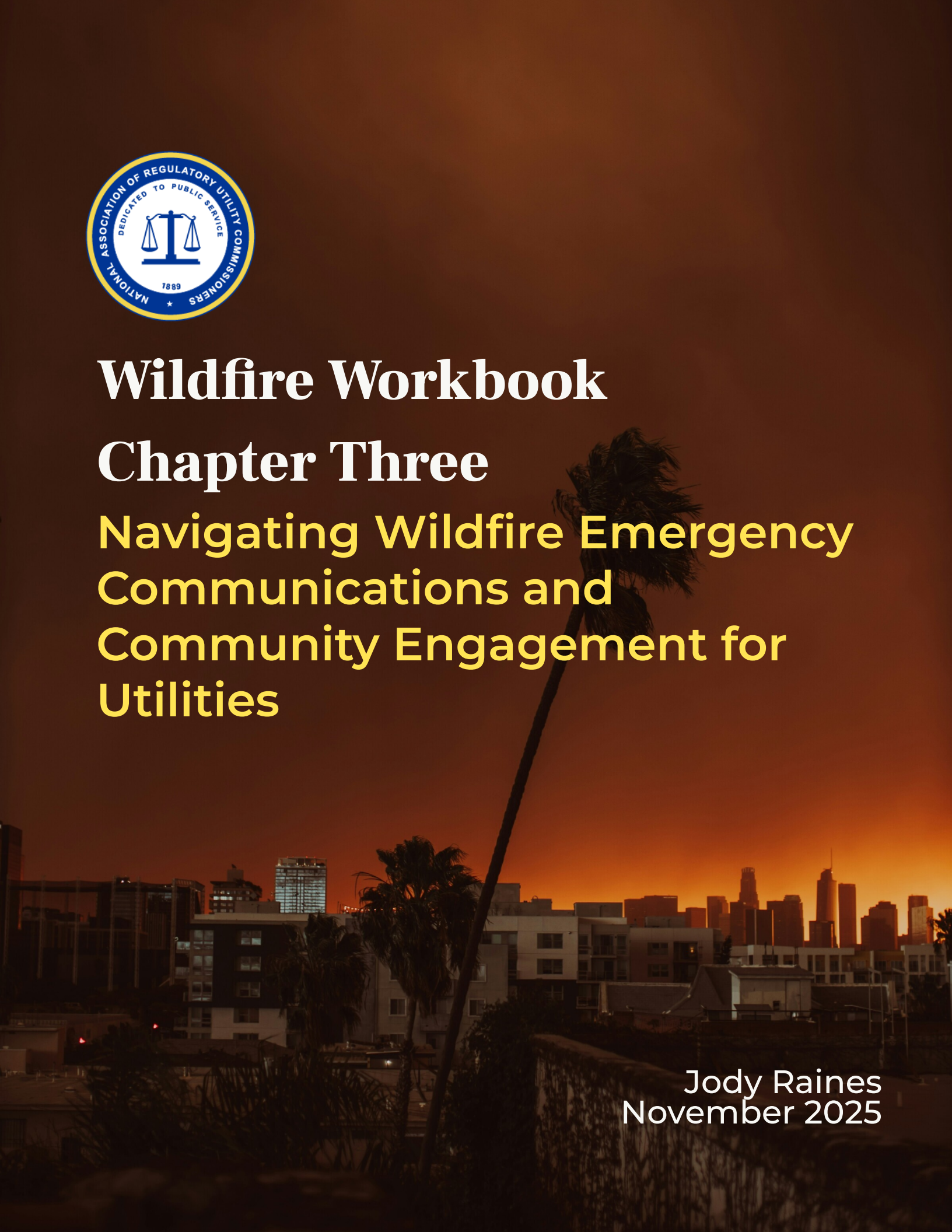

Wildfire Workbook

Chapter Three

Navigating Wildfire Emergency Communications and Community Engagement for Utilities

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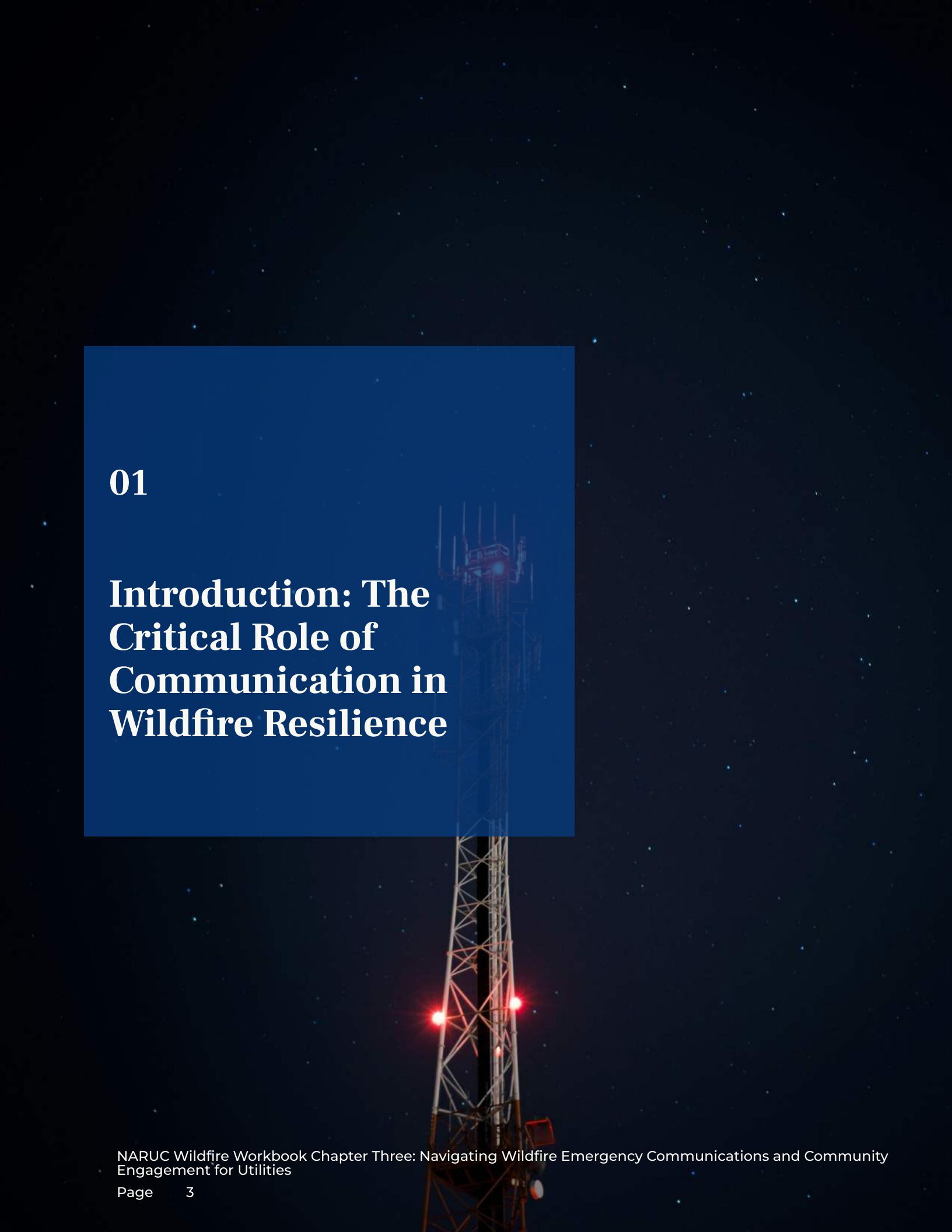
Table Of Contents



01

Introduction: The Critical Role of Communication in Wildfire Resilience

Wildfires represent an escalating and complex threat, intensified by the impacts of dry weather, strong winds, fierce storms, and the expanding wildland-urban interface (WUI). This evolving landscape necessitates a profound shift in how utilities approach emergency communications, moving beyond traditional outage notifications to embrace comprehensive public safety messaging. For utility regulators, an understanding of these communication protocols and community engagement practices is paramount for effective oversight, informed policy development, and ensuring that utilities consistently meet their fundamental public safety obligations. This chapter should provide both a high-level overview and deeper explorations into specific aspects, offering practical examples and templates for actionable insights.

Effective communication is a foundational pillar of wildfire resilience. It directly influences public safety, the protection of property, the maintenance of utility reputation, and adherence to regulatory compliance. As the frequency and intensity of wildfire events continue to grow, the ability of utilities to communicate clearly, consistently, and promptly can mean the difference between life and death during rapidly developing emergencies. This report will delve into the essential components of such communication, providing a framework for regulators to assess and guide utility preparedness.

02

Foundational Principles of Wildfire Emergency Communications

A. The Evolving Threat Landscape and Communication Imperatives

The dynamics of wildfires are undergoing significant transformation. Fast-moving fires, fueled by dry vegetation and propelled by high winds, drastically reduce the critical window available for alerting affected populations. In these high-velocity scenarios, precision, uniformity, and timeliness of communication become vital for ensuring public safety. Utilities operate within a complex and constantly shifting environment, facing challenges that span from accurate risk assessment to stringent regulatory compliance. This implies the adoption of robust strategies and, increasingly, advanced technological solutions.

Several core imperatives emerge for utilities in this challenging context:

First, proactive risk identification is essential, especially in wildfire prone geographic areas. Utilities are striving to develop and implement capabilities to assess the likelihood of wildfire ignition and spread in near real-time. This involves integrating granular data from enhanced weather stations, wildfire cameras, and sophisticated satellite systems, such as NASA's Fire Information for Resource Management System. This strategic shift enables utilities to transition from merely reacting to incidents to proactively managing wildfire risks.

Second, another priority is maintaining real-time situational awareness. In order to make informed decisions regarding actions such as implementing changes in recloser settings, de-energizing power lines through Public Safety Power Shutoffs (PSPS), rerouting power, and deploying emergency resources effectively, utilities need excellent situational intel. A comprehensive operational support system is one that integrates diverse data streams, including detailed weather forecasts, fire spread predictions, and granular infrastructure data, to provide a holistic view of the evolving situation.

Third, organizational commitment is key. Effective wildland fire safety and communication are not the exclusive domain of front-line field crews or dedicated safety managers. These efforts demand commitment at every level of the organization, from executive leadership setting strategic priorities down to individual contractors implementing daily protocols.

A critical observation for regulators is the profound interconnectedness of mitigation efforts and communication capabilities. Utilities are making substantial investments in strengthening their physical infrastructure, such as replacing bare overhead power lines with covered conductors, installing fast-acting fuses, and undergrounding distribution lines in high-risk areas.

Concurrently, they are deploying advanced monitoring technologies, including expanded weather station networks, wildfire cameras, and machine learning for more accurate forecasts, alongside systems for **Early Fault Detection** (EFD) **and Rapid Earth Fault Current Limiters** (REFCL). While these initiatives are primarily designed to prevent fires or minimize their impact, they also fundamentally enhance the quality and timeliness of information that utilities can, and must, communicate. For instance, more precise weather data and early fault detection enable more targeted and accurate PSPS decisions, which in turn leads to more credible and actionable public alerts.

These tools create an opportunity for a powerful feedback loop where robust mitigation efforts directly strengthen communication effectiveness. With these tools, communication strategy serves as an integral and direct component of a utility's wildfire mitigation and resilience strategy, not as a separate and isolated function.

When evaluating utility investments in advanced infrastructure and monitoring technologies, state regulators can consider these investments not solely for their direct risk reduction benefits, but also for how they enhance the utility's ability to provide timely, accurate, and actionable public safety communications.

B. Core Principles for Effective and Accessible Messaging

Effective emergency messaging hinges on several core principles to ensure public understanding and appropriate action during wildfire events.

Clarity and consistency are non-negotiable. Alert and warning language must be unequivocally accessible and consistent across all communications. The use of inconsistent operational jargon significantly diminishes message effectiveness and public understanding, potentially impeding immediate and appropriate action.

A significant challenge arises from the paradoxical effect of jargon on public trust. Regulators must consider not only verifying that communication channels exist, they must also assure that utilities' communication plans adhere to plain language principles, consistency in terminology, and potential impact on public trust and compliance. This requires evaluating not just what is communicated, but how it is communicated, and whether it genuinely empowers the public to take appropriate action.

To combat confusion and enhance public response, the federally appointed Wildland Fire Mitigation and Management Commission, in its "On Fire" report, strongly recommends standardized wildfire terminology and protocols across all communities. The National Fire Protection Association's (NFPA) Educational Messages Advisory Committee (EMAC) specifically recommends the use of "clear, simple, accurate, technically sound, and, whenever possible, positive messaging" for emergency alerts. NFPA 1616 (now consolidated into NFPA 1660) explicitly calls for "uniform procedures for clear, consistent, recognizable, and accurate communications".

