

Public Safety Power Shutoff (PSPS)

CALIFORNIA PUBLIC UTILITIES COMMISSION PUBLIC BRIEFING

August 2, 2022





Topics for Discussion

- 1 PSPS Preparedness**
- 2 PSPS Decision-Making Criteria and Modeling**
- 3 Public Safety Partner Coordination**
- 4 Customer Support and Resources**
- 5 Enhanced Powerline Safety Settings (EPSS)**

PG&E Presenters

Mark Quinlan

Vice President, Electric System Operations

Susie Martinez

Director, Liaison and Regulatory Operations and Engagement

Scott Strenfel

Director, Meteorology and Fire Science

Tracy Maratukulam

Director of Customer Engagement, Strategy and Programs

Eric Lamoureux

Deputy Director, Enhanced Powerline Safety Settings Program

PSPS Preparedness



Each year, we improve our PSPS Program to:

- Further refine our ability to identify and mitigate catastrophic wildfire risk
- More precisely target PSPS through infrastructure and meteorological advancements
- Further reduce customer impacts through expanded resources and support
- Provide backup power to Community Resource Centers and critical facilities and install temporary generation microgrids to maintain service to our customers

**We are building on improvements from previous years
and continuing to make our system safer and more resilient.**



Year-Over-Year PSPS Comparison

PSPS impacts have declined significantly through new, advanced technologies and improvements to the electric system infrastructure.

| Event Details | 2019 | 2020 | 2021 | 2021 Comparison to 2020 |
|--|-----------|---------|---------|--|
| PSPS Events | 7 | 6 | 5 | 17% fewer outages |
| Customers Impacted | 2,014,000 | 653,000 | 80,400 | 88% fewer customers impacted |
| Average Number of Counties Impacted | 17 | 17 | 10 | 41% fewer counties impacted |
| Average Outage Duration (hours) | 43 | 35 | 31 | 11% less time without power |
| Average Outage Restoration Time (hours) | 17 | 10 | 12 | 20% increase in restoration time |
| Damage/Hazards | 722 | 257 | 442 | (13% decrease in restoration time when excluding January PSPS event) |
| Peak Wind Gusts | 102 MPH | 89 MPH | 102 MPH | |
| Potential Impacted Acreage Prevented | 3.5M | 912K | 691K | |
| Potential Damaged Structures Prevented | 280K | 196K | 86K | |

97% notification accuracy

98% Medical Baseline notification accuracy

Address Alerts launched SMS text in 16 languages for customers and non-customers



Continuing to Expand Short- and Long-term Mitigation Efforts

| PROGRAM | COMPLETED THROUGH 2021 | PLANNED IN 2022 | COMPLETED IN 2022 |
|---|---------------------------|-------------------------|------------------------|
| > Undergrounding Our Lines Undergrounding powerlines to reduce wildfires caused by equipment | 120 Miles | 175 Miles | 75 Miles |
| > Overhead System Hardening Installing stronger poles and covered powerlines and conducting line removals | 741 Miles | 470 Miles | 282 Miles |
| > Enhanced Powerline Safety Settings Enhanced safety settings detect powerline faults and help prevent wildfires | ~11,500 Miles* | ~44,300 Miles* | ~43,500 Miles* |
| > Weather Stations Better predicting and responding to severe weather threats | 1,313 Stations | 100 Stations | 43 Stations |
| > High-Definition Cameras Monitoring and responding to wildfires through increased visibility | 502 Cameras | 98 Cameras | 53 Cameras |
| > Enhanced Vegetation Management Addressing vegetation that poses a higher potential for wildfire risk | 6,359 Miles | 1,800 Miles | 1,066 Miles |
| > Sectionalizing Devices and Transmission Switches Separating the grid into smaller sections and narrowing the scope of PSPS | 1,209 Devices/Switches | 115 Devices/Switches | 38 Devices/Switches |
| > Temporary Distribution Microgrids Keeping customers energized during a Public Safety Power Shutoff | 8 Sites | 5 Sites | 13 Sites** |

