



2022 Public Safety Power Shut Off Post Season Briefing

April 18, 2023

Presenters:

Allen Berreth, Vice President, T&D Operations

Nora Yotsov, Director, Emergency Management

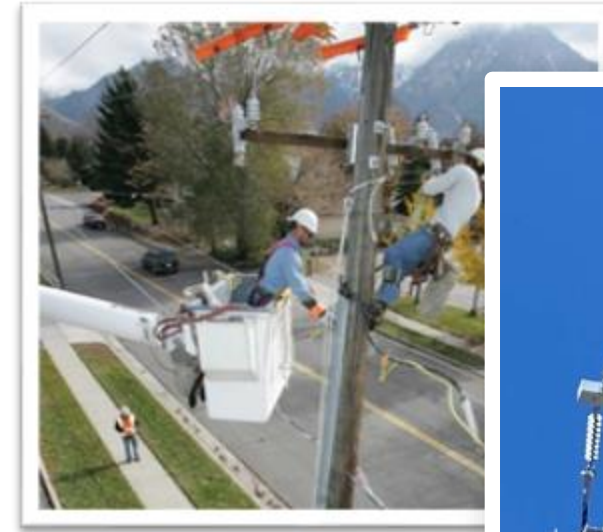
Jona Whitesides, Senior Communications Specialist

A photograph of a wooden utility pole with several power lines extending from it. The pole is positioned on the right side of the frame. In the background, there are rolling green hills under a clear blue sky. A semi-transparent white banner is overlaid across the middle of the image, containing the title text. Below the banner is a solid orange horizontal bar.

Public Safety Power Shutoff Post Season Briefing

Agenda

- PacifiCorp's California Service Territory
- Event History & Risk
- Situational Awareness & Forecasting
- Communications
 - Education & Outreach
 - Notification Plans
 - Community Resource Centers
- Medical Baseline / Access Functional Needs
- Customer Resources
- PSPS Survey Results
- Fast Trip



PacifiCorp's Service Territory (refresher)

General Stats

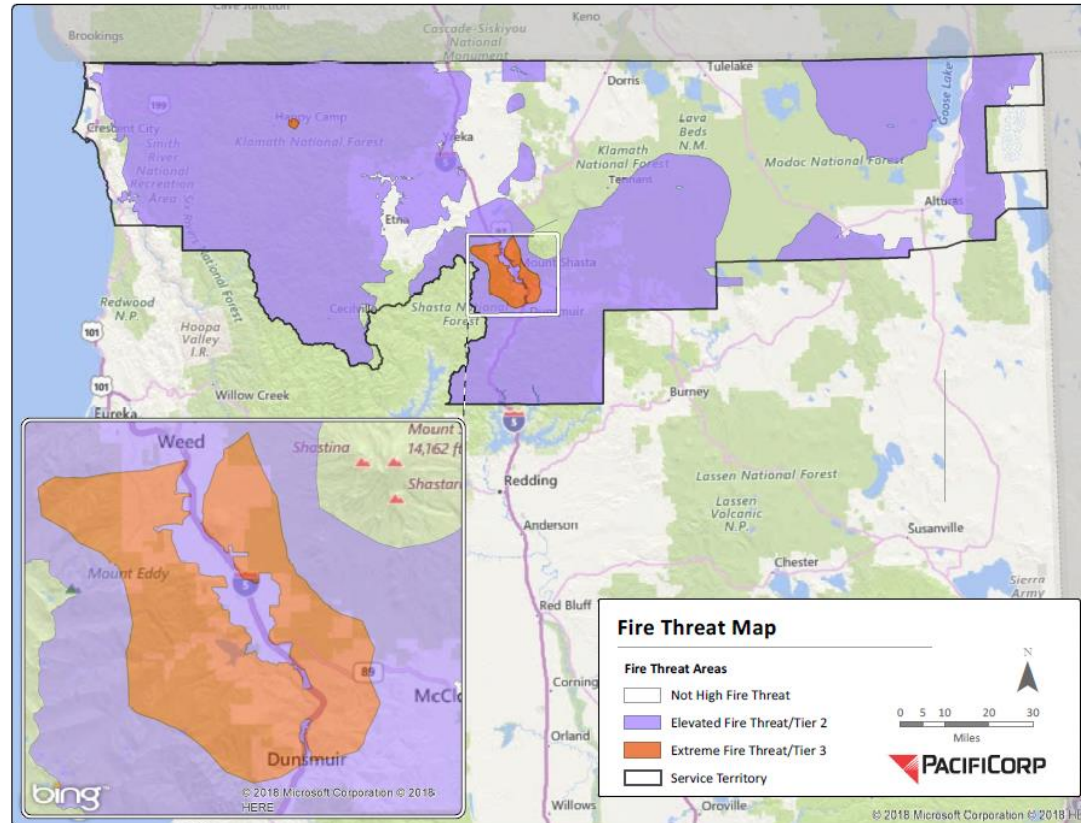
PacifiCorp provides electricity to approximately **45,000 California customers** via **62 substations**, **2,500 miles** of distribution lines, and about **780 miles** of transmission lines across nearly **11,000 square miles**