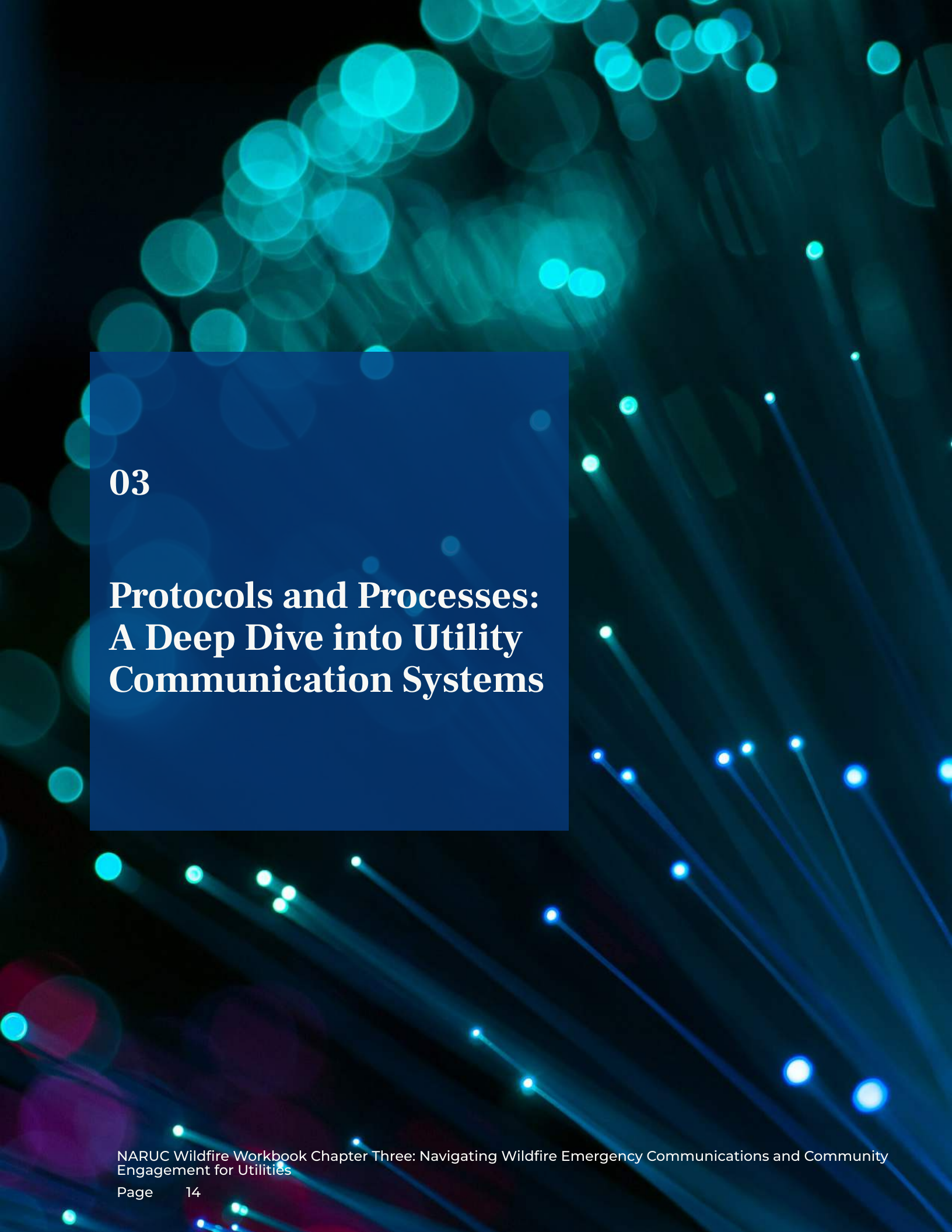
Examples of standardized approaches include the "Ready, Set, Go!" Program, developed by the International Association of Fire Chiefs, which provides a clear, three-tiered framework for wildfire alerts and warnings: "ready status" (prepare), "set status" (be ready to evacuate), and "go status" (evacuate immediately). Similarly, various authorities, including Oregon, the US Forest Service (USFS), and the Washington Association of Sheriffs and Police Chiefs (WASPC), employ multi-level systems. For instance, Level I alerts might mean "evacuation or protection alert" (USFS) or "be ready to evacuate" (Oregon); Level II indicates an "evacuation warning or notice" (USFS) or "be set to evacuate" (Oregon); and Level III signifies "go now" or immediate evacuation (Oregon).

Utilities should employ a multi-modal method of delivering messages, as relying on a single communication channel is inherently insufficient given the varied circumstances of emergencies and public access. An effective communication strategy necessitates combining diverse modes: Wireless Emergency Alerts (WEAs), reverse 911, opt-in text messaging, social media, emails, dedicated apps, radio, television, and sirens. WEAs, a component of FEMA's Integrated Public Alert and Warning System (IPAWS), are particularly powerful as they are geotargeted and, crucially, do not require recipients to opt-in. From 2012 to 2022, nearly a third of all non-National Weather Service WEAs were issued for wildfires, underscoring their significance. WEA messages are character-limited (90 or 360 characters, depending on the device) and can include a URL or hyperlink for additional information, offering a pathway to more detailed guidance. Utilities like Southern California Edison (SCE) have established centralized "Wildfire Communications Centers" to serve as a hub for all wildfire safety and Public Safety Power Shutoff (PSPS)-related customer communications, offering content in multiple languages. Customers are actively encouraged to sign up for PSPS alert notifications, which are delivered via their preferred method: email, text, or phone. Industry bodies like the American Public Power Association (APPA) provide valuable resources such as their "Public Power Storm Communications Guide," which offers detailed tips, best practices, and sample messages tailored for various communication channels before, during, and after adverse weather events.

Finally, understanding your audience cannot be overestimated. Messages must be tailored to the specific target audience, taking into account their unique needs, potential sensitivities, and the impacts the information may have on customers and other stakeholders. Ensuring long-term, stable access to critical information is also vital. It is crucial to remember that jargon, while useful for communication among emergency managers, may not be intuitively understood by the general public.

Principle	Description	Why it Matters	Relevant Sources
Clarity & Simplicity	Use plain, understandable language, avoid technical jargon or acronyms.	Ensures immediate comprehension, reduces confusion, and promotes timely action.	NFPA, On Fire Report
Consistency	Employ uniform terminology and messaging across all channels and over time.	Builds familiarity and predictability, reinforcing the message and reducing cognitive load during stress.	NFPA 1660, Ready, Set, Go!
Timeliness	Deliver information promptly, recognizing that fast-moving fires shrink response windows.	Enables early preparation, evacuation, and protective actions, directly impacting safety outcomes.	PG&E PSPS
Multi-Modal Delivery	Utilize a diverse array of communication channels (WEA, reverse 911, social media, radio, etc.). Include digitally accessible, or accessible to users who rely on assistive devices/technology.	Maximizes reach to different demographics and ensures redundancy if one channel fails.	FEMA IPAWS
Audience-Centric	Tailor messages to specific community needs, vulnerabilities, and linguistic diversity.	Increases relevance and effectiveness, ensuring all populations receive actionable information.	SCE, PG&E

Principle	Description	Why it Matters	Relevant Sources
Action-Oriented	Clearly state what actions are required, not just what is happening.	Guides the public on specific steps to take, empowering them to protect themselves and their property.	Ready, Set, Go!
Trust-Building	Be transparent about risks, mitigation efforts, and the dynamic nature of emergencies.	Fosters credibility, encourages compliance, and strengthens community resilience.	CPUC



03

Protocols and Processes: A Deep Dive into Utility Communication Systems

A. Multi-Channel Alert and Warning Systems

Effective emergency communication relies on a robust architecture of alert and warning systems, leveraging multiple channels to ensure broad reach and redundancy.

The Integrated Public Alert and Warning System (IPAWS), developed by the Federal Emergency Management Agency (FEMA) in 2012, serves as the foundational national system for disseminating emergency alerts, with Wireless Emergency Alerts (WEAs) being a key component. WEAs are short, text-based, geotargeted messages transmitted to mobile devices by authorized federal, state, local, tribal, and territorial authorities. A critical advantage of WEAs is that they do not require recipients to opt-in to receive an alert, making them one of the most powerful and far-reaching channels for communicating imminent threats. Wildfires have been a dominant use case for WEAs; nearly a third of all non-National Weather Service WEAs issued between 2012 and 2022 were for wildfires, underscoring their significance in this context.

WEA messages are character-limited (90 or 360 characters, depending on the device) and can include a URL or hyperlink for additional information, offering a pathway to more detailed guidance. Note that communication facilities may have capacity limitations that should be explored and recognized prior to relying on this methodology.

While WEAs are highly effective, they represent only one facet of a robust communication strategy. A truly comprehensive approach integrates WEAs with a myriad of other communication modes, including reverse 911 calls, opt-in text messaging services, social media platforms, emails, dedicated mobile applications, traditional radio and television broadcasts, and sirens. Utilities such as Southern California Edison (SCE) have established centralized "Wildfire Communications Centers" that serve as a single, easily accessible hub for all wildfire safety and Public Safety Power Shutoff (PSPS)-related customer communications, notably offering content in multiple languages. Customers are actively encouraged to sign up for PSPS alert notifications, which are delivered via their preferred method: email, text, or phone. Industry bodies like the American Public Power Association (APPA) provide valuable resources such as their "Public Power Storm Communications Guide," which offers detailed tips, best practices, and sample messages tailored for various communication channels before, during, and after adverse weather events.

A significant consideration is the **digital divide** and its implications for communications among different communities. While the power of WEAs and the widespread use of digital channels are evident, care must be taken to reach everyone, including those without internet or smartphone connectivity. While many homes no longer have landlines, maintaining traditional landlines and corded phones may provide backups, especially since Voice over Internet Protocol (VoIP) services may fail during power outages without backup batteries. This exposes a critical challenge: ensuring communication across diverse demographics. Communities, including those in remote areas, individuals with limited digital literacy, communities with language barriers or those relying on specific technologies (like landlines or assistive technology) face inherent vulnerabilities in accessing critical information during widespread emergencies. This can exacerbate risks for those already most susceptible. Consequently, the utilities' multi-channel communication strategies should address the needs of these customer segments, particularly those who may be disproportionately affected by communication gaps. This includes potentially redundant communication methods, supporting programs that provide tangible assistance (e.g., backup batteries for medical devices), and requiring culturally and linguistically appropriate messaging. The focus should be on creating a communication framework that leaves no community behind.

B. Public Safety Power Shutoffs (PSPS) Communication Lifecycle

PSPS are intentional, pre-emptive outages implemented by utilities as a critical safety measure to prevent wildfires. These shutoffs can be triggered during severe weather conditions characterized by low humidity, forecasted high winds, dry ground vegetation, and Red Flag Warnings issued by the National Weather Service. The communication surrounding PSPS events follows a structured lifecycle, designed to inform and prepare customers at every stage.

Utilities like Pacific Gas and Electric (PG&E), Avista, Puget Sound Energy (PGE), and PacifiCorp all adhere to a structured alert timeline designed to provide customers with ample preparation time, while acknowledging the dynamic nature of weather forecasts. This timeline typically includes:

- Up to a week before power is turned off: Initial severe weather forecasts are monitored.
- Up to 48 hours before: A "First Watch" notification is sent, indicating that outages are likely.
- Up to 24 hours before: A "Second Watch" notification reiterates the likelihood of outages.
- 1 to 4 hours before: A "Warning" notification confirms that outages are required for safety.
- Delayed /Cancelled: Crucially, notifications are also sent if a shutoff is delayed or cancelled due to changing weather conditions.
- When power is turned off: A notification confirms the power has been disconnected.
- During the outage: Updates are provided, including estimated restoration notifications and "Weather all clear" notifications once conditions improve.
- When power is restored: A final notification confirms service has resumed.

Utilities primarily leverage email, phone calls, and text messages for PSPS alerts. Some examples include: PG&E automatically enrolls account holders to receive these alerts. SCE's Wildfire Communications Center provides a comprehensive suite of PSPS notifications covering the entire event lifecycle, from initial alerts to restoration confirmations. Most electric utilities will also send out social media alerts.