Data as of 07/23/2022

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

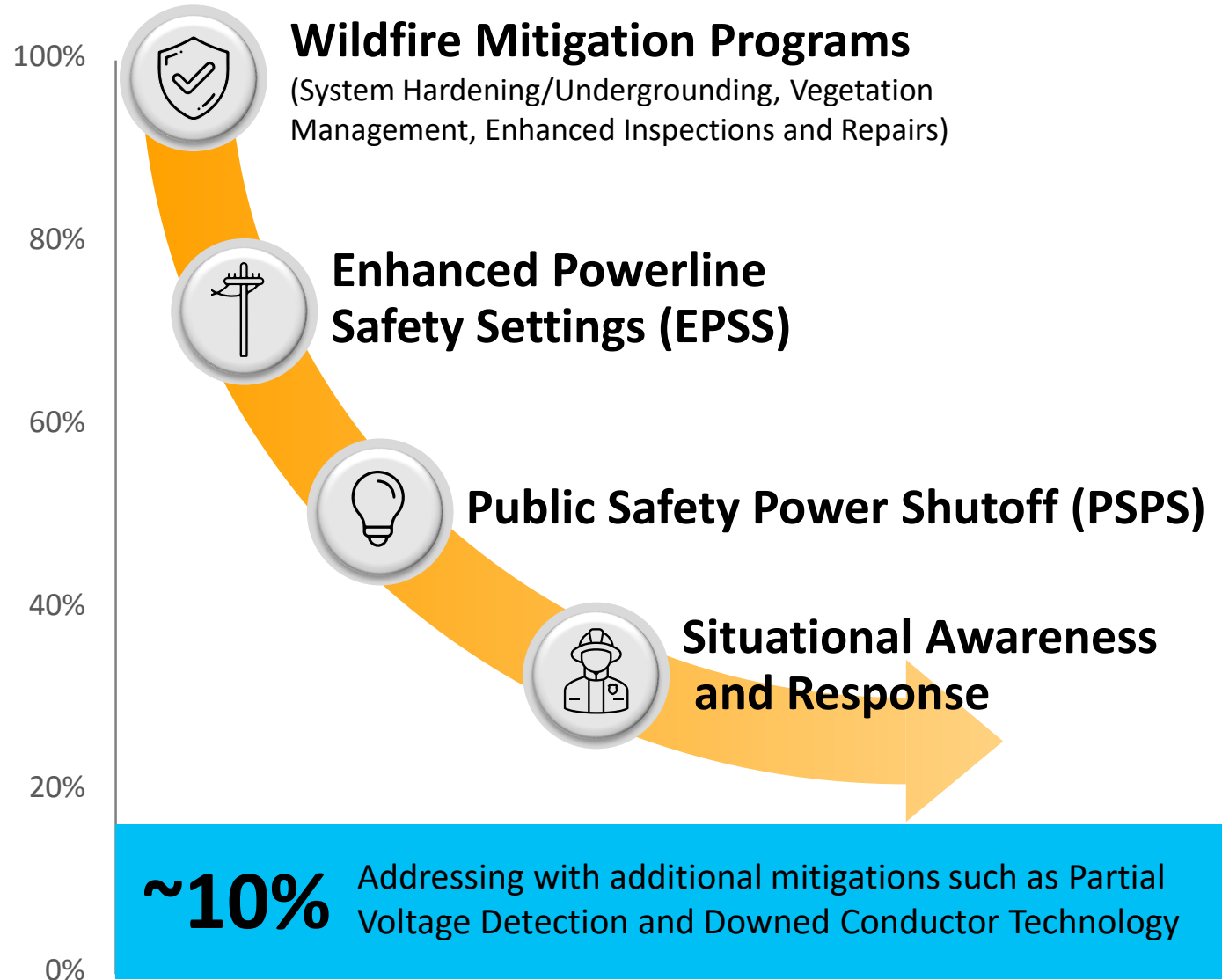
*Circuit-capable miles

**Planned for readiness by Oct. 1



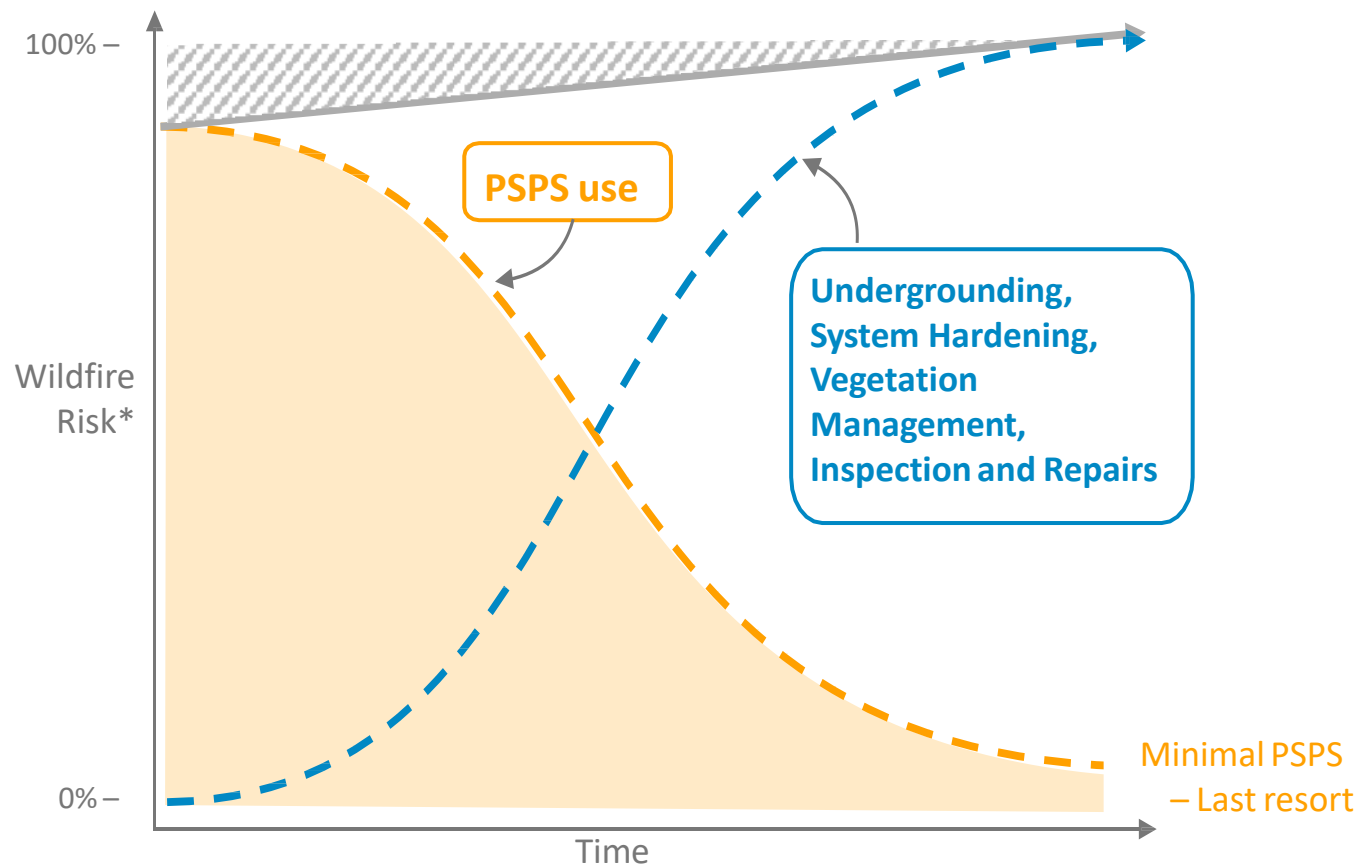
Layers of Protection...

PG&E actions
have mitigated
~90%
of wildfire risk



...Mitigating Ninety Percent of Risk Today

With efforts like undergrounding and system hardening, **PSPS as a measure of last resort will continue to decline.**



Data is approximate

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

PSPS Decision-Making and Criteria



What Conditions Could Lead to a PSPS?



Low humidity levels 30% and below



Forecasted high winds above 19 mph and gusts above 30-40 mph



A Red Flag Warning issued by the National Weather Service



Condition of dry material on the ground and low moisture content of vegetation



On-the-ground, real-time observations

Transmission-Level PSPS Decision-Making Process

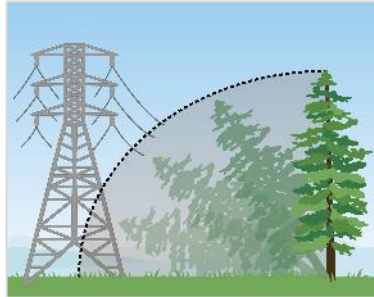
We also review the transmission lines that traverse those areas where meteorology has identified severe weather conditions.



