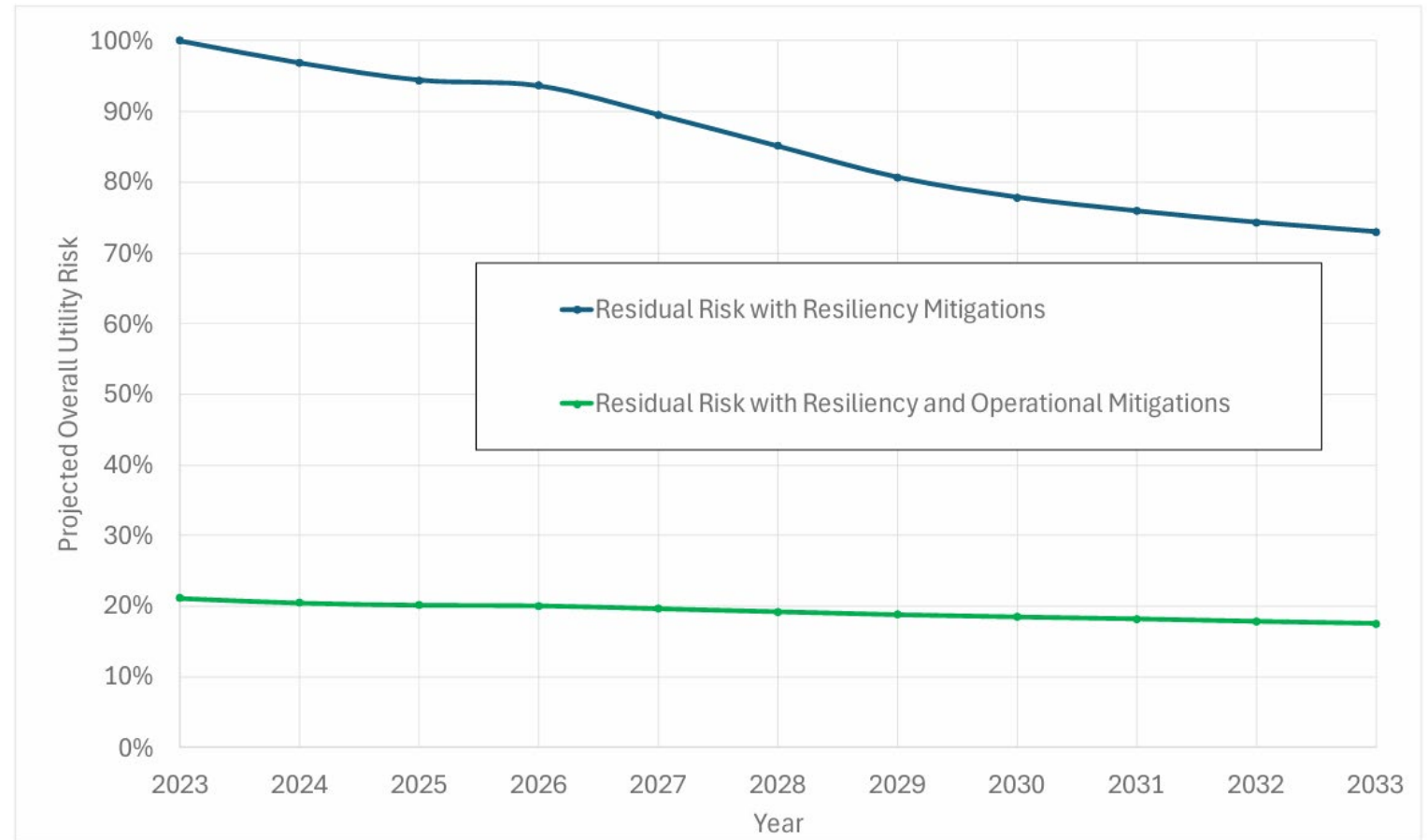
Section 7: Public Safety Power Shutoff (PSPS)

PSPS As A Tool For Safety

High winds can cause tree branches and debris to contact energized lines, potentially leading to a wildfire. **We initiate PSPS as a last resort measure to keep our customers and communities safe.**

We estimate PSPS is **95%** effective at reducing catastrophic wildfire risk, making PSPS a cornerstone of PG&E's operational mitigations.

PSPS Preventing Ignitions

2019-2024

27
PSPS events

1,439
Instances of damage or hazards mitigated during high-risk weather conditions
which had the potential to become catastrophic fires

Reducing the Duration, Frequency, and Scope of PSPS Events

We are working to make our system more resilient by reducing the impact of PSPS for our customers and communities

Improvement Area	Improvements
Reduce Duration	▪ Use Supervisory Control and Data Acquisition (SCADA) devices to reduce the time it takes to de-energize a circuit, shortening outage length.
Reduce Frequency	▪ Improve our risk model sensitivity to weather, vegetation, and fuel conditions through the adoption of changes in our Fire Potential Index (FPI), Ignition Probability Weather, and Operability Assessment models.
Reduce Scope	▪ Underground powerlines. This may mean lines no longer pose an ignition risk and take customers out of PSPS scope during extreme weather.** ▪ Install switches and sectionalizing devices, providing flexibility to only de-energize a portion of the line with the at-risk segment, rather than the entire line. ▪ Use PG&E's Fixed Power Solutions (FPS) Program to offer backup power for our most vulnerable customers, critical facilities and schools.

Efforts above are targeted at circuits that have been frequently deenergized.
**Undergrounding does not always eliminate PSPS risk for directly-connected customers, especially when the undergrounded line remains connected to an overhead line.*
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PSPS Lessons Learned Since 2023-2025 WMP

→ **We are now using our FPI 5.0 model** as of August 2024, which has several enhancements from the previous FPI 4.0 model. This model scopes outages at a more granular level, leading to less customer impacts. While we had six PSPS outages in 2024, the scope of these events was reduced compared to 2019-2020 events.

→ **During one 2024 PSPS event, we were able to reduce the event duration for some customers by temporarily re-energizing a line before a second wave of adverse weather impacted the same customers**. This let customers who had been without power cool their homes and charge devices. We may offer temporary re-energization during future PSPS events where conditions allow.

→ **We also continually grow with ideas and feedback shared by our staff following each PSPS event in post-event reports**. These lessons learned are incorporated into process improvements and addressed by specific Functional Areas.

Section 8: Grid Design, Operations and Maintenance

We are strengthening our electric system by upgrading powerlines.

This includes moving powerlines underground and completing overhead hardening.

In some cases, we are removing powerlines if areas receive power from a remote grid or if the lines are no longer needed.

These programs:

✓ **Reduce wildfire risk**

✓ **Enhance long-term safety**

Prioritizing Undergrounding Where It's Most Impactful

We prioritize undergrounding to have the greatest impact on reducing wildfire risk.

To accomplish this, we use a wildfire safety risk model and partner with wildfire analysis providers.
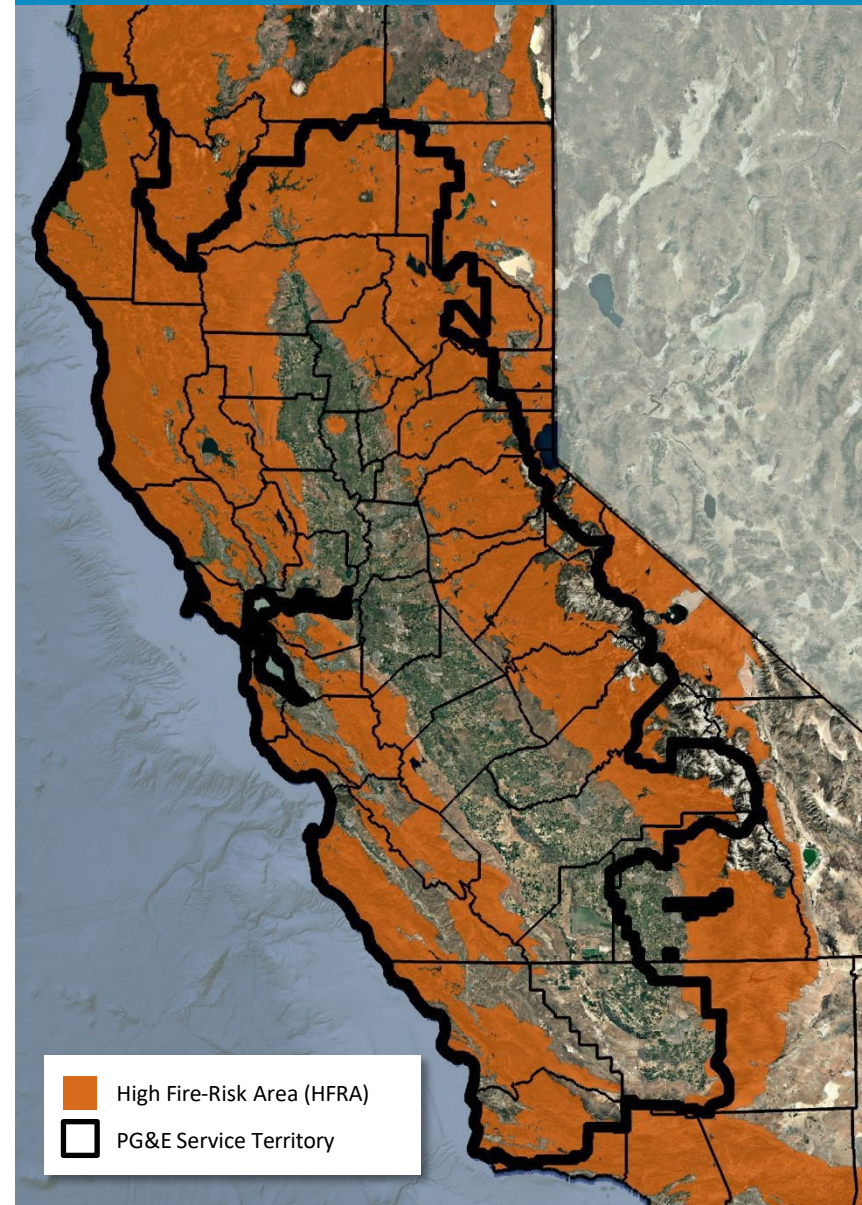
This modeling considers historic ignitions and other factors, such as:

- Vegetation
- Topography
- Condition of the electrical equipment

We also consider:

- Probability of an ignition
- Consequences if a wildfire were to start in a specific location

PG&E High Fire-Risk Map

High Fire-Risk Area (HFRA)