To ensure effective communication, utilities employ targeted alert strategies. Some examples of targeted programs: PG&E offers "Address Alerts" that allow customers to receive notifications for multiple important locations, such as a child's school, a parent's home, a workplace, or other owned properties. Special provisions are made for customers who rely on power for health and safety, including extra PSPS alerts, and potentially in-person notifications, for those on Medical Baseline programs or with Vulnerable Customer Status. SCE, for example, offers a Critical Care Backup Battery Program to support these customers. Recognizing diverse communities, PG&E provides PSPS information in English and 15 additional languages, including pre-recorded messages in American Sign Language (ASL) for the deaf and hard-of-hearing community. SCE's Wildfire Communications Center also offers language selection options.

A critical consideration is the balancing act of timeliness versus accuracy in PSPS alerts. PG&E's PSPS alert timeline explicitly states that alerts can begin "up to a week before power is turned off," but also cautions that "weather forecasts can change," potentially leading to the first alert not being sent "until the same day the power is shut off". This highlights a critical, inherent tension in PSPS communication: the need to provide early warnings for public preparedness versus the imperative for accuracy to avoid "alert fatigue" or unnecessary disruption. Issuing premature or inaccurate alerts can erode public trust, lead to complacency, and diminish the effectiveness of future, truly critical warnings.

The continuous investment in "real-time ground observations" and "machine learning for forecasts" by utilities demonstrates their ongoing efforts to refine this delicate balance. Regulators must critically assess how utilities navigate this inherent tension. This includes evaluating the transparency of their forecasting models, the protocols for updating or cancelling alerts, and their strategies for educating the public about the dynamic nature of PSPS decisions. The goal is to ensure that utilities maintain public trust even when forecasts necessitate changes to initial PSPS predictions, thereby preserving the credibility of all emergency communications.

C. Standardized Terminology and Jargon Management

The consistent use of clear and standardized terminology is fundamental to effective wildfire emergency communication. Inconsistent operational jargon poses a significant barrier to public understanding during wildfire emergencies. Terms like "evacuation warning" or "evacuation order," when used without clear, consistent context or without explicitly naming the actual hazard, can confuse the public, diminish their understanding of the threat, and ultimately impede their ability to take necessary and timely action. Such linguistic ambiguity can also negatively impact the perceived transparency and reputation of the utilities and agencies issuing these critical messages.

Recognizing this critical issue, the federally appointed **Wildland Fire Mitigation and Management Commission**, in its seminal **"On Fire" report**, strongly recommends the adoption of standardized wildfire terminology and protocols across all communities and jurisdictions. The **NFPA**'s Educational Messages Advisory Committee (EMAC) further reinforces this by recommending messaging that is "clear, simple, accurate, technically sound, and, whenever possible, positive." NFPA 1616 (now consolidated into **NFPA 1660**) explicitly calls for "uniform procedures for clear, consistent, recognizable, and accurate communications."

Examples of standardized approaches that enhance public understanding include the "**Ready, Set, Go**!" Program. This widely adopted program, developed by the International Association of Fire Chiefs, provides a clear, three-tiered framework for wildfire alerts and warnings: "ready status" (prepare), "set status" (be ready to evacuate), and "go status" (evacuate immediately). Similarly, various authorities, including Oregon, the US Forest Service (USFS), and the Washington Association of Sheriffs and Police Chiefs (WASPC), employ multi-level systems. For instance, Level I alerts might mean "evacuation or protection alert" (USFS) or "be ready to evacuate" (Oregon); Level II indicates an "evacuation warning or notice" (USFS) or "be set to evacuate" (Oregon); and Level III signifies "go now" or immediate evacuation (Oregon).

A significant challenge arises from the interoperability of terminology across jurisdictions and organizations. While the research clearly advocates for standardized terminology, it also reveals that different standardized systems exist (e.g., "Ready, Set, Go!" versus the various "Level I/II/III" systems). Furthermore, even within the "Level" system, different agencies (USFS, WASPC) may use slightly varied phrasing for the same numerical level. This indicates that while individual utilities or local jurisdictions might adopt an internal standard, achieving true interoperability of messaging across diverse geographical areas, state lines, or between federal and local agencies remains a significant challenge.

For a public that might receive alerts from multiple, potentially uncoordinated sources during a large-scale, multi-jurisdictional wildfire event, this lack of seamless interoperability can reintroduce the very confusion that standardization aims to eliminate. When reviewing wildfire plans, regulators can encourage internal utility standardization of terminology and support participation in regional and national efforts aimed at harmonizing wildfire terminology across jurisdictions. This could involve holding cross-jurisdictional workshops, developing shared communication protocols, and implementing public education campaigns that explain how different alert systems relate to each other, especially for communities situated near jurisdictional borders.

04

Fostering Robust Community Engagement and Preparedness

Effective wildfire resilience extends beyond emergency alerts to encompass proactive community engagement and preparedness initiatives. These efforts are crucial for building trust and fostering a resilient community.

A. Proactive Engagement Strategies: Building Trust and Resilience

Utilities like Southern California Edison (SCE) actively conduct Community Safety Meetings. These forums facilitate direct engagement and partnership with customers, local and tribal government agencies, fire agencies, and community-based organizations, focusing on shared goals of resiliency and emergency preparedness. These meetings provide a platform for two-way communication, allowing utilities to disseminate information and gather feedback from the communities they serve.

Comprehensive customer education campaigns are vital for fostering preparedness. SCE's Wildfire Customer Education campaign, for instance, utilizes a broad spectrum of media—television, radio, print, digital, social media ads, and online videos—to provide resources that help customers prepare, stay safe, and remain informed before and during wildfire season. These campaigns are designed to be accessible and to reach a wide audience.

Transparency and trust are fundamental to successful engagement. Utilities should adopt a proactive and transparent stance in communicating their wildfire mitigation efforts and the rationale behind them, rather than shying away from discussing wildfire risks. Openness and transparency are crucial for building and maintaining public trust and demonstrating a genuine commitment to grid reliability and public safety.

Utilities have a key role in empowering customer preparedness by guiding them through actionable steps for their own safety and resilience. This includes encouraging households to develop tailored wildfire action plans, which should feature predetermined meeting points outside high-risk areas, multiple escape routes known to all family members, and a family communication strategy designating an out-of-area contact. Customers should also be advised to assemble comprehensive emergency supply kits for each family member, including a dedicated kit for vehicles. The "6 P's of Evacuation" (People & pets, Papers, Prescriptions, Pictures, Personal computer, Plastic/cash) provide a memorable checklist for essential items. Furthermore, utilities should educate customers on the safe and proper operation of their gas, electric, and water main shut-off controls for emergency situations.

Empowering customers also involves guiding them to secure backup generation solutions in anticipation of PSPS events, which can disrupt essential services like air conditioning, refrigeration, and internet access. SCE's Critical Care Backup Battery Program, offering free portable batteries for households with electrically powered medical devices, is an excellent example of direct utility support.

Beyond individual homes, cities and utilities can collaborate to establish and publicize "clean-air refuges"—large indoor facilities with proper ventilation and air conditioning—for individuals unable to access clean air at home during wildfire smoke events. Encouraging the installation of residential high-efficiency air filters is also beneficial. For communication preparedness, customers should be advised on maintaining traditional landlines (especially corded phones that may work during power outages), keeping mobile devices charged, having backup chargers (car, solar), limiting non-emergency calls to conserve network capacity and battery life, utilizing texting for non-emergencies, and understanding when and how to call 911.

Finally, targeted communications are vital. It is important to recognize that different communities, such as rural versus urban areas, often face unique challenges and possess distinct needs during wildfires. Tailoring communication messages to these specific audiences is crucial for building trust and enhancing their preparedness and response capabilities.

A significant evolution in utility engagement is the shift from mere information dissemination to actively nudging and enabling behavioral change. While many communications focus on providing information—checklists, alerts, PSPS timelines, safety tips —the objective extends to actively empowering customers to take concrete steps.

This means not just telling people what to do, but providing the necessary resources, incentives, and clear, actionable pathways for them to take concrete steps in preparedness. This requires an understanding of behavioral science principles to overcome common barriers such as inertia, perceived cost, or complexity. Regulators should evaluate utility engagement strategies not just for the volume or breadth of information disseminated, but for their demonstrable effectiveness in driving actionable preparedness among customers. This could involve assessing programs that offer tangible support (e.g., battery programs), evaluating educational content for its clarity on personal mitigation steps, and scrutinizing partnerships that facilitate access to preparedness resources. The focus should be on measuring actual behavioral outcomes, not just communication outputs.

B. Collaborative Approaches: Utilities, Communities, and Stakeholders

The success of wildfire emergency communication and response hinges on robust inter-agency and multi-stakeholder coordination. This collaboration is crucial for effectively responding to extreme fire events, particularly those that can escalate rapidly and cross jurisdictional boundaries. A truly effective wildfire response process demands trained teams, robust local collaborations, and clear, synchronized communication across all involved parties.

The success of wildfire emergency communication hinges on a complex web of interconnected roles and responsibilities, where each entity understands its role and that of others, and how to best coordinate actions:

- **Electric Utilities**: Bear primary responsibility for grid hardening, proactive vegetation management, the implementation of Public Safety Power Shutoffs (PSPS), and direct customer communication regarding service impacts and safety. Their mandate extends to assessing risk, maintaining service continuity where possible, responding effectively to incidents, ensuring compliance with evolving regulations and when deemed safe, repairing equipment and reactivating service.

- **Local Governments** (Cities/Counties): Are responsible for issuing evacuation alerts and orders for their communities and managing wildfires within their municipal boundaries. They coordinate emergency services, often through an Emergency Operations Center (EOC) utilizing the National Incident Management System (NIMS) and Incident Command System (ICS). They also leverage mutual aid agreements (like EMAC) and collaborate closely with state emergency management and FEMA regional offices. Local governments are tasked with informing communities about identified risks and sharing recovery resources.
- **Fire Agencies**: Provide critical early warnings through heat and smoke detection technologies, deploy firefighting equipment and personnel, and play a central role in incident response. Programs like "Ready, Set, Go!" are instrumental in their community outreach efforts.

- **State Agencies**: Offer essential support, resources, and coordinate efforts with local governments. In California, the Office of Energy Infrastructure Safety enforces the state-mandated WMP. The CPUC mandates communication protocols for emergencies and Public Safety Power Shutoffs.
- **Federal Agencies** (FEMA, FCC, DOE): Provide overarching national alert systems (IPAWS/WEA), offer technical assistance and funding, and coordinate energy sector response during large-scale emergencies. The Federal Communications Commission (FCC) specifically addresses emergency connectivity issues.
- **Community Organizations & Non-Profits**: Serve as vital partners, collaborating with utilities to strengthen mitigation efforts. Examples include the American Red Cross, providing emergency shelters, food, and first aid, and Team Rubicon, a veteran-led humanitarian organization. They can also establish and manage "community resilience hubs" that offer essential services like phone charging and access to medical equipment during power outages. Another resource are disability advocacy groups who can provide input on the extent to which emergency response procedures and communications are disability inclusive.
- **Telecommunication Providers**: Are critical for maintaining communication infrastructure during emergencies, deploying mobile equipment (such as Cells on Wheels/COLTs) to affected areas, and providing essential services like charging stations and Wi-Fi access at shelters.
- **Customers/Residents**: Are active participants in the communication ecosystem. Their roles include reporting fires (e.g., via apps like Smoke Spotter), developing personal and family preparedness plans, and undertaking vegetation management and preparing defensible space on their own properties to reduce risk.

Utilities should formalize their PSPS procedures to include explicit coordination with municipalities and other utility providers (e.g. telecommunications and water) and pre-PSPS customer communication protocols. Active collaboration across the entire spectrum of stakeholders provides comprehensive risk identification, mitigation, response, and recovery efforts. Southern California Gas & Electric (SDG&E), for example, reportedly works with 40 different groups to ensure appropriate communication measures are in place during emergencies.

A significant challenge for regulators is the governance complexity of multi-stakeholder coordination. While the imperative for multi-stakeholder collaboration is consistently emphasized , achieving seamless "**unity of effort, unity of message" (as articulated by APPA's guide**) across such a diverse array of entities presents a profound governance challenge. This goes beyond simple information sharing; it involves synchronized decision-making, coordinated resource allocation, and clear lines of accountability within a highly dynamic and often chaotic environment. The observation in one instance that there appeared to be "no proper reporting system, information sharing opportunities or accountability" in some contexts highlights that the ideal of coordination is frequently difficult to realize in practice, leading to potential fragmentation and inefficiency during critical incidents.

