

California

2022 Wildfire Mitigation Plan

May 3, 2022

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Risk Model



Situational
Awareness



System
Hardening



Communication

WILDFIRE SAFETY



Pacific Power
Rocky Mountain Power

Agenda

- ✓ Plan Development and Journey
- ✓ Wildfire Mitigation Plan Foundation & Elements
 - ✓ Baseline Risk Assessment
 - ✓ Strategic Programs & System Hardening
 - ✓ Dynamic Risk through Situational Awareness
 - ✓ Public Safety Power Shut-Off Protocols
 - ✓ Community Outreach & Education

WILDFIRE SAFETY PACIFIC POWER

Staying safe during wildfire season

As wildfires become more frequent and intense throughout the West, our focus is on keeping you and your community safe. Protecting you from this increasing threat, while providing you with safe, reliable power, is our highest priority.

Here's what we're doing, and what you can do to stay prepared.

What we're doing:

- Reducing wildfire risks:** We're taking additional steps to reduce wildfire risk by increasing wildfire monitoring and training vegetation removal power lines. We're improving the reliability of our system and taking up additional actions and working with local emergency services to ensure power during critical wildfire areas should be used to reduce consequences. **Public Safety Power Shutoff.**
- Other steps we're taking include:**
 - Installing fire-resistant vegetation around our lines
 - Installing HD cameras on the field for real-time monitoring of our lines
 - Improving our wildfire response
 - Improving equipment maintenance and fire-protection
 - Training and equipping our field crews for wildfires

Preparing for emergencies: While it is impossible to eliminate all wildfire risks, we're working closely with local and state agencies to help and ensure wildfire emergency response plan. For areas at a higher risk of high wind conditions, we've introduced a new fire-protection measure – a **Public Safety Power Shutoff**. This is a new process designed to help us react quickly in these high-risk scenarios, by proactively shutting off power that we determine would be dangerous under conditions. This measure will only be taken in a limited project your safety.

Keeping you informed: Communication is an essential part of any emergency plan. Please be sure your Pacific Power contact contact information is up-to-date, so we can keep you informed about:

- Increased fire alerts
- Potential power outages
- Updates on power restoration

PUBLIC SAFETY POWER SHUTOFF PACIFIC POWER

Understanding public safety power shutoffs

We're taking proactive steps to reduce the risk of wildfires and ensure safe. To prevent wildfires, ignition in high-risk areas, we may turn off power along specific circuits. This is called a **Public Safety Power Shutoff**.

Why would a Public Safety Power Shutoff happen?

No amount of preparation can eliminate all wildfire risks. While we work hard to clear plants away from our power lines, debris, tree limbs and other material can be blown up onto. Low during times of high winds. When strong winds are combined with high temperatures, low humidity and other conditions, the risk of sparks that might ignite a wildfire.

In these cases, turning power off in affected areas may be necessary to ensure the safety of your community. We make the decision to proactively shut off in high-risk areas very seriously and we expect that the Public Safety Power Shutoff will be a very rare occurrence.

What risk factors do we monitor?

Public Safety Power Shutoffs will be initiated only in specific, pre-planned areas where on-the-ground conditions create an extreme wildfire risk.

We monitor a range of factors before triggering a Public Safety Power Shutoff including:

- DRY VEGETATION** we never see so little fuel
- HIGH WINDS**
- LOW HUMIDITY**
- REAL-TIME OBSERVATION** by our ground field agents

Plan Development and Journey

- PacifiCorp's 2022 Wildfire Mitigation Plan (WMP) builds upon multiple years of experience, program development, and formal rulemaking and process across various states

2018
Rulemaking in CA
Initial program development

2019
Initial WMP in California
Programs initiated in Oregon & Washington

2020
Programs Expanded in Oregon & Washington
Initial WPP in Utah
Updates to California Plan

2021
Develop WPP in Oregon
Draft WA WMP
Continued expansion of and updates to programs
Updates to Utah & California Plans

2022
Updates to Oregon, Washington, Utah, and California plans



- The plan reflects a comprehensive approach to mitigating the risk of utility related wildfires by combining input from multiple business units, subject matter experts, and industry best practices
- Plan includes long term, multi-year investment



