Briefing Overview

- Cal OES Emergency Communications Division
  - Mission and structure
  - Capabilities Discussion
- 9-1-1 Outage Reporting
- Discussion and Questions
Emergency Communications Division
Organizational Chart

Mission: Facilitate the availability of First Responder Broadband and Land Mobile Radio Communications to maximize operational integration Statewide.

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March 2020
Promotes the Public Safety Broadband Network service integration into 9-1-1 for all service providers and for all Public Safety entities
- Performs outreach, education, and coverage assessments for FirstNet deployment
- Facilitates communications among responders during emergencies and performs all duties related to Emergency Support Function 2, Communications, as required
- Manages the integration of broadband services with the Next Generation 9-1-1 system, Computer Aided Dispatch, Mobile Data Computer, Mobile Data Terminals and Public Safety Answering Point (PSAP) integration
- Works with AT&T and FirstNet through the 25-year federal project timeline to ensure the needs of public safety in California are understood and addressed
- Manages CalNET contracts for AT&T/FirstNet, Sprint, T-Mobile, and Verizon
- Provides communication planning expertise for emergency planning
- Supports communications exercises and training
Coordinates with Operational Areas within each respective Mutual Aid Region to:

- Assists local & tribal governments in their communications planning to increase resiliency and interoperability
- Identify gaps in communications and assist with identifying comprehensive solutions

- Responsible for providing Interoperable and Emergency Telecommunications solutions in support of Incident Command requirements
- Recruits/trains/maintains a roster of Communication Reserve Unit volunteers that play a pivotal role in performing the TACCOM Mission statewide
- Coordinates operational communications at Inland, Coastal and Southern Regional Emergency Operation Centers and the State Operations Center
Emergency Support Function #2 – Communications (CA-ESF2) Overview

- CA-ESF2 coordinates status of communication systems and facilitates providing resources needed to sustain and restore the public communications infrastructure
  - Assists State, tribal, and local governments with emergency communications (TACCOM Deployable Comm Assets)
  - Assists with restoration of public safety communications systems and first responder networks
  - Informs local and state agencies to affect sound decision making
- All information requests are urgent unless otherwise indicated
- Contact Information:
  - EF2@caloes.ca.gov
  - Activated in SOC
  - 24/7/365 CSWC
  - 916-845-8546
  - 916-845-8911

March 2020
Use Case: Public Safety Power Shutoff (PSPS) Summary – October 2019

- PG&E – between October 9 and October 11 – shut down power to an estimated population of 1.8 million people. Some of those customers were without power for more than 2 days

- In late October, we saw the most widespread outages

- PG&E de-energized an estimated 447,400 people between October 23 and October 25

- Between October 26 and November 1, across two separate PSPS events, PG&E shut off power to an estimated population of 2.4 million people (roughly 15% of the state’s population. Some of those people that lost power on October 26 did not see their power restored for 6 days

- At the same time PG&E executed PSPS in the north state, SoCal Edison cut power to an estimated 181,000 people and San Diego Gas & Electric to an estimated 54,000 people

- Throughout the October events, 17 of California’s 58 counties saw between 50,000 to more than 150,000 people lose power; 13 counties experienced 5 or more separate PSPS power outage events

March 2020
PSPS Considerations – Cascading Impacts

- **Communications:** how do we ensure first responders have the ability to communicate with each other, 9-1-1 centers have the ability to take calls, and every individual has the ability to make those 9-1-1 calls?

- **Schools:** how do we ensure children can still go to school? And be safe once there? At the height, 564 schools closed due to PSPS outages, affecting 171,955 students.

- **Sheltering and Feeding:** how do we ensure wraparound support for those who are forced from their homes because they lack of power? How do we support small grocery stores, restaurants, and school cafeterias whose back-up power is not sufficient during back-to-back, multiple day black-outs?

- **Transportation:** what measures need to be put in place when traffic signals are out? How do we keep transit systems, rail arms, tolls, bridges, and tunnels operational for commuters?

- **Commodities:** how do we provide support to move fuel, food, and other essential commodities?

- **Public Health:** how do we ensure hospitals, clinics, and other health care facilities aren’t adversely impacted and diverted from their primary purposes? How do we ensure safe drinking water and wastewater services and that there are no detrimental public health and environmental impacts?

- **Preparing for Fire:** amidst all these areas and more, we had to stand ready to respond to the elevated fire risk across the state.

March 2020
The PSPS event, coupled with the numerous, simultaneous fires throughout California, highlighted some of the vulnerabilities of the communication systems in California.