Asset Health & Vegetation Risk



Induction Assessment



Enhanced Tree Strike Model



Wind Speed Threshold



CAISO Coordination



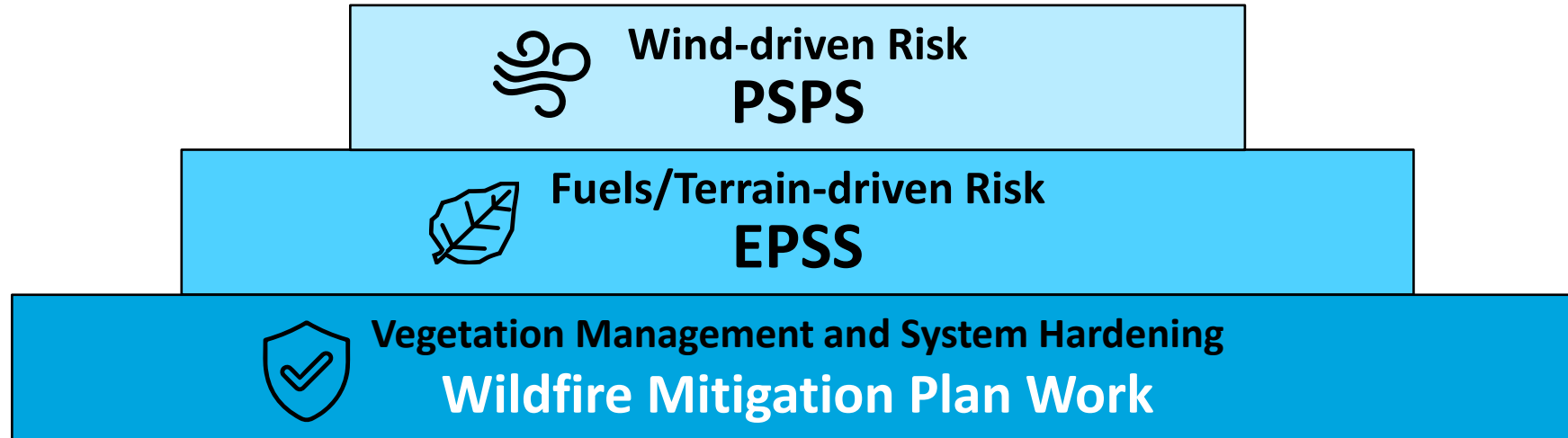
Public Safety Impact

Safety Shutoff Decision is made on a transmission structure level that intersects within a weather footprint

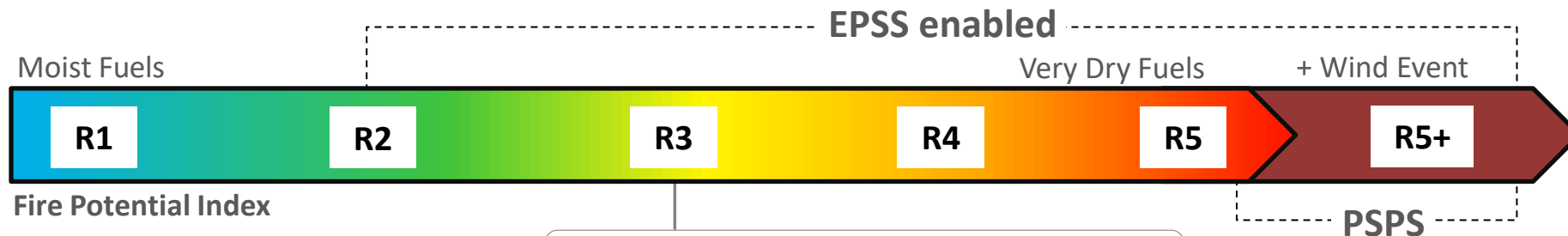


An Adaptive, Systematic, Risk Mitigation Approach...

PG&E has continued to adapt to California's changing wildfire risk profile.



EPSS and PSPS address a significant portion of the wildfire risk



In 2012-2020, 95% of acres burned and 100% of structures burned occurred under R3 or greater conditions.

...Layers of Protection

Public Safety Partner Coordination





Public Safety Partner Outreach and Engagement

2022 TARGETED ENGAGEMENTS

| | COMPLETED IN 2022 |
|--|----------------------|
| > CWSP Advisory Committee Expanded to focus on all CWSP initiatives | 2 |
| > Regional Working Groups Continuing to provide a forum for regional and tribal stakeholders to discuss PSPS and wildfire safety work | 10 of 20 |
| > Local Government Forums Individualized meetings with cities and counties to discuss PSPS and local issues of importance | 105 |
| > PSPS Exercises and Seminar Conducting a PSPS-focused seminar and continuing exercises to simulate a PSPS with external partners | 5 |
| > Tribal CWSP Webinar Hosted with all tribes in our service area to gather feedback and discuss PSPS and wildfire safety | 1 |
| > Public Safety Partner Webinars Hosting segment-specific meetings to gather feedback and discuss PSPS and wildfire safety | 3 of 5 |
| > Additional PSPS Briefings & Workshops Continuing to host ad hoc meetings and workshops to improve our PSPS Program | 121 |

In-Event Communications

- **Texts, emails and phone calls** throughout the event
- **Situation reports, outage maps, customer lists** via the Portal
- **State Executive Briefing** with state agencies
- **Systemwide Cooperators Calls**
- **Cooperators Communications** with counties and tribes
- **Agency Representative** assigned to each county/tribe in scope; embedded support is also offered
- **Third-party representative** may request to observe PG&E's virtual EOC
- **Notifying Public Safety Answering Points (PSAP)**
- **Critical Infrastructure Lead** single point of contact in the EOC

**First/emergency responders at the local, state, tribal and federal level, water, wastewater and communication service providers, affected community choice aggregators, publicly-owned utilities/electrical cooperatives, the CPUC and the Cal OES and CALFIRE*

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

2022 Refinements and Updates

- **Automating** data uploads
- **Reducing** data refresh times
- **Improving performance** for routine maintenance activities
- **Increasing stability** and computing speeds through use of cloud-based environment
- **Reducing time** to notify users that new geospatial information is available
- **Increasing our ability** to update outage maps with changes to event scope or customer impacts

Education and Preparedness

- **Training sessions** planned for August through October
- **The portal** was utilized during the PSPS full-scale exercise to test new developments and end-to-end processes