One way regulators can approach the risk is to assess the mechanisms utilities and their partners employ for inter-agency and multi-stakeholder coordination, rather than simply accepting the stated intent. This includes reviewing formal Memoranda of Understanding (MOUs), evaluating the frequency and effectiveness of joint training exercises, examining the use of shared communication platforms (e.g., **WebEOC**) , clarifying roles and responsibilities, and establishing robust feedback loops for continuous improvement. The focus should be on how these different entities are truly integrated into a cohesive response framework, and how accountability is maintained throughout the emergency lifecycle.

Stakeholder Group	Primary Role in Wildfire Communication	Key Communication Channels/Tools Utilized	Interdependencies/ Collaboration Points
Electric Utilities	Grid hardening, PSPS implementation, direct customer alerts, safety info.	PSPS alert systems (email, text, phone), Wildfire Comm. Centers, social media, community meetings, sharing camera data. EOCs for PSPS implementation and emergency response.	Coordinate PSPS with municipalities and other utilities; share grid status with emergency services; educate public.
Local Governments	Issue evacuation orders, manage local response, coordinate resources.	Emergency Operations Centers (EOCs), local media, community loudspeakers, emergency alert tools (Alertable, Voyent Alert).	Collaborate with fire agencies on evacuation recommendations; coordinate with utilities on PSPS impacts; access federal/state resources.

Stakeholder Group	Primary Role in Wildfire Communication	Key Communication Channels/Tools Utilized	Interdependencies/ Collaboration Points
Fire Agencies	Early wildfire detection, incident response, community outreach.	"Ready, Set, Go!" program, Smoke Spotter app, access to remote camera alerts, sirens, direct communication with EOCs.	Provide real-time fire intelligence to local governments and utilities; collaborate on public education.
State Regulators	Evaluate utility wildfire mitigation plans, review communication protocols, provide oversight.	Annual WMP reviews, GO 166 compliance reports, public meetings, policy directives.	Review and if required by statute approve utility plans; ensure compliance with communication standards.
Federal Agencies (FEMA, FCC, DOE)	National alert systems, technical assistance, funding, energy sector coordination.	IPAWS/WEA, Emergency Response Hubs, ESCC coordination calls, FirstNet.	Provide national alert infrastructure; support state/local response; ensure critical infrastructure resilience.
Telecommunication Providers	Maintain communication infrastructure, ensure emergency connectivity.	Mobile equipment (COLTs), charging stations, Wi-Fi at shelters, 911/E911 service.	Collaborate with utilities on power outages; support emergency services with network capacity.

Stakeholder Group	Primary Role in Wildfire Communication	Key Communication Channels/Tools Utilized	Interdependencies/ Collaboration Points
Community Organizations	Provide shelter, aid, and support; facilitate resilience hubs.	Community resilience hubs, direct outreach, partnerships with utilities and governments.	Work with local governments on shelter operations; partner with utilities on preparedness programs.
Residents/ Customers	Personal preparedness, reporting incidents, following directives.	Family communication plans, emergency supply kits, portable radios, Smoke Spotter and WatchDuty apps.	Report fires; engage in community preparedness; follow evacuation orders.

05

Regulatory Frameworks and Oversight

Effective utility communication during wildfires is increasingly governed by regulatory frameworks designed to ensure public safety and accountability.

A. Regulatory Oversight in Wildfire Communications

Due to experience with multiple devastating catastrophic wildfires, California has one of the most established wildfire-related utility regulatory framework, with the California Public Utilities Commission (CPUC) in conjunction with the California Office of Energy Infrastructure Safety implementing comprehensive statutory requirements. [For more information on how these two agencies work together, listen to Tech Talk for Regulators, Episode 4 on California Wildfire Mitigation Agencies.]

The CPUC categorizes regions based on wildfire risk, designating Tier 2 (elevated risk) and Tier 3 (extreme risk) areas, where Public Safety Power Shutoff (PSPS) events are more probable. Utilities are explicitly required to issue PSPS alerts as early as possible, day and night, to affected customers.

A cornerstone of California's regulatory approach is the requirement for Annual Wildfire Mitigation Plans (WMPs). Local publicly owned electric utilities and electrical cooperatives must prepare and annually submit a comprehensive wildfire mitigation plan to the California Wildfire Safety Advisory Board by July 1. These plans should detail:

- Preventive strategies, explicitly considering dynamic climate change risks.
- Protocols for disabling reclosers and de-energizing portions of the electrical distribution system, with a clear focus on mitigating public safety impacts and ensuring notification to critical first responders, healthcare facilities, and telecommunications infrastructure within the potential de-energization footprint.
- Detailed vegetation management plans.
- Methodologies for identifying and presenting enterprise-wide safety and wildfire-related risk.
- Comprehensive plans for restoring service after a wildfire.

These plans should be presented at appropriately noticed public meetings, where comments from the public and other agencies are accepted, and compliance with all applicable rules and standards is verified. An independent evaluator with experience in electrical infrastructure safety must review and assess the comprehensiveness of these WMPs, with their reports made publicly available.

Another foundational CPUC order is General Order 166 (GO 166). Adopted in 1998 and revised in 2021, this order establishes standards for emergency and disaster response for all jurisdictional electric utilities. It mandates that utilities prepare and annually update an Emergency Response Plan (ERP), enter into mutual assistance agreements, and conduct annual emergency training and exercises (with 10 days' notice to relevant authorities). Critically, GO 166 requires utilities to develop and maintain a written strategy for how they will communicate with the public before, during, and immediately following major outages and emergencies. This includes detailed requirements for internal coordination, information gathering, processing, and dissemination, as well as coordination with the Independent System Operator (ISO) and Transmission Owners (TO). Utilities must also submit annual reports to the CPUC demonstrating compliance with these standards.

A key observation for regulators is the proactive regulatory posture on communication quality and strategy. The detailed mandates from the OEIS for Wildfire Mitigation Plans and the CPUC for General Order 166 demonstrate a regulatory evolution from reactive oversight to proactive requirements for communication quality and strategy. This represents a recognition that communication is not merely an auxiliary function but a core component of public safety and utility operations during wildfire events.

Regulators in California, Oregon, and Washington are increasingly scrutinizing not just the existence of communication plans, but their comprehensiveness, clarity, and effectiveness in reaching and informing the public. This shift empowers regulators to demand more robust, transparent, and audience-centric communication strategies from utilities, thereby enhancing public safety outcomes and reinforcing the utility's accountability.

B. Comprehensive Emergency Planning and Industry Standards

Beyond compliance with specific regulatory requirements, utilities benefit from adhering to comprehensive emergency planning frameworks and industry standards. These guidelines provide a structured approach to preparedness, response, and recovery.

The EPA's Public Safety Power Shutoff Standard Operating Procedure (SOP) Template is a valuable resource for water utilities, designed to assist them in preparing for, responding to, and recovering from power shutoffs, with the ultimate goal of reducing fire risks. While some elements are specific to PSPS, much of the information is broadly applicable to any power outage scenario. The SOP template covers critical topics across various time steps, from initial planning to power restoration, including:

- Generators and Backup Power
- Fuel
- Communications
- Partnerships
- SCADA (Supervisory Control and Data Acquisition)
- Staffing
- Access
- Safety

The template is available in both PDF and customizable.docx formats, allowing utilities to tailor it to their specific needs. The communication components within this template are particularly notable, emphasizing internal communication, external response partner communication, communication with critical customers, and inventorying communication equipment. It also includes guidance on media outreach, risk communication, and public notification templates, ensuring consistency with regulatory requirements.

NFPA Standards (requires membership) play a crucial role in establishing best practices for emergency management. The NFPA 1660, Standard for Emergency, Continuity, and Crisis Management: Preparedness, Response, and Recovery (Note registration may be required), is a newly consolidated standard that combines previous foundational standards, including NFPA 1616 (Standard on Mass Evacuation, Sheltering, and Re-entry Programs (requires purchase). NFPA 1660 provides a common set of requirements for all-hazard emergency management and business continuity programs, mass evacuation, sheltering, re-entry, and pre-incident planning. It emphasizes the importance of clear, consistent terminology and outlines requirements for incident recognition, initial reporting/notification, plan activation, incident management, ongoing communications, and documentation. This standard is widely used by public, not-for-profit, nongovernmental, and private entities and has been adopted by the U.S. Department of Homeland Security as a voluntary consensus standard for emergency preparedness.

Beyond specific standards, industry guides provide practical advice. The **American Public Power Association (APPA) Public Power Storm Communications Guide** offers tips and best practices for effective communication before, during, and after a storm. These recommendations are based on the actual practices of public power utilities nationwide and include sample messages for local news, customers, and other stakeholders, such as press releases, social media posts, and talking points. The guide emphasizes the mantra of "unity of effort, unity of message" and provides detailed advice on pre-storm planning, activating communication plans, managing communications during an event, and post-storm messaging. It also covers coordination with state, tribal, territorial, and federal agencies, including the Department of Energy (DOE) and the Electricity Subsector Coordinating Council (ESCC).

A significant development for regulators is the adaptability of industry standards for the wildfire context. The evolution of standards like NFPA 1660, which consolidates previous emergency planning guidelines, and the development of specific templates like the EPA PSPS SOP for water utilities, indicate a maturation of the regulatory and industry approach. This progression moves beyond generic disaster planning to explicitly address wildfire-specific considerations for utilities. It signifies that the industry and its oversight bodies are recognizing the unique challenges posed by wildfires and are developing tailored frameworks to guide preparedness and response. This allows regulators to assess utility plans not just against general emergency readiness, but against a growing body of wildfire-specific currently successful practices, ensuring a more targeted and effective approach to public safety.

06

Emerging Technologies and Future Directions in Wildfire Communication

The landscape of wildfire risk mitigation and communication is continuously evolving, driven by technological advancements and innovative approaches. Utilities are at the forefront of adopting these new methods to enhance safety and improve communications.

A. Innovations in Risk Mitigation and Communication

Utilities are continuously developing new approaches and collaborating with other utilities, academia, and the energy sector to make communities safer. Utilities implementing these innovations can highlight these emerging technologies and innovative approaches for wildfire risk mitigation through educational communications:

1. Strengthening the Grid:

- **Covered Conductor Installation**: Replacing bare overhead power lines with covered conductors reduces the chance of a power line arcing or sparking if it contacts with objects like tree branches or metallic balloons.
- **Fast-Acting Fuses**: The installation and replacement of fast-acting fuses are crucial. These fuses interrupt current more quickly, reducing the risk of ignitions during electrical faults, such as when a tree falls on a power line in high winds.
- **Undergrounding Overhead Distribution Lines**: As part of ongoing wildfire mitigation efforts, utilities may underground overhead distribution lines in severe risk areas, particularly where lines haven't been replaced with covered conductors, to further reduce wildfire threats.

2. Improved Monitoring and Risk Assessment:

- **Expanded Weather Station Network**: Utilities are expanding their network of weather resources with stations to monitor real-time weather and ground conditions. This helps in better predicting wildfire risks and more effective communication strategies.
- **Machine Learning for Forecasts**: By leveraging artificial intelligence and machine learning, there is improved accuracy of weather forecasts and models. These enhanced capabilities allow for more targeted Public Safety Power Shutoff (PSPS) outages, minimizing the number of affected customers.
- **Wildfire Camera Installation:** Cameras can be installed to remotely increase visibility in high fire risk areas. As an example, the live feed from these cameras in high fire risk areas is part of the Alert California network, allowing fire agencies and the public to monitor wildfire conditions.

3. New Technologies:

- **Early Fault Detection (EFD)**: This technology helps identify potential electrical equipment issues early, enabling repairs before equipment failures occur.
- **Rapid Earth Fault Current Limiters (REFCL)**: REFCLs sense when electrical equipment fails and takes action to prevent potential ignitions.

4. Communication and Community Support:

- **Wildfire Communications Center**: Establishing a dedicated Wildfire Communications website or webpage to share wildfire communications and update PSPS information in multiple languages is helpful for disseminating updated information. Sharing and communicating with maps, in multiple languages and updates as the situation develops.
- **Critical Care Backup Battery Program**: This program offers a free portable backup battery to households that require electrically powered medical devices, helping them prepare for unexpected power outages and providing temporary power during evacuations.
- **Outbound Social Media**: Communicating where the fire is, how the efforts are moving, and keeping in touch with the community through social posts can be an effective approach. Consider establishing a page on social media, defining an account on X or Blue Sky, and sharing progress on Instagram as a few possible measures.
- **Text Alerts**: Many emergency community programs exist, applications such as WatchDuty, NextDoor, or Nixle can send email and text messages to update the community.
- **Non-Digital Communications**: Seniors and some communities may not have access to digital alerts and content. Be sure to include traditional media in messaging.