PG&E Service Territory

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Annual Targets

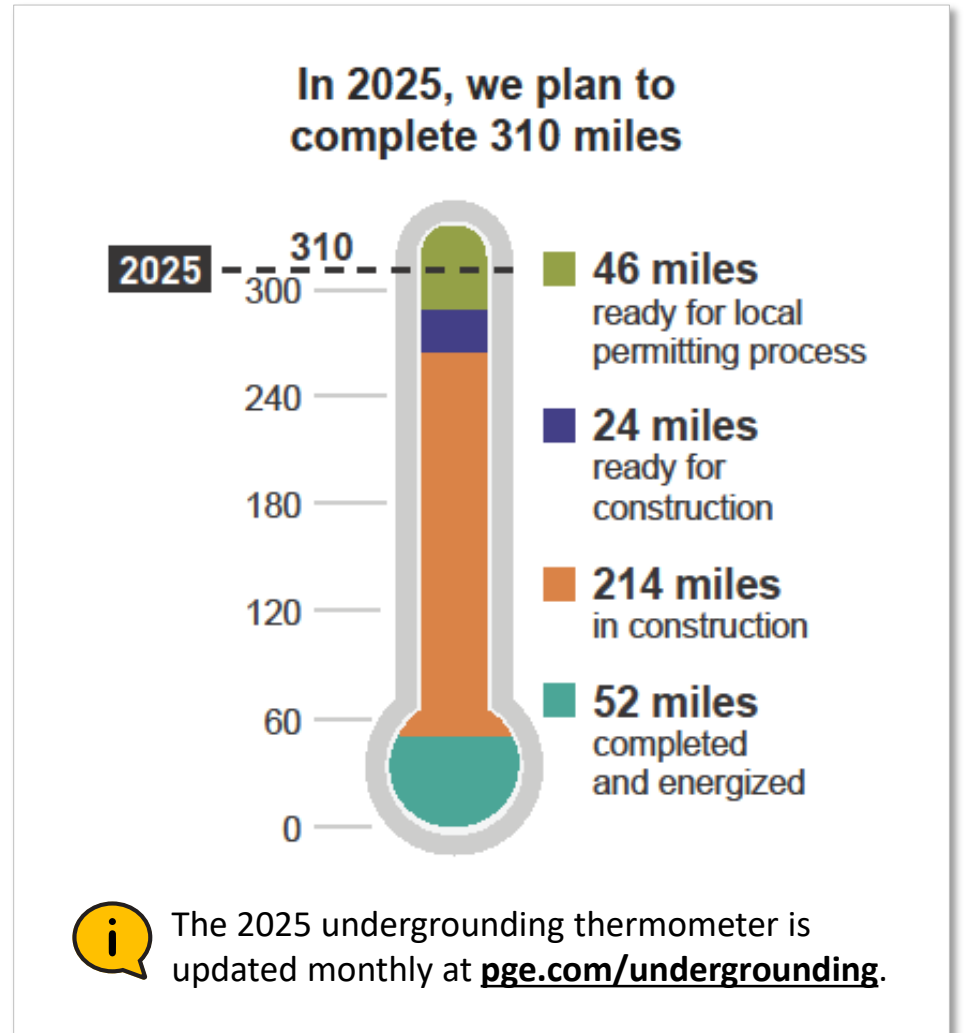| YEAR	UNDERGROUNDING MILES*	OVERHEAD HARDENING AND LINE REMOVAL*	REGULATORY PROCESS

2025 Target	310	210	• Approved in:
			   ○ 2023-2025 WMP
			   ○ 2023-2026 GRC

2026 Target	360	298	• Approved in 2023-2026 GRC • Proposed in 2026-2028 WMP

2027 Target	307	190	• Proposed in:
			   ○ 2026-2028 WMP
			   ○ 2027-2030 GRC

2028 Target	400	190	• System Upgrades proposed in:
			   ○ 2026-2028 WMP
			   ○ 2027-2030 GRC
			• Undergrounding to be proposed in 10-Year Electrical Undergrounding Plan (EUP), and funded by EUP if approved, or the 2027 GRC if the EUP is not yet approved

Includes 4 miles of line removal enabled by remote grid in 2026.

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2025 Undergrounding Progress

We are continuing to make progress toward our goal of moving 310 miles of powerlines underground in 2025, with 52 miles completed so far.

Since launching the Undergrounding Program in 2021, we have constructed over 725 total miles of underground powerlines.

Undergrounding eliminates nearly all wildfire risk from a line once complete. Combined with other system hardening efforts and 2023 progress, **we've permanently removed nearly 7.5% of wildfire ignition risk from our entire system.***

In 2025, we plan to complete 310 miles

2025 — 310
300

240

180

120

60

0

46 miles ready for local permitting process

24 miles ready for construction

214 miles in construction

52 miles completed and energized

ℹ The 2025 undergrounding thermometer is updated monthly at **pge.com/undergrounding**.

*Data as of 6/30/25. *Compared to wildfire risk in 2023. Includes risk reduction from Butte Rebuild and Community Rebuild undergrounding.*
Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

38

Higher-voltage distribution lines pose the greatest wildfire risk. Therefore, to **maximize safety, we are prioritizing undergrounding those lines.**
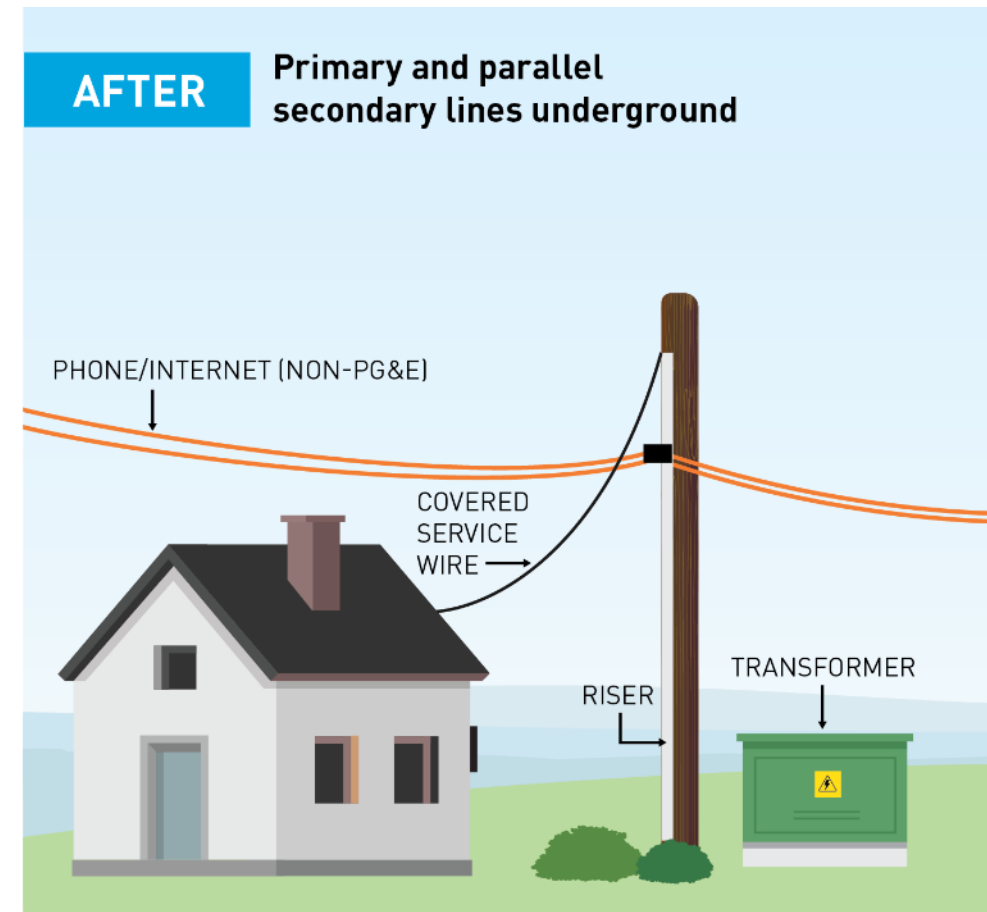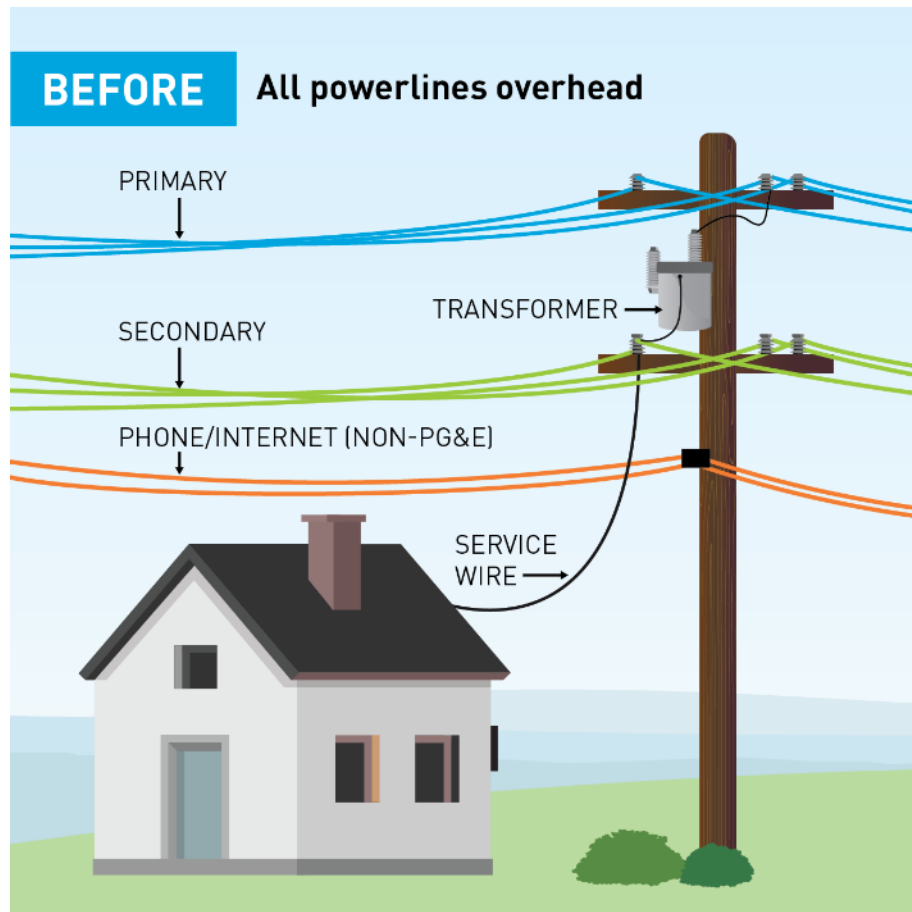
For illustrative purposes only. Not to scale.

We continue to make progress toward our goal of completing 210 miles of overhead hardening and line removal in 2025, with 140 miles completed so far.

Since launching the Community Wildfire Safety Program in 2018, we have completed more than **1,475 total miles** of overhead hardening and line removal.

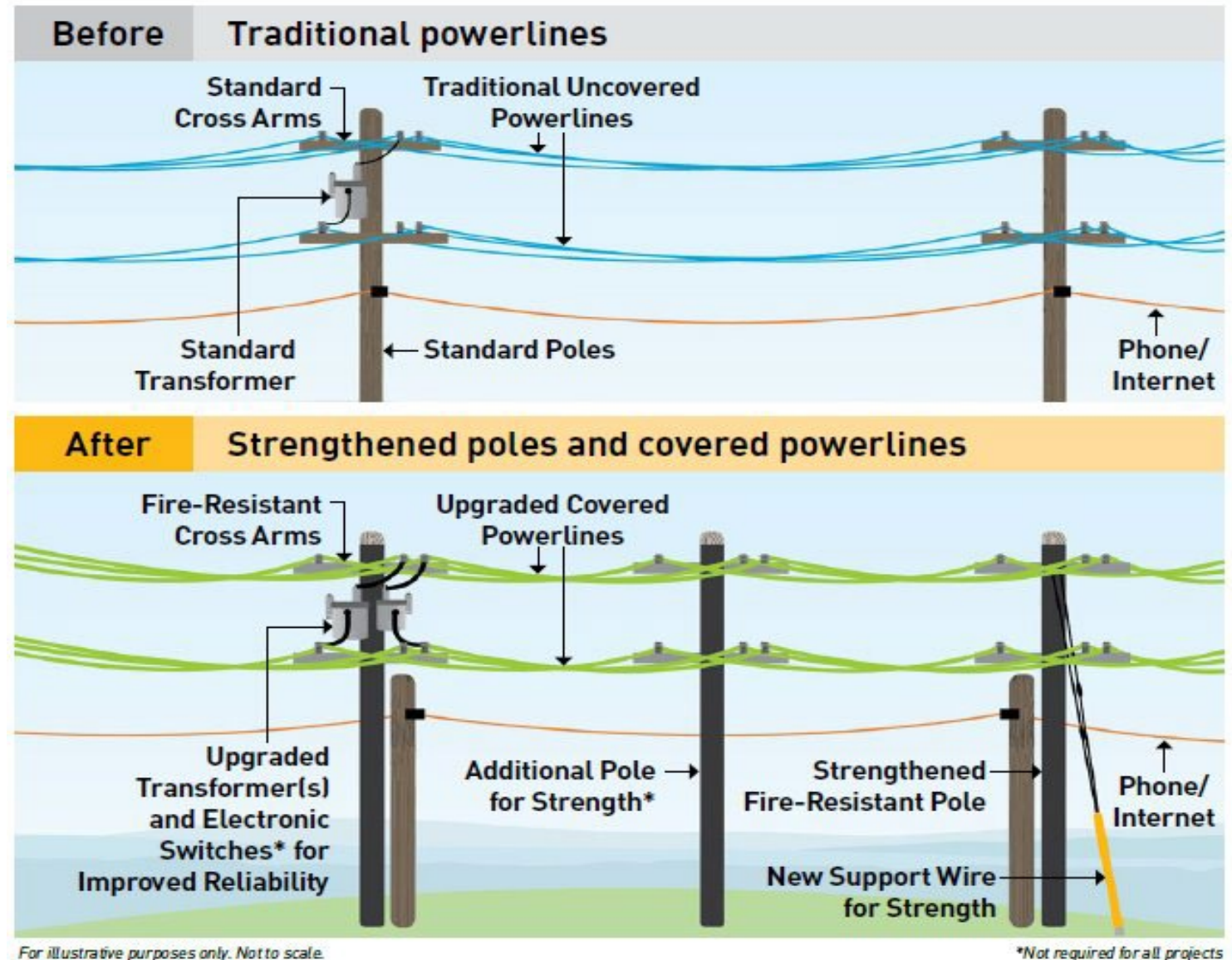| 2025 Completed To Date	2025 Total Forecast
140 miles (67%)	210 miles

The 2025 system upgrades progress graphic is updated monthly at **pge.com/systemupgrades**.