Critical Customers and Facilities

- Engaged with **~2,600 critical customers, counties and tribes**
- **Conducted resiliency collaborative meetings** with telecommunications providers
- **Dedicated PG&E contact** for telecommunications providers to address real-time issues
- **Targeted outreach** to small water agencies
- **Weekly collaboration** with the California Hospital Association and Hospital Council
- **Hosting segment-specific preparedness webinars:**
 - Community-choice aggregators
 - Telecommunications providers
 - Water agencies
 - Transmission customers
 - Hospital and healthcare providers
- **Ongoing coordination** with the Association of California Water Agencies, Hospital Council of Northern and Central California, and the California Hospital Association
- **Meetings with 12 hospitals** at higher risk of PSPS to discuss permanent resiliency solutions

Customer Support and Resources



Customer Outreach and Engagement

- ✓ **60M+** Digital and social media impressions
- ✓ **7,784** Radio and television ads (4,461 broadcast and cable; 3,323 radio)
- ✓ **141** Social media posts, **reaching 1.3M customers**
- ✓ **71** Emails & Direct mail items
- ✓ **37** Collateral and fact sheets
- ✓ **20** Customer webinars completed (22 planned)
- ✓ **1** Bill insert

During a PSPS Outage, we will share updated information to help customers prepare and plan through:

- Press conferences
- Social media posts
- Email, phone call and text message
- Address alerts via phone and text
- Our website
- Media briefings



Expanding Access and Enhancing Customer Support

PROGRAM

2022 IMPROVEMENTS

> Community-Based Organization Partnerships

Support and resources for all interested vulnerable customers

- Expanded network of 78 community-based organization partnerships in all counties
- Partnering with accessible transportation agencies on transportation options
- Additional resources identified by AFN Collaborative Planning team (CRC improvements, additional CBO training, battery solutions for medications)

> Food Resource Partnerships

Resources to replace food lost during PSPS

- Partnering with ~50 organizations serving all counties potentially impacted by PSPS (26 Meals on Wheels partnerships in 22 counties, 23 food bank partnerships in 37 counties)

> Portable Batteries

Batteries available to all interested/qualified Medical Baseline and electricity-dependent AFN HFTD customers

- Distributing ~6,000 batteries to Medical Baseline and electricity dependent AFN customers (~14,470 total distributed to date; goal of ~19,000 by 2022 year-end)
- Expanded eligibility to non-income qualified Medical Baseline customers in HFTDs (total scope of ~29,000 customers)

> Generator and Battery Rebate Program

Rebates available for all PSPS/EPSS impacted customers in HFTDs

- Adjusted tiered rebate amounts to support ~1,300 customers with rebates (853 provided to date in 2022, 2,076 since program inception)
- Expanded eligibility to all customers in HFTDs or served by an EPSS circuit AND have experienced 2 or more PSPS events.
- Backup Power Transfer Meter pilot to cover costs for ~1,500 customers (64 to date in 2022)

> Multi-Solution Partnerships

Service-area wide, full-service solutions for individuals with Access and Functional Needs

- Building awareness through radio and direct to customer outreach and launching 2-1-1's proactive care coordinator program



Medical Baseline Marketing and Outreach Activities

PG&E is encouraging customers to participate and enroll in the Medical Baseline Program using targeted outreach.

| Activities | Channel(s) | Target Audience | Timing |
|---|--|--|-----------|
| MBL Digital Media Ads | Google, Facebook, Nextdoor | Adults age 45+ | March-Oct |
| MBL Acquisition Campaign | Email & direct mail | Customers most likely eligible for MBL based on PG&E's proprietary MBL propensity model | Apr - Jul |
| MBL Acquisition Residential Bill Inserts | Bill inserts | All residential customers | June |
| MBL Radio Ads | Radio | Adults age 45+ | June-Oct |
| MBL TV Ads | Pilot campaign in Spanish with Univision | Pilot campaign in Spanish with Univision targeting Sacramento, Stockton, Modesto, Chico, and Redding | June-Oct |

Medical Baseline Campaign Statistics

| | 2021 COMPLETE | 2022 PROGRESS |
|---|---------------|---------------|
| Total Channel Count | 23 | 14 |
| Direct Mail Customers Reached | 2,463,629 | 2,130,464 |
| Email Customers Reached | 2,317,955 | 4,129,053 |
| Bill Insert Customers Reached | 11,016,000 | 3,000,000 |
| Digital Media Total Impressions | 128,745,568 | 15,449,348 |
| Digital Media Total Conversions (Clicks) | 317,645 | 40,686 |