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



Extreme Risk

Extreme Risk of Wildfire

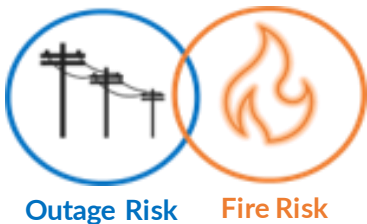
Approximately **250 miles** or 10% of all **overhead distribution lines** are planned for prioritized system hardening

Prioritized System Hardening

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

PSPS History & Risk

PSPS is the intersection of wildfire risk and weather-related outage risk



PSPS History						
Year	# of Events	Event Duration	Total Customers Affected	AFN/ Medical Baseline Customers Affected	Critical Facilities Affected	CRCs Activated
2020	1	7.9 hours	2,559	5	13	0
2021	1	9.6 hours	1,953	11	19	1
2022	0	0	0	0	0	0

GACC Risk				
Year	Moderate Risk Days	Earliest Moderate Risk Date	Latest Moderate Risk Date	High Risk Days
2021	122	May 6	Oct 17	37
2022	96	Jun 11	Oct 31	22

Continue using PSPS as a tool and measure of last resort

2022 Accomplishment / Updated Methodology

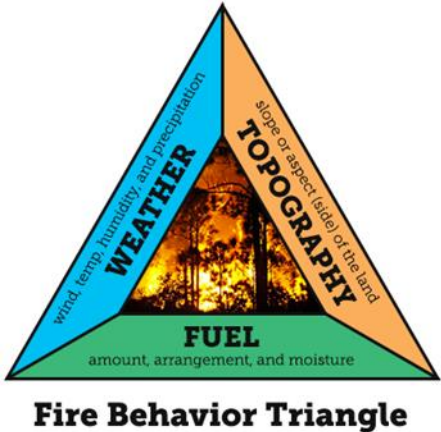
Decision incorporates multiple factors:

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

Mitigating Impacts of PSPS with:

- ☐ Enhanced planning & preparations
- ☐ Advanced warning and notifications
- ☐ CRC Activation to provide community services
- ☐ Customer Generation Programs

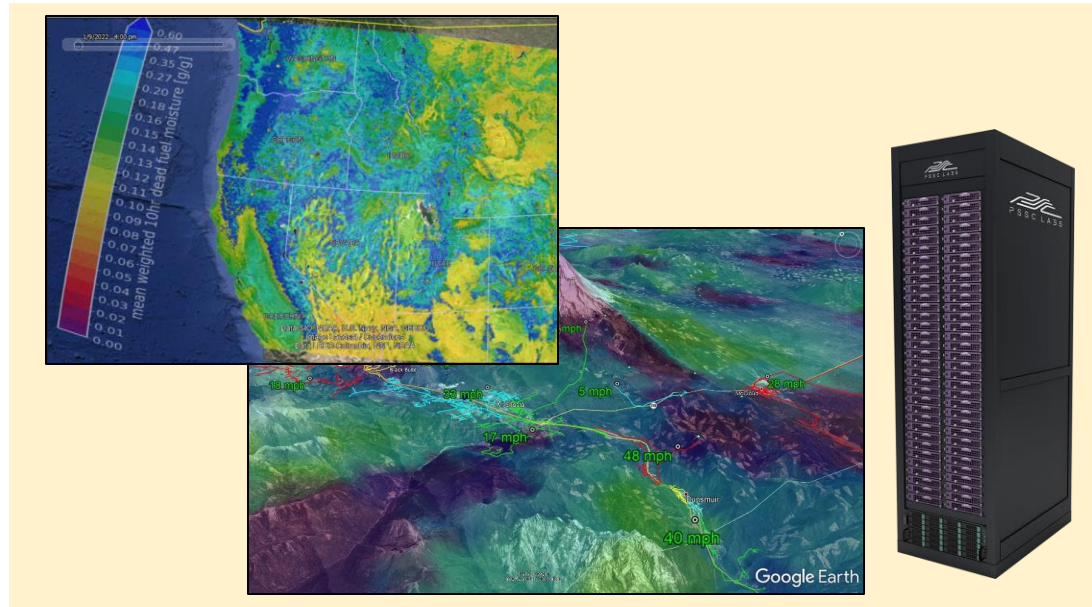
- ☐ WFA-E Consequence Modeling
- ☐ Fire Weather Watches or Red Flag Warnings (RFW)
- ☐ WRF Forecasts
- ☐ Evaporation Demand Drought Index (EDDI)
- ☐ Fuels Conditions (Grasses, Live Fuels, & Dead Fuels)
- ☐ Current or Recent Wildfire Activity
- ☐ Hot-Dry-Windy Index (HDWI)
- ☐ Vapor Pressure Deficit (1-month avg)
- ☐ FHCA Location (Y/N)