Overhead hardening reduces ignition risk by nearly 67% and is used in coordination with other wildfire safety tools to reduce additional risk.
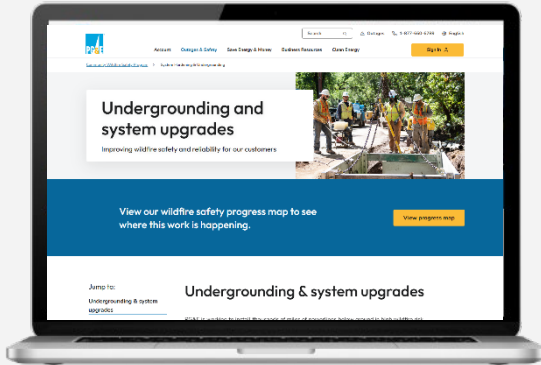
Data as of 6/30/25.

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

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PG&E uses **strengthened poles and covered powerlines** in areas where other hardening methods like undergrounding may not be feasible to install.

Before — **Traditional powerlines**
- Standard Cross Arms
- Traditional Uncovered Powerlines
- Standard Transformer
- Standard Poles
- Phone/Internet

After — **Strengthened poles and covered powerlines**
- Fire-Resistant Cross Arms
- Upgraded Covered Powerlines
- Upgraded Transformer(s) and Electronic Switches* for Improved Reliability
- Additional Pole for Strength*
- Strengthened Fire-Resistant Pole
- New Support Wire for Strength
- Phone/Internet

For illustrative purposes only. Not to scale.

*Not required for all projects
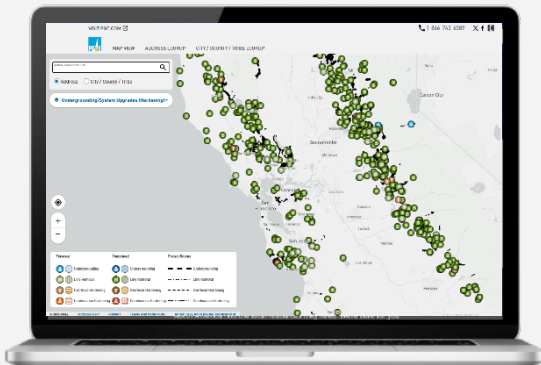
More Undergrounding and System Upgrades Resources

Undergrounding and System Upgrades Websites

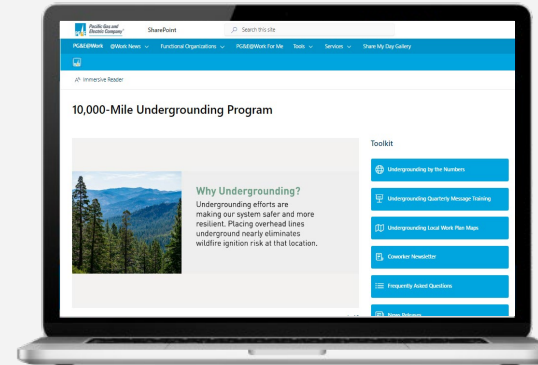Information on Undergrounding and System Upgrades

> ℹ **pge.com/undergrounding**   ℹ **pge.com/systemupgrades**

Wildfire Safety Progress Map

Interactive Tool for Undergrounding and System Upgrades Workplans

> ℹ **pge.com/wildfiresafety-upgrades**

PG&E @ Work Undergrounding Page

Internal Information and Resources

- Talking points and FAQs on undergrounding program overview, benefits, cost, risk identification, prioritization and scoping work
- Updated workplan maps
- Updated KMZ
- Progress thermometer
- Fact sheets

> ℹ Learn more by typing "Undergrounding" into your browser address bar or going to: **https://pge.sharepoint.com/ Topics/SitePages/Undergrounding.aspx**

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

How We Conduct System Inspections

Regular system inspections serve as our first line of defense to protecting our communities and ensuring we avoid the wildfire sequence.

✓ **Our patrols** start with a simple visual examination of applicable overhead and underground facilities to identify obvious structural problems and hazards.

✓ **Our detailed inspections** involve careful examinations and diagnostic testing of individual structures, conductors, equipment, components and vegetation.

✓ **We're looking for Compelling Abnormal Conditions** during our inspections, which are any electric distribution pole, equipment, component, conductors, vegetation or third-party condition that causes a safety or fire ignition risk and may adversely impact public safety or service reliability.

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

Asset Inspections

	Transmission	**Distribution**
Interval	Detailed inspections every <u>three years</u> in HFTD guided by WTRM v2.	Detailed inspections every <u>three years</u> in HFTD guided by WDRM v4.
What This Means	Three-year inspection interval mirrors the conservative degradation estimate of identified non-emergency conditions.	Aerial inspections in between three-year detailed inspection cycles for areas of extreme, severe and high risk or consequence.
Requirement	California Public Utilities Commission (CPUC) General Order 95 requires Level 2 maintenance notifications to be completed at a max. duration of three years.	CPUC General Order 165 requires inspections to be completed at a five-year frequency.
Operational Decisions	Inspection findings inform decisions for what lines may be included in Public Safety Power Shutoffs.	High risk conditions addressed expeditiously. Lower-risk conditions are remediated through risk-prioritized mega-bundling. This allows PG&E to increase risk-spend efficiency in executing notifications that are identified through inspections. PSPS scoping also considers EC notifications.

Through improvements to our wildfire risk models, we now consider both risk and consequence when determining where to prioritize work.

This change improves our "eyes on risk"[3] compared to our 2023-2025 WMP.

Example Eyes on Risk Selection Process for Inspections

Consequence[1]	Low	Medium	High	Severe	Extreme
Extreme					
Severe					
High					
Medium					
Low					

Wildfire Risk[2]

Vegetation Management	Routine	Routine/Hazard	Routine/Hazard/ Remote Sensing[4]
Distribution Inspections	Tri-Annual	Bi-Annual	Annual

Note(s):
(1) Groupings for both consequence and wildfire risk are based on the percentiles of circuit segments based on the following categories: Extreme 0-1%, Severe 1-2%, High 2-10%, Medium 10-20%, Low 20-100%.
(2) Wildfire risk is included because it allows for a correlation between wildfire risk and consequence, while also considering probability of ignition for vegetation drivers.
(3) "Eyes on risk" demonstrates the anticipated average "eyes on risk" value per year and may fluctuate per year depending on changes in overhead circuit mileage.
(4) Remote Sensing mileage is has not been determined, considerations applied to High Risk areas for demonstration purposes

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

Processes for Maintaining Equipment

Regular maintenance and repairs keep our assets working safely and reliably. Our 2026-2028 WMP covers reoccurring maintenance of the following:

- Capacitors
- Circuit breakers
- Connectors, including hotline clamps
- Conductor, including covered conductor
- Fuses, including expulsion fuses
- Distribution pole
- Lightning arrestors

- Reclosers
- Splices
- Transmission poles/towers
- Transformers
- Non-exempt equipment
- Pre-GO 95 legacy equipment
- Other equipment not listed

For each asset, we track:

- Condition Monitoring
- Maintenance Strategy (e.g., reactive, preventative, predictive, reliability-centered)
- Replacement/Repair Condition

- Timeframe for Remediation
- Failure Rate
- Ignition Rate
- Failure and Ignition Causes

How We Prioritize Tags

PG&E uses a risk-informed prioritization system to address the highest risk issues at hand. Maintenance tags are generated through our inspection programs and routine activities are assigned a priority based on the potential safety impact.

PG&E Priority Tag	Category Description
A	An immediate risk of high potential impact to safety or reliability.
X*	High potential impact to safety or reliability but do not pose an immediate risk.
B	Any other risk of at least moderate potential impact to safety or reliability (Take corrective action within the specific time period).
E	Any other risk of at least moderate potential impact to safety or reliability (Take corrective action within the specific time period).
H*	The "H" PG&E Priority Tag are "E" Notifications that are planned to be addressed by a planned System Hardening Project.
F	Any risk of low potential impact to safety or reliability.

Distribution Only

Work Orders

When assets are identified for improvements, we generate a work order. Work orders are prioritized based on risk.

PRIMARY TYPES OF WORK ORDERS	BACKLOGS BEING ADDRESSED
Transmission tags	• We have addressed ignition-related backlog of E and F tags created before 2023 in HFTD/HFRA. • We continue to work on addressing non-ignition-related backlog in HFTD/HFRA through 2027 and are monitoring for escalation our backlog of tags in non-HFTDs via our Field Safety Reassessment Program.
Distribution tags	• At the end of 2024, we had ~200,000 notifications in HFTD/HFRA past due, mostly E and F tags. We updated our inspection criteria to reduce the creation of ineffective tags and began bundling work to address this. • In 2026-2028, we will close a volume of tags equivalent to 160% of EC tags created in HFTD/HFRA locations.
Substation tags	• Our backlog of substation line (2023 created) and power generation (created in 2024) corrective tags are being addressed as outlined in Utility Standard TD-3322S and Utility Procedure TD-3320P-12.

Procedures

Grid operation procedures guide our work in three key areas:

1 **Equipment Settings to Reduce Wildfire Risk** ➔

2 **Grid Response Procedures and Notifications** ➔

3 **Personnel Work Procedures and Training in Conditions of Elevated Fire Risk** ➔

EXAMPLES

- ✔ Enhanced Powerline Safety Settings (EPSS)
- ✔ Downed Conductor Detection (DCD)
- ✔ Sensitive Ground Fault (SGF)
- ✔ SmartMeter Partial Voltage (PV) Alert
- ✔ Hazards Detection (Gridscope)
- ✔ Communication Assisted Protection (ComAPS)

- ✔ Identifying faults on EPSS enabled circuits and to dispatching personnel to address them

- ✔ Requiring PG&E employees and contract partners follow when traveling to work, performing work, or operating outdoors

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

Gridscope

Gridscope devices are state-of-the-art sensors that collect asset performance data. Data can be used to manage real-time outages, as well as future work planning and reliability programs.