Wildfire Mitigation Plan Foundation & Elements

Situationally aware of environmental risks

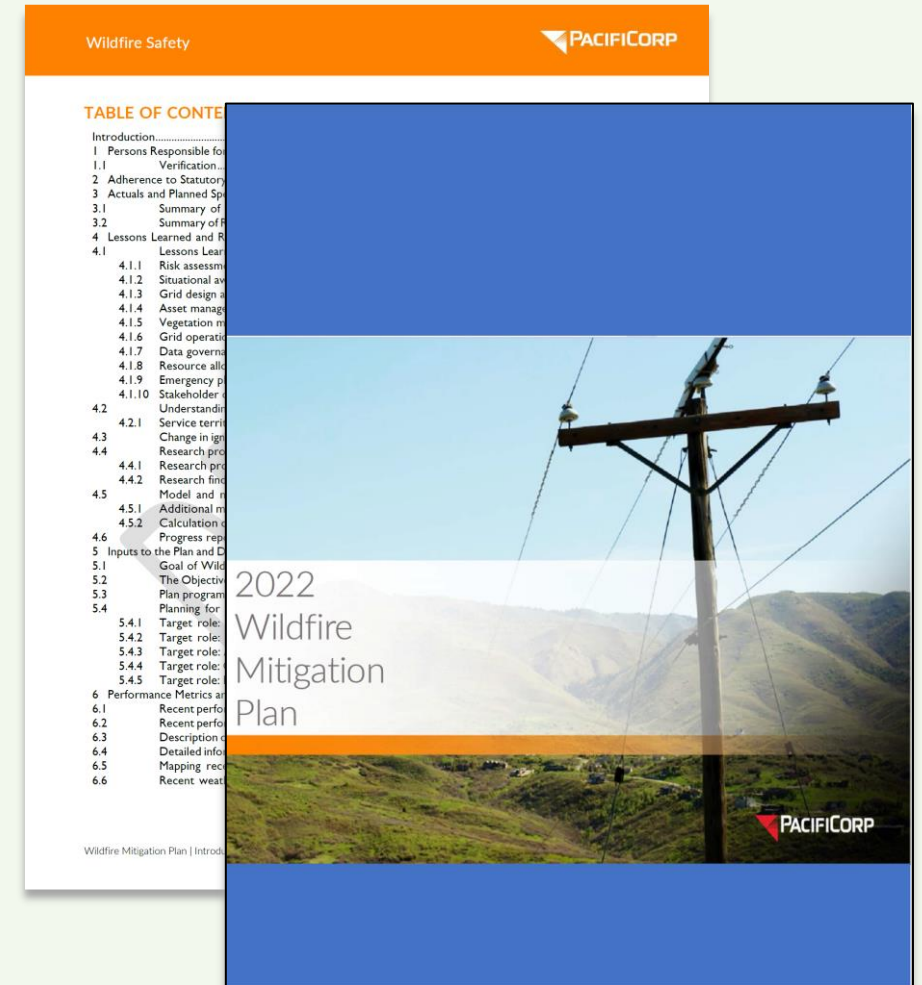
- Baseline risk modeling to inform strategic programs and investments
- Dynamic seasonal risk modeling to inform operational protocols
 - ✓ Fire weather condition monitoring
 - ✓ Meteorology department & forecasting

Resilient system to limit potential for ignition

- Enhanced inspection programs and accelerated correction of certain conditions
- Enhanced vegetation management practices
- Deployment of covered conductor / line rebuilds

Rapid response to fault events

- Deploy more sensitive protective coordination equipment
- Replace fuse locations with non-expulsion equipment
- Implement operational strategies during fire risk periods
- Installation of new fault indicators



Baseline Risk Mapping for Strategic Investment

General Stats

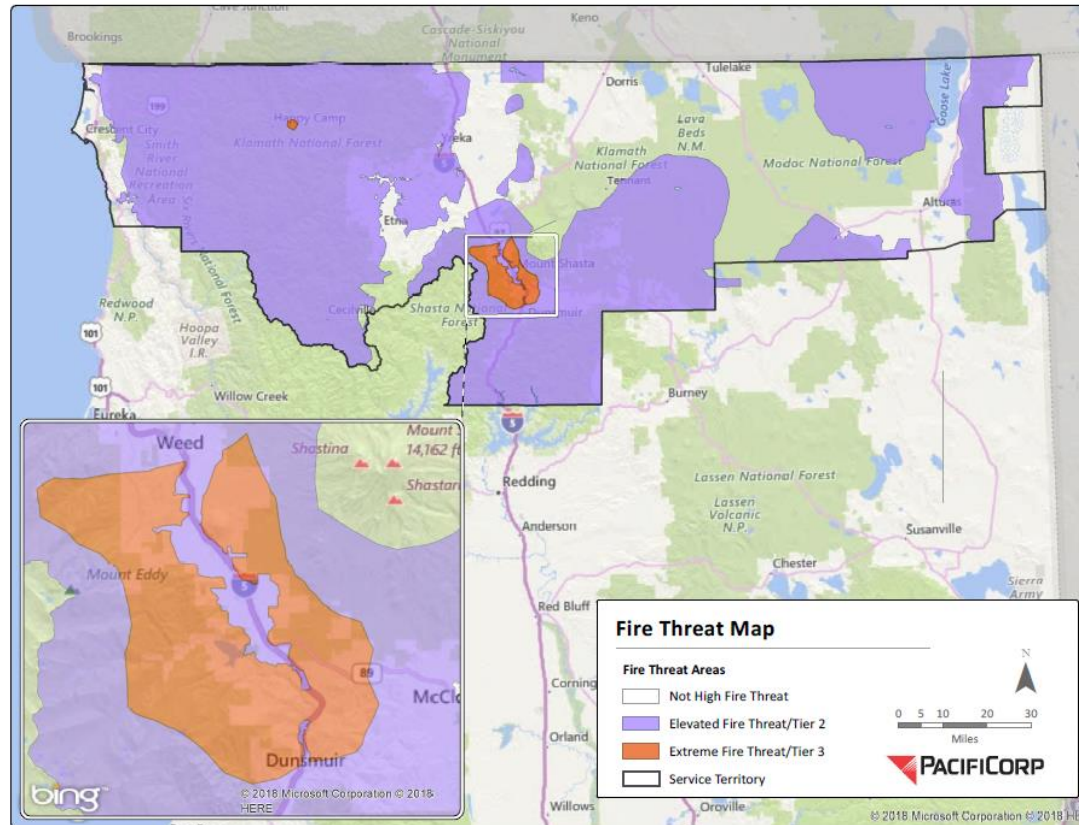
PacifiCorp provides electricity to approximately **45,000 California customers** via **62 substations**, **2,500 miles** of distribution lines, and about **780 miles** of transmission lines across nearly **11,000 square miles**