Data as of July 22, 2022

What We're Doing In 2022

- **Providing specialized materials, mailers and phone calls** to customers eligible for our Medical Baseline program
- **Updating contact information for Medical Baseline Customers**
- **Conducting ADA accessible webinars** (with closed captioning available in Spanish, Chinese and English)
- **Hosting webinars for organizations** that serve persons with disabilities and/or access and functional needs
- **Partnering with over 200 CBO Informational Partners** to amplify preparedness messaging and awareness of resiliency resources
- **Providing program material** in sixteen languages and Braille and developing videos in American Sign Language
- **Encouraging customers to self-identify as AFN**
- **Developing targeted radio and social media** to highlight applicable programs/resources
- **Issuing AFN specific PSAs** before and during PSPS
- **Partnering with leaders** from mandated minimum parties named in Phase 3 with responsibility for access and functional needs populations



Enhancing Our PSPS Emergency Website

What's New in 2022

- **Pop-up notice** directing customers with a slower internet connection to our low-bandwidth tools
- **Power restored message** shown by address up to 48 hours after power is restored
- **Increased ability to zoom** in and out on our outage map

What's Upcoming in 2022

- **New PSPS landing page** with a focus on Access and Functional Needs (AFN) resources, including 2-1-1
- **Updated Resource Center (CRC) page**
- **Phase tracker** by address to let customers know where they are in the restoration process
- **Streamlined navigation** to get customers to PSPS resources more quickly
- **Aligned content** with customer vs. partner needs

Current Outage Status:

Power is off !
Current As Of: 05/19/2022, 5:05pm PST

[Get Notifications](#)
[Stay Safe During Outages](#)
[Find Charging, Wifi, & Ice](#)

! **Inspections are underway to ensure it is safe to restore power.** [Close](#)

| | |
|-----------------------|-----------------------------|
| Start time | May 19 9:00 AM - 11:00 AM |
| Estimated Restoration | May 20 11:00 PM |

Customers Affected 16

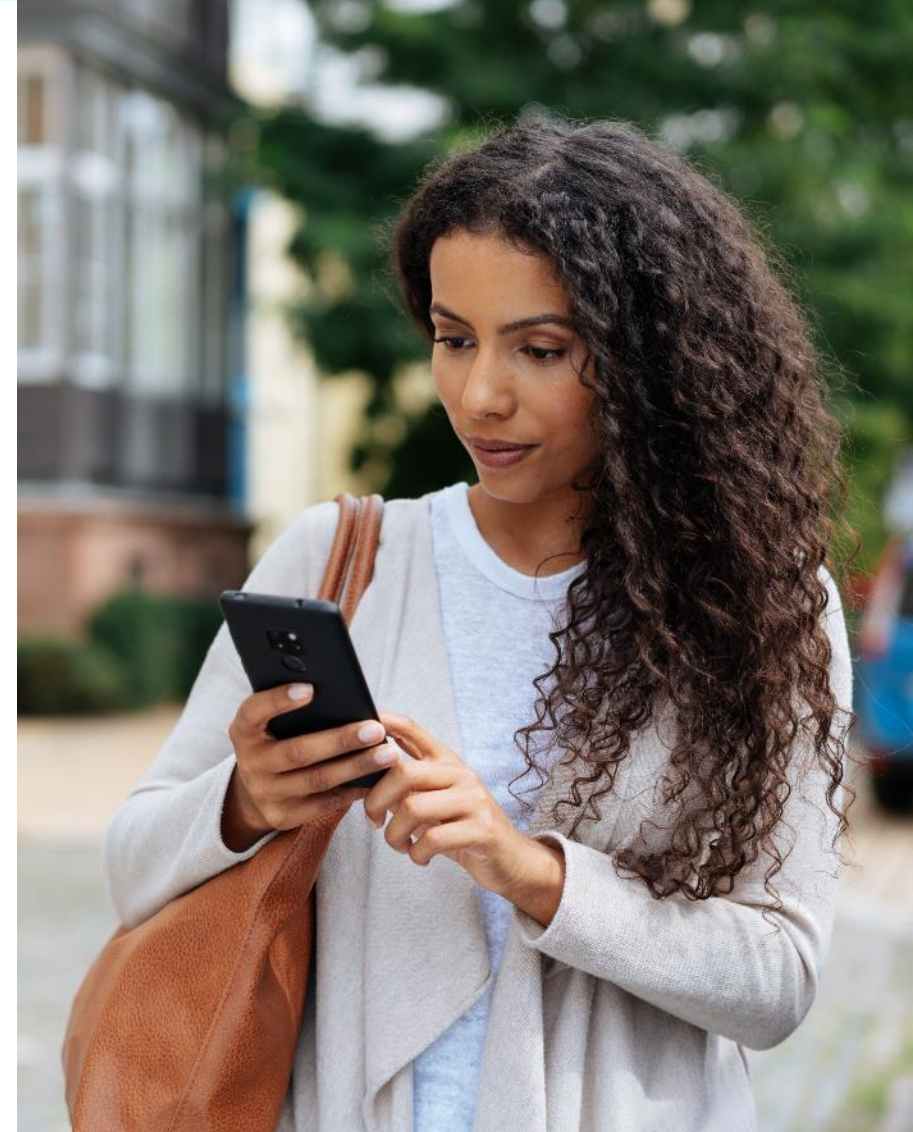
Due to high winds and dry conditions, power in your area has been turned off to help prevent a wildfire. Once weather has improved, we will begin inspecting power lines and equipment for possible damage. Power will be restored as soon as it is safe to do so.