Gridscope Device

- ✓ **Pole-mounted:** Installation takes minutes and devices are operational within 48 hours.
- ✓ **Self-powered:** During outages they remain operational and collect data used to support response, restoration, and post-event reviews.
- ✓ **Intelligent sensor:** That monitors vibration, acoustics, IR, visible light, and more then process the information to detect faults and other hazards not readily identifiable via existing PG&E devices.

PG&E's Enhanced Powerline Safety Settings (EPSS) team piloted Gridscope devices' capacity to support:

- Dispatching crews during restoration closer to fault locations, thereby reducing duration of outages and improving safety for our crews and customers
- Reducing the proportion of unknown-cause outages
- Identifying non-visual hazards that could lead to an ignition

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

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Gridscope Pilot Deployments

Pilot Deployments

Q3 2023	4	Circuit Protection Zones	➤	450 Installations
Q1 2024	9	Circuit Protection Zones	➤	1,425 Installations
Q2 2024	18	Circuit Protection Zones	➤	2,205 Installations
Q3 2024	64	Circuit Protection Zones	➤	6,000 Installations

Total Complete

95 Circuit Protection Zones **on** **37** Circuits ➤ **10,080** Installations

Circuits with Gridscope Devices

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

Asset Quality Control/Assurance
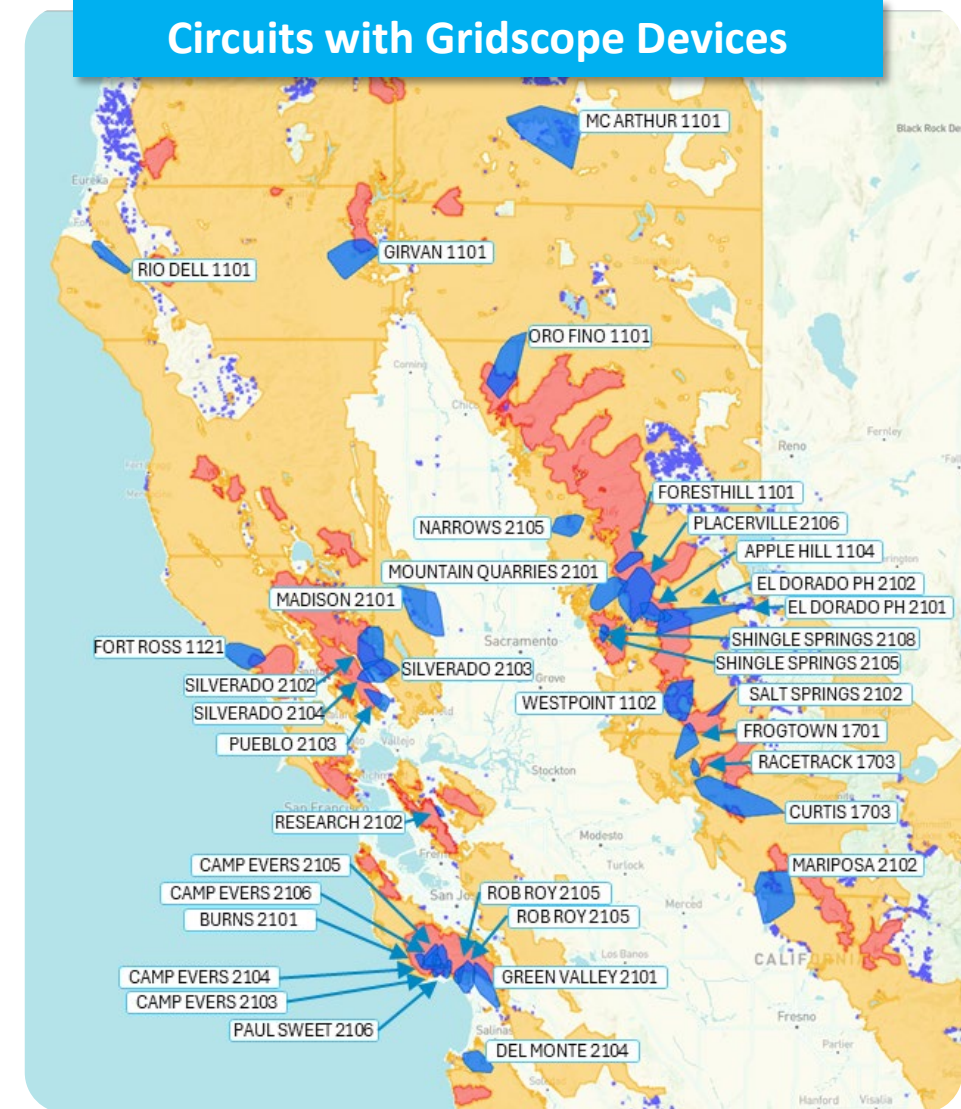
We use two quality initiatives to verify asset work is successfully completed:

1

Quality Control
Assesses work outputs to verify alignment with its intended specifications

2

Quality Assurance
Tests the design of work processes and provides guidance for continuous improvement on quality control methods

Both initiatives are performed against the following asset work:

- ✔ System Hardening - Undergrounding
- ✔ Open Tag Reduction – Distribution Backlog
- ✔ Detailed Ground or Aerial Inspections – Distribution
- ✔ Detailed Inspection Transmission

Section 9: Vegetation Management and Inspections

Vegetation Management WMP Strategy

We plan to streamline our inspection programs to improve safety while targeting risk in our system to continuously reduce ignitions associated with vegetation-caused interruptions.

Changes to our WMP Strategy

2023 – 2025 WMP	2026 – 2028 WMP
Under the 2023 – 2025 WMP, VM has multiple inspection programs, including:	**Our 2026 – 2028 WMP strategy focuses on:**
▪ Annual inspections of distribution lines via Routine (PG&E System) ▪ Second Patrol (HFTD/HFRA) ▪ Risk-targeted programs: Focused Tree Inspection (FTI), Vegetation Management for Operational Mitigations (VMOM), and Tree Removal Inventory (TRI)	▪ Consolidating VM inspection programs ▪ Leveraging remote sensing technology to inform and/or supplement inspections ▪ Utilizing analytics to enable risk-prioritized inspections

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

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Consolidating Routine Vegetation Management Distribution Inspections

Consolidating inspection programs improves operational efficiency, affordability, and customer satisfaction, while complying with applicable laws and regulations.

2023 – 2025 WMP	2026 – 2028 WMP
Vegetation Management for Operational Mitigations: Mitigate 6,500 trees on EPSS capable circuits	**Combine with other Vegetation Management work in response to weather conditions**
Focused Tree Inspection (FTI): Inspect 1,500 circuit miles within defined Areas of Concern **Tree Removal Inventory (TRI):** Mitigate 25,000 trees identified from legacy programs **Distribution Routine Program:** Annual patrols of all overhead circuit miles system wide	**Incorporate FTI and TRI into Distribution Routine patrols;** explore supplementing patrols with remote sensing technologies **Mitigate 135,000 trees from remaining TRI population** through distribution routine programs by 2028
Distribution Second Patrol: Inspect all circuit miles in HFTD and HFRA locations	**Inspect locations based on wildfire risk and consequence;** explore supplementing patrols with remote sensing technologies

Benefits of Program Consolidation

Consolidation of the Inspection Programs enables customer affordability, operational efficiencies, and customer satisfaction, while complying with applicable laws and regulations.

Distribution Routine

- Combine elements of risk identification into our annual inspections
- Improve operational efficiencies, affordability, and customer sentiment
- Focuses resources to maximize tree work
- Streamlines the Distribution Inspection Procedure

Distribution Hazard Patrol

- Inspections focused on risk-informed prioritization informed by Wildfire Risk and Consequence
- Allows operations to focus on highest risk areas based on historical data and operational lessons
- Supplement ground-based patrols with alternative inspection methods (i.e., remote sensing)
- Improve operational efficiencies, affordability and customer sentiment
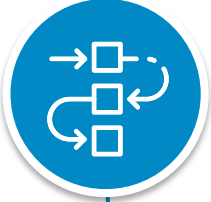
Weather-Driven Events

- Integrates program into normal course of business, based on outage event and weather conditions

In 2025, we are exploring how remote sensing technologies may be utilized in lieu of ground-based vegetation management inspections on our distribution system.

Exploratory Approach

In 2025, we are piloting potential applications of satellite, LiDAR, drone and other technologies to determine their potential in vegetation management inspections.

Benefits of remote sensing pilots

- ✓ May be able to supplement ground inspections.

- ✓ Refines the approach before broader implementation to support vegetation management operations.

- ✓ As remote sensing matures, there is an opportunity to expand beyond high-risk areas.

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

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Current and Proposed Strategy for Distribution Hazard Patrols

2023 – 2025 WMP	2026 – 2028 WMP

We currently examine risks uniformly across the HFTD/HFRA.

- Distribution Hazard Patrol Inspections are conducted across all HFTD/HFRA.
- Plan does not vary layers of protection based on risk.
- Annual patrols are performed on the entire Distribution system through the Distribution Routine program.

	HFTD/HFRA Miles
Distribution Routine	~25K
Distribution Hazard Patrol	~25K
Remote Sensing	-
Total	~50K

We are proposing a risk-informed inspection strategy, leveraging remote sensing technologies.

- Proposed Distribution Hazard Patrol Inspections targets a subset of HFTD/HFRA miles, informed by Wildfire Risk and Wildfire Consequence.
- Proposed plan would vary layers of protection based on risk.
- We maintain annual patrols on the entire Distribution system through the Distribution Routine program.

	HFTD/HFRA Miles
Distribution Routine	~25K
Distribution Hazard Patrol	~11K
Remote Sensing	~5.5K
Total	~36K - 41.5K

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

Section 10: Situational Awareness and Forecasting

High-definition cameras and weather stations allow us to better predict and respond to wildfire risk and severe weather around the clock.
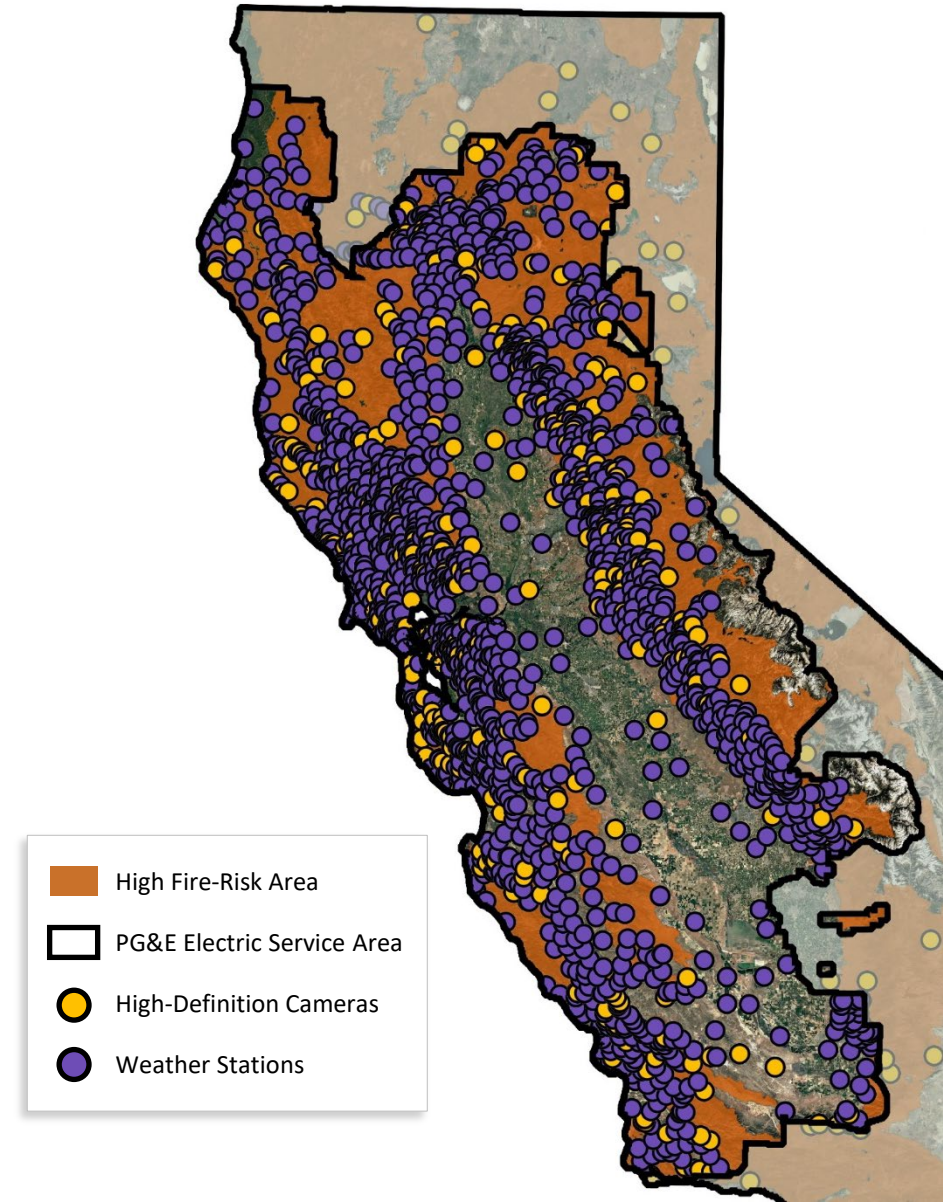
System	Installations Through April 2025	2026-2028 Work Plans
Weather Stations	**1,596** stations	Conduct network evaluation, develop weather model verification technology and enhance model leveraging AI.
High-Definition Cameras	**647** cameras	Evaluate AI system performance and new functionalities.

