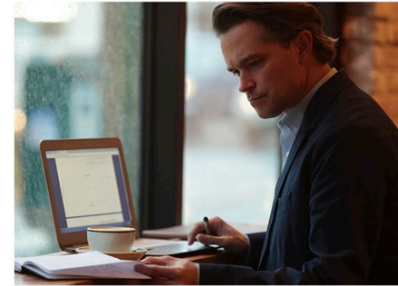


PacifiCorp

Public Safety Power Shutoff (PSPS) Public Briefing

August 4, 2021



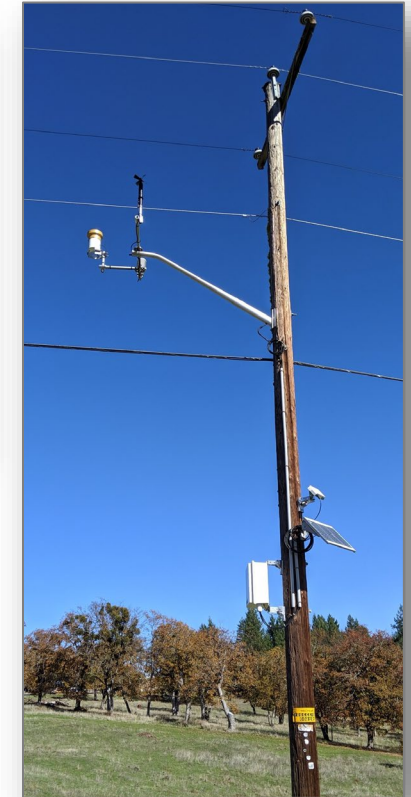
Allen Berreth
Vice President T&D Operations

Introduction

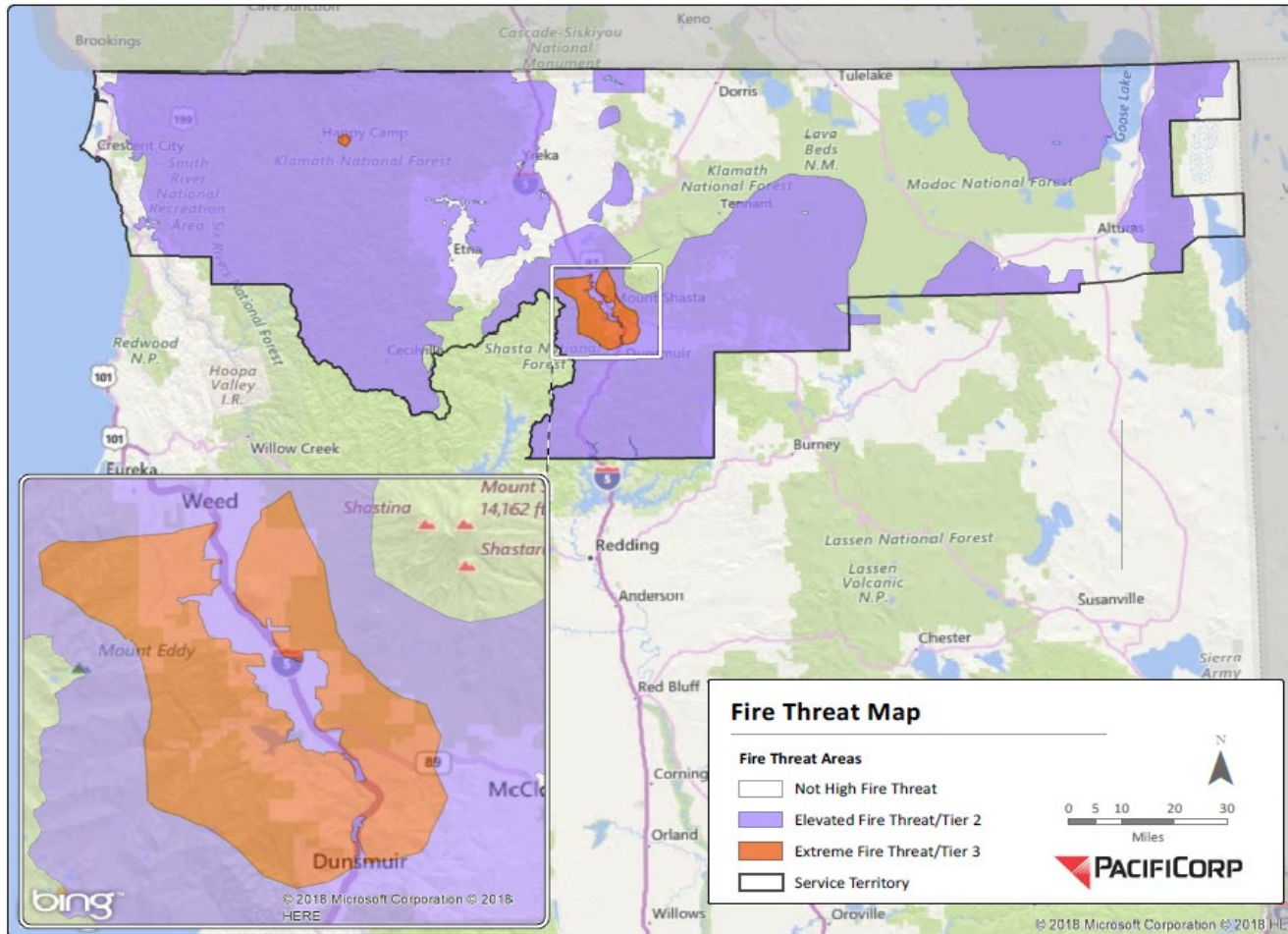
Presenter: Allen Berreth, VP of T&D Operations