- Power Shutoff
Your power is shut off for wildfire safety.
- Inspections and Repairs**
Inspections and repairs are currently being done to ensure safety.
- Power Restored
Your power is now restored.

We are improving our notifications based on feedback received from customers.

2022 IMPROVEMENTS

- **Enhancing notification tools** to improve the accuracy of notifications
- **Improving our processes to confirm resources** are in place two hours ahead of the planned de-energization time
- **Updating our “courtesy policy” notification approach**
- **Updating notification language** to be more specific and highlight 2-1-1 customer resource
- **Refining our outage alert notification tool** to provide more precise updates



2022 CRC Improvements

- **Partnering with accessible transportation agencies** on expanding transportation options to and from CRCs
- **Piloting process for customers to leave medical devices at CRCs** for charging during operating hours
- **Driving increased awareness of CRCs** through pre-season marketing, social media and local radio ads
- **Providing printed materials in large print** in addition to 16 languages and Braille
- **Increasing customer service staff training** to serve visitors with access and functional needs

✓ **112** Indoor Sites

✓ **281** Outdoor Sites

How We Gather Feedback

Solicited feedback on CRC sites from tribes and counties in our service territory

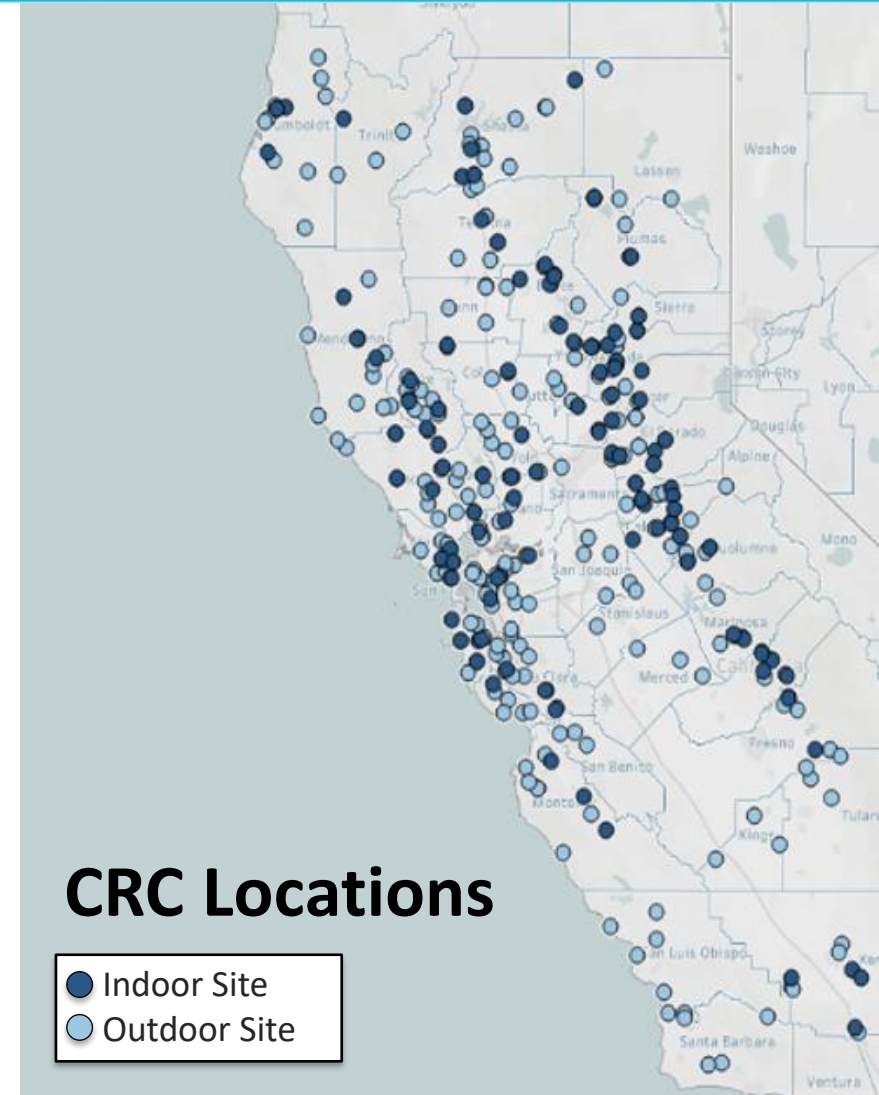
Reviewed portfolio of sites for gaps and opportunities for improvement based on PSPS modeling