System Wide Initiatives

- ✓ Weather Stations
- ✓ Situational Awareness
- ✓ Operational Protocols
- ✓ Community Education and Outreach



California Service Territory



HFTD

Heightened Risk of Wildfire

Approximately **1,200 miles** or **36%** of all **overhead lines** are located within the HFTD

850 miles of overhead **distribution** in the HFTD;

350 miles of overhead **transmission** in the HFTD

Programmatic Shifts

- ✓ Increased Frequency of Asset Inspections
- ✓ Accelerated Condition Correction
- ✓ Enhanced Vegetation Management



PSPS Zones

Extreme Risk of Wildfire

Approximately **250 miles** or **10%** of all **overhead distribution lines** are located within **5 individual PSPS Zones**

Prioritized System Hardening

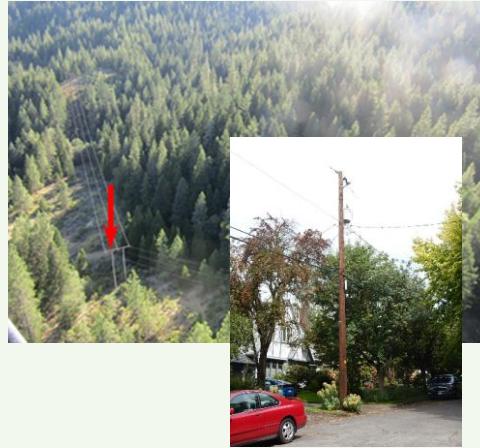
- ✓ Covered Conductor
- ✓ Advanced Protection and Control
- ✓ Expulsion Fuse Replacements

Strategic Programs

Asset Inspections

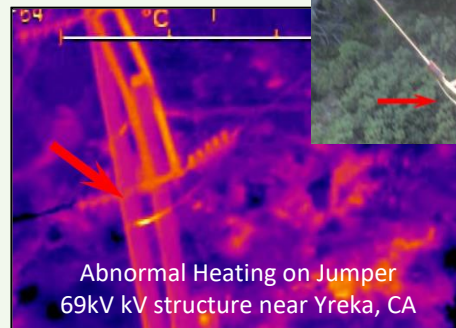
- ✓ Increased frequency of inspections in the HFTD

Inspection Type	Cycle Change
Detail	10 yr → 5 yr
Patrol	2 yr → 1 yr



- ✓ Accelerated correction of Fire Threat Conditions

Priority Type	Cycle Change
Level 1 / A	30 days
Level 2 / B	6 mo – 12 mo (Tier 3 – Tier 2)



- ✓ Annual Infrared Inspection of Transmission Lines

Vegetation Management

- ✓ Continuation of best practices
- ✓ Annual inspection in the HFTD
- ✓ Annual pole clearing of equipment poles

HFTD Readiness Patrols

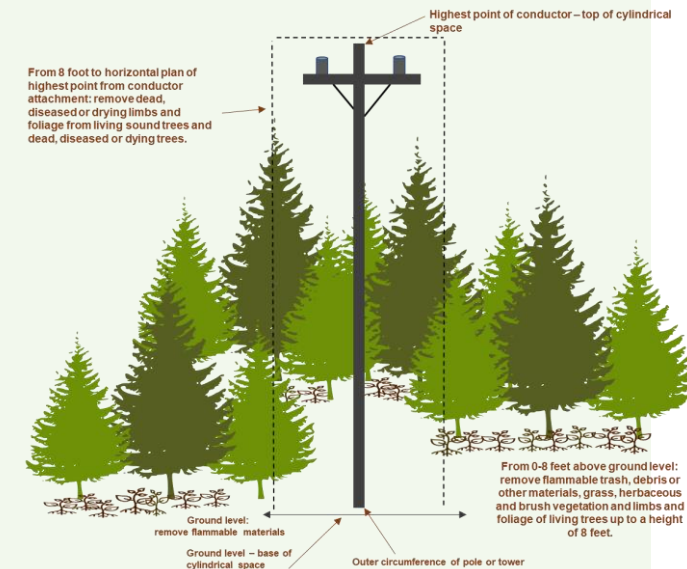
1,007 miles of Distribution
163 miles of Transmission