Topics:

- PacifiCorp's CA Assets / PSPS Zones
- Vegetation Threats & Mitigation Measures
- Grid Hardening Improvements & Impacts to PSPS
- PSPS Decision Making Framework
- Community Resource Centers
- Mitigation of Impacts to AFN & Medical Baseline Customers
- Public Education & Outreach
- External Collaboration & Feedback



PacifiCorp's California Service Territory



General Stats

PacifiCorp provides electricity to approximately **45,000 customers** via **63 substations**, **2,520 miles** of distribution lines, and about **800 miles** of transmission lines across nearly **11,000 square miles** of which just under half is classified as **HFTD**

HFTD Stats

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

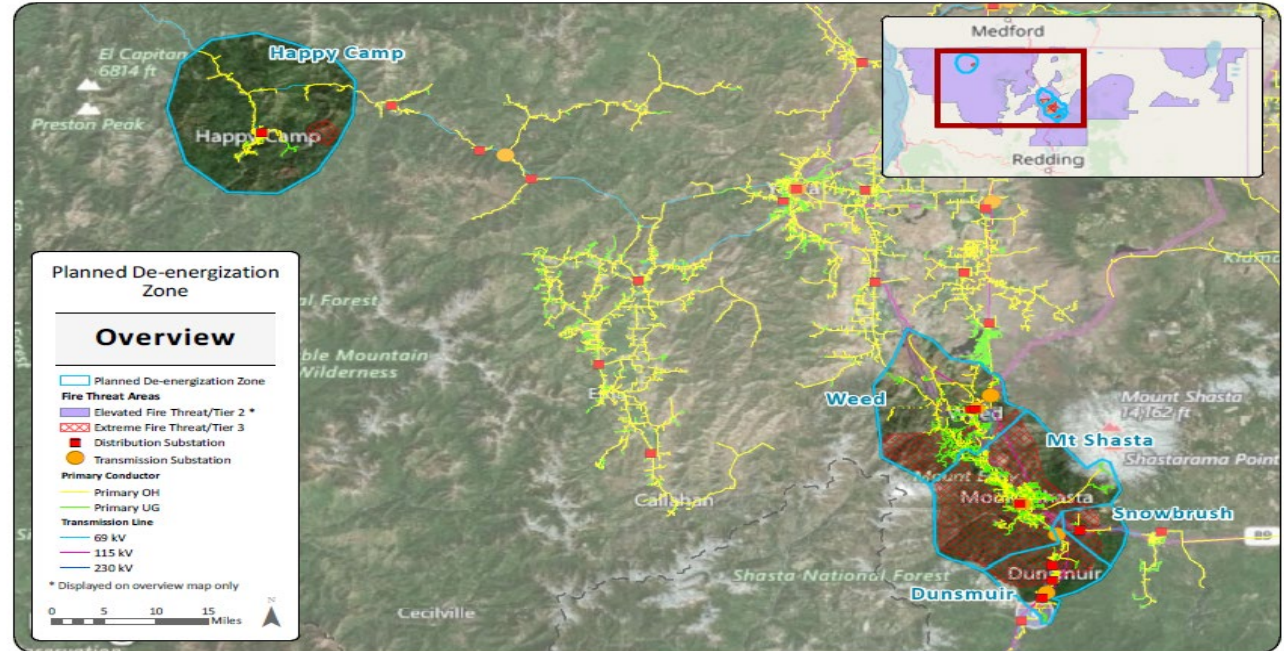
850 miles of overhead distribution lines in the HFTD;