Data as of 4/31/2025.
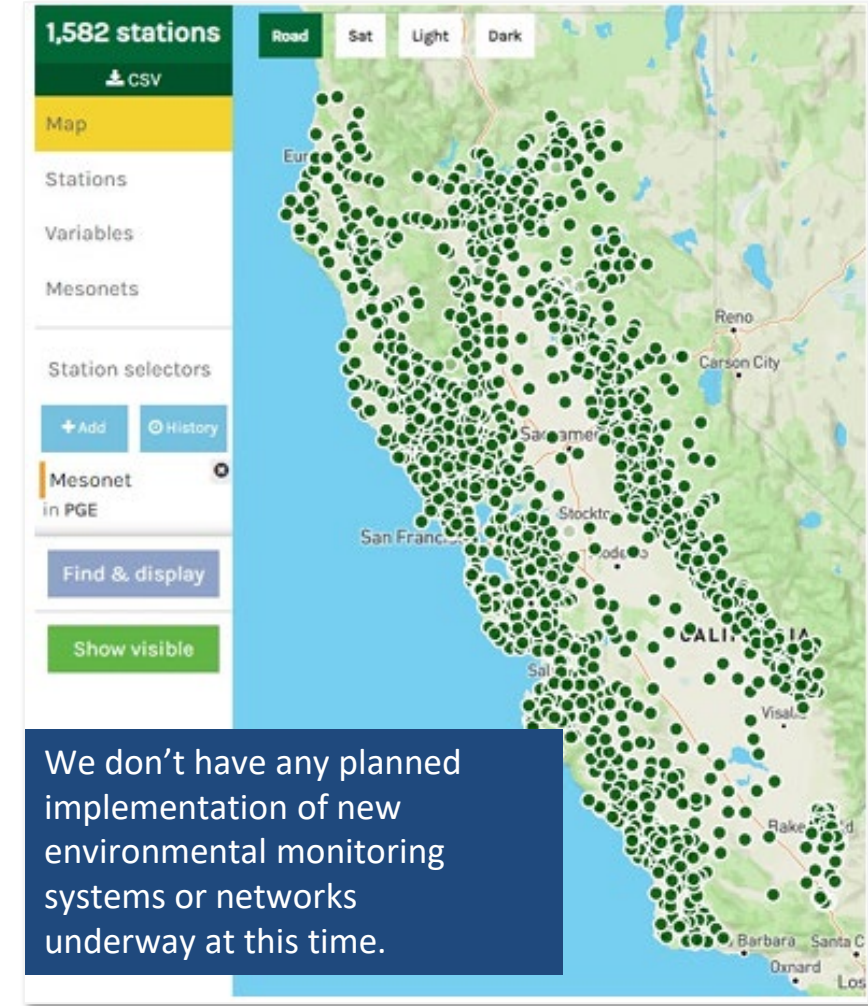
Customers can see camera outputs and locations at **ops.alertcalifornia.org** and view our interactive weather map at **pge.com/weather**.

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

- High Fire-Risk Area
- PG&E Electric Service Area
- High-Definition Cameras
- Weather Stations

Environmental Monitoring Systems

System	Measurement/ Observation	Frequency	Purpose and Integration
Weather Stations	• Sustained wind speed • Wind gust speed • Air temperature Relative humidity	The standard frequency is six observations per hour. However, up to 120 observations per hour can be enabled on most stations.	• Improving situational awareness • Assisting with Public Safety Power Shutoff (PSPS) event execution • Improving weather forecasts through data assimilation by the Meteorological Assimilation Data Ingest System (MADIS) • Validating the performance of the weather models
Fuel Moisture Sampling and Modeling	The percentage of moisture in collected samples of specific plant species from 30 select HFTD locations across the service territory.	Once a month	• Validating the fuel moisture models • Improving situational awareness • Building robust historical fuel moisture datasets

We don't have any planned implementation of new environmental monitoring systems or networks underway at this time.

PG&E Weather Stations as of 1/13/2025.

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

Grid Monitoring Progress To Date and 2026-2028 Targets

We are actively working to improve grid health awareness and response by operating emerging technologies, providing tools for real-time operational support, transitioning to a posture where we can predict developing hazards and implementing proactive maintenance work to reduce wildfire risk and improve public safety.

Our 2026-2028 objective is to mature our enterprise systems to better support risk reduction efforts.

System	Installations Through May 2025
Line Sensors (LS)	**302** circuits
Distributed Fault Anticipation (DFA)	**97** circuits
Early Fault Detection (EFD)	**8** circuits

Data as of 5/31/2025.

Grid Monitoring Systems

System	Measurement/Observation	Frequency	Purpose and Integration
Line Sensors	Current/fault current	15 minutes/triggered by fault magnitude threshold.	The detection and assistance in locating faults. In process of being integrated into analytics platform.
DFA	Current/voltage power flow anomalies	256 samples per cycle continuous. Event capture triggered by condition-based thresholds.	The detection and assistance in locating faults, abnormal power flow events, categorization of events. In process of being integrated into analytics platform.
EFD	Using sensors that monitor the Radio Frequency (RF) spectrum, the system detects the generation of Partial Discharge (PD) which is an indicator of equipment electrical degradation or arcing. Using measured accumulation of PD, the system can identify the location of these issues.	1:25 duty cycle (Gen 3), continuous (Gen 4). Events matched based on timing and location on monitored circuit segments.	To detect failing equipment early and to detect vegetation encroachment. Plan to integrate into analytics platform.
Reclosers	Current/voltage/ power/fault data	Continuously	This data is used to provide real-time fault information as well as to assist in diagnosing system problems during and after events occur.

Planned Improvements

- Expanding current footprints for line sensors, distribution fault anticipation sensors, and early fault detection sensors
- Evaluating next generation SmartMeter technology's capabilities for wildfire risk reduction and developing a path to production if viable

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

Ignition Detection Systems

Detection System	Capabilities	Companion Technologies	Contribution to Fire Detection and Confirmation
PG&E FDAS	Satellite detection and alerts from six satellites. Update cadence is every five minutes.	None	Provides valuable information to the utility and the public regarding the presence of new fires and the spread of existing fires in a timely fashion.
Wildfire Cameras w/AI detections	Over 600 cameras sponsored covering over 90 percent of the HFTD Tier 2 and 3 areas.	None	Video cameras allow fast and accurate detection or confirmation of wildfires, which can help operators assess the scope of resource response needed. Cameras have been equipped with AI smoke detection.

PG&E Cameras
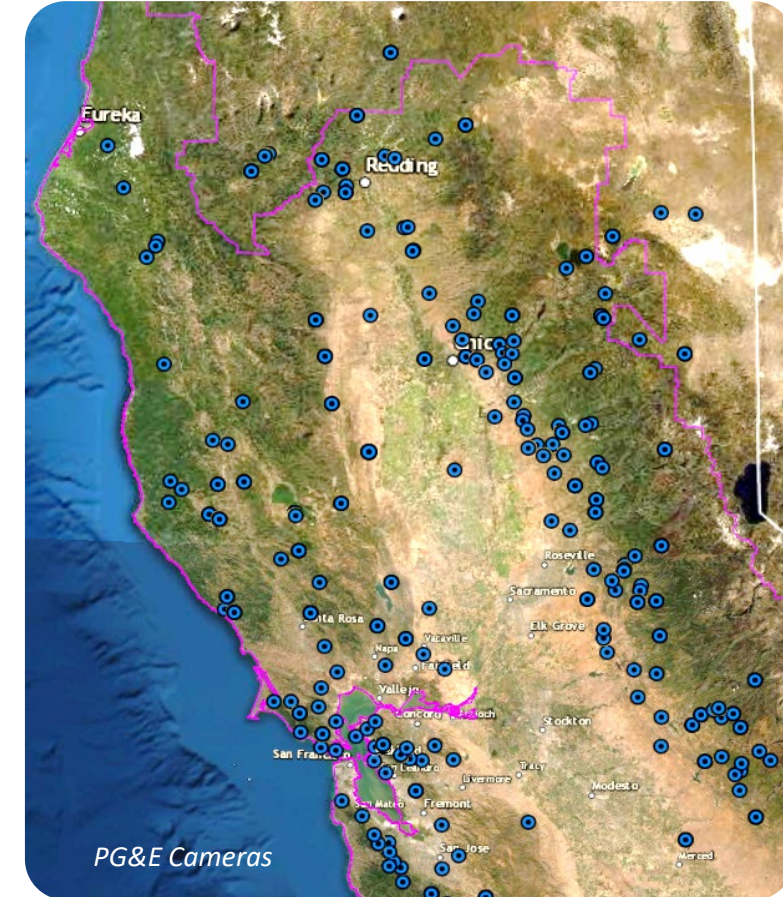
We continue to evaluate new technologies to assist in identifying ignitions, but don't have any planned integrations of new technologies underway.