These efforts collectively aim to strengthen the electrical system, reduce the need for PSPS outages, and minimize the number of affected customers, all while enhancing the utility's ability to communicate effectively and proactively with the communities it serves.

07

Summary: Empowering Resilient Communities Through Effective Communication

The escalating threat of wildfire demands an adaptive and comprehensive approach to emergency communications and community engagement from utilities. This chapter highlights effective communication as a critical component of public safety, operational resilience, and maintaining public trust.

For utility regulators, several key takeaways and strategies emerge from this analysis:

- **Prioritize Integrated Mitigation and Communication Strategies**: Regulators can encourage and, where statutorily directed, require that utilities' wildfire mitigation plans explicitly detail how grid hardening, advanced monitoring, and new technologies directly enhance communication capabilities. Investments in infrastructure and data analytics can be evaluated not just for fire prevention, but also for their contribution to more accurate, timely, and targeted public alerts. This ensures a holistic approach where physical resilience directly supports informational resilience.
- **Encourage Clarity and Consistency in Public Messaging**: Regulators can continue to scrutinize utility communication for use of plain language principles and standardized terminology. Beyond internal consistency, regulators can advocate for and support cross-jurisdictional harmonization of wildfire alert language (e.g., evacuation levels) to minimize public confusion during multi-agency responses. This may involve inquiring about and encouraging utilities' participation in and funding of regional terminology alignment initiatives.

- **Evaluate Inclusive Communication Frameworks**: Given the challenges of the digital divide, utility communication strategies can be evaluated to address the needs of all customer segments, including medically vulnerable populations and those with limited digital access. This includes supporting redundant communication channels (e.g., traditional media, landlines), programs that provide tangible preparedness assistance (e.g., backup batteries for medical devices), and community based and linguistically appropriate messaging. Consider digital communications compatibility with assistive technology.
- **Oversee the Balancing Act of PSPS Communication**: It's important to assess how utilities manage the inherent tension between issuing early PSPS warnings for preparedness and ensuring the accuracy of those warnings to avoid alert fatigue. This involves reviewing utilities' forecasting models, protocols for alert updates and cancellations, and their public education efforts on the dynamic nature of PSPS decisions. The goal is to preserve public trust even when forecasts necessitate changes to initial predictions.
- **Strengthen Multi-Stakeholder Coordination Governance**: While collaboration is widely recognized as essential, focus should be on the mechanisms that ensure effective inter-agency and multi-stakeholder coordination. This includes reviewing formal Memoranda of Understanding (MOUs), evaluating the frequency and effectiveness of joint training exercises, examining the use of shared communication platforms, and clarifying roles and responsibilities across all entities involved in wildfire response. This proactive oversight of governance structures is crucial for achieving true "unity of effort, unity of message" during emergencies.

Understanding the role of communications, community engagement, and outreach can play a pivotal role in shaping a future where utilities are not only more resilient to wildfires but also more effective in communicating with and empowering the communities they serve, ultimately enhancing public safety and fostering a more prepared populace.

08

Implementation Considerations for Regulators

Successful reverse 911 implementation requires careful attention to several regulatory and operational factors. Database accuracy and maintenance represent ongoing challenges, as systems depend on current contact information for effectiveness. Regulators should consider requirements for utilities to maintain and update customer contact databases, potentially including mandatory customer information verification during routine service interactions.

Language accessibility and communication equity present additional regulatory considerations. Diverse communities require multilingual messaging capabilities, while residents with hearing or visual impairments need accessible communication formats. Regulators may need to establish standards for inclusive emergency communications that ensure all customers receive critical wildfire safety information regardless of language barriers or disabilities.

The integration of reverse 911 systems with broader emergency management infrastructure also requires regulatory oversight. Standards for message coordination, timing protocols, and information sharing between utilities and emergency agencies help prevent conflicting communications that could confuse residents during critical moments.

Measuring Effectiveness and Continuous Improvement

Regulators should establish metrics for evaluating reverse 911 system performance during wildfire events. Key performance indicators might include message delivery rates, response times from incident identification to customer notification, and post-event surveys measuring customer comprehension and behavioral response. These metrics enable continuous system improvement and help regulators assess whether utilities are meeting their communication obligations during emergencies.

Regular testing and training exercises provide additional opportunities for improving system effectiveness. Regulators can require utilities to conduct periodic reverse 911 tests, evaluate coordination with emergency agencies, and update messaging templates based on lessons learned from actual wildfire events or other emergencies.

As wildfire risks continue to evolve with changing climate conditions and expanding wildland-urban interface development, reverse 911 systems will likely require ongoing technological and procedural adaptations. Regulatory frameworks should maintain flexibility to accommodate emerging communication technologies while ensuring that core functionality continues to serve the critical safety needs of communities at risk from wildfire threats.

09

Communication Strategies and Practices for Electric Utilities During Wildfires

Electric distribution utilities are increasingly tasked with managing wildfire risks, a challenge amplified by dry vegetation, strong winds, and aging infrastructure. Effective communication and community engagement are pivotal in ensuring public safety, maintaining trust, and coordinating with stakeholders before, during, and after wildfire events.

Pre-Wildfire Communication Strategies

Community Education and Awareness

Utilities are encouraged to proactively educate communities about wildfire risks, the rationale behind Public Safety Power Shutoffs (PSPS), and mitigation strategies. This education should be accessible, using locally relevant languages to reach diverse populations. Tools include community workshops, social media campaigns, bill inserts, newsletters, and participation in local events. For instance, Southern California Edison (SCE) maintains a dedicated wildfire mitigation website with FAQs and alert sign-ups (Wildfire Mitigation). Similarly, Pacific Gas and Electric (PG&E) launched the “From the Underground Up” campaign, promoting underground power lines, which garnered 7.3 million YouTube views and improved customer satisfaction (Community Wildfire Safety).

Proactive Positioning

By communicating wildfire prevention efforts—such as grid hardening and vegetation management—utilities can enhance brand image and foster trust. Highlighting customer roles in preparedness, like creating defensible spaces, further strengthens community resilience. San Diego Gas & Electric (SDG&E) through its Community Fire Safety Program, partners with over 40 community groups to promote preparedness (Community Fire Safety).

Media Relationships

Building strong media relationships facilitates rapid dissemination of safety information. Media briefings and press kits with PSPS information and protocols help utilities maintain a positive presence and educate the public year-round.

Community Partnerships

Collaborating with local organizations, fire departments, and community resilience hubs amplifies messaging and provides resources during outages. Seattle's Community Emergency Hubs program, with 135 locations, serves as a model for year-round engagement and emergency support (Community Emergency Hubs).

During Wildfire Communication Strategies

PSPS Notifications

PSPS events, where utilities intentionally shut off power to prevent fires, require clear and timely communication. Notifications should be sent as early as possible, and in many cases recommended 48 hours in advance via multiple channels, including email, text, phone, social media, and websites. Hawaiian Electric notifies the public through news releases, outage maps, and website updates, coordinating with local officials. Chelan PUD similarly provides 48-hour advance notices via email, phone, media, and partnerships. SDG&E's PSPS Dashboard offers real-time forecasts and updates (PSPS Dashboard).

Real-Time Updates

Utilities are encouraged to provide ongoing updates on PSPS events, wildfire status, and restoration efforts. Dedicated websites, outage maps, and social media platforms are important for sharing information. Idaho Power, for example, offers a PSPS forecast and map to keep customers informed (PSPS Event Information).

Coordination with First Responders

Establishing protocols for real-time communication with public agencies and first responders in advance of an event ensures a coordinated response. Utilities, like Seattle City Light, emphasize stakeholder engagement in their wildfire risk reduction strategy (Wildfire Risk Reduction).

Post-Wildfire Communication Strategies

Rebuilding Updates

After a wildfire, utilities should share regular updates on restoration efforts, including timelines and progress. Town halls and website reports help address community concerns and maintain transparency.

Cost Recovery Explanations

Transparently explaining cost recovery mechanisms is essential to maintain customer trust. Utilities should issue detailed reports and include FAQs in customer communications to clarify wildfire-related expenses.

Lessons Learned

Sharing insights from wildfire events demonstrates a commitment to improvement. Bonneville Power Administration (BPA) improved its PSPS communication based on lessons from 2021-2023, integrating data from partnerships with the Pacific Northwest National Laboratory (BPA Wildfire Mitigation).

Currently Effective Strategies

Transparency

Utilities should openly share their wildfire mitigation efforts, including vegetation management, grid hardening, and technology investments. Austin Energy's use of Pano AI cameras for smoke detection is a notable example (Austin Energy AI).

Collaboration

Working with community organizations, fire departments, and other stakeholders enhances preparedness and response. PG&E's partnerships with local groups for wildfire safety programs illustrate this approach.

Customer Support

Offering support programs, such as backup generator rebates, and educating customers on emergency preparedness are critical. PG&E provides up to $500 in rebates for generators and batteries, supported by educational videos (Generator Rebates). SDG&E's Generator Calculator helps customers assess needs (Generator Calculator).

Data-Driven Communication

Using data analytics to assess communication effectiveness allows utilities to refine strategies. SCE and SDG&E leverage dedicated websites and dashboards to track customer engagement and provide real-time information.

Accessibility for Vulnerable Populations

Utilities must develop specific protocols for customers with access or functional needs, including in-person notifications and multilingual support. CPUC guidelines emphasize in-person notifications for these populations (PSPS FAQs).

Regulatory and Industry Guidelines

California Public Utilities Commission (CPUC)

The CPUC mandates that PSPS be used as a last resort, with guidelines requiring specialized communication protocols for affected customers. Utilities must offer support like backup generator rebates and are subject to ongoing performance monitoring (CPUC PSPS). CPUC also emphasizes language access and in-person notifications for vulnerable populations.

American Public Power Association (APPA)

APPA encourages utilities to develop comprehensive communication plans for internal operations and external stakeholders, including PSPS notifications. Community education in locally relevant languages is a key recommendation (Wildfire Mitigation Planning).

E Source

E Source, a utilities-focused consulting, research, and data science company, advocates for a comprehensive wildfire communications strategy, including dedicated website resources, regular updates, and easy alert sign-ups. It also recommends targeted communications for rural versus urban audiences and addressing wildfire myths through FAQs (Wildfire Communication).

Wildfire Safety Board (California)

The board supports education and outreach efforts, providing resources to ensure effective utility communication (Wildfire Mitigation Strategy).

Tools and Resources for Utilities

Tool/Resource	Description	Example
Communication Plan Template	Structured template for PSPS and wildfire communication plans.	Sample plan provided in artifact.
Community Resource Centers	Hubs for resources during outages, leveraging trusted facilities.	Seattle's 135 Community Emergency Hubs (Community Emergency Hubs).
Data-Driven Tools	Analytics and weather stations for precise PSPS decisions and communication evaluation.	SDG&E's PSPS Dashboard (PSPS Dashboard).
PSPS Documentation	Guidelines for notifying affected and non-affected customers.	CPUC PSPS FAQs (PSPS FAQs).

Considerations for Effective Communication

- **Transparency and Collaboration**: Align with public agencies and first responders for consistent messaging.
- **Vulnerable Populations**: Prioritize multilingual and in-person notifications for access/functional needs customers.
- **Technology Utilization**: Leverage social media, outage maps, and AI tools for real-time updates.