350 miles of transmission lines in the HFTD



PacifiCorp's CA PSPS Zone Summary

- PacifiCorp has identified two extreme risk geographic locations generally centered around Tier 3
- These locations are subdivided into 5 discrete zones
- Approximate impact:
 - 20 circuits
 - 9 substations
 - 259 line-miles
 - 10,351 customers

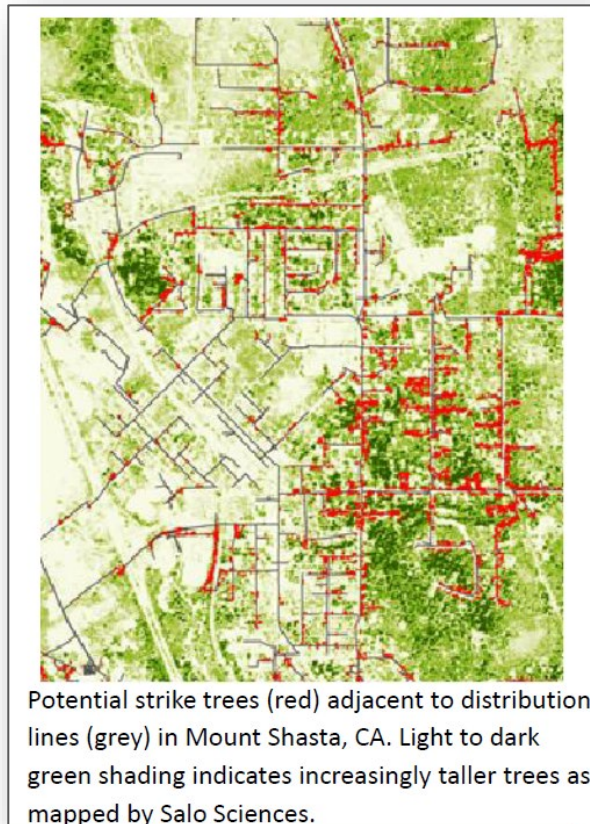


	PSPS Name	Substation	# of Circuits	Customers	Distribution OH	Distribution UG
1	Happy Camp	Seiad, Happy Camp	3	865	48.4	5.9
2	Weed	Weed, International Paper	5	2,589	90.5	62.1
3	Mt. Shasta	Mt. Shasta	6	5,074	86.4	76.7
4	Dunsmuir	N & S Dunsmuir, Nutglade	5	1,806	30.0	8.6
5	Snowbrush	Snowbrush	1	17	4.2	1.2
	Total	9 Substations	20	10,351	259.5	154.5

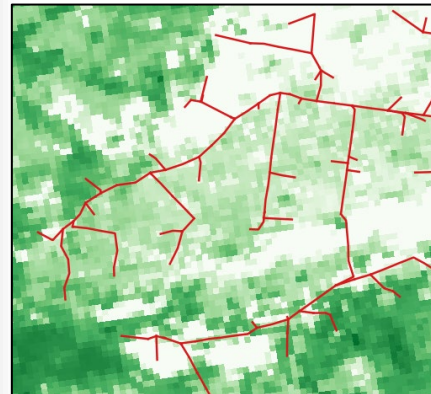
Vegetation Threats & Mitigation Measures

Vegetation threats pose significant risk to the electrical system

- Threat trees pose fall in risk
- Thick, dense vegetation canopy pose blow in / contact risk



Potential strike trees (red) adjacent to distribution lines (grey) in Mount Shasta, CA. Light to dark green shading indicates increasingly taller trees as mapped by Salo Sciences.