Detail/Cycle Work

1,258 miles of Distribution
354 miles of Transmission

Pole Clearing

3,047 equipment poles



Strategic Programs & Long-Term Investment

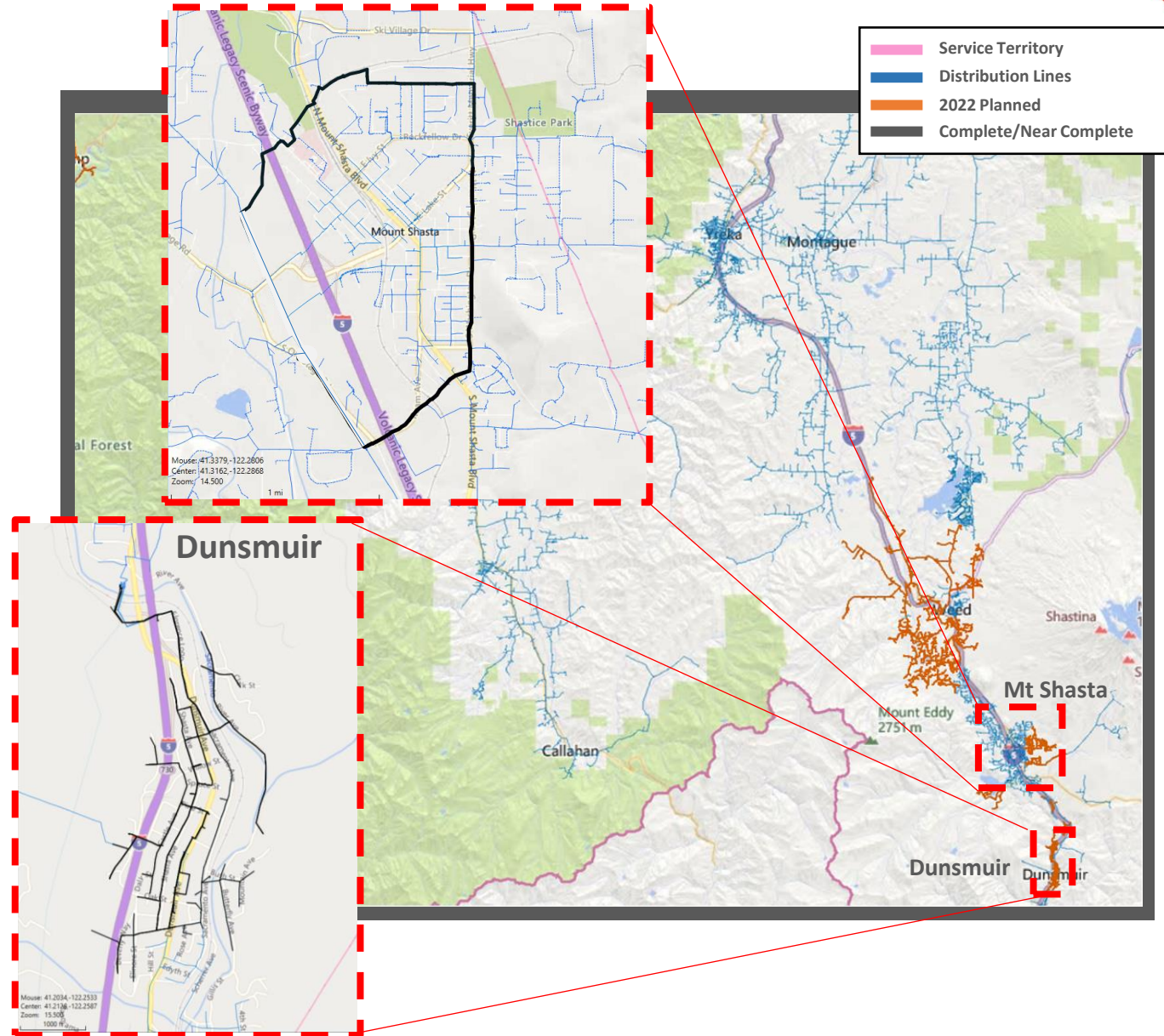
System Hardening

- ✓ Over \$100 million of investment
- ✓ Line Rebuild Program
- ✓ Advanced Protection and Control
- ✓ Expulsion Fuse Replacement

3.5 miles complete in Mt Shasta
\$2.3 mil investment

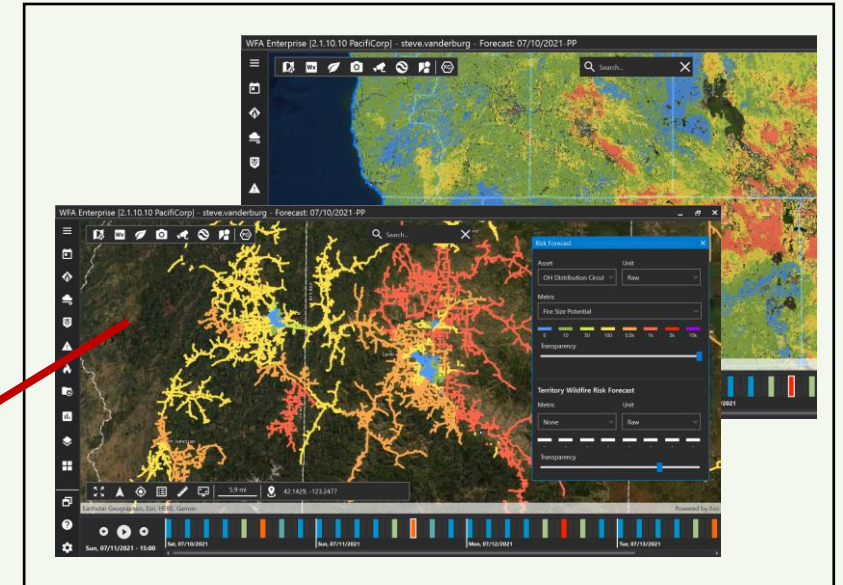
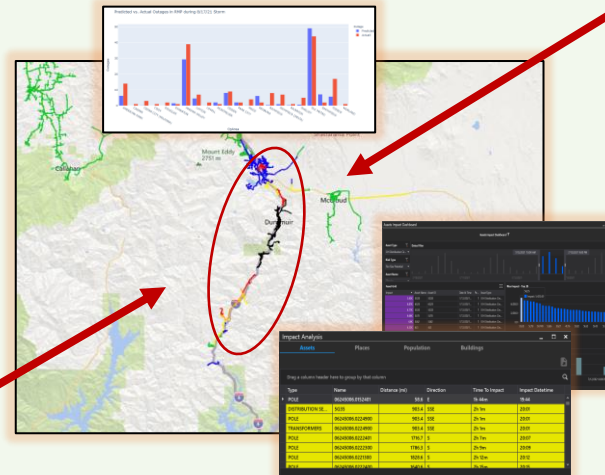
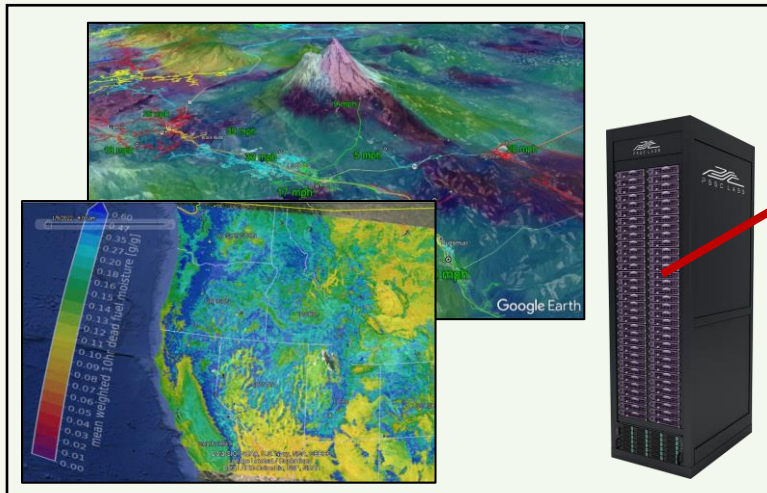