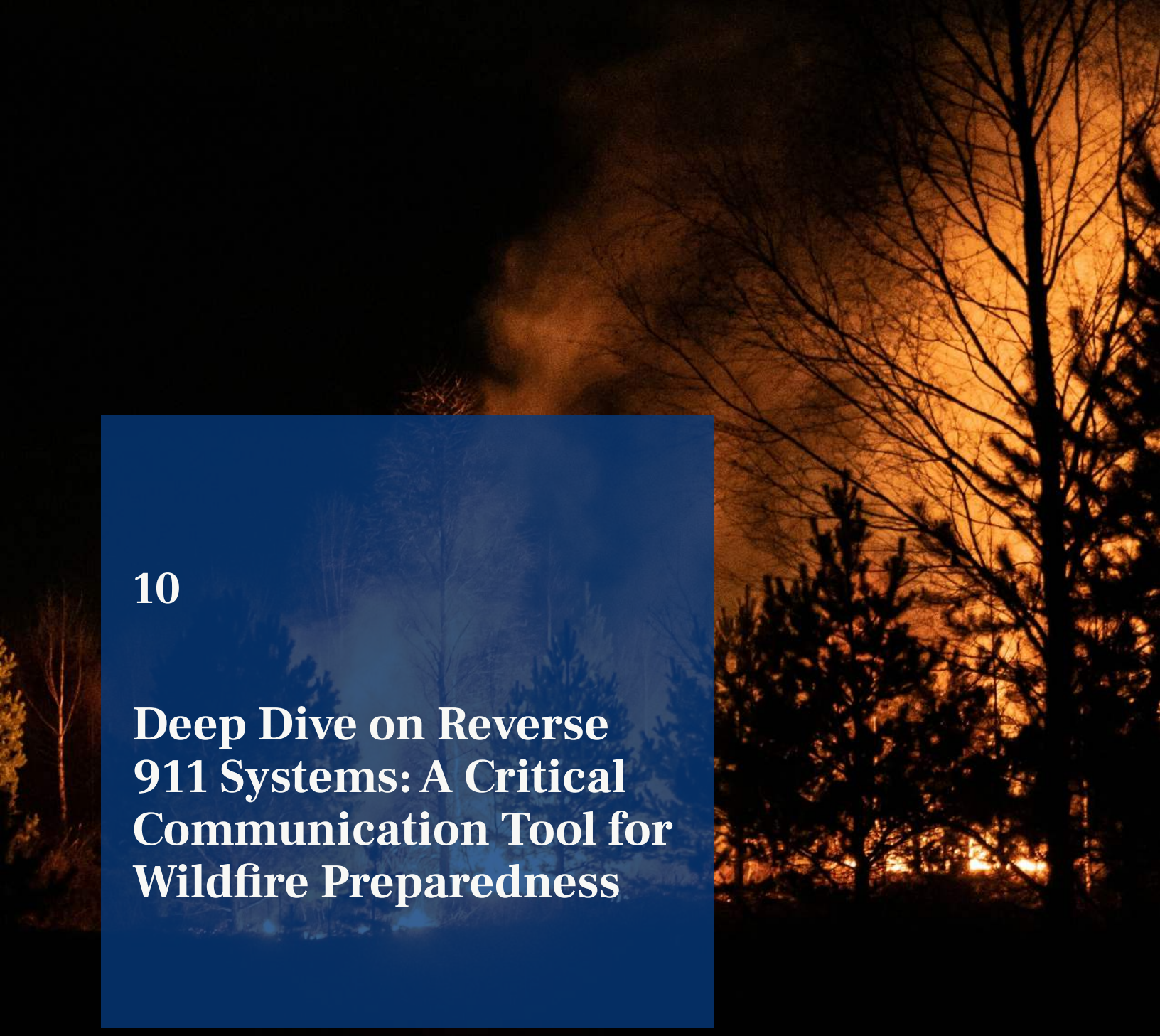
- **Continuous Improvement**: Use customer feedback and lessons learned to refine strategies.

Conclusion

Effective communication is essential for electric utilities to manage wildfire risks and maintain public trust. By implementing proactive education, timely PSPS notifications, transparent post-wildfire updates, and collaborative strategies, utilities can enhance safety and resilience. Regulatory guidelines from the CPUC and industry best practices from APPA and E Source provide a robust framework for success. Utilities must continue to innovate, leveraging data-driven tools and community partnerships to address the growing wildfire challenge.

Key Citations

- Utilities Adopt Various Strategies to Mitigate Against the Threat of Wildfires
- California Public Utilities Commission Wildfire and Wildfire Safety
- How to Communicate to Customers About Wildfire Risk and Prevention
- Southern California Edison Wildfire Mitigation Plan & Related Documents
- Pacific Gas and Electric Community Wildfire Safety Program
- San Diego Gas & Electric Community Fire Safety Program
- Seattle City Light Wildfire Risk Reduction Strategy
- Bonneville Power Administration Releases Updated Wildfire Mitigation Plan
- San Diego Gas & Electric PSPS Dashboard
- Idaho Power PSPS Event Information
- San Diego Gas & Electric Generator Calculator
- Pacific Gas and Electric Generator and Battery Rebate Program
- Seattle Community Emergency Hubs
- American Public Power Association Wildfire Mitigation Planning
- California Wildfire Mitigation Strategy Roadmap



10

Deep Dive on Reverse 911 Systems: A Critical Communication Tool for Wildfire Preparedness

Understanding Reverse 911 Systems

Reverse 911 systems represent a fundamental shift from traditional emergency communications. While conventional 911 allows citizens to call for help, reverse 911 enables emergency authorities to push critical information directly to affected communities. Local Emergency Notification Systems, commonly known as Reverse Dial, are used by safety officials to send phone calls, emails, and texts to a specific area with a prepared message during an emergency.

These systems work by automatically dialing phone numbers within specific geographic areas, delivering pre-recorded or live messages about imminent threats, evacuation orders, shelter-in-place instructions, or other time-sensitive safety information. The technology has evolved to include not only voice calls but also text messages, emails, and smartphone app notifications, creating multiple channels for reaching residents during emergencies.

Application in Wildfire Response

During wildfire emergencies, every minute counts. Reverse 911 systems provide utilities and emergency management agencies with the capability to rapidly communicate with thousands of residents simultaneously.

For utility companies, reverse 911 systems serve multiple critical functions during wildfire events. They can notify customers about planned Public Safety Power Shutoffs (PSPS) [See Chapter 2] before dangerous weather conditions arrive, provide updates about restoration timelines, and issue safety warnings about downed power lines or gas leaks in fire-affected areas or even relay evacuation alerts or updates.

Major California utilities like PG&E and Southern California Edison integrate these systems into their PSPS notification protocols, with PG&E providing dedicated PSPS alert services and SCE notifying customers approximately two days in advance of potential shutoffs. These systems enable utilities to fulfill their regulatory obligations for customer notification while supporting broader emergency response coordination.

Regional Implementation Models Across the United States

States have different protocols in adopting reverse 911 systems to address their specific wildfire risks and regulatory environments. Texas offers a notable example through its Texas Advisory and Notification System (TXANS), which ERCOT uses to issue Conservation Appeals when there is a potential to enter emergency operations. While primarily focused on grid reliability, this system demonstrates how emergency notification infrastructure can be leveraged for utility-related public safety communications during extreme weather events that often coincide with wildfire conditions.

Colorado provides another instructive case following the devastating Marshall Fire. Xcel Energy conducted its first proactive power shutoffs in Colorado in 2022, calling the move a "last resort" to prevent wildfire ignition during high-risk conditions. The Colorado Public Utilities Commission has since approved Xcel's comprehensive wildfire mitigation plan, which includes infrastructure upgrades, vegetation management, enhanced operations, communications improvements, and formal use of Public Safety Power Shutoffs (PSPS) during high-risk conditions. This framework specifically integrates reverse 911 capabilities into utility emergency response protocols.

Utility regulators increasingly recognize reverse 911 systems as essential infrastructure for wildfire preparedness. The California Office of Energy Infrastructure Safety now oversees utility wildfire mitigation plan compliance, including communication requirements. Emergency alert systems are often run through third parties. Commonly utilized vendors include OnSolve, CodeRED, Everbridge, Rave Mobile Safety's Smart 911, and Genasys. This variety of platforms allows utilities and emergency agencies to select systems that best meet their specific operational needs and regulatory requirements.

How Utilities Access and Implement Reverse 911 Systems

Utilities typically access reverse 911 capabilities through three primary pathways: direct contracting with emergency notification vendors, partnership agreements with local emergency management agencies, or integration with existing municipal systems. The procurement process varies significantly based on utility size, regulatory requirements, and local emergency management infrastructure.

Direct Vendor Contracting

Many utilities contract directly with emergency notification service providers to establish dedicated communication capabilities. Utility Companies use these systems to notify customers about service disruptions or hazards related to utility services. Major vendors like Everbridge, OnSolve CodeRED, and Rave Mobile Safety offer enterprise-level contracts that allow utilities to maintain independent notification capabilities while coordinating with broader emergency management efforts.

The contracting process typically involves several key steps. Utilities must first assess their notification requirements, including customer database size, geographic coverage areas, message volume capacity, and integration needs with existing customer information systems. Vendors then provide proposals that address technical specifications, implementation timelines, training requirements, and ongoing maintenance support. All contract agreements are competitively bid and available to agencies that expend public funds and establish a pre-qualified list of vendors. This simplifies the purchasing process for public utilities operating under procurement regulations.

Contract terms often include database management capabilities, multi-channel communication options (voice, text, email), geographic targeting features, and real-time message delivery tracking. Utilities must also negotiate service level agreements that specify system availability requirements, message delivery speed standards, and technical support response times critical during emergency situations.

Partnership with Emergency Management Agencies

Alternative implementation approaches involve utilities partnering with local or regional emergency management agencies that already operate reverse 911 systems. This model leverages existing municipal investments in emergency notification infrastructure while providing utilities with access to established communication channels. Other alerts include missing persons, police activity, and utility notifications demonstrating how these systems accommodate multiple agency needs.

Partnership agreements typically establish protocols for utility access to emergency notification systems, message approval processes, and coordination during multi-agency responses. Utilities may contribute funding to support expanded system capacity or enhanced features while benefiting from integration with broader emergency management operations. This approach can be particularly cost-effective for smaller utilities or those serving areas with limited wildfire risk that don't justify independent system investments.

Integration Challenges and Technical Considerations

Successful reverse 911 implementation requires careful attention to database integration and customer information management. Utilities must ensure that their customer databases can interface effectively with emergency notification platforms, providing accurate contact information and service address mapping. A Mass Notification System (MNS) broadcasts messages to inform employees and the public of an emergency. It sends real-time alerts and instructions to groups and individuals during critical events, such as natural or human-induced disasters, pandemics, and terrorist attacks.

Technical integration often involves establishing secure data connections between utility customer information systems and emergency notification platforms. This may require IT infrastructure upgrades, cybersecurity assessments, and staff training on system operation. Some utilities opt for hybrid approaches, using both CodeRED and Everbridge for emergency notifications to ensure redundancy and maximize customer reach during critical events.

The implementation timeline typically spans 3-6 months from contract execution to full operational capability, including system configuration, database integration, staff training, and testing protocols. Utilities must also establish ongoing maintenance procedures for customer database updates, system testing schedules, and coordination protocols with emergency management partners. The California Public Utilities Commission (CPUC) requires utilities to maintain robust communication protocols with emergency agencies, ensuring that reverse 911 systems can rapidly disseminate information about utility-related wildfire risks, power shutoffs, and restoration activities. Under CPUC regulations, utilities must report ignitions involving their equipment that meet specific criteria, and the CPUC has enhanced community engagement requirements for PSPS events to better communicate with impacted communities. This coordination becomes particularly crucial when utilities need to communicate simultaneously with customers, emergency responders, and regulatory bodies during rapidly evolving fire situations.

Benefits for Multi-Agency Coordination

Reverse 911 systems excel at facilitating coordination between utilities, emergency management agencies, and regulatory bodies during wildfire events. When a utility initiates a PSPS or identifies equipment-related fire risks, the reverse 911 system can simultaneously notify affected customers, alert emergency services to prepare for increased call volumes, and inform regulatory agencies about the scope and timeline of utility actions.

This multi-channel communication capability reduces information silos that historically complicated emergency response efforts. Emergency managers can layer utility-specific notifications with broader evacuation orders, weather warnings, and resource deployment information, creating a comprehensive information environment that supports informed decision-making by residents and response agencies alike.

11

Deep Dive: Utility Wildfire Communication Plan Components

A wildfire communication plan enables utilities to proactively inform customers, employees, and stakeholders about wildfire risks, preparedness measures, and response actions, including PSPS events. The plan aims to:

- Enhance public safety by providing clear, timely information.
- Reduce service disruptions through coordinated messaging.
- Build trust through transparency and responsiveness.
- Comply with regulatory expectations, such as those outlined by the CPUC in California.

Key Components of the Communications Plan

A robust communications plan includes the following:

(Example - BPA's 2024 Wildfire Mitigation Plan)

1. **Introduction:** Defines the plan's purpose, scope, and objectives, aligning with utility goals and regulatory requirements.
2. **Stakeholder Identification:**
    - Internal stakeholders include employees, management, and executives responsible for implementing the plan.
    - External stakeholders encompass customers (residential, commercial, industrial), government agencies (local, state, federal), emergency management officials, other utilities (water, telco), media, and community organizations, including tribal nations and medical facilities (hospitals, senior facilities, etc.).