National Land Cover Database Tree Canopy Cover and PacifiCorp Distribution Line outside Greenview, California — Darker color indicates more tree density

Short Term Mitigation Measures:


- ✓ Incremental vegetation inspections in high-risk locations
- ✓ Reduction of high-risk tree inventory
- ✓ Radial Pole Clearing to reduce fuel
- ✓ Situational Awareness through data collection

Long Term Mitigation through System Hardening:

- Covered Conductor
- Fault Detection
- System Automation

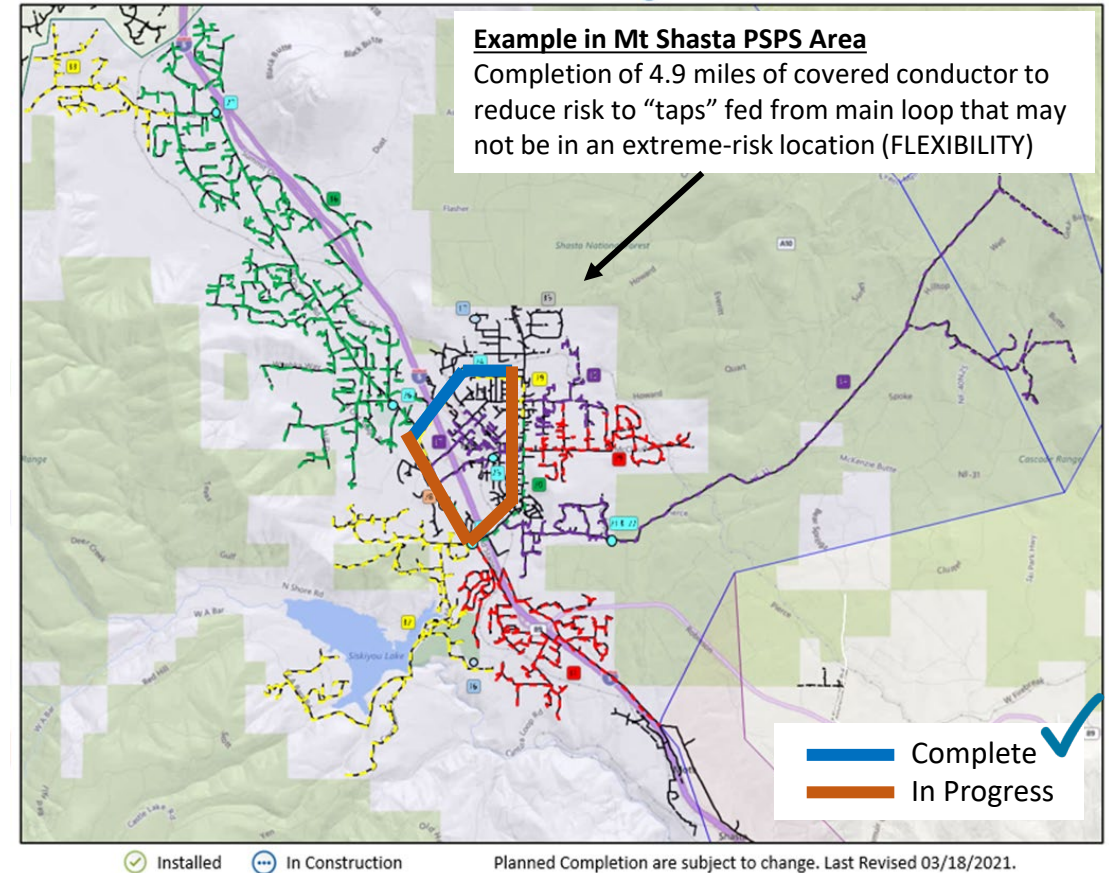


Grid Hardening Improvements & PSPS Impacts

- PSPS is a mitigation tool implemented as a last resort due to extreme risk
- Long term mitigation of risk is achieved through grid hardening
- Therefore, grid hardening is targeted at extreme risk PSPS locations
 - Installation of Covered Conductor
 - Replacement of Wooden Poles
 - Installation of System Automation Equipment
 - Replacement of Small Diameter Conductor
- Impacts to PSPS risk anticipated in 2022: 