6 miles nearing completion in
Dunsmuir
\$3.6 mil investment



New Weather Forecast Models

- In-house Weather Research & Forecast (WRF) model
 - 2km, 96-hour weather and fuels forecasts
 - Generates 1 terabyte of forecast data daily
- Operational Localized Risk Assessment Model (LRAM)
 - 48-hour impacts (outage) forecast
- Detailed 30-year Weather Reanalysis
 - Foundation for risk-based forecast



Advanced Wildfire Models

- Millions of territory-wide wildfire simulations performed daily
- Wildfire risk and consequence forecasts
- Used for real-time decision making and long-term planning of system hardening

Expanding Weather Station Network

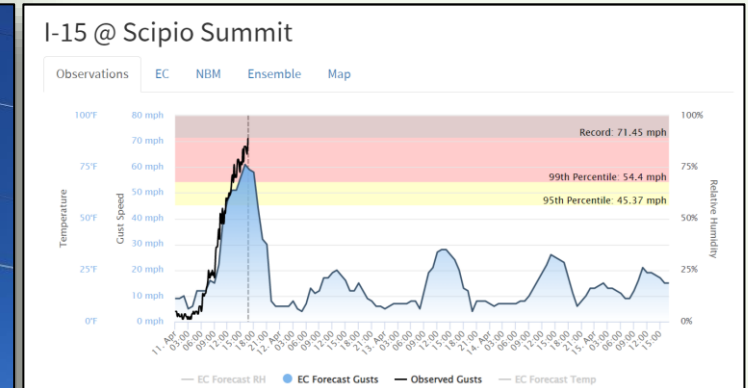
- Expanding to 80 weather stations in CA by end of 2022
- 10-minute observations to support real-time operations

New Situational Awareness Websites

- Real-time displays of weather station & forecast data at PacificPowerWeather.com
- Wind gusts are color coded by strength relative to the local climatology... or simply put, “noteworthiness”

New Meteorology Team

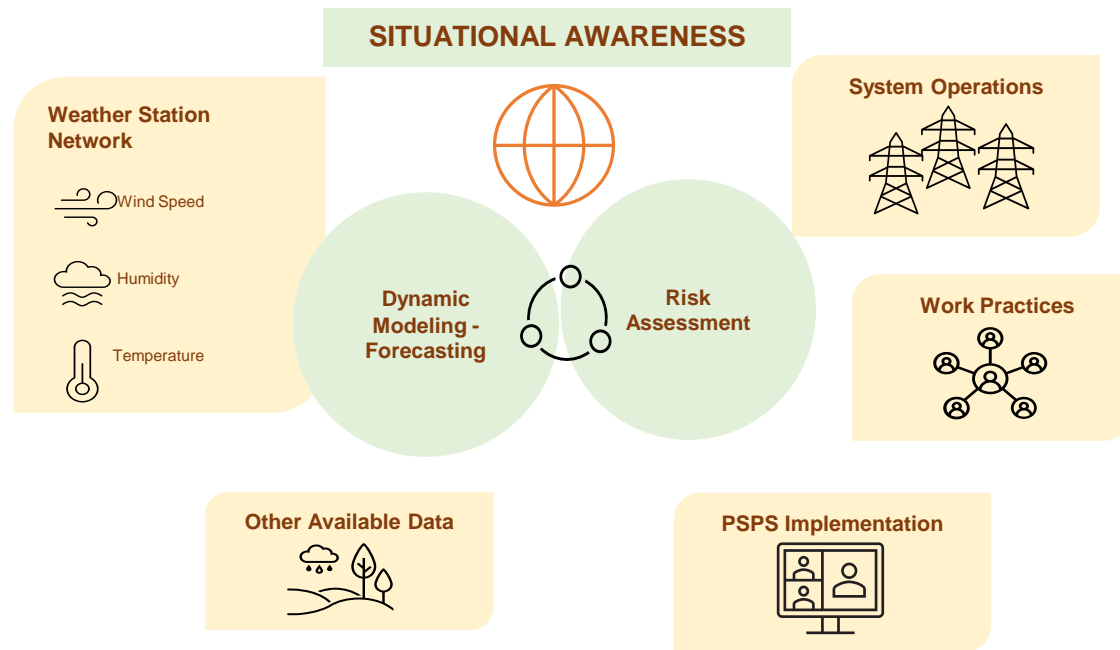
- 5 full-time meteorologists provide 24/7/365 support
- Provides daily and event-driven forecast products to the company
- Supports the company’s Emergency Coordination Center for all-hazards including fire weather & PSPS