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

We are working to ensure new systems implemented in 2026-2028 are efficient and valuable. We use the following evaluation process to determine how new operations are added to our approach.
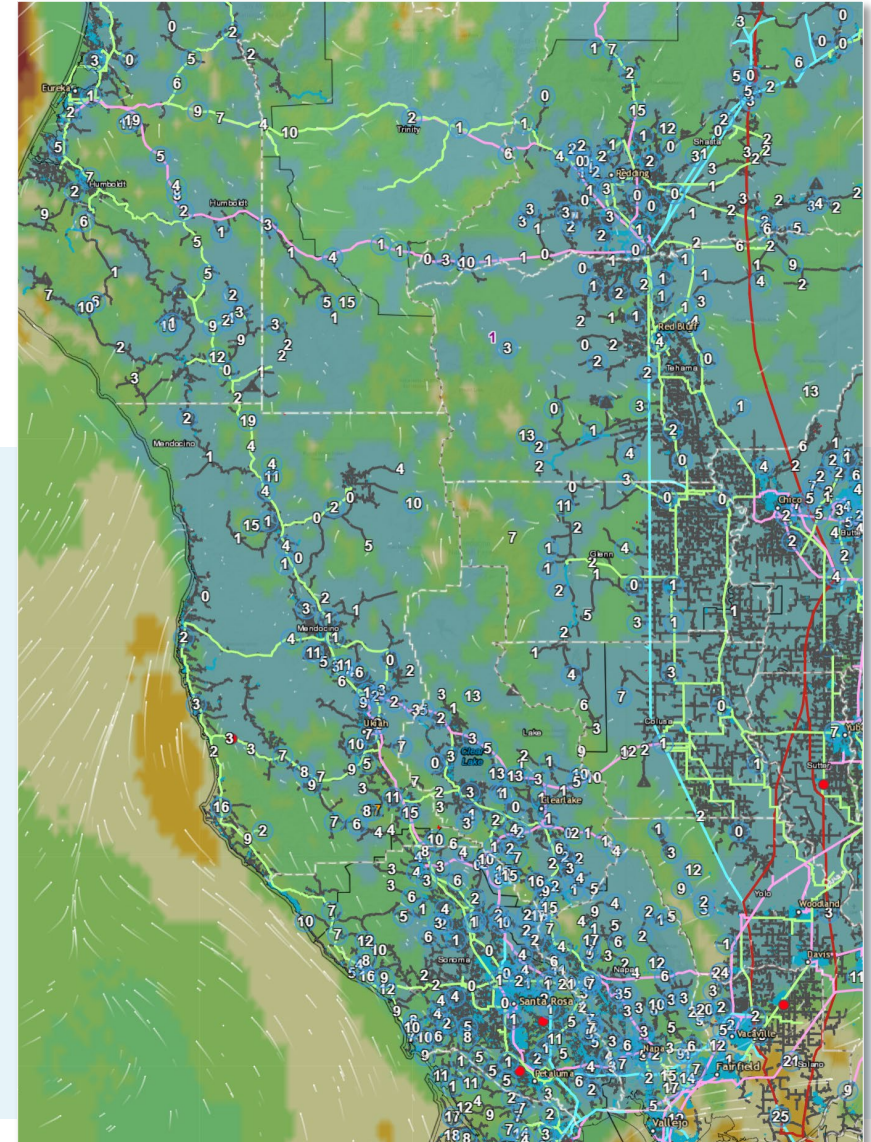
1. Determine the need for a new/additional system

2. Identify new and any existing technology

3. Evaluate the effectiveness and cost

4. Conduct studies and develop pilots to test system operations

5. Evaluate performance

6. Deploy the system into action if it effectively addresses the need

7. Begin operation and conduct maintenance and improvement work as needed

Weather Forecasting

Our high-resolution weather models and 30+ year high-resolution weather climatology allows PG&E to determine historical wind-outage-ignition relationships, calibrate fire-danger indices to historical fires, improve guidance for operational decision making and provide additional input to fire spread models.

What goes into our model:

- Weather-fuel moisture coupled model with 120+ hour forecast

- 2 km spatial, hourly resolution

- Eight-member ensemble, initialized by European Centre for Medium-Range Weather Forecasts (ECMWF) and Global Forecast System (GFS)

- 30+ year climatology dataset which is updated annually with a 2x2km hourly resolution ~82,000 weather and fuel grid points across our service territory

- Dead and live fuel moistures

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

Weather Forecasting Limitations and Planned Improvements

Running high-resolution models is expensive to perform for a large service area and requires a large amount of storage.

We are limited by computer costs, storage costs and financial costs to run more granular dynamic weather models.

As AI and machine learning matures in weather prediction, we may be able to achieve better forecasts at a greater cost-efficiency.

Planned Updates

We will utilize an internally-developed tool to perform model validations.

We expect models equipped with AI or machine learning to become available and plan to evaluate some of these models before consideration of operational deployment.

Fire Potential Index (FPI)

Our FPI model predicts the probability that fire growth will be large, critical or catastrophic. Our current FPI, model 5.0*, improves on the accuracy of model 4.0.

What FPI Measures

Weather

- Wind speed
- Turbulence
- Temperature
- Vapor pressure deficit
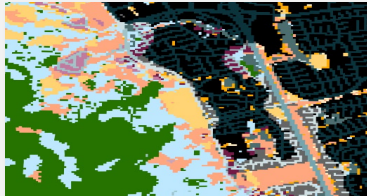
Fuel and Soil Moisture

- Dead-fuel moisture
- Woody live fuel moisture
- Herbaceous fuel moisture
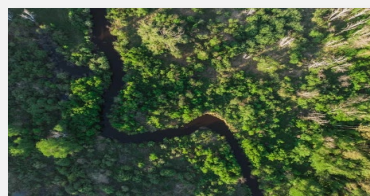- Soil moisture

Solar Radiation

- Global horizontal irradiance

Fuel Type

- Grass
- Shrub
- Timber
- Urban

Fuel Properties

- Fuel-bed depth
- Fuel complexity

Topography
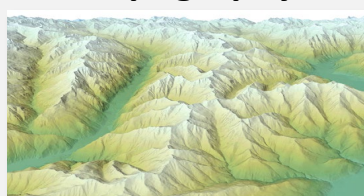
- Ruggedness
- Slope

FPI 5.0 Enhancements

- Factors in fire radiative power to ID catastrophic fires based on high intensity
- Expanded model training data
- Improved spatial relations of weather, fuel moisture, fuels and terrain data
- Finer spatial resolution for greater detail in terrain data
- Improved temporal resolution and coupling of satellite fire detected fire growth and temporal relations to weather and fuel moisture features
- New weather and fuel moisture input features including soil moisture, enhanced dead and LFM models, new herbaceous fuel moisture model, solar radiation, and new fuel properties features added including fuel bed depth and fuel complexity

* FPI 5.0 was approved for operations beginning in August 2024.
Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

Section 11: Emergency Preparedness, Collaboration, and Community Outreach

Emergency Preparedness and Community Outreach Targets by Year

Initiative	Activity (Tracking ID#)	2026-2028 Schedule
Public Communication, Outreach, and Education Awareness	Outreach to HFRA Infrastructure Customers (CO-04)	Complete by end of September annually
Public Communication, Outreach, and Education Awareness	Outage Preparedness Campaign (CO-05)*	Complete by end of September annually
Emergency Preparedness and Recovery Plan	Common Operating Picture (COP) Technology (EP-07)	Start March 2026, complete by year end 2028
External Collaboration and Coordination	Continue sharing PSPS lessons learned (PS-10)	Complete by year end annually
Customer Support in Wildfire and PSPS Emergencies	Access and Functional Needs (AFN) Customer Support During PSPS Emergencies (PS-12)	Start April 2026, complete by year end 2028

- Emergency Preparedness and Recovery Plan (Section 11.2)
- External Collaboration and Coordination (Section 11.3)
- Public Communication, Outreach, and Education (Section 11.4)
- Customer Support in Wildfire and PSPS Emergencies (Section 11.5)

*CO-05 outreach is intended to reach only customers served by either a circuit equipped with EPSS or a circuit where a PSPS may be planned to keep communities safe..

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

WE HAVE

5M+

electric customers
with diverse backgrounds and over
200 languages spoken.

MORE THAN

50%

of PG&E's territory is within high fire-threat districts, yet customers' wildfire awareness varies greatly.

We engage with customers year-round to ensure all customers from a variety of backgrounds and communities are prepared for wildfire safety outages.

Campaign Goals

✔ **Utilize research** (qualitative and quantitative) to inform messaging, strategy and tactics

✔ **Increase awareness** of PG&E actions and customer support

✔ **Tailor and target communications and resources** to different and diverse audiences

✔ **Send accurate and timely PSPS- and EPSS-specific communications**

✔ **Listen to customers and provide a feedback loop** to continuously improve

✔ **Develop and foster robust and supportive external partnerships and third-party validators**

Customer Resources and Engagements

- Portable Battery Program
- Generator Rebates Program
- Backup Power Transfer Meter Program
- Wildfire Safety Webinars

- Regional Working Groups
- Regional Town Halls
- Advisory Committee Meetings

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

Engaging with Agencies

Our team helps prepare agencies for emergencies including fire agencies at the local, state and federal level, along with law enforcement agencies and county offices of emergency management.

That includes:

✓ **Establishing a primary liaison** with external Public Safety and Emergency Response Partners and building and maintaining relationships

✓ **Coordinating with external partners** on the deployment of PG&E resources

✓ **Providing public safety education, outreach and training** to first responder entities

✓ **Assisting with conducting system hardening** reviews and circuit and wildfire risk assessments

Our Engagement

- **Annual planning meetings with Fire Agencies**

- **Electric Annex trainings**

- **PSPS-specific exercises, regulatory workshops and Public Safety meetings**

- **Gas safety outreach and training efforts**

Our mission is to foster effective communication and collaboration between tribal governments and PG&E.

Our Wildfire Safety Priorities

- Engage with tribes to discuss wildfire season preparedness and share resources.

- Hold safety trainings for tribes and their fire, OES and utility districts.

- Provide awareness about resources and resiliency programs available to tribes.

- Conduct outreach in advance of projects and coordinate project timelines.

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

Communicating Before, During and After PSPS and EPSS Outages

Accurate and timely information is critical to customer preparedness and awareness. See below for how we notify customer during wildfire safety outages:

PSPS

- **Priority: 72-48 hours** before power is turned off
- **Watch: 48-24 hours** before power is turned off
- **Warning: 4-1 hours** before power is turned off
- **Cancellation/Delay:** If shutoff is delayed/cancelled

At Power Shut Off

- **Post-Weather Event:** Following weather "all-clear"
- **Update:** If the estimated time of restoral changes

Once Power is Restored

"WATCH" TEXT

PG&E PSPS Outage Watch 1 1/18/24: Due to weather PG&E may turn off power for safety at 1234567 ANYWHERE COURT on 11/21 EST. shutoff: 10:00am–11:00pm. Est. res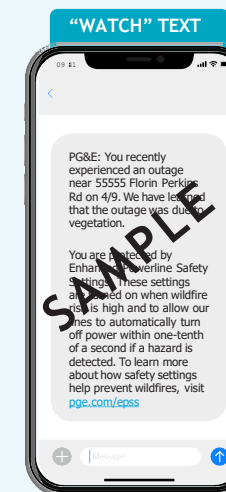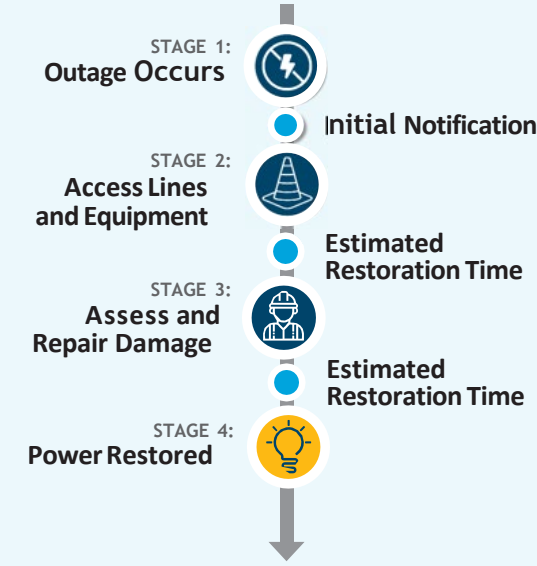toration: 11/21 by 1:00pm. Weather can affect shutoff & restoration. Info & Other languages: pge.com/pspsupdates Reply w/ "1" to verify receipt

EPSS

- **STAGE 1:** Outage Occurs
  - Initial Notification
- **STAGE 2:** Access Lines and Equipment
  - Estimated Restoration Time
- **STAGE 3:** Assess and Repair Damage
  - Estimated Restoration Time
- **STAGE 4:** Power Restored

"WATCH" TEXT

PG&E: You recently experienced an outage near 55555 Florin Perkins Rd on 4/9. We have learned that the outage was due to vegetation.

You are protected by Enhanced Powerline Safety Settings. These settings are focused on when wildfire risk is high and to allow our lines to automatically turn off power within one-tenth of a second if a hazard is detected. To learn more about how safety settings help prevent wildfires, visit pge.com/epss

We also leverage our website, social media, partnerships with agencies and Community Based Organizations (CBO), local news and more to keep customers updated.