CRC Locations and Resources

| Details/Resources | Indoor Indoor site (i.e. library, school) | Outdoor Open air tents at outdoor site |
|-------------------------------------|---|--|
| COVID-19 Health and Safety Measures | ✓ | ✓ |
| ADA-Accessible Restroom | ✓ | ✓ |
| Heating and Cooling | ✓ | |
| Device Charging* | ✓ | ✓ |
| Wi-Fi Service | ✓ | ✓ |
| Bottled Water | ✓ | ✓ |
| Non-Perishable Snacks | ✓ | ✓ |
| “Grab-and-go” resource offerings** | ✓ | ✓ |
| Tables and Chairs | ✓ | ✓ |
| Bagged Ice | ✓ | |
| Blankets | ✓ | ✓ |
| Security Personnel | ✓ | ✓ |
| Cellular Coverage | ✓ | ✓ |
| Customer Service Staff | ✓ | ✓ |
| Wind/Weather-Resistant | ✓ | |
| Privacy Screens | ✓ | |

* Medical device charging will be prioritized in times of high demand

** Grab-and-go bag contains device charger, water, snack, blanket and info card



Standard operating hours at all CRCs: **8 AM - 10 PM**

Enhanced Powerline Safety Settings





EPSS Year-To-Date Progress

| CUSTOMERS PROTECTED | MILES PROTECTED | CIRCUITS PROTECTED | DAYS OF PROTECTION | OUTAGES RESTORED | AVG. OUTAGE LENGTH | CUSTOMERS ON AVG. IMPACTED PER OUTAGE | UNIQUE CUSTOMERS IMPACTED |
|---------------------------|------------------------|--------------------------|------------------------|-----------------------|--|---------------------------------------|---------------------------|
| 1.8M+ Customers | ~44.3K Miles | 1,015 Circuits | 148 Days YTD | 861 Outages | ~3.2 HRS Average (52% better than 2021) | ~873 Customers | ~466K Customers |

| | | | | |
|-------------------------------|--------------------------------|-------------------------------|------------------------------|--|
| CIRCUITS EXPERIENCING: | 0 outages: 607 (60%) | 1 outage: 206 (20%) | 2 outages: 91 (9%) | 3 or more outages: 111 (11%) |
|-------------------------------|--------------------------------|-------------------------------|------------------------------|--|

Data as of July 21, 2022

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

Thank You



Appendix



Lessons Learned from the full-scale exercise on 6/13 – 6/17

What Worked Well

> System-Wide Event

- 40 counties
- 18 PG&E Divisions
- 400K+ customers

> Partnership: External partner engagement including 48 external contributors from 14 partner agencies. Partners included

- Cal OES
- California Department of Water Resources
- SCE
- 194 external observers

> Complexity: Addition of a wildfire incident overlying the PSPS to add realistic stress and challenge to the response

Education and Preparedness

> Enhancing the ability of the PSPS viewer

> Refining the restoration playbook

> Improving pre-and in-exercise communications



Expanding Resource Partnerships for Vulnerable Customers

We have expanded our support for customers with Access and Functional Needs, with more partnerships and resources.

| PROGRAM | PLACES/SERVICES INCLUDED | COUNTIES SERVED |
|--|--------------------------|-----------------|
| > California Foundation for Independent Living Centers (CFILC) | 16 Centers | 48 Served |
| > Meals on Wheels | 26 Organizations | 22 Served |
| > Food Banks | 22 Organizations | 37 Served |
| > Portable Battery Program Providers | 6 Providers | 42 Served |
| > In-Language and Additional Partnerships | 12 Services | 21 Served |



Providing More Support For Vulnerable Customers During a PSPS

Medical Baseline Program (MBL)

Assists residential customers who rely on power for certain medical needs.

If customers don't qualify for MBL

Vulnerable Customer Status (VCS)

Customers that have an individual in the household with a serious illness or condition that could become life threatening if service is disconnected can self-certify.

If customers don't qualify for VCS

Electricity Dependent

Customers who are at an increased risk of harm to their health, safety and independence during a PSPS, can self-identify.

Additional PSPS notifications and doorbell rings



Medical Baseline Healthcare Outreach

PG&E recognizes that ongoing engagement with healthcare practitioners, medical associations, and medical device suppliers is a key opportunity to increase enrollment in the Medical Baseline Program.

- PG&E, SCE, SDG&E and SoCalGas provided an **Annual MBL Training to In Home Support Services Providers (IHSS)** and provided online MBL resources
- PG&E, SCE, and SDG&E presented a **webinar to the Hospital Association** which included information on PSPS, MBL and other resources
- PG&E also engaged with the following **healthcare industry and durable medical equipment partners:**
 - Plumas District Hospital
 - California Association of Health Facilities (CAHF)
 - Marysville Medical Clinic
 - CA Physicians' Assistant Board
 - Owens HealthCare and Durable Medical Equipment Company
 - We Care Home Assistants LLC