Station	Alert	Speed	Temp	Humidity					
North Mt Shasta City	Watching	35	18	-17	21 31 35 42	9	W	47	67
Lake Siskiyou	Watching	27	10	-17	12 22 27 36	4	NNE	52	59
West Weed	Watching	22	4	-18	37 47 57 67	2	ESE	46	73

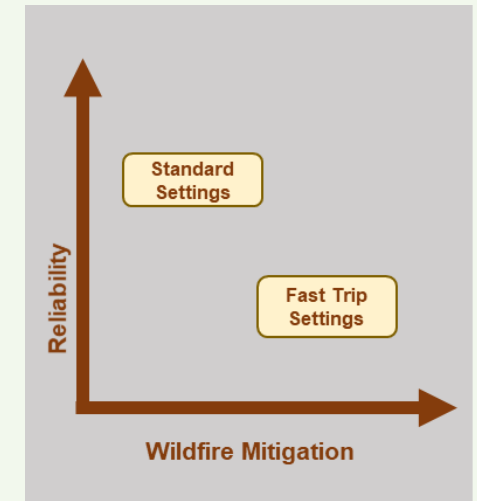
Station	Status	Alert Speed mph	Gust Speed mph	Gust-Alert Speed mph	Wind gust magnitude mph			Speed mph	Direction	Temp °F	Humidity %	
					≥95	≥99	≥Max					
North Mt Shasta City	Watching	35	18	-17	21	31	35	42	9	W	47	67
Lake Siskiyou	Watching	27	10	-17	12	22	27	36	4	NNE	52	59
West Weed	Watching	22	4	-18	37	47	57	67	2	ESE	46	73

System Operations



Elevated Fire Risk Settings

- Risk based deployment of alternate settings
 - *Faster tripping*
 - *Increased open times*
 - *Reduced reclosing*
- Deployment of CFCIs (fault indicators) to reduce impact to customers

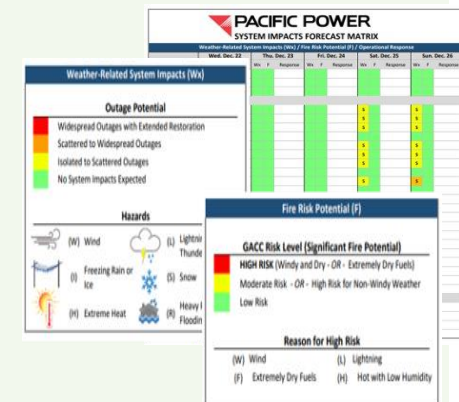


Augmented Work Practices

- Acquire and maintain key equipment (water trucks and personal suppression equipment)
- Implement risk-based work practices and resource adjustments