- At the peak, **874 cell sites** and **454,722 VoIP/wireline** customers lost service. In Marin County, 57% of their cellular sites were out of service at one point during the PSPS events.
- During this same timeframe, zero LMR sites were offline.
- Cal OES worked with the FCC to activate DIRS for the event: [http://www.fcc.gov/powershutoff](http://www.fcc.gov/powershutoff)
- Cal OES is working to define outage reporting regulations in support of SB 670 to address the outage reporting challenges.
- Ultimately, backup power is needed for cellular, wireline and VoIP.
PSPS County Impacts

**Total per County**

0 - Del Norte, Imperial, Kings, Lassen, Modoc, San Luis Obispo, Tulare
1 - Inyo, Madera, Merced, Sacramento, San Joaquin, Sutter
2 - Colusa, Fresno, Glenn, Mariposa, Mono, Monterey, Orange, San Benito, Stanislaus, Trinity
3 - Alameda, Alpine, Contra Costa, Humboldt, Marin, San Diego, Santa Barbara, Santa Clara, Santa Cruz, Shasta, Siskiyou, Solano, Tuolumne, Ventura, Yolo
4 - Amador, Mendocino, Riverside, San Bernardino, San Mateo, Tehama
5 - Calaveras, Lake, Los Angeles, Sierra
6 - Butte, El Dorado, Nevada, Placer, Plumas, Sonoma, Yuba
7 - Kern, Napa

**Date of Events**

PG&E - 10/23/19, 10/26/19, 10/29/19
SCE - 10/02/19, 10/12/19, 10/21/19, 10/27/19
SDG&E - 10/10/19, 10/15/19, 10/20/19

**Population Affected**

- Maximum Population Affected during events
  - 0-5,000
  - 5,000-10,000
  - 10,000-25,000
  - 25,000-50,000
  - 50,000-100,000
  - 100,000-150,000
  - 150,000+

Population based on a x2.5 of Impacted Customers

March 2020
## Priority Counties for Back Up Power

### PRIORITY COUNTIES

<table>
<thead>
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<th>Total PSPS Events Per County</th>
<th>County</th>
<th>Population Affected</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Sonoma</td>
<td>150k +</td>
</tr>
<tr>
<td>6</td>
<td>El Dorado</td>
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<tr>
<td>5</td>
<td>Los Angeles</td>
<td>50-100k</td>
</tr>
</tbody>
</table>
9-1-1 Outage Reporting

- Staff on call 24/7/365
- CA911outages@caloes.ca.gov
- Interface with carriers and providers
- 9-1-1 Branch may contact PSAP for more info
- What to do for TDOS or DDOS
  - Contact Telecom Vendor
  - Cal OES State Threat Assessment Center (STAC)
9-1-1 Network Outages

CPE sends number to data base for caller location.

Wireless Location Info

VoIP Location Info

MSC or VPC

Selective Router

Location Data Bases

ALI Data Base

Landline 9-1-1

Wireless 9-1-1

VoIP 9-1-1

VoIP Service Provider

MSC or VPC

Selective Router

End-Office Switch

CPE sends number to data base for caller location.

PSAP

March 2020
9-1-1 Network Outages:

- An average of 16 outages per month
- An average of 263 hours per month
  - Someone who needed help might not have been able to reach 9-1-1

Next Gen 9-1-1 will dramatically reduce these outages
9-1-1 Location Outages

- CPE sends number to data base for caller location
- Wireless Location Info
- MSC or VPC
- Phone Number and Voice
- Selective Router
- Call and ANI sent to PSAP
- CPE sends number to data base for caller location
- VoIP Location Info
- Wireless Location Info
- Location Outages
- VoIP Service Provider
- Landline 9-1-1
- Wireless 9-1-1
- VoIP 9-1-1
- ALI Data Base
- Location Info
- ESN
- Location Outages

March 2020
Automatic Number Information and Automatic Location Information (ANI/ALI) outages

- An average of 19 outages per month
- An average of 145 hours per month where location data was not available
- About 50% of all 9-1-1 calls arrive without location information
- When location information is not available, valuable time is lost asking where the 9-1-1 caller is located

**Next Gen 9-1-1 increases location accuracy**
CPE Outages

- Landline 9-1-1
- Wireless 9-1-1
- VoIP 9-1-1

CPE Outages

MSC or VPC

Location Info

End-Office Switch

Phone Number and Voice

Selective Router

Call and ANI sent to PSAP

CPE sends number to data base for caller location

VoIP Location Info

Wireless Location Info

pANI

Location Info

pANI

VoIP Service Provider

Location Data Bases

End-Office Switch

Selective Router

PSAP

VoIP Location

VoIP Service Provider
CPE Outage Summary

- An average of 13 outages per month
- An average of 340 hours per month

How can Cal OES help?
- Ensure vendor is meeting the requirements in the SOW
- Escalate outages using contacts for each vendor

PSAP should notify your vendor as well as send email to CalOES outage

CA911outages@caloes.ca.gov

March 2020
CA Legislature passed SB 670, which was signed into law. The outage reporting process will address many of the current outage reporting challenges

- SB 670 requires telecommunication companies to report outages to Cal OES
- Cal OES must send information to Sheriff's, Emergency Managers and PSAPs
- Cal OES must also develop regulations that define the outage reporting thresholds and how the outages will be reported
- Cal OES has started the regulatory process, which should be completed by July of 2020

https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201920200SB670
In today’s environment, we have no direct visibility into the 9-1-1 system
  • We are dependent on carriers for outage information

The NG9-1-1 system will be monitored 24/7/365 via PNSP/RNSP

The Prime and all Regions will provide a dashboard for Cal OES to monitor the health and stats for end-to-end state NG 9-1-1 system

Dashboard may be available to PSAPs to provide increased situational awareness

eBonding trouble tickets enables PSAPs to have a single point of contact
Sample Data Center View
DRAFT
Questions and Discussion