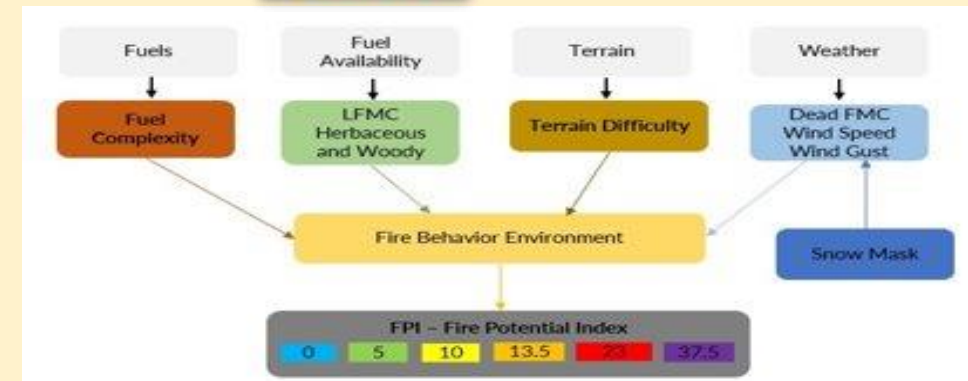
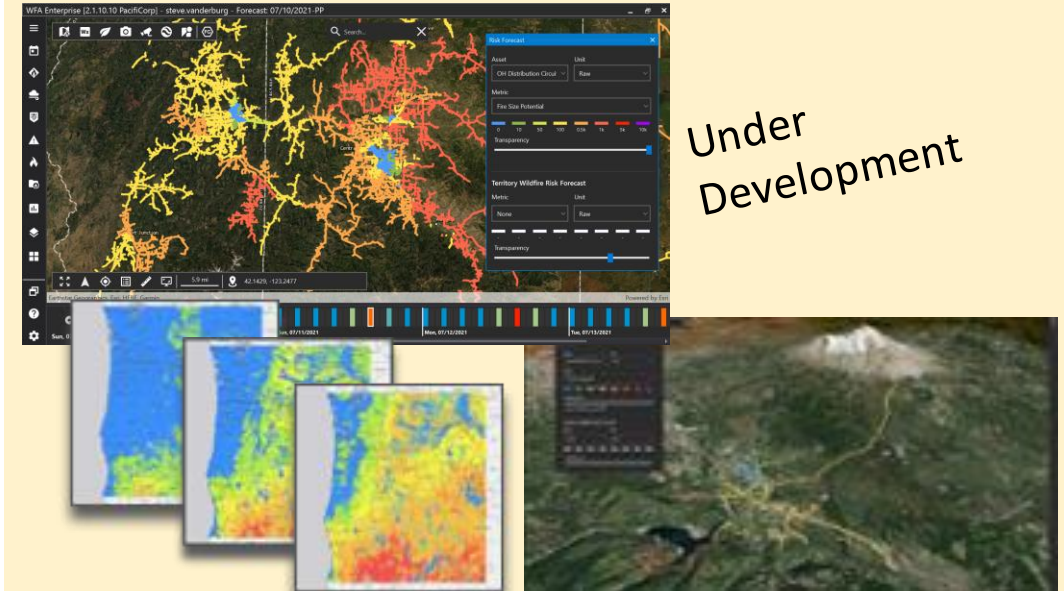
Situational Awareness

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



2023 Plan – Fire Potential Index





Notifications & Communications

Education & Outreach

- ✓ Tabletop exercises with Public Safety Partners
 - ✓ Completed tabletop in **Siskiyou County** on April 28, 2022.
 - ✓ Completed functional exercise in **Siskiyou County** on May 26, 2022.
- ✓ Wildfire safety and preparedness campaign included **social media, radio, bill inserts and other online media** (such as Spotify)
- ✓ Updated brochures, flyers and other collateral
- ✓ Updates to improve awareness of customer support programs
- ✓ **Spanish PSPS Website**
- ✓ New 2022 Webinar

EMERGENCY RESPONSE PARTNERS

- ✓ Formal collaboration through annual tabletop & functional exercises
- ✓ Engage and maintain local situational awareness through county emergency manager(s)
- ✓ Deploy personnel to the local EOC as needed to coordinate responsibilities and distribute information
- ✓ Situational reporting with county emergency managers
- ➔ Bring on additional PacifiCorp personnel to support more frequent coordination