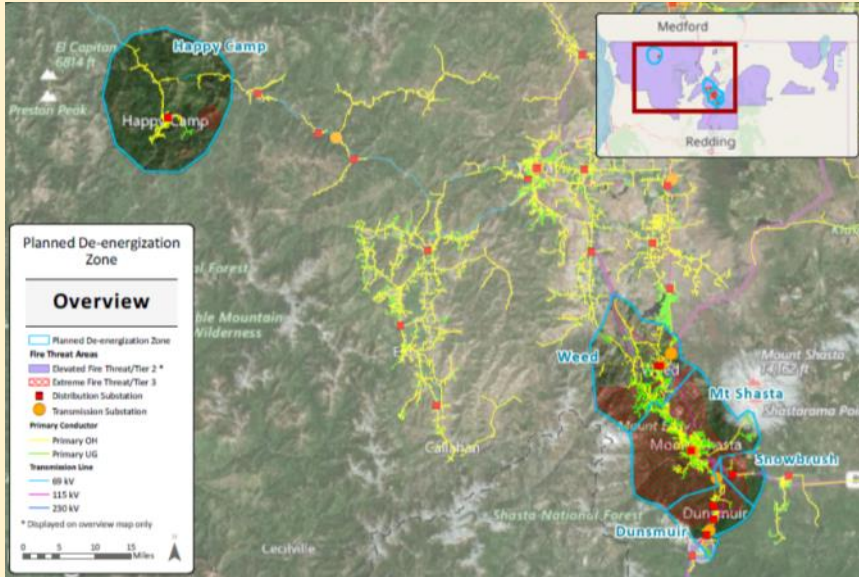
Public Safety Power Shutoff

- Situational awareness provides valuable input to decision making



PSPS Implementation Protocols

PSPS Zones Reflect Extreme Wildfire Risk

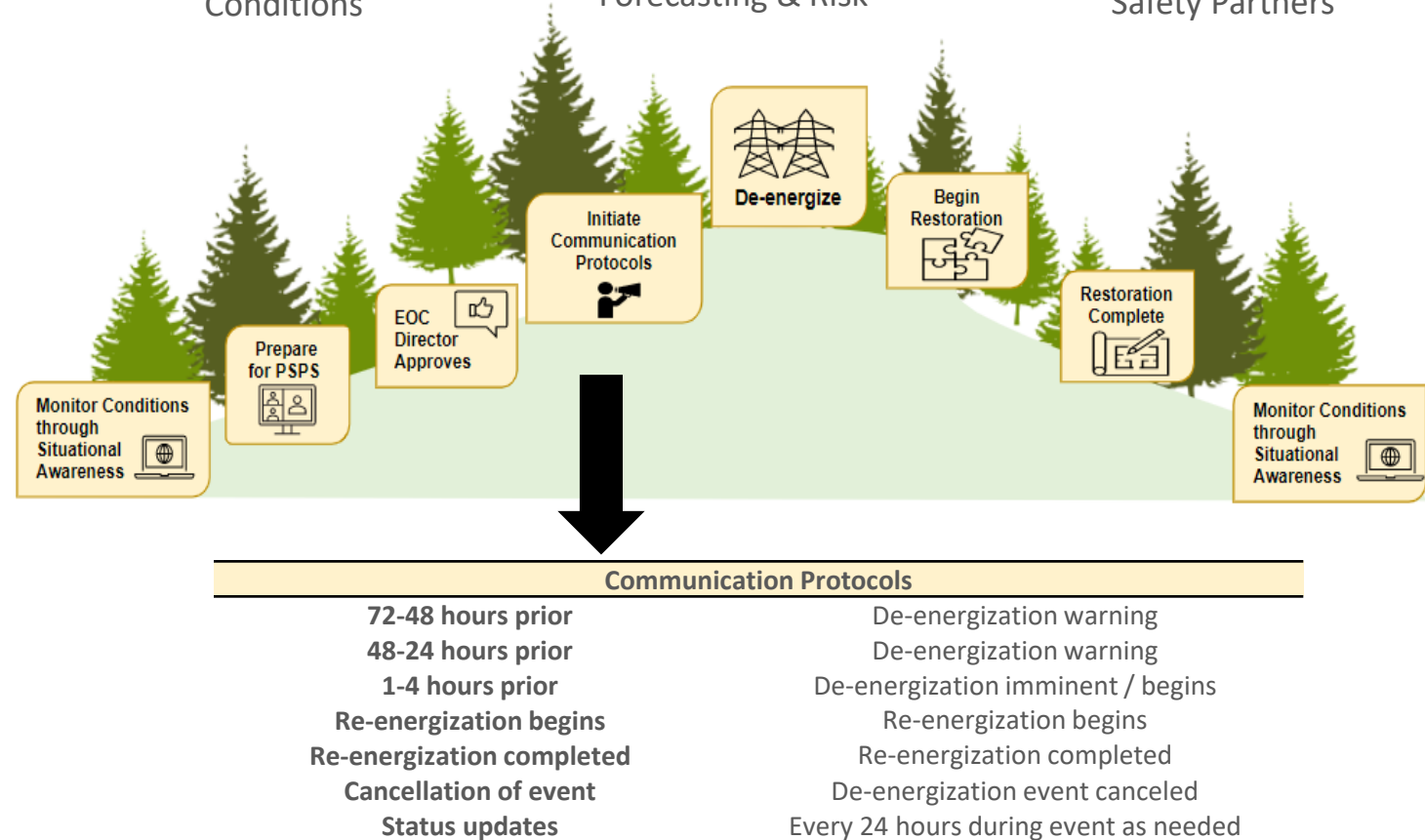


PSPS Zone Name	Customers	OH Distribution	UG Distribution	# of Circuits
Dunsmuir	1,788	31	8	11
Happy Camp	626	40	6	4
Mt. Shasta	5,077	86	78	11
Snowbush	18	3	1	2
Weed	2,560	88	63	16
TOTAL	10,069	248	157	

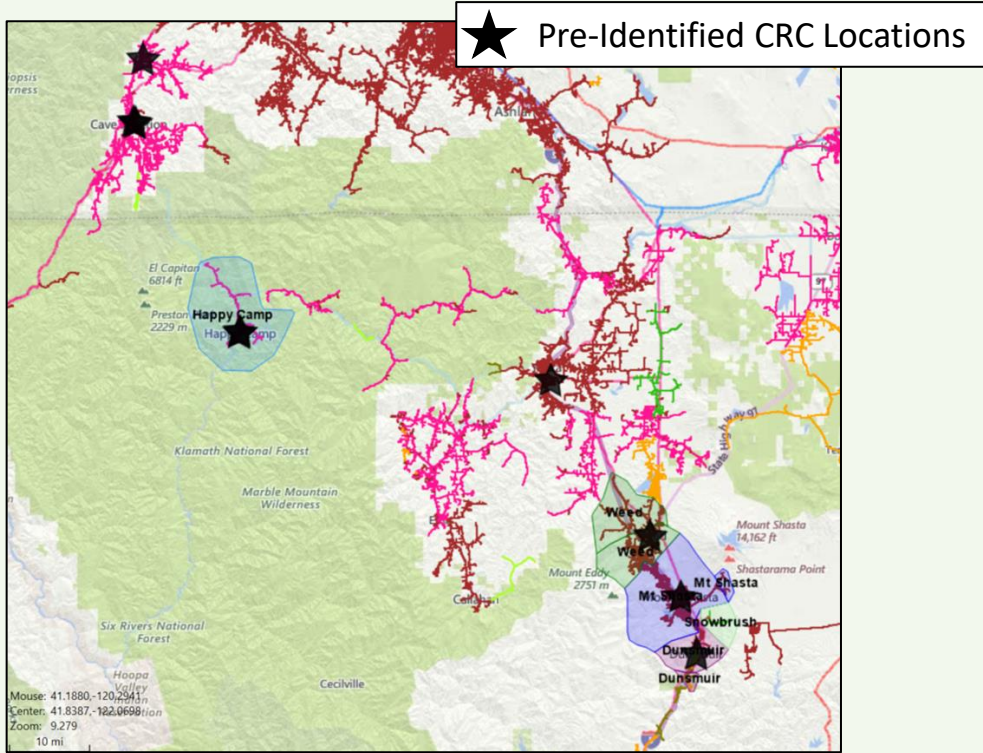
Map of Public Safety Power Shut Off Zones