#	Construction Activity	Planned Completion	Status
19	Rebuild 2.5 miles to covered conductor, re-conductoring the main line portion (north ring fence) of circuit 5G77. Taps on this line are not included.	2021	✓
32	Rebuild 8.5 miles to covered conductor the Siskiyou Lake portion of circuit 5G79.	2022	⋯
33	Rebuild 3.0 miles to covered conductor the Deetz Road portion of circuit 5G77.	2022	⋯
#	Construction Activity	Planned Completion	Status
20	Rebuild 2.4 miles to covered conductor, re-conductoring the main line portion (south ring fence) of circuit 5G79. Taps on this line are not included.	2021	⋯
36	Rebuild 29.7 miles to covered conductor the NW portion of circuit 5G76.	2023	⋯

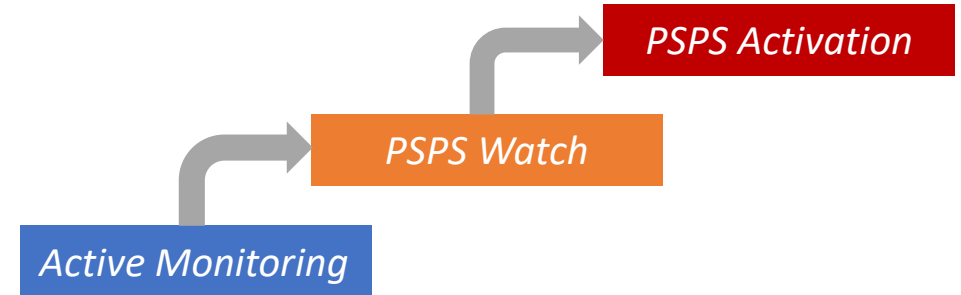
Mt Shasta PSPS Zone



PSPS Decision Making Framework

- PacifiCorp uses a range on inputs in its assessment and decision-making process:

- ✓ Weather Forecasting & Risk
- ✓ Localized System Impact Assessment
- ✓ Real Time Local Conditions
- ✓ Dynamic Input from Local Partners



- The following metrics are used as part of the inputs in decision making:

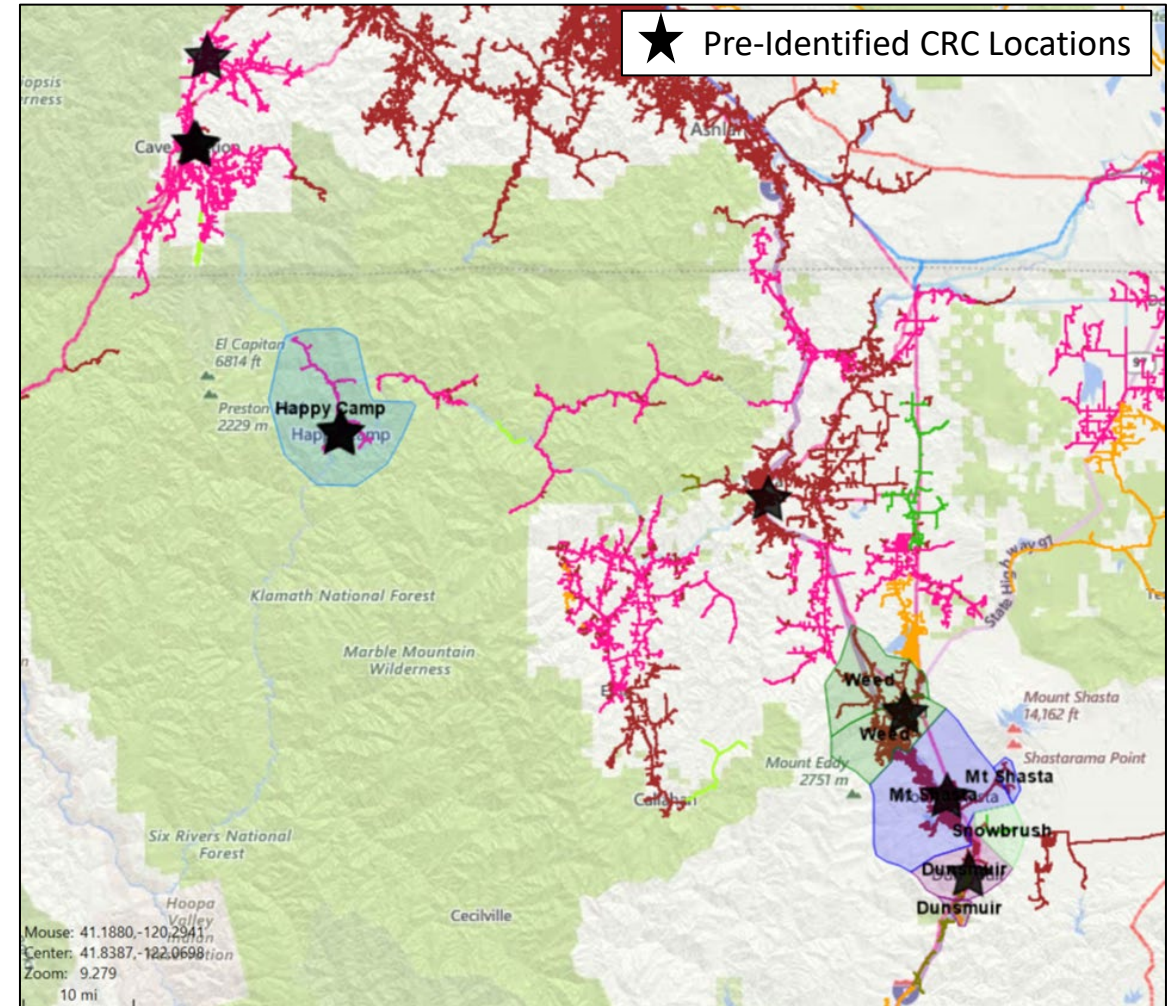
- **Hourly Fosberg Fire Weather Index (FFWI)** combines temperature, relative humidity, and 10-minute wind-speed factored into a single weather index correlated to influence on fire spread
- **The Keetch-Byram Drought Index (KBDI)** assesses the risk of fire by representing the net effect of evapotranspiration and precipitation in producing cumulative moisture deficiency.
- **Localized Vapor Pressure Deficit (VPD)** measures the department from normal dryness in a shorter term to complement KBDI
- Forecasted wind speeds and potential sustained gusts.

Community Resource Centers

- Community Resource Centers (CRCs) Provide:
 - ✓ 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, SatPhone, Radio, Cellular phone etc.
 - ✓ Televisions
 - ✓ On-site medical support (EMT-A at a minimum, Paramedic preferred)
 - ✓ Charging stations
- PacifiCorp has planned / established CRCs in coordination with county and tribal leadership:

General Area	PSPS Zone Name	CRC Identified
Siskiyou County	Happy Camp PSPS Zone	Headway Building Karuk Wellness Center (Happy Camp)
	Weed / Snowbrush PSPS Zone	Weed Community Center Karuk Wellness Center (Yreka)
	Mt Shasta PSPS Zone	Mt Shasta Community Center
	Dunsmuir PSPS Zone	Dunsmuir Community Center
Del Norte County	Cave Junction PSPS Zone	Selma Community Center Cave Junction Senior Center Cave Junction High School

- Multiple CRC locations within 10-20 miles of PSPS zones
- Additional locations can be established quickly during an event if needed



PSPS Mitigation – Community Resiliency

Pacific Power’s Community Resiliency Program includes funding to support Portable Generators, Technical Assistance, and Energy Storage:

Portable Generator Grants

Grant Funding to support the purchase of portable renewable backup generators that may be dispatched to provide power to vulnerable community members during an interruption in the utility power supply.