CRITICAL INFRASTRUCTURE

- ✓ Maintain lists within our new Public Safety Partner Portal (launched June 1st, 2022)
- ✓ Monthly updates and download capability by public safety partners
- ➔ Outreach to update primary and secondary points of contact for facilities & collect backup generation capabilities
- ✓ Facilities can request to be added to our list online from our critical facilities page
- ➔ Validation of our critical infrastructure with the respective county or tribal emergency managers

TRIBAL PARTNERS

- ✓ Twice-monthly meetings with the Karuk Tribe
- ✓ Frequent collaboration and coordination with the Karuk Tribal emergency manager
- ➔ Coordinate and provide information to tribal communities via county emergency managers
- ➔ Align messaging strategies between tribal public information and corporate communications
- ➔ Bring on additional PacifiCorp personnel to support more frequent coordination



Notification Plans

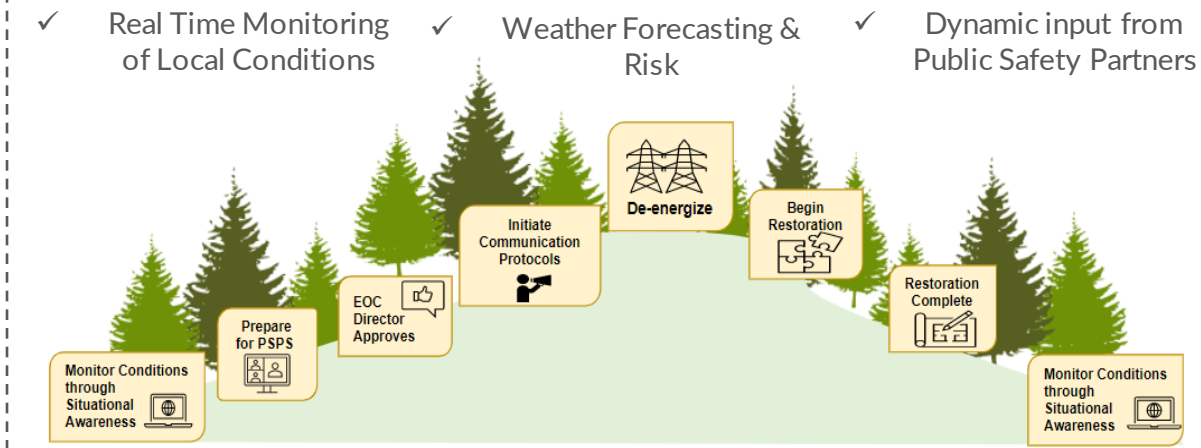
- Once the decision is made to implement a PSPS, Notification Protocols are initiated
- Pending any changes to dynamic weather factors and risk, notifications protocols generally include:

Notification Protocols	
48-72 hours prior	De-energization warning to Public Safety Partners
24-48 hours prior	De-energization warning
1-4 hours prior	De-energization imminent
Event begins	De-energization begins
Re-energization begins	Re-energization begins
Re-energization completed	Re-energization completed
Cancellation of event	De-energization event canceled

- During a PSPS event, notifications to medical baseline and AFN populations are managed separately from general notifications
- Pacific Power performs positive or affirmative communications using various methods:

- ☐ Personal Calls
- ☐ Text Messages
- ☐ Emails
- ☐ Home Visit

General PSPS Protocols



2022 Enhancements

- ☐ Enhance ability to better categorize AFN and Medical Baseline Customers
- ☐ Strengthen relationships with CBOs

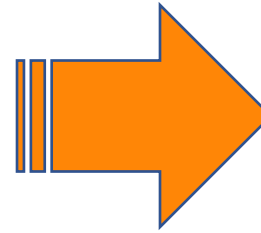


Example: Initiated contact with Redwood Coast Resource Centers to better understand how to identify and serve AFN populations