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

Sharing Lessons to Better Support Customers

PG&E collaborates closely with other IOUs, AFN Community Representatives, Community-Based Organizations (including 211)and State and Regulatory Officials to strengthen its customer support.
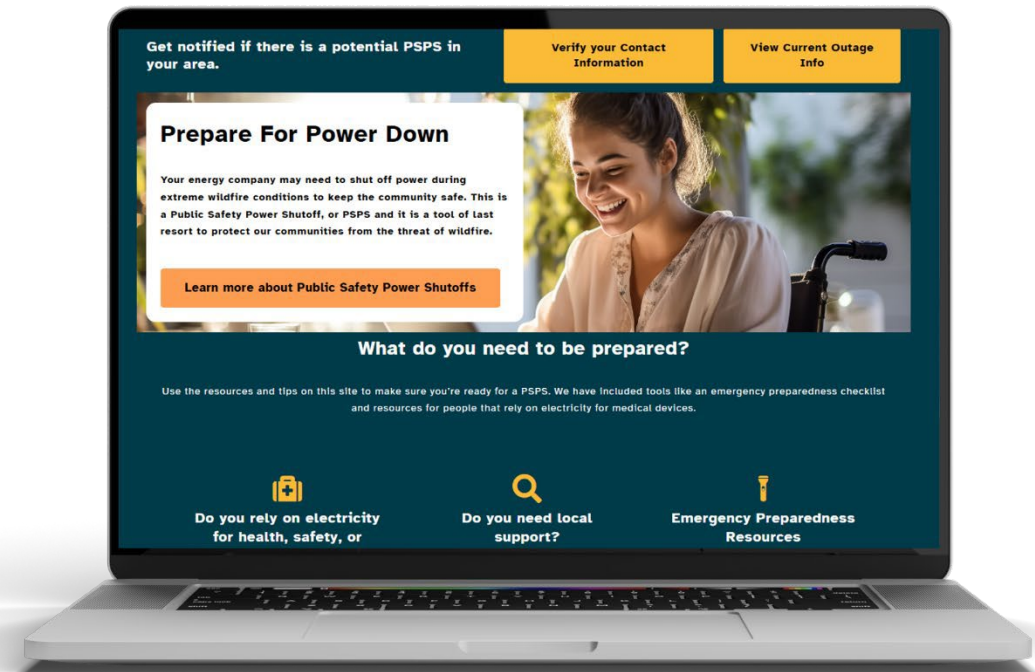
AFN Collaborative and Statewide Councils

- ✔ **Who:** California IOUs, AFN Community Representatives, CBOs and Government Representatives

- ✔ **What:** Councils that determine ways to reduce outage impacts for AFN customers and discuss how to promote support programs.

Prepare for Power Down

- ✔ **Who:** California IOUs (PG&E, SCE and SDG&E)

- ✔ **What:** PrepareforPowerDown.com is a one-stop-shop for customers to learn about PSPS and the resources available to them.

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Individuals with Access and Functional Needs (AFN) are eligible for extra support and assistance during Public Safety Power Shutoff (PSPS) events, per CPUC ruling.

If a loss of power at the customer's home creates a health or safety risk for their household, a customer may qualify for PG&E's accommodations and support services during a PSPS Event.

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Who can qualify for AFN assistance?

The AFN population are individuals who have the following conditions:

- ✔ Developmental or intellectual disabilities
- ✔ Physical disabilities, chronic conditions, injuries
- ✔ Limited English proficiency or non-English speaking
- ✔ Older adults
- ✔ Children

- ✔ People living in institutionalized settings
- ✔ Low income
- ✔ Homeless
- ✔ Transportation disadvantaged, dependent on public transit
- ✔ Pregnant

ⓘ It is estimated that **over 80% of the population** in our service area are considered people with Access and Functional Needs. For more information, visit **pge.com/afn.**

Community Resource Centers

During a PSPS, Community Resource Centers provide resources and up-to-date information for customers impacted by a wildfire safety outage.

Centers may have:

- ✓ Device charging
- ✓ Wi-Fi
- ✓ Bottled water
- ✓ Snacks
- ✓ Tables and chairs
- ✓ ADA-accessible restroom
- ✓ Air conditioning or heating*
- ✓ Blankets
- ✓ Bagged ice*

ⓘ **pge.com/crc**

*May vary by location

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Section 12: Enterprise System

Under the 2026-2028 WMP, we will measure our performance against the following system targets:

- ✔ VM Critical Datasets Data Quality Remediation through active management and annual reports to identify issues

- ✔ Evaluation and creation of new methods(s) to improve the accuracy of asset inventory data

- ✔ Grid Monitoring Systems Efficacy Assessment

- ✔ Participation in Company Disaster Recovery Exercise

- ✔ Integration of continuous grid monitoring technologies

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Section 13: Lessons Learned

Lessons Learned

Subject	Lesson Learned	Proposed Improvement
Undergrounding and System Hardening Process Efficiency	Program cost savings can be achieved through multiple mechanisms, such as lump sum contracts with vendors, and updating standards, such as spoils management and trench depth.	• Negotiate and structure contract terms with undergrounding and system hardening vendors to support more cost-effective services • Update standards for the handling and testing of spoils to maximize efficiencies • Establish standard for trench depth that provides exceptions for 24" depth in approved cases with hard rock excavation
Undergrounding Project Management Improvement	Improve the customer experience and optimize project schedules by engaging with customers earlier and regularly throughout an undergrounding project.	• Increase and enhance customer communication channels and cadence based on key project milestones
Continuous Focus on Safety	Contractor safety requirements can help prevent third-party dig ins to utilities.	• Establish requirements for all contractors to develop and implement a Dig In Prevention procedure that aligns with PG&E's Damage Prevention procedure
Improve Inspection and Remediation Process	Considerations for remote sensing technologies may enable improved monitoring and identification of risk.	• Evaluate remote sensing technologies to inform inspection and remediation processes
Real-Time Monitoring	Installation of Gridscope technology has provided enhanced intelligence on outage locations and in at least 10 instances has identified hazards prior to an outage and associated ignition.	• Continue scaling the use of Gridscope as part of a real-time monitoring strategy that provides multi-sensor intelligence prior to ignition risk and supports monitoring of asset degradation

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Lessons Learned (cont.)

Subject	Lesson Learned	Proposed Improvement
Feedback from Energy Safety, CPUC, or other Authoritative Bodies	The EPSS program has seen reliability pick up where vegetation and animal mitigation work is performed. Additionally, the program has identified customers that experience more than five EPSS outages, year-over-year, since the expansion of the program in 2022 and wants to better support these customers.	• Maintain a focused effort on vegetation and animal mitigation work on circuit zones with a high frequency of vegetation or animal cause • Enhance its efforts to target additional outage mitigation or direct customer support for those customers that have been most impacted
Internal Monitoring and Fault Detection	The leading fault type for all outages that result in ignitions during EPSS protection continues to be from high impedance fault conditions. Since 2022, PG&E has deployed Downed Conductor Detection (DCD) to capture high impedance fault conditions within HFRA. DCD has been installed across 87 percent of the HFRA and have reduced high impedance fault type ignitions. There remains a gap on extreme low amperage fault conditions that DCD cannot detect.	• Enhance the sensitive ground fault pick-ups to allow for detection of high impedance fault conditions not detectable by the existing DCD algorithm • Continue the reprogramming of SGF trip floor settings criteria to increase detection of faults to 5-amp fault conditions within five seconds
Wildfire and Resiliency Work	Our wildfire and climate resiliency work is not connected to the work of communities and agencies.	• Develop a Wildfire Resilience Corridors pilot with a community within our areas of concern • Develop wildfire mitigation programs and projects with pilot communities that will mutually benefit both community assets and utility infrastructure

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Section 14: Areas of Continued Improvement (ACI)

ACI Required Progress and PG&E Response

ACI Name	Required Progress in 2026-2028 Base WMP	PG&E Response
PG&E-25U-01 — Outage to Ignition Risk Analysis	Provide an update on the evaluation of ignition likelihood based on various outage types when modeling ignition risk and analyzing mitigation effectiveness as a result.	The WDRM v4 probability of ignition model does distinguish by outage type: • The WDRM v4 introduces event cause and equipment type interactions terms to the Probability of Ignition given Outage (p(i|o)) model. • To support this modeling update, we developed an expanded set of Probability of Failure, or (Pf)/Outage causal models. • The (p(i|o)) model correlates to failure/outage rates, weather conditions, fuel conditions and availability, and other location-specific attributes. • This updated (p(i|o)) model helps inform tradeoffs between mitigation strategies.
PG&E-23B-03 — Incorporation of Extreme Weather Scenarios in Planning Models	Develop statistical estimates of potential wind events over at least the maximum asset life for PG&E's system and evaluate results from incorporating these into WTRM-Planning when developing the mitigation initiative portfolio or explain why this approach would not serve as an improvement to mitigation strategy.	We have developed statistical estimates of potential wind events over the maximum asset life for our system, and the WTRM integrates the impact of wind events throughout the lifecycle of the assets: • Our statistical estimates indicate that as asset age increases, the fragility curves adjust, leading to an increased conditional Pf at any specific wind speed – meaning assets are more fragile as they age and more susceptible to failure at lower wind speeds. • We use this fragility curve, along with the exceedance curves for wind hazard, to calculate the annual Pf in the WTRM.

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ACI Name	Required Progress in 2026-2028 Base WMP	PG&E Response
PG&E-25U-02 — Cross-Utility Collaboration on Best Practices for Inclusion of Climate Change Forecasts in Consequence Modeling, Inclusion of Community Vulnerability in Consequence Modeling, and Utility Vegetation Management for Wildfire Safety	Continue collaboration efforts and demonstrate efforts to include Bear Valley, Liberty Utilities, and PacifiCorp in these efforts, where appropriate and relevant to each IOU's interests. Continue to participate in all Energy Safety-organized activities related to best practices for: • Inclusion of climate change forecasts in consequence modeling • Inclusion of community vulnerability in consequence modeling • Utility vegetation management (VM) for wildfire safety	We collaborate with other utilities, including Bear Valley, Liberty Utilities, PacifiCorp and Hawaiian Electric through industry events throughout the year and monthly meetings focusing on Energy Safety activities and other WMP-related topics including: • Inspection programs • VM programs • Quality Control programs • Internal and Contract Resources • Remote Sensing Technologies • Optimization of the off-cycle HFTD inspections We continue to actively participate in Energy Safety-organized activities related to best practices for all relevant topics.
PG&E-25U-03 — Continuation of Grid Hardening Joint Studies	Continue collaboration with the other IOUs to evaluate various aspects of grid hardening and provide an updated Joint IOU Grid Hardening Working Group Report.	In response to this request, we continued our collaboration with the other IOUs to evaluate various aspects of grid hardening. Through this collaboration we created a report, Continuation of Grid Hardening Join Studies, available on PG&E's Community Wildfire Safety Program webpage.

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ACI Name	Required Progress in 2026-2028 Base WMP	PG&E Response
PG&E-25U-04 — Decrease in Detailed Ground Distribution Inspections	Provide a cost benefit analysis and Cost-Benefit Ratio* (CBR) based on a variety of outlined scenarios (see page 582 of the WMP for full details). The cost benefit analysis and CBR must only consider the risk impact of the distribution detailed inspection frequencies outlined above and must not account for reductions to other inspection or maintenance programs.	We calculated the requested scenarios and compared them to the scenario we propose in our 2026-2028 WMP, which proposes detailed inspections on three-year cycles for all structures and a new aerial scan inspection on extreme, severe and high consequence and risk locations. We determined from this analysis that our proposed 2026-2028 WMP scenario is the most risk efficient, with a CBR of 1.737×10^{-8}: • This scenario adds additional eyes on risk via scan inspections on our highest risk and consequence structures in years between detailed inspections. • Executing scan inspections allows for the identification of the highest risk conditions at a lower cost allowing for more frequent inspections in high risk or consequence locations. • Considering both detailed inspections and scan inspections, extreme and severe assets receive eyes-on-risk every year and high assets receive eyes-on-risk two out of three years, an improvement on our every other year eyes on risk approach for 2024 and 2025.