2020: No requests for funding

Energy Storage Grants

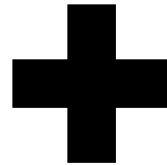
Grant funding to support the installation of energy storage at critical facilities.

2020: One project requested / awarded funding [General Store, 20 kW, 220 kWh storage]

Technical Assessment

Technical assessments to evaluate the potential costs and benefits of adding energy storage and associated technologies to critical facilities

2020: One project requested technical support



NEW in 2021

Mobile & Deployable EV Charging

PacifiCorp is procuring deployable EV charging equipment for dispatch to impacted communities during PSPS events; equipment will be located at community resource centers



Under Development:

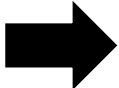
- Battery backup options are currently being evaluated for medically vulnerable customers and immediate deployment
- Generator rebate program for customers located within a high risk or PSPS Zone under evaluation

Public Education & Outreach

Customer Survey Conducted from October 27, 2020 – November 25, 2020

Survey Participation	<ul style="list-style-type: none"> ✓ 595 Total Surveys Completed ➤ 80 Phone Based Surveys ➤ 515 Web Based Surveys
----------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Major Takeaways
<ul style="list-style-type: none"> ✓ Most commonly recalls channels for wildfire prevention were <i>social networking</i> and <i>TV news</i> ✓ Respondents rated the <i>Pacific Power website</i> as the <i>most useful</i> and clear source of information ✓ 68% reported to be more aware of wildfire safety communications in than in May 2020 ✓ 71% recall seeing, hearing, or reading the phrase <i>“Public Safety Power Shutoff or PSPS”</i>, up significantly from May 2020 ✓ 26% are aware of a PSPS map on <i>Pacific Power’s website</i>, a <i>significant increase</i> since May 2020. ✓ Among those reporting that they rely on electricity for medical needs, 1/3 are aware of additional notices, up significantly from May



Forward Looking Strategy
<ul style="list-style-type: none"> ✓ Continue utilizing current strategy but <i>consider adding messaging targeted at critical customers and those with medical needs.</i> ✓ Continue leveraging TV news and social networks to educate customers about PSPS events. ✓ Promote company website as a source of information. ✓ Evaluate efficiency of communications via newspapers and direct mail. ✓ Continue providing timely and accurate notifications prior to a PSPS event <i>with an increased awareness of those relying on electricity for medical needs.</i> ✓ Continue increasing awareness of PSPS designations and map availability on the Pacific Power website (nearly a 100% increase in results from May to November)



PSPS Mapping & Transparency

Working to update and enhance website material, including real time PSPS status updates

NAME	TODAY	TOMORROW	2 DAYS OUT	3 DAYS OUT	4 DAYS OUT	5 DAYS OUT	6 DAYS OUT
Azalea / Glendale / Wolf Creek / Sunny Valley	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Cascade-Siskiyou N.M.	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Dunsmuir	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Happy Camp	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Hood River / Wasco (East)	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Hood River Urban (SE)	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Hood River Urban (West)	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Illinois Valley	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Lost Creek Lakes	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Merlin	Normal	Normal	Normal	Normal	Normal	Normal	Normal

AFN & Medical Baseline Customers

CARE Program – Update in 2021

- All applications and re-certification forms were updated with the following:

Check this box if someone in your household has a disability, or requires accessibility, financial or language support during a public safety power outage. Pacific Power will provide an additional notification prior to a public safety power shut off. For more information, visit pacificpower.net/wildfire.

- Forms are mailed to residential and master-meter customers to enroll in the discounted rate schedule or to re-certify and remain on the rate.
- Applications for Group Living Facilities and Agricultural Employee Housing updated.
- Tracking response rate for evaluation.

Medical Customers

- Due to the pandemic, customers can self-certify as a medical customer
- All medical customers are coded as AFN customers
- Post pandemic, all customers receiving an application for medical certification will receive information and will be able to identify as an AFN customer.