Community Resource Centers

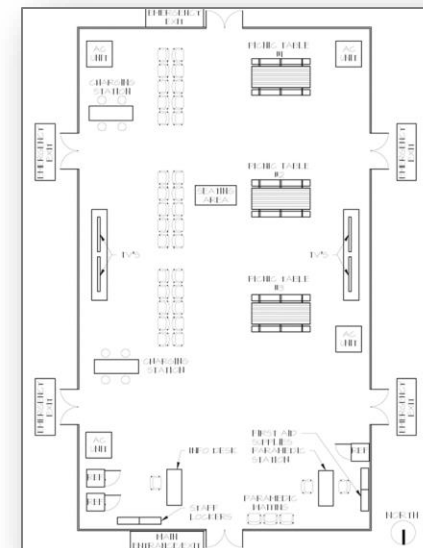
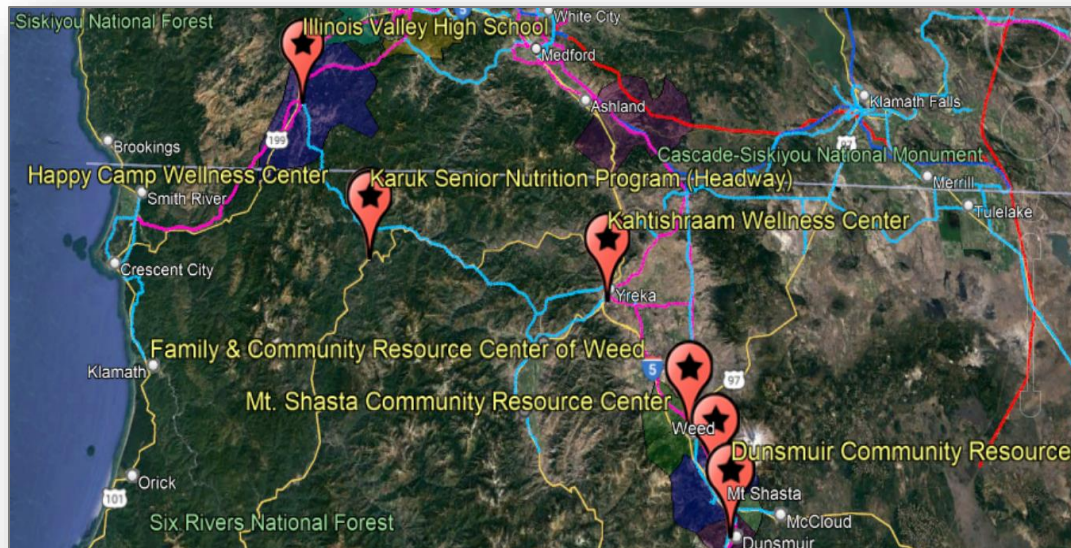
Existing Services

- ✓ 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



Enhanced in 2022

- ✓ **Air Purifiers**
- ✓ **Air Quality Monitors**
- ✓ **Ice**
- ✓ **Non-perishable snacks**
- ✓ **Small Crates for Pets**
- ✓ **Portable ADA Ramp**





Medical Baseline / Access Functional Needs

Medical Baseline & AFN Customer Identification

CARE Program – Updated in 2021

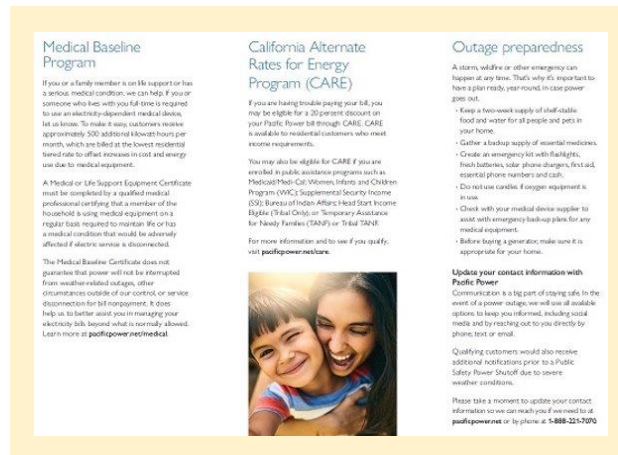
- ✓ All applications and re-certification forms were updated with the following:

- ☐ 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.

Medical Customers

- Customers can self-certify as a medical customer with no documentation.
- All medical customers are coded as AFN customers.
- All customers receiving an application for medical certification will receive information and will be able to identify as an AFN customer.



2022 Improvements

- Since February 2022, there has been an increase of **314** total AFN customers (**67 percent**)
- PacifiCorp continues to seek improvements to identifying the electricity dependent customers with AFN through defining, mapping, and enabling self-identification, and has mapped their respective databases to code customer accounts accordingly
- As a part of the planning process, the team worked to identify the targeted individuals and benchmark with state agencies to create an informed estimate of the number and types of individuals with disabilities and others with AFN residing in the community
- All medical baseline customers are identified as AFN customers

2022 AFN Customer Counts

**Medical
Baseline AFN**
145

**Non-Medical
Baseline AFN**
636

Total
781

Backup Generation and Portable Battery Programs

NEW Website and Reference Material



Choose your state for more about generators, safety and possible rebates

[IS BACKUP POWER RIGHT FOR YOU?](#)

[USE BACKUP POWER SAFELY](#)

[CALIFORNIA GENERATOR REBATES](#)

Steps to help select backup power

A portable electric generator or a portable power station can help provide electricity to the appliances, devices and systems that you need most in an emergency. But they can also be loud, costly and potentially pose safety hazards. If you decide that a portable generator is right for you, it is essential to learn how to safely operate the device prior to an emergency. Generators also require proper storage, access to fuel and regular safety checks.