3. **Communication Strategies**:
    - **Pre-Wildfire Season**: Utilities distribute educational materials, such as preparedness checklists, and conduct outreach through town halls or webinars to raise awareness.
    - **During Wildfire Season**: Real-time updates are provided via multiple channels, with specific notifications for PSPS events, including timelines and safety instructions. Coordination with emergency agencies ensures consistent messaging.
    - **Post-Wildfire Season**: Utilities share lessons learned, collect feedback through surveys, and conduct after-action reviews to refine future communications.
4. **Communication Channels:**
    - **Primary channels** include the utility's website (with a dedicated wildfire page), social media platforms (e.g., X, Facebook), email alerts, and text notifications.
    - **Secondary channels** involve press releases, media briefings, community meetings, and local media (radio, television).
5. **Roles and Responsibilities:**
    - A dedicated communication team develops and executes the plan, monitors inquiries, and responds promptly.
    - A spokesperson serves as the primary media contact, ensuring consistent messaging.
    - Media relations staff draft press releases and coordinate outreach, while customer service handles inquiries and complaints.

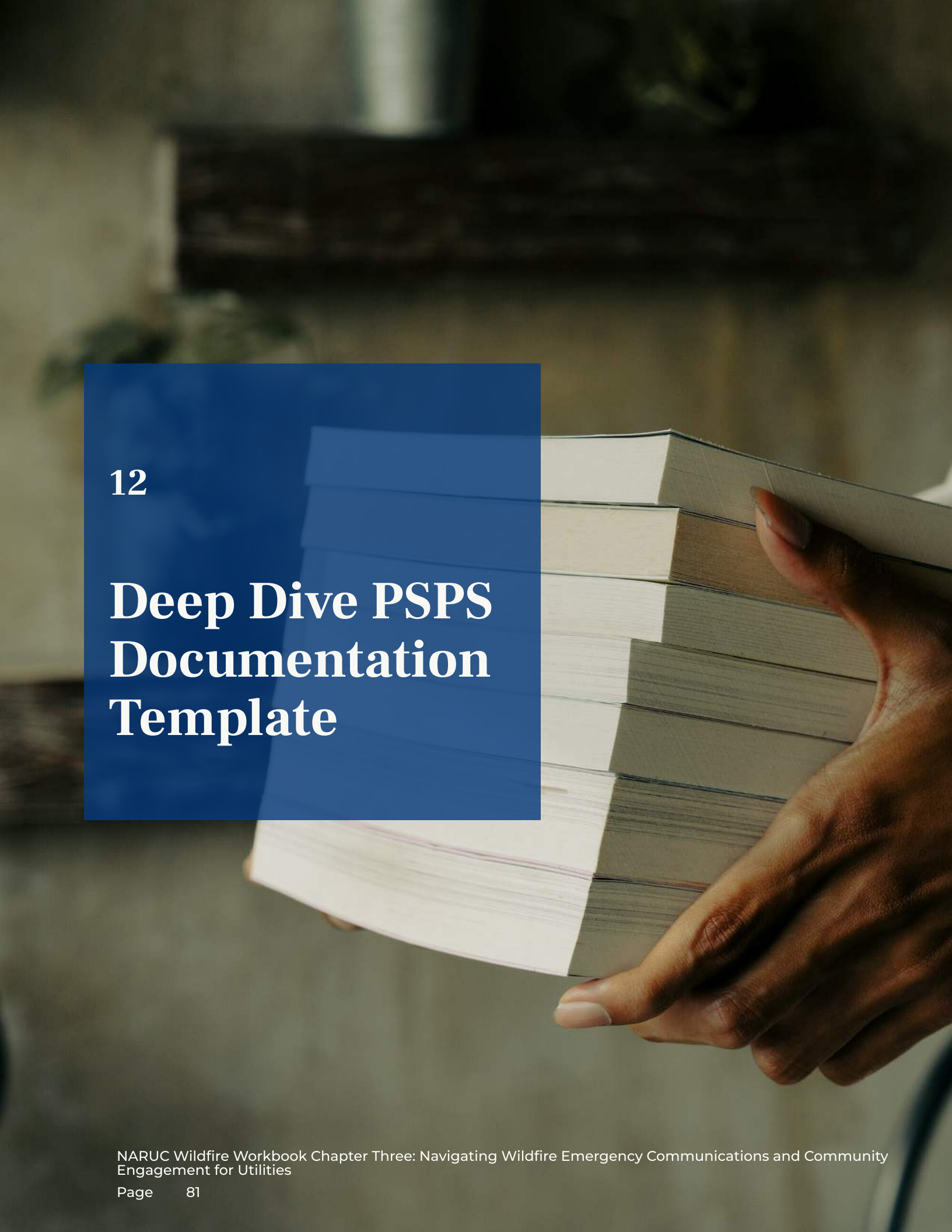
6. **Emergency Communication Plan**:
    - **Activation Triggers**: High fire risk conditions (e.g., Red Flag Warnings from the National Weather Service) or potential PSPS events.
    - **Notification Procedures**: Automated systems deliver mass notifications via text, email, or phone calls, with clear, concise messages.
    - **Scripts**: Pre-drafted scripts for scenarios like PSPS announcements or power restoration updates ensure consistency.
7. **Monitoring and Evaluation**:
    - Metrics include the number of notifications sent, customer feedback scores, and media coverage analysis.
    - Feedback mechanisms, such as online surveys or hotlines, capture stakeholder input.
    - Post-event reviews identify successes and areas for improvement, with annual plan updates.
8. **Appendices**:
    - Contact lists for internal and external stakeholders.
    - Templates for press releases, customer notifications, and FAQs.

Effective Practices

- **Proactivity**: Engage customers early with educational campaigns to build preparedness.
- **Clarity**: Use simple, actionable language in notifications to avoid confusion.
- **Coordination**: Align messaging with emergency agencies to prevent conflicting information.
- **Accessibility**: Ensure communications are available in multiple languages and formats to reach diverse communities.

Regulatory Context

In California, Senate Bill 901 (2018) and CPUC regulations require utilities to include communication strategies in their Wildfire Mitigation Plans (WMPs), as outlined in Public Utilities Code Section 8386 (Pacificorp WMP). These plans must address stakeholder engagement, PSPS notifications, and post-event reporting. Other states, like Oregon and Utah, have similar requirements, emphasizing customer outreach and coordination with local agencies.



12

Deep Dive PSPS Documentation Template

PSPS documentation is critical for utilities to record event details, assess impacts, and comply with regulatory requirements, particularly in California, where the CPUC mandates post-event and post-season reports (CPUC PSPS Reports). Documentation supports transparency, regulatory oversight, and continuous improvement by identifying lessons learned.

Key Components

Documentation for a PSPS Communications template includes:

1. **Event Summary**:
    - **Date and Time**: Start and end times of the PSPS event.
    - **Areas Affected**: Counties, cities, or regions impacted, with attached maps.
    - **Reason for PSPS**: Weather conditions (e.g., high winds, Red Flag Warnings) and fire risk assessment.
    - **Duration**: Total hours of power shutoff.
2. **Customer Impact**:
    - **Number Affected**: Total customers and breakdown by type (residential, commercial, industrial).
    - **Geographic Data**: Census tracts or ZIP codes affected, with geospatial data reports as required by CPUC's POSTSR2 template.
3. **Communication Activities**:
    - **Notifications**: Dates, times, channels (text, email, social media), and sample messages.
    - **Media Outreach**: Press releases issued and media interviews conducted.
    - **Community Engagement**: Meetings with local governments, tribal nations, or community groups.

4. **Operational Details**:
    - **Shutoff Procedures**: Steps taken to de-energize power, including coordination with other utilities.
    - **Restoration Procedures**: Process for restoring power, including challenges and resolutions.
5. **Costs Incurred**:
    - **Direct Costs**: Personnel (e.g., overtime), equipment (e.g., helicopters).
    - **Indirect Costs**: Lost revenue due to outages.
    - **Education and Outreach**: Costs for surveys and campaigns, as per CPUC's POSTSR3 template.
6. **Complaints and Feedback**:
    - **Complaints**: Total number and nature (e.g., lack of notice), documented per CPUC's POSTSR4 template.
    - **Resolution**: Actions taken to address complaints.
7. **Lessons Learned**:
    - **Successes**: Effective strategies, such as timely notifications.
    - **Improvements**: Areas like delayed restoration or communication gaps.
    - **Action Items**: Specific steps for future events.
8. **Supporting Documents**:
    - Maps of affected areas and PSPS zones.
    - Weather reports, such as Red Flag Warnings (National Weather Service).
    - Internal memos and coordination logs.

PSPS Citations

- BPA 2024 Wildfire Mitigation Plan
- CPUC Utility PSPS Reports
- CPUC PSPS Post-Event Report Template
- CPUC POSTSR1 Narrative Report Template
- CPUC POSTSR2A PSPS Data By Census Tract
- CPUC POSTSR2B PSPS Data Non-Spatial
- CPUC POSTSR3 Education and Outreach Costs
- CPUC POSTSR4 Complaints Documentation
- CPUC PSDR 2022 Data Report Template
- Pacificorp Wildfire Mitigation Plans
- National Weather Service Red Flag Warning

13

Deep Dive: Community Resource Centers Key Points

- **California and Oregon**: Utilities are required or voluntarily establish Community Resource Centers (CRCs) during wildfire-related Public Safety Power Shutoffs (PSPS), offering services like charging stations and water.
- **Texas, Florida, Louisiana**: During hurricanes, state and federal agencies, like FEMA, set up Disaster Recovery Centers (DRCs), with utilities focusing on power restoration rather than direct CRC operation.
- **Colorado and Washington**: Limited utility-led CRCs; county or state-led resource centers and FEMA DRCs are more common during wildfires.
- **North Carolina**: Similar to hurricane-prone states, relies on state and FEMA-led DRCs for hurricane recovery, with utilities providing outage updates.
- **Gaps**: CRCs often lack food, medical support, pet accommodations, and multilingual resources across states.
- **Engagement**: Strategies range from formal community working groups in California to utility websites and state coordination in other states.
- **Additional Agencies**: Health departments, non-profits, and emergency management agencies are critical for comprehensive disaster response.

Community Resource Centers Overview

Utilities in wildfire-prone states like California and Oregon set up CRCs to support communities during power outages caused by PSPS events, providing essentials like device charging, water, and restrooms. In hurricane-prone states such as Texas, Florida, Louisiana, and North Carolina, state and federal agencies, along with non-profits, establish DRCs to assist with recovery, while utilities focus on restoring power. In states like Colorado and Washington, wildfire response often involves county-led resource centers or FEMA DRCs, with utilities prioritizing prevention and mitigation. Across all states, gaps in services like food, medical care, and pet support suggest a need for enhanced collaboration with additional agencies.

Gaps and Additional Resources

CRCs and DRCs could be improved by addressing gaps such as:

- **Food and Medical Support**: Most centers lack consistent food provision or medical personnel.
- **Pet Accommodations**: Few centers offer pet-friendly facilities.
- **Multilingual Resources**: Information in multiple languages is limited, especially in diverse communities.
- **Transportation and Overnight Support**: Access for non-drivers and after-hours support are often inadequate.

Additional resources could include partnerships with non-profits like the American Red Cross for food and shelter, health departments for medical support, and transportation agencies for better access.

Agencies to Involve

Beyond utilities and public utility commissions, key agencies include:

- **Emergency Management**: Coordinates disaster response (e.g., FEMA, state agencies, law enforcement and fire agencies).
- **Health Departments**: Provide medical and public health support.
- **Non-profits**: Offer food, shelter, and emotional support (e.g., Red Cross, Salvation Army).
- **Social Services**: Support vulnerable populations like the elderly or disabled.
- **Transportation Departments**: Ensure access to CRCs and evacuation routes.

Sampling of Templates and Guides

- **California**: CPUC PSPS Guidelines outline CRC requirements.
- **Oregon**: Utility plans and 211info.org provide CRC information.
- **Texas**: Texas General Land Office offers hurricane preparedness resources.
- **Florida**: FEMA DRCs guide recovery efforts.
- **Louisiana**: Lafayette Utilities System's Hurricane Handbook

Community Resource Centers for Utilities During Disasters

This report provides a comprehensive analysis of Community Resource Centers (CRCs) and similar facilities established by utilities or in collaboration with state agencies during disasters such as wildfires, hurricanes, floods, and other events causing power disruptions. It includes requirements, engagement strategies, examples from multiple states (California, Oregon, Texas, Colorado, Washington, Florida, Louisiana, and North Carolina), gaps in services, additional agencies to involve, and available templates or guides. The focus is on utilities' roles in wildfire and hurricane scenarios, with an emphasis on identifying gaps and enhancing community support.