Medical Baseline Program

If you or a family member is on life support or has a serious medical condition, we can help. If you or someone who lives with you full-time is required to use an electricity-dependent medical device, let us know. To make it easy, customers receive approximately 500 additional kilowatt-hours per month, which are billed at the lowest residential tiered rate to offset increases in cost and energy use due to medical equipment.

A Medical or Life Support Equipment Certificate must be completed by a qualified medical professional certifying that a member of the household is using medical equipment on a regular basis required to maintain life or has a medical condition that would be adversely affected if electric service is disconnected.


The Medical Baseline Certificate does not guarantee that power will not be interrupted from weather-related outages, other circumstances outside of our control, or service disconnection for bill nonpayment. It does help us to better assist you in managing your electricity bills beyond what is normally allowed. Learn more at pacificpower.net/medical.

California Alternate Rates for Energy Program (CARE)

If you are having trouble paying your bill, you may be eligible for a 20 percent discount on your Pacific Power bill through CARE. CARE is available to residential customers who meet income requirements.

You may also be eligible for CARE if you are enrolled in public assistance programs such as Medicaid/Medi-Cal; Women, Infants and Children Program (WIC); Supplemental Security Income (SSI); Bureau of Indian Affairs; Head Start; Income Eligible (Tribal Only); or Temporary Assistance for Needy Families (TANF) or Tribal TANF.

For more information and to see if you qualify, visit pacificpower.net/care.



Outage preparedness

A storm, wildfire or other emergency can happen at any time. That's why it's important to have a plan ready, year-round, in case power goes out.

- Keep a two-week supply of shelf-stable food and water for all people and pets in your home.
- Gather a backup supply of essential medicines.
- Create an emergency kit with flashlights, fresh batteries, solar phone chargers, first aid, essential phone numbers and cash.
- Do not use candles if oxygen equipment is in use.
- Check with your medical device supplier to assist with emergency backup plans for any medical equipment.
- Before buying a generator, make sure it is appropriate for your home.

Update your contact information with Pacific Power

Communication is a big part of staying safe. In the event of a power outage, we will use all available options to keep you informed, including social media and by reaching out to you directly by phone, text or email.

Qualifying customers would also receive additional notifications prior to a Public Safety Power Shutoff due to severe weather conditions.

Please take a moment to update your contact information so we can reach you if we need to at pacificpower.net or by phone at 1-888-224-7070.

	2019	2020	2021
Medical Baseline	132	127	126

*28 Medical Baseline Customers live in a PDZ.

External Agency Coordination & Engagement

Communications Providers

Outreach to support preparedness:

- 8 communications providers / 4 located in PSPS Zones
- Initial outreach conducted to establish primary & secondary contacts:
 - ✓ *Primary – 100%*
 - ✓ *Secondary – 50%*
- Outreach continuing to improve preparedness and coordination

Engagement with Tribal Communities

Working to enhance coordination:

- ✓ Holding twice monthly meetings
- ✓ Established engagement with the Karuk Tribe newly hired emergency manager
- ✓ Continuing to coordinate and provide information to tribal communities via county emergency managers
- ✓ Establishing set meetings in the future

Engagement with Public Safety Partners

Working to enhance coordination:

- ✓ Collaborate formally through Annual Tabletop Exercises
 - ✓ May 25: Siskiyou County
 - ✓ May 27: Del Norte County
- ✓ Engage and maintain local situational awareness through applicable county emergency manager(s)

Feedback from External Agencies and Public Safety Partners

Aspects Working Well

- ✓ Joint Information System coordination has been established and will continue to be a valuable partnership
- ✓ State, County, local and private emergency management plans are aligned and function well together
- ✓ Partnerships established between state, county, local and private agencies to support coordination with access and functional needs populations

Areas to Watch

- Continued work through established partnerships is needed to improve coordination with Access and Functional Needs population
- Additional public outreach to customers to all customers regarding wildfire risk and mitigation strategies is needed
- Communications providers have limited bandwidth for some areas requiring secondary and tertiary contingency plans

Thank you