Types of generators for home use

<https://www.pacificpower.net/outages-safety/storm-emergency-preparedness/backup-generators.html>

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



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

Customer Feedback:

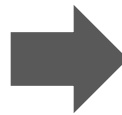
- ✓ Felt **more** prepared for PSPSs after they received batteries
- ✓ Felt **good** about the customer care provided and
- ✓ Provided **positive** feedback on the program

A young boy with light hair, wearing a plaid shirt and a backpack, stands with his arms raised in a gesture of joy or triumph. He is positioned in the center-right of the frame. In the background, several large wind turbines are visible against a clear blue sky. The image has a warm, slightly golden light, suggesting it might be late afternoon or early morning. A red graphic element is visible in the top right corner.

2022 PSPS Survey Results

Customer Survey Results

Q4 2020 Survey Participation	2020: October 27 ¹ – November 25	✓ 595 Total Surveys Completed ➤ 80 Phone Based Surveys ➤ 515 Web Based Surveys
Q4 2021 Survey Participation	2021: November 15 – December 5	✓ 579 Total Surveys Completed ➤ 74 Phone Based Surveys ➤ 509 Web Based Surveys
Q1 2022 Survey Participation	March 7 – March 21	✓ 581 Total Surveys Completed ➤ 80 Phone Based Surveys ➤ 501 Web Based Surveys
Q4 2022 Survey Participation	November 3 – November 19	✓ 607 Total Surveys Completed ➤ 80 Phone Based Surveys ➤ 607 Web Based Surveys <i>Included 30 critical customers</i>



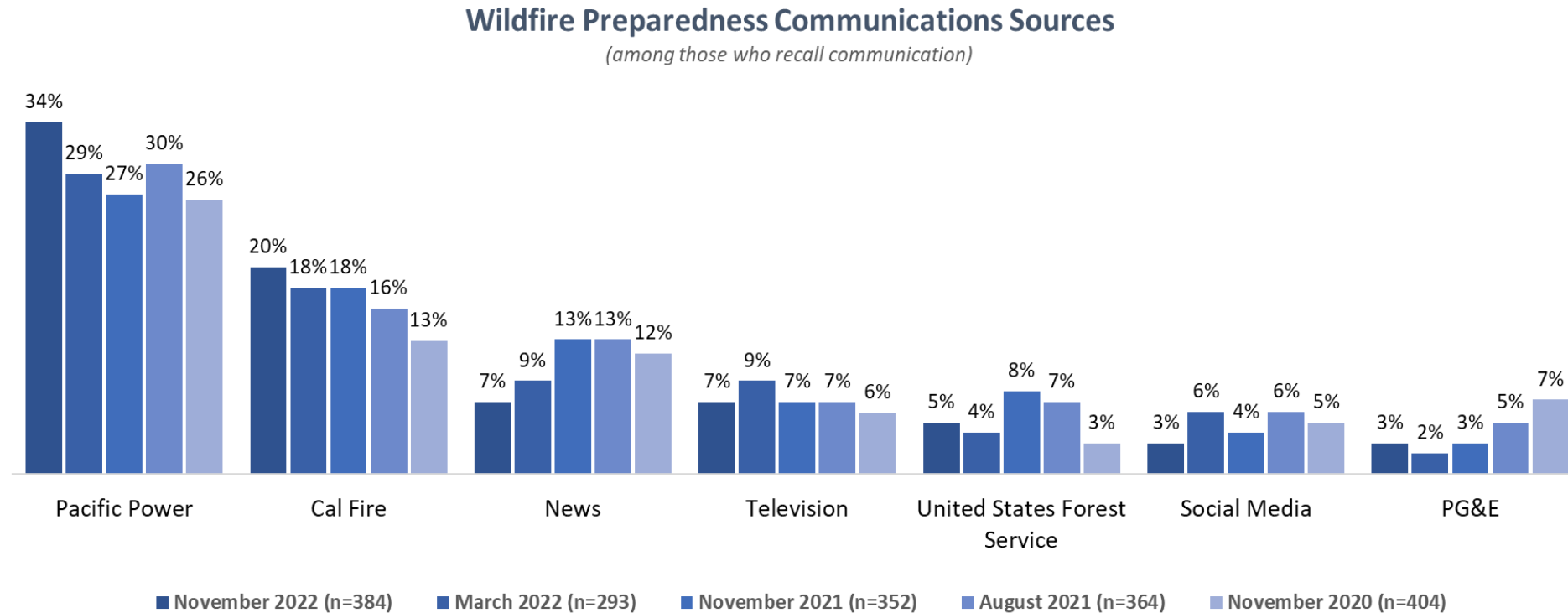
Objectives
<ul style="list-style-type: none"> • Measure awareness of Pacific Power messages related to wildfire preparedness • Identify recall of specific message topics • Identify recall of message channels • Measure recall and understanding of Public Safety Power Shutoff or PSPS • Evaluate sources customers are most likely to turn to for information about PSPS • Evaluate PSPS experience • Explore actions taken by customers to prepare for wildfire season • Measure awareness of Pacific Power's efforts to reduce the risk of wildfires