Community Resource Center Requirements

Utilities' roles in establishing CRCs vary by state and disaster type. Below is a detailed breakdown of requirements across states, focusing on wildfires and hurricanes.

State	Engagement Strategies	Source
California	Quarterly working groups with communities, AFN representatives (access and functional needs), and public safety partners; PSPS exercises with CAL FIRE and Cal OES; precise PSPS information on utility websites.	CPUC PSPS
Oregon	CRC information via utility websites and 211info; notifications through phone, email, and text.	211info PSPS
Texas	State-level coordination via TDEM (Texas Division of Emergency Management); utilities like CenterPoint Energy provide outage updates through maps and alerts.	Texas Hurricane Center
Colorado	County-led engagement through resource centers; utilities collaborate with fire departments for prevention	Boulder OEM
Washington	Utilities submit annual wildfire plans to UTC; DRCs provide centralized assistance information	FEMA DRC Locator
Florida	DRCs coordinate with utilities for service updates; 211 services provide resource information.	Charlotte County
Louisiana	Utilities distribute preparedness guides (e.g., LUS Hurricane Handbook); informal CRCs rely on community partnerships	AARP Louisiana
North Carolina	State and FEMA coordinate DRCs; utilities like Duke Energy engage via outage maps and customer alerts.	NC DPS

Examples:

- **California**: In 2019, PG&E opened 28 CRCs during a PSPS event, providing restrooms, water, charging stations, and air-conditioned seating for up to 100 people. Southern California Edison (SCE) uses mobile and fixed CRCs in high fire-risk areas.
- **Oregon**: In 2022, Pacific Power set up temporary CRCs in Douglas, Marion, and Linn counties during a PSPS event, offering air conditioning, water, snacks, and pet crates. PGE directs customers to 211info for CRC locations.
- **Texas**: During Hurricane Beryl (2024), FEMA DRCs and non-profits like the Houston Food Bank provided meals and water, while CenterPoint Energy focused on outage updates via its tracker.
- **Colorado**: After the 2021 Marshall Fire, Boulder County established a Donations and Resource Center to distribute food, hygiene products, and financial aid
- **Washington**: During wildfires, FEMA DRCs provide assistance information, accessible via the DRC Locator.
- **Florida**: Post-Hurricane Milton (2024), FEMA opened DRCs at Orange County Multicultural Center and Bithlo Community Center, with utilities like Duke Energy providing restoration updates.
- **Louisiana**: After Hurricane Ida (2021), “relief islands” like Walmarts and churches served as informal CRCs, while Lafayette Utilities System distributed a Hurricane Handbook with preparedness tips
- **North Carolina**: Following Hurricane Helene (2024), FEMA established DRCs to assist with recovery, while Duke Energy provided outage maps and restoration updates.

Engagement Strategies

Engagement strategies ensure communities are informed and supported during disasters. Below is a summary of state-specific approaches:

State	Engagement Strategies	Source
California	Quarterly working groups with communities, AFN representatives (access and functional needs), and public safety partners; PSPS exercises with CAL FIRE and Cal OES; precise PSPS information on utility websites.	CPUC PSPS
Oregon	CRC information via utility websites and 211info; notifications through phone, email, and text.	211info PSPS
Texas	State-level coordination via TDEM (Texas Division of Emergency Management); utilities like CenterPoint Energy provide outage updates through maps and alerts.	Texas Hurricane Center
Colorado	County-led engagement through resource centers; utilities collaborate with fire departments for prevention.	Boulder OEM
Washington	Utilities submit annual wildfire plans to UTC; DRCs provide centralized assistance information.	FEMA DRC Locator
Florida	DRCs coordinate with utilities for service updates; 211 services provide resource information.	Charlotte County
Louisiana	Utilities distribute preparedness guides (e.g., LUS Hurricane Handbook); informal CRCs rely on community partnerships.	AARP Louisiana
North Carolina	State and FEMA coordinate DRCs; utilities like Duke Energy engage via outage maps and customer alerts.	NC DPS

Examples:

- **California**: PG&E's 2023 PSPS Pre-Season Report included community briefings and coordination with local authorities.
- **Oregon**: PGE uses interactive maps and 211 services for PSPS notifications.
- **Texas**: During Hurricane Beryl, TDEM coordinated with local officials, and CenterPoint Energy provided real-time outage updates.

- **Colorado**: Boulder County engaged communities through donation drives and resource centers post-Marshall Fire.
- **Washington**: The UTC annually holds wildfire season debrief to discuss utility preparedness and has done so since 2021.
- **Florida**: Charlotte County's Goodwill CRC provided FEMA/SBA assistance, with utilities offering water/sewer updates.
- **Louisiana**: LUS distributed its 2024 Hurricane Handbook at libraries and city halls
- **North Carolina**: Duke Energy collaborated with state agencies to provide outage updates during Hurricane Helene recovery.

Gaps and Additional Resources Needed

While CRCs and DRCs provide critical support, several gaps persist across states:

1. **Food Provision**: California and Oregon CRCs typically provide water but not food. Texas, Florida, and Louisiana DRCs sometimes include meals, but consistency is lacking.
2. **Medical Support**: Few centers offer first aid or medical personnel, leaving a gap for vulnerable populations.
3. **Pet Care**: Only some Oregon CRCs provide pet crates; most states lack pet-friendly facilities.

4. **Transportation Access**: California mandates transportation for AFN populations, but other states have limited options for non-drivers.
5. **Overnight Support**: CRCs often close at night (e.g., 10:00 p.m. in California), leaving gaps for overnight needs.
6. **Multilingual Resources**: Information in multiple languages is limited, especially in diverse communities.
7. **Mental Health Support**: Emotional support services are rarely available at CRCs.

Additional Resources:

- **Food and Medical Services**: Partner with non-profits like the American Red Cross or Houston Food Bank to provide meals and medical support.
- **Pet Accommodations**: Establish pet-friendly areas or partner with animal shelters.
- **Transportation**: Expand shuttle services or collaborate with transportation departments.
- **Multilingual Support**: Provide information in multiple languages, leveraging 211 services or community organizations.
- **Overnight Shelters**: Coordinate with FEMA or local agencies to offer shelters for after-hours support.

Examples:

- **FEMA DRCs**: In Florida, post-Hurricane Milton DRCs assisted with aid applications, but lacked food or medical services.
- **Non-profit Involvement**: The Houston Food Bank provided meals during Hurricane Beryl in Texas, a model for utility partnerships.
- **Pet Support**: Oregon's Pacific Power included pet crates at some CRCs, a practice other states could adopt.

Other Agencies to Involve

A coordinated disaster response requires collaboration beyond utilities and public utility commissions:

Agency Type	Role	Examples
Emergency Management	Coordinate disaster response and resource allocation	Cal OES, TDEM, NC DPS, FEMA
Health Departments	Provide medical support and address public health concerns	Colorado Department of Public Health, Florida Department of Health
Social Services	Support vulnerable populations (e.g., elderly, disabled)	Louisiana Office of Community Development, Texas Health and Human Services
Non-profits	Offer food, shelter, and emotional support	American Red Cross, Salvation Army, Houston Food Bank
Telecommunications	Ensure communication services during outages	AT&T, Verizon
Transportation	Manage evacuation routes and access to CRCs	Colorado Department of Transportation, Florida Department of Transportation

Examples:

- **California**: Cal OES collaborates with utilities during PSPS exercises.
- **Texas**: TDEM coordinates with non-profits like the Salvation Army for hurricane relief.
- **Florida**: The Florida Department of Health supports DRCs with public health resources.
- **Louisiana**: The Office of Community Development administers recovery programs post-hurricanes.

Templates and Guides

Several resources provide frameworks for CRC setup and disaster recovery:

- **California**: CPUC's PSPS Guidelines outline CRC requirements and engagement strategies.
- **Oregon**: Utility-specific plans from PGE and Pacific Power guide CRC setup.
- **Texas**: Texas General Land Office's Hurricane Preparedness page offers recovery resources.
- **Colorado**: Colorado Wildfire Risk Assessment Portal provides risk assessment tools.
- **Washington**: Washington UTC's wildfire plans guide utility preparedness
- **Florida**: FEMA's DRC guidelines support recovery efforts.
- **Louisiana**: Lafayette Utilities System's Hurricane Handbook offers preparedness tips.
- **North Carolina**: FEMA's recovery resources for Hurricane Helene.
- **National**: FEMA's Roadmap to Federal Resources for Disaster Recovery.

Community Resource Center Setup Guide

Planning and Development

- **Timeline**: Develop a CRC plan within 60 days, using local demographic data to address access and functional needs (AFN) populations.
- **Consultation**: Engage with regional local government working groups, wildfire advisory boards, public safety partners, tribal representatives, senior citizen groups, business owners, and healthcare providers.

Siting and Accessibility

- **Location**: Choose familiar public venues (e.g., recreational centers, schools, libraries, Walmarts, churches) that are ADA accessible with at least two egress routes.
- **Proximity**: Ensure most residents can reach a CRC within a 30-minute drive, adjusting based on community needs.
- **Transportation**: Plan for public transportation access (e.g., one-hour trip) and provide transportation for AFN populations upon request.

Operating Hours

- **Standard Hours**: Operate from 8:00 a.m. to 10:00 p.m. during disaster events.
- **Adjustments**: Allow local government facilities to set earlier closing times if needed.

Essential Services

- **Amenities**: Provide device charging stations, cellular network services, water, chairs, restrooms, ice, and disaster information representatives.
- **Reporting**: Include CRC operations in quarterly updates to the public utility commission.

Engagement Strategies

- **Working Groups**: Establish quarterly regionalized groups with community and AFN representatives to gather feedback.
- **Communication**: Develop notification plans and ensure public access to disaster event information via utility websites, 211 services, or DRC locators.
- **Exercises**: Conduct disaster response exercises in high-risk areas with relevant agencies.

Considerations for Enhancement

- **Food**: Add food services or vendors to support extended outages.
- **Medical Support**: Include basic first aid or medical personnel.
- **Pet Care**: Provide pet-friendly facilities or partner with animal shelters.
- **Multilingual Resources**: Offer information in multiple languages.
- **Overnight Support**: Coordinate with FEMA or local agencies for shelters or extended hours.

Synopsis

Utilities' roles in establishing CRCs during disasters vary by state and disaster type. In wildfire-prone states like California and Oregon, utilities directly set up CRCs during PSPS events, offering essential services. In hurricane-prone states like Texas, Florida, Louisiana, and North Carolina, FEMA and state agencies lead DRCs, with utilities supporting power restoration. Colorado and Washington rely on county or FEMA-led resource centers, with utilities focusing on wildfire prevention. Gaps in food, medical support, pet care, and multilingual resources highlight the need for collaboration with health departments, non-profits, and transportation agencies. Engagement strategies range from formal working groups to utility websites and state coordination, emphasizing community preparedness and resilience.

Key Citations

- CPUC Public Safety Power Shutoff Guidelines - California's guidelines for PSPS events and CRC requirements.
- 211info Public Safety Power Shutoffs - Oregon's resource for CRC locations during PSPS.
- Texas General Land Office Hurricane Preparedness - Texas resources for hurricane preparedness and recovery.
- Boulder OEM Marshall Fire Donations and Resource Center - Boulder County's resource center for Marshall Fire recovery.
- Washington UTC Wildfire Mitigation Plans - Washington's utility wildfire preparedness plans.
- FEMA Disaster Recovery Centers - FEMA's guidelines for DRC setup and operations.
- Lafayette Utilities System Storm Central - Louisiana's utility hurricane preparedness handbook.
- FEMA Disaster 4827 Hurricane Helene - FEMA's recovery resources for North Carolina's Hurricane Helene.
- KOAA News Colorado Springs Utilities Wildfire Prevention - Colorado utility wildfire mitigation efforts.
- Seattle Public Utilities Wildland Fire Crew - Washington utility wildfire response.
- Charlotte County Storm Recovery - Florida's hurricane recovery resources.
- Houston Food Bank Severe Weather Resources - Texas non-profit food assistance during disasters

- AWWA Emergency Preparedness Guidelines - National guidelines for utility disaster preparedness.
- FEMA Recovery Resources - FEMA's roadmap for disaster recovery funding.
- AARP Louisiana Hurricane Guide - Louisiana's guide for hurricane assistance.
- NC DPS Emergency Management - North Carolina's emergency management resources.

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