- Conditions are continuously monitored to assess risk
- Decision incorporates multiple factors:

- ✓ Real Time Monitoring of Local Conditions
- ✓ Weather Forecasting & Risk
- ✓ Dynamic input from Public Safety Partners



Community Resource Centers (CRCs)



- ✓ Shelter from environment
- ✓ Air conditioning
- ✓ Potable water
- ✓ Seating and tables
- ✓ Restroom facilities
- ✓ Refrigeration for medicine and/or baby needs
- ✓ Interior and area lighting
- ✓ On-site security
- ✓ Communications capability such as Wi-fi access, Sat Phone, Radio, Cellular phone etc.
- ✓ Televisions
- ✓ On-site medical support (EMT-A at a minimum, Paramedic preferred)
- ✓ Charging stations
- ✓ Ice

Free Portable Battery Program

- Implemented in 2021 to provide back-up batteries – at no cost – to medical baseline customers

Program Includes:

- ✓ Technical assessment of needs
- ✓ Free-to-the customer portable batteries
- ✓ Training
- ✓ Customer Support



Generator Rebate Program

- Rebate offered on the purchase of a portable generator or portable power station to customers who:
 - Reside in Tier 2 or Tier 3 area
 - Additional rebate to Access and Functional Needs (AFN) customers



Community Outreach and Education

- Tabletop exercises with Public Safety Partners
- Wildfire safety and preparedness campaign
- Brochures, flyers and other collateral
- Customer service training
- Webpage
- Webinars

More information at:
www.pacificpower.net/wildfiresafety

Public safety power shutoff forecasting

This table shows the Public Safety Power Shutoff status.

NAME	STATUS	6 DAYS OUT
Azalea / Glendale / Wolf Creek / Sunny Valley	Normal	Normal
Cascade-Siskiyou NM	Normal	Normal
Dunsmuir	Normal	Normal
Happy Camp	Normal	Normal

WILDFIRE SAFETY **PACIFIC POWER**

Staying safe during wildfire season

As wildfires become more frequent and intense throughout the West, our focus is on keeping you and your community safe. Protecting you from this increasing threat, while providing you with safe, reliable power, is our highest priority. Here's what we're doing, and what you can do to stay prepared.

What we're doing

Reducing wildfire risks

We're taking additional steps to reduce wildfire risk by increasing vegetation maintenance and tree-trimming programs, and working with our customers to reduce wildfire risk. We're also working with our customers to reduce wildfire risk by providing them with information on how to reduce wildfire risk.

Other steps we're taking include:

- Working with customers to reduce wildfire risk
- Providing them with information on how to reduce wildfire risk
- Installing fire-resistant materials for wildfire season
- Working with customers to reduce wildfire risk
- Providing them with information on how to reduce wildfire risk

Preparing for emergencies

While it is impossible to eliminate all wildfire risk, we're working closely with federal, state and local agencies to expand and enhance existing emergency response plans.

For areas at a higher risk of wildfire ignition, we've introduced a new proactive measure—a Public Safety Power Shutoff. This is a new process designed to help keep people and communities safe by proactively shutting off power during extreme and dangerous weather conditions. This measure will only take effect as a last resort to help protect your safety.

Keeping you informed

Communication is an essential part of your emergency plan. Please be sure you have your Pacific Power account contact information up to date so we can keep you informed about:

- Potential power outages
- Updates on power outages

Reducing wildfire risks

Safety is our top priority. Learn what we're doing to reduce wildfire risks and prepare for emergencies. [Learn more](#)

WILDFIRE SAFETY **PACIFIC POWER**

Staying Safe in Wildfire Season

Wildfire season is here, and safety is top of mind for you and us.

As wildfire season nears, we want to make sure you're prepared. We're working with our customers to reduce wildfire risk by providing them with information on how to reduce wildfire risk.

To find out more about wildfire safety, and what you can do to stay prepared, visit PacificPower.net/wildfiresafety.

WILDFIRE SAFETY **PACIFIC POWER**

PUBLIC SAFETY POWER SHUTOFF **PACIFIC POWER**

Understanding public safety power shutoffs

We're taking proactive steps to keep the communities we serve safe. To prevent wildfires from igniting in high-risk areas, we may turn off power along specific circuits. This is called a Public Safety Power Shutoff.

Why would a Public Safety Power Shutoff happen?

No amount of preparation can eliminate all wildfire risk. While we work hard to clear areas away from power lines, debris, tree limbs and other material can be blown up onto lines during times of high winds. Along with this, a combination of high temperatures, low humidity and other conditions, the risk of sparks might ignite a wildfire.

In those cases, turning power off in affected areas may be necessary to ensure the safety of your community. We make the decision to proactively shut off in high fire risk areas very strategically and we expect that the Safety Power Shutoff will be a very rare occurrence.

What risk factors do we monitor?

Public Safety Power Shutoffs will be initiated only in specific, pre-planned areas when the present conditions create an extreme wildfire risk.

We monitor a range of factors before triggering a Public Safety Power Shutoff including:

- DRY VEGETATION** and other potential wildfire fuel
- HIGH WINDS**
- LOW HUMIDITY**
- REAL TIME OBSERVATION** by on-the-ground risk experts

Thank you