Key Findings
<ul style="list-style-type: none"> ✓ Most commonly recalled channels were e-mail, social media and TV news ✓ The Pacific Power website remains rated as the most useful and clear source ✓ 67% reported to be aware of wildfire safety communications, up from 58% ✓ 56% recall seeing, hearing, or reading the phrase "Public Safety Power Shutoff of PSPS", up from 52% ✓ 23% experienced a PSPS in the past year ✓ Among those reporting that they rely on electricity for medical needs, 1/4 are aware of additional notices

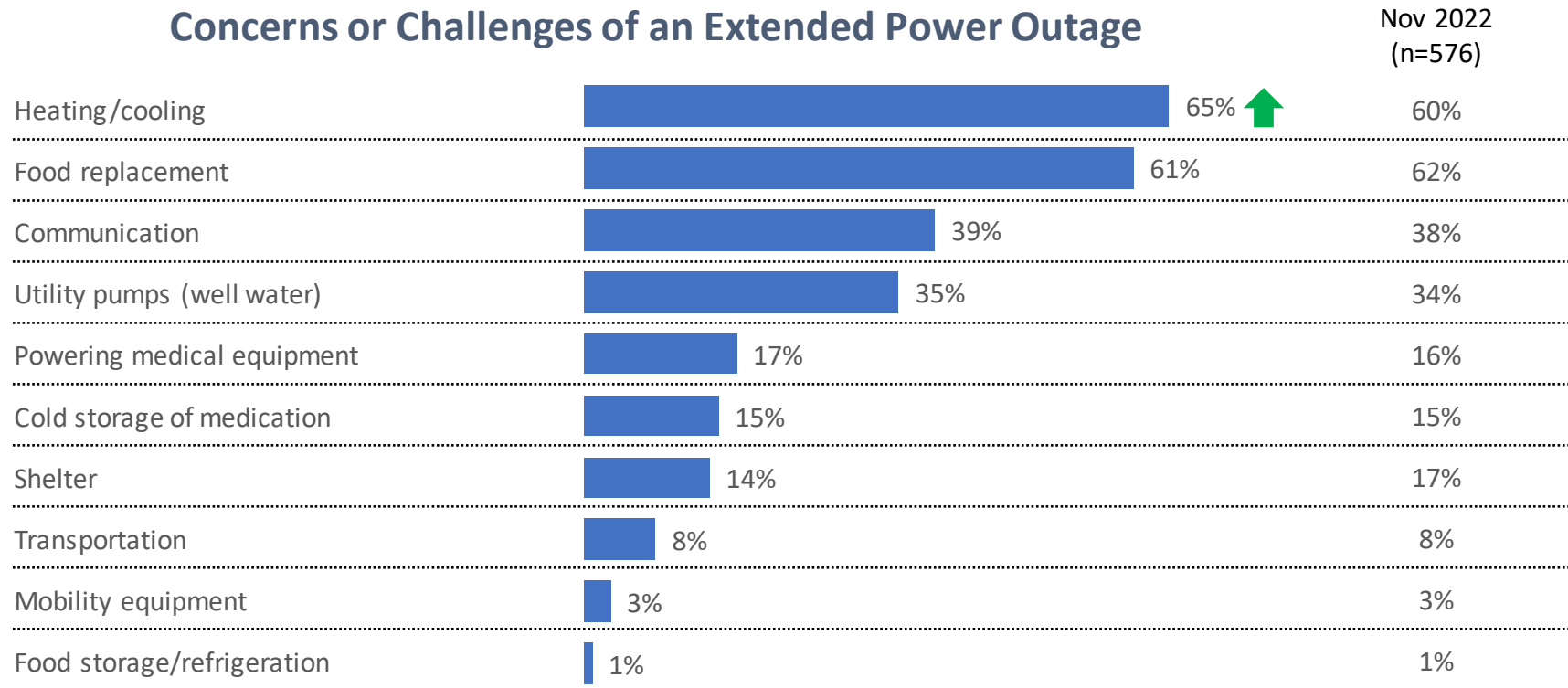
Recommendations
<ul style="list-style-type: none"> ✓ Continue utilizing TV news and social media to reach customers; evaluate cadence, as off-season awareness trends lower than post-season. ✓ Focus media and social media communications on driving customers to the website, as well as leveraging bill inserts to communicate quick highly important information, and to refer customers to the website for more detail. ✓ Focus communications on PSPS, how to be prepared and respond to an outage (including an emergency kit and readiness plan), and the steps Pacific Power is taking. ✓ Evaluate the current off-season messaging plan. <ul style="list-style-type: none"> ❖ Awareness of PSPS is down in March 2022 and mirrors May 2020, which awareness is much higher in previous August and November waves. ❖ Consider off-season messaging around steps Pacific Power is taking to mitigate risk and help customers prepare.

