

TOP HEADLINES

California experts want wireless carriers to power, avoid future communications failures

Failure of wireless communications is preventable, says CPUC office



PARADISE, CA – JAN. 23: Christina Taft visits the commemorative cross honoring her mother, Victoria Taft, one of 86 Camp Fire victim

crosses set up on a hillside in Paradise, Calif., Wednesday, Jan. 23, 2019. (Karl Mondon/Bay Area News Group)

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As an inferno roared toward the town of Paradise in November, police Lieutenant Anthony Borgman desperately tried to reach Cal Fire for information about its progress.

But his cell phone was useless, silenced by damage and loss of power to cell towers and electrical lines. The phones of many of the town's residents also went mute, preventing them from giving or getting information that could have saved lives.

California faces another wildfire season, yet the state's cell phone system still lacks the resiliency needed to prevent a repeat of the Camp Fire's colossal communications failure, according to a legal motion filed by the Public Advocates' office at the California Public Utilities Commission. A total of 66 cell phone sites were either damaged or out of service in Butte County as a result of the deadly blaze.

Fearing blackouts in future natural disasters, the advocates are urging the Commission to immediately require carriers provide backup battery or generator power and network redundancy in designated high fire risk zones to ensure that emergency alerts are received and that 911 calls are answered.

"These are common sense steps to ensure public safety. They are not unattainable or impractical," said Ana Maria Johnson of the Public Advocate's Office of the CPUC. "This is something providers can do, working with local counties and communities, to make happen, so we're better prepared for the next emergency."

More than a decade ago, the Federal Communications Commission ordered carriers to install eight hours of backup power at all cell sites and 24 hours of backup power at all central switching facilities. But when the wireless industry challenged the order in court and won on procedural grounds, the FCC dropped the effort. In 2007, California also considered stronger reliability standards but declined to impose them. Now the CPUC is recommending that the FCC try again to strengthen the rules, but it is not known what, if anything, will be done.

In the meantime, more than half of California residents have cut the landline cord and rely solely on cell phones. The number is even higher — 70 percent — of adults renting homes. This wireless network delivers federal and state emergency alerts, transmits 911 calls and helps police and other “first responders” make decisions about when and where to deploy resources.

Too often, the wireless network fails, according to the Public Advocates’ motion filed earlier this month.

For Lt. Borgman of the Paradise Police Department, cellular information was critical to his ability to accurately issue evacuation alerts, identify exit routes and direct the town’s emergency services dispatch operation, which processed the flood of incoming 911 calls.

He depended on wireless communication because Cal Fire’s Incident Command post was 45 minutes away, in a remote region served only by dirt roads. It wasn’t practical, or safe, for Paradise officials to send their team there.

“At a certain point, I couldn’t maintain direct communication with Cal Fire,” said Borgman. “By the time it got to the point where I needed to request resources, the phones weren’t working.

“I couldn’t make a call on my cell phone from here,” he said, adding that the two agencies’ different non-cell radio frequencies were not compatible. “There was communication for a while, but then it just got to a point where all that broke down.”

Meanwhile, Paradise residents weren't getting messages to evacuate. An analysis by the Bay Area News Group showed that about 56 percent of the 4,272 emergency alert calls in first hours of Paradise blaze failed, and the lack of power at the cell towers is a prime suspect in that failure.

As the fire progressed, the call-failure rate climbed. Seventeen towers were lost just in the fire's first day, either because they were damaged or lost power, according to CPUC sources.

When lives are at risk, communication is critical, said Christina Taft, 25, a business student at CSU Chico who lost her mother, Victoria, in the fire. She and her mom received no emergency warnings. And she was unable to get help for her mother after repeatedly calling 911. She is researching new approaches to emergency communications — calling the proposed platform “Victoria” after her mother — so others don't suffer the same fate.

“It's a repeating pattern of response deterioration,” said Taft. “The response and technology used in Paradise actually became worse from 2008 to 2018, not better.

“Emergency systems needed to be updated decades ago, before the fires started to become a deadly problem,” she said.

She also urged the state to think beyond backup battery or generator power, exploring solutions such as satellite systems to ease our dependence on physical towers. New technologies such as artificial intelligence and machine learning also could boost communication reliability, she said.

“How come Lyft and Uber can show a person getting responded to in real-time, but we do not have a rescue application to do the same?” she asked.

Lack of redundant transmission paths is also a problem. During a 2014 Mendocino County wildfire, officials reported that destruction of 400 feet of a local telephone carrier's sole fiber optic line in the fire area resulted in the loss of almost every type of communication — telephone, internet, cellular, and 911 — for nearly two days.

During California's severe rainstorms in January and February of 2017, nearly 1 million customers lost access to 911 due to service outages.

In the October 2017 Redwood Complex Fire, wildfires took out the main cell tower and the Laughlin Repeater, leaving residents of Willits without cellphone or landline service or the ability to call 911.

A total of 341 cell sites went down during the 2017 Wine Country Fires, making it impossible for many public safety personnel to communicate with each other or reach 911, according to Mark Ghilarducci, director of the state's Office of Emergency Services.

Meanwhile, the state's communications network is evolving to become increasingly more reliant on internet and wireless services. California's network experiences, on average, about 15 outages and 255 hours of downtime a month due to failures on the grid, according to the state Office of Emergency Services.

The wireless industry says regulatory hurdles have prevented the expansion of cell sites to accommodate backup generators, battery power and network redundancy. Local governments must approve substantial changes to platforms holding the towers to allow space for additional equipment. The Wireless Infrastructure Association has asked the Federal Communications Commission to work with local governments to streamline the approval process.

“Streamlining the process ... needs to be prioritized,” according to a statement from Jonathan Adelstein, president and CEO of the Wireless Infrastructure Association, which represents companies that build, design, own and manage telecommunications facilities. “There is no one-size-fits-all solution. Regulators should consider an all-encompassing approach starting with the basics — removing regulatory barriers to make room for innovation.”

CPUC sources said that the Wireless Infrastructure Association is primarily concerned with lobbying against city regulation of new cell sites in urban areas, and that there are few, if any, substantive barriers to prevent carriers from installing backup power at rural cell towers. Carriers ATT and Verizon did not respond to a request for comment.

Now is time for the state to step into the breach, rather than waiting for the federal government to act, according to Camp Fire victims and the CPUC advocates.

“In the digital age, we need the government to catch up and to go faster in order to help us, not to be decades behind,” Taft said. “Prevention costs less, and saves lives.”

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