"PG&E calculates CBR for each mitigation, which incorporates cost estimates and the effectiveness of each mitigation. If CBR is greater than or equal to 1.0, the mitigation is considered cost-effective.

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ACI Name	Required Progress in 2026-2028 Base WMP	PG&E Response
PG&E-25U-05 — Transformer Predictive Maintenance	Provide testing results and documentation, reports, and/or whitepapers relevant to the IONA project and all risk-spend efficiency calculations relevant to the IONA* project.	Our Asset Health & Performance Center has been running the IONA model consistently since January 2024, conducting engineering analysis on failure predictions generated by the model. When a voltage/load anomaly is confirmed, a potential root cause is assigned by the reviewer and sent on for further investigation: • In 2024, 282 investigations were completed using the IONA model, which resulted in 44 transformers (9 in HFTD Tier 2 and 3 areas) being replaced prior to failure (Risk Reduction: 1.19283 per WDRM v4 model). • There were 104 cases (23 in HFTD Tier 2 and 3 areas) where investigations revealed other system risks (e.g., loose/broken neutral, broken jumpers, wiring issues, circuit reactive component issues, failed fuses, energy theft) that were remediated. • We plan to re-train the IONA model based on results from desktop reviews and field investigation findings conducted in 2024 to improve model accuracy as the IONA model has shown the capability to identify system risks over and above transformer issues. Detailed IONA Program results are available on PG&E's Community Wildfire Safety Program webpage. The IONA Program provides eyes on risk, then risk remediation is accomplished through existing maintenance programs and funding, so the Program by itself does not have a risk spend efficiency calculation.

IONA is a machine learning model that detects voltage anomalies using SmartMeter voltage and loading data along with weather data, transformer age, and geographical information to predict transformer failures.

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ACI Name	Required Progress in 2026-2028 Base WMP	PG&E Response
PG&E-25U-06 — Evaluation and Reporting of Safety Impacts Relating to EPSS	Provide the latest 2024 analysis pertaining to EPSS outages, for each Circuit Protection Zone (CPZ) in which EPSS has been enabled (see page 590 of the WMP for full list of details required).	PG&E's EPSS Reliability Analysis, which uses 2024 outage data, contains all information required and is available on PG&E's Community Wildfire Safety Program webpage. Some of our continued or additional measures to minimize customer impact based on EPSS enablement include: • Targeting proactive and reactive operational mitigation programs to support minimizing reliability impacts for customers in EPSS scope; including proactive and reactive VM as part of its activities based on weather conditions to reduce the impacts of vegetation caused outages. • Continuing proactive and reactive animal mitigation work including avian protection improvements and critter abatement. • Expansion of Gridscope installation to additional areas to further augment situational awareness. We are also exploring using Gridscope data to improve real-time monitoring of system conditions. • Continuing to use 2024 improvements to near real-time outage tracking to provide enhanced fault location information to reduce outage durations and enable faster restoration. • Repairing and replacing critical operating equipment to drive operational and reliability improvements.

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ACI Name	Required Progress in 2026-2028 Base WMP	PG&E Response
PG&E-25U-07 — Vegetation Management Recordkeeping	Demonstrate: • Revisions and improvements to VM recordkeeping process in One VM to consistently and accurately capture factors for prescribing trees for removal. • Revisions and improvements to VM recordkeeping process for trees inspected under Focused Tree Inspection (FTI) to align with lessons learned, achieve data consistency and quality, and to collect information relevant to a tree risk assessment performed to reduce the risk of utility-related ignitions attributable to contact from vegetation. • Consideration of adding the capability to One VM to document potential defects or issues with "inventory only trees" and other trees not prescribed work by explaining and providing the decision-making process for consideration.	We are committed to improving VM recordkeeping practices, which includes both technology and process enhancements: • Throughout 2024, we completed enhancements to the One VM tool that include: the capability to capture factors for prescribing trees for removal, a drop-down selection to enforce standardized, tree-specific reasons for tree removal that align with Appendix B of TD-7102P-01 and controls requiring consistent de-listing reasons and comments. • We implemented a digital version of the International Society of Arboriculture's Basic Tree Risk Assessment form in One VM, which was used for FTI vegetation points requiring maintenance, and clarified procedures to create TRAQ records for three specific prescription types: fell tree, targeted prune, and major dismantle. • After thorough consideration regarding adding the capability to explain and document the decision-making process on trees not prescribed work, we will not implement this approach at this time due to the increased time to document the inspection. Instead, we will document observations on trees that need work and fall into one of the three prescription types.

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ACI Name	Required Progress in 2026-2028 Base WMP	PG&E Response
PG&E-25U-08 — Reinspection of Trees in the Tree Removal Inventory	Describe the results of the pilot, including any resulting actions and implementation timelines for those actions. If PG&E chooses not to expand the pilot, it must justify this choice.	In late 2024, we began planning a pilot to re-evaluate trees listed for work within Shasta County that involves review of individual vegetation points that had been previously marked for removal under the EVM Program with a Tree Assessment Tool (TAT) Abate score of Yes. • We will be inspecting approximately 8,500 TAT Abate units to determine if they still need work, have already been removed by another program, or are recommended for delisting. • The inspection will involve a level 2 inspection by a TRAQ certified arborist who will determine initial status, and then any units recommended for delisting from removal status will have a secondary evaluation by a Board-Certified Master Arborist. • After the data has been evaluated by the Board-Certified Master Arborist, VM will review and determine next steps. • Resulting actions or changes to procedure documents or guidance processes will be identified once the pilot has fully concluded and an analysis of the results has been completed.
PG&E-23B-15 — Implementation of Focused Tree Inspections and Addressing the Risk from Hazard Trees	Present plan for consistent HFTD-wide hazard tree-related risk reduction by inspection and remediation. Continue dialogue with peer electrical corporations and Energy Safety during plan development and remain abreast of hazard tree inspection and remediation strategies including, but not limited to, tools for risk assessment, recordkeeping practices, and frameworks for risk-informed inspections.	• We are updating our inspections in 2026-2028 to vary the layers of inspection based on the level of vegetation risk (including hazard trees) and WFC in the HFTD territory. • We will continue to benchmark with peer electrical corporations and engage in dialogue with Energy Safety to remain abreast of hazard tree inspections and remediation strategies, with a focus on leveraging new technology to improve risk assessment, inspection strategy and recordkeeping practices.

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ACI Name	Required Progress in 2026-2028 Base WMP	PG&E Response
PG&E-23B-16 — Updating the Wood Management Procedure	• Benchmark the scope of Wood Management program with, at minimum, SCE and Liberty Utilities, and justify the differences in scope. • Provide a response detailing whether PG&E has considered how offering wood removal and disposal services to customers may reduce refusals related to VM and how that consideration has informed any updates to the Wood Management program for the 2026-2028 WMP Base WMP. • Provide an updated version of Wood Management Procedure.	We continue to benchmark with other California utilities, including SCE, SDG&E, and Liberty Utilities, and intend to share any revisions to our procedure as part of this work. This benchmarking will support continued identification of best practices with the goal of building consistent industry-wide application. In November 2024, we updated our wood management procedure to implement a of consistent response to customers requesting wood management: • Our wood management activities now apply on a case-by-case basis in response to customer requests on distribution VM programs. • We have considered how offering wood removal and disposal services to customers may reduce refusals related to VM, now we offer wood management when feasible according to our standards on a case-by-case basis in response to customer requests on all distribution VM programs.

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ACI Name	Required Progress in 2026-2028 Base WMP	PG&E Response
PG&E-23B-17 — Consolidation of Vegetation Inspections Programs	Present a plan to consolidate vegetation inspection programs for distribution circuits in the HFTD with the following objectives: • Reduce the number of annual touchpoints from inspectors and tree crews due to overlapping scopes of work. • Streamline the distribution inspection procedure, including reduction and/or consolidation of its attachments, to reduce confusion among government agencies. • PG&E's customers, and vegetation personnel. • Address the risk from vegetation contact through vegetation inspection, trimming, and removal while complying with applicable laws and regulations.	We are currently evaluating which component(s) of the FTI and TRI scope will be incorporated into the Distribution Routine Patrol Program. This analysis will be based on findings from efficacy studies planned to be performed in 2025. PG&E will incorporate VMOM into existing activities. For the 2026-2028 period, we will streamline our VM inspection programs, while targeting high risk areas of the system to continuously reduce ignitions associated with vegetation caused outages: • We will focus on consolidating vegetation inspection programs by using technology to inform and supplement planning, execution, or verification of worked performed, as well as using operational analytics to enable risk-informed work execution. • We will continue to address the risk from vegetation contact through vegetation inspection by following our Distribution Inspection Procedure. In 2025, we are further exploring the use of technologies to support distribution inspections; using data gathered from proven remote sensing technologies to analyze how distribution inspections could be further evolved to incorporate remote sensing techniques.

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ACI Required Progress and PG&E Response (cont.)

ACI Name	Required Progress in 2026-2028 Base WMP	PG&E Response

PG&E-23B-18 — Improving Vegetation Management Inspector Qualifications	• Present a plan to improve the level of qualifications and training of its current VM Inspectors (both contract and employee).
	• Explain and provide the decision-making process for its consideration of updates to the minimum qualification and training requirements for its VM Inspectors.
		• We have implemented multiple initiatives to continue to improve the level of qualifications and training of its current VM Inspectors. These initiatives include:
		
		  • Training requirements standardization
		  • Refresher courses
		  • On-the-job training
		
		• Updates to the training requirements for PG&E VM Inspectors are decided by changes it standard and procedures such as:
		
		  • Receiving and incorporating improvement opportunities identified in the field by Quality Management.
		  • Quality Learning forums are conducted by Quality Management leaders in collaboration with local VM Operations to review findings, trends and opportunities for improvements.

PG&E-23B-21 — Identification of High-Risk Species for Focused Tree Inspections	Define criteria for determining which species warrant increased scrutiny during Focused Tree Inspections and other inspections. Detail methodologies for determining these species.	We incorporated consideration of tree species as part of standardized work as defined in our Distribution Inspection Procedure: • We have also developed a tool to improve situational awareness during pre-patrol planning, which includes outage and ignition dashboards allows us to drill down to the circuit or CPZ level to see historical outage and ignition causes by species, diameter, and failure – this provides us with the most current data to inform inspections.

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ACI Name	Required Progress in 2026-2028 Base WMP	PG&E Response
PG&E-23B-22 — Continuation of Effectiveness of Enhanced Clearances Joint Study	Provide a white paper that discusses: • The large IOUs' joint evaluation of the effectiveness of enhanced clearances including, but not limited to, the effectiveness of enhanced clearances in reducing tree-caused outages and ignitions • The large IOUs' joint recommendations for updates and changes to utility VM operations and best management practices for wildfire safety based on this study • Include the IOUs' recommendations for updates to regulations related to clearance distances	We, SDG&E and SCE conducted a joint study to quantify the benefits of proactive pruning to 12 feet or more of clearance at time of trim, generating the IOU Effectiveness of Enhanced Clearances White Paper available at PG&E's Community Wildfire Safety Program. Our data sample, used in this study, does not holistically represent the effectiveness of combined mitigations: • We incorporate lifecycle cost of overhead mitigations into our mitigation selection process. • A main alternative mitigation to undergrounding is the use of covered conductor, which may be selected for circuit segments with fewer trees. Since covered conductor has been a recent engineering mitigation measure deployed by IOUs, we will need additional time to collect data samples and further analyze the effectiveness of combined mitigations.

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