Customer Survey – Communication Sources

Pacific Power remains the most mentioned source of communication about wildfire preparedness (34%), statistically consistent with March 2022 (29%)



Extended Outage Concerns



A man in a light blue shirt is seen from the side, working at a desk with multiple computer monitors. The monitors display various financial data, including stock market tickers, bar charts, and line graphs. The scene is dimly lit, with the primary light source being the screens themselves. An orange horizontal bar is positioned at the bottom of the image.

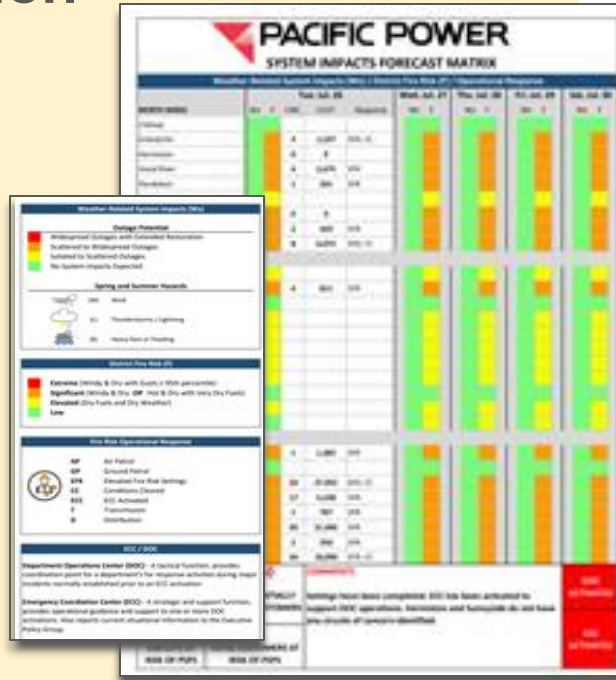
Elevated Fire Risk (EFR) Settings

Elevated Fire Risk (EFR) Settings

- Pacific Power is upgrading relays and reclosers (grid hardening)
- These upgraded devices are now capable of multiple types of settings or “modes”, including Elevated Fire Risk (EFR) settings
- While no two circuits are the same, EFR settings are designed to clear faults in **< 1 second** and limit arc energy, as compared to traditional schemes where clearing times can be 4-10 seconds

Risk-Based Application

- EFR Settings are deployed using a **risk-based** approach
- Daily reports are used to determine whether EFR settings are needed
- Standard outage notification and communication protocols are followed
- **Enhanced patrolling** performed during restoration



Outreach & Awareness

Press Release, July 24, 2022

PORTLAND - With daily high temperatures forecast to near or above the 100-degree mark next week across parts of the Pacific Northwest, Pacific Power is prepared to face higher demands on the grid from both record temperatures and increased customer need.

"We've taken steps for grid hardening, in particular since last summer, to prevent overloading at the substation level and on the distribution system," said Erik Brookhouse, vice president of system operations for Pacific Power. "We are confident about our network's readiness for this summer."

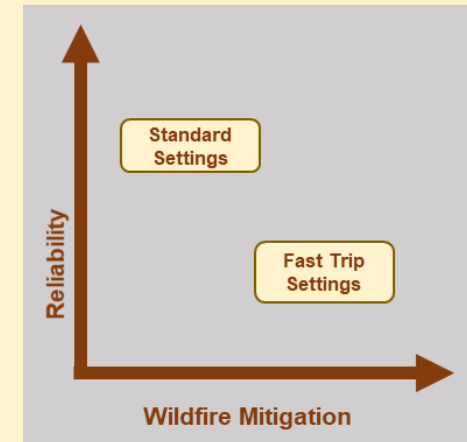
Wildfire conditions have elevated too and Pacific Power has taken additional safety precautions in high risk areas to reduce the risk of wildfire. Among other measures, the company is conducting additional patrols of power lines and temporarily modifying targeted system settings to be more sensitive.

- Operate the clothes dryer and dishwasher at night.
- If you have air conditioning, set it to maintain an interior temperature of 78 degrees, higher when you are away from home.

More electric energy information is available on Pacific Power's website at: www.pacificpower.net.

Deployment of CFCIs

- Risk based deployment of EFR settings can still have an inverse impact on reliability
- Deployment of CFCIs (fault indicators) **improves restoration time** and can **reduce impact** to customers



Thank You!