

December 18, 2019

The Honorable Lisa Murkowski
Chairman
Committee on Energy & Natural Resources
United States Senate
Washington, D.C. 20510

The Honorable Joe Manchin
Ranking Member
Committee on Energy & Natural Resources
United States Senate
Washington, D.C. 20510

Dear Chairman Murkowski and Ranking Member Manchin:

Public Knowledge, a consumer advocacy organization, submits the following letter to the Senate Committee on Energy and Natural Resources, which was originally submitted to the House Subcommittee on Communications & Technology on December 4, 2019.

Until relatively recently, the reliability of our communications network and the reliability of the power grid were separate issues independent of each other. Our traditional copper network relied on its own source of power and remained functioning indefinitely even in a blackout. Many emergency and safety instructions today still advise people to keep a landline connection so they can maintain communications in case of an extended power outage.

But the conversion to IP (internet protocol) based networks changes all of that. Whether wireless, copper, cable or fiber, IP networks *cannot* be self-powered. This is an inherent technological limitation of IP-based networks. Wireless networks require power not merely for the handset, but for the cell tower and for the network that carries the signal from the tower back to the internet “cloud.” Landlines using voice over IP technology (VOIP), which include all fiber and cable voice service, require separate power at the home and for the network itself. Even traditional copper lines are increasingly phasing out the older, self-powered technology for modern VOIP technologies that cannot self-power and therefore rely on either the power grid or backup power to function in emergencies.

The recent power outages in California associated with the California Wildfires have emphasized the close connection between the resiliency of the power grid and the resiliency of communications networks. In Marin County, one of the wealthiest and technologically connected places on Earth, over 50% of cell tower sites were rendered non-functional because of extended power outages. People were cut off from their family and from direct contact with emergency authorities when they needed it most. The failure of the communications network as a consequence of extended power outages also hampered the ability of first responders to address the emergency and its immediate aftermath.

Federal regulators have been slow to consider this change in technology, and how failure of the power grid now brings down critical communications infrastructure with it. We ask you to consider these issues as you examine the resiliency and reliability of America’s power grid.

December 4, 2019

The Honorable Michael Doyle
Chairman
Subcommittee on Communications
& Technology
United States House of Representatives
Washington, D.C. 20515

The Honorable Robert Latta
Ranking Member
Subcommittee on Communications
& Technology
United States House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman Doyle and Ranking Member Latta:

We write as consumer advocates, civil rights advocates, Tribal advocates and advocates for economic development of local communities and rural America, deeply concerned over the continually declining state of our nation's critical communications infrastructure. While Washington remains focused on "winning the race to 5G," increasing numbers of Americans lack basic, reliable voice telephone service as providers allow their legacy networks to rust and degrade. Lack of maintenance and lack of emergency preparedness have contributed to lengthy outages in periods of natural disaster, where the ability to communicate with emergency services and family is most critical. Once the envy of the world, our national communications network increasingly fails us when we need it most.

The current FCC has aggravated this situation. As one of his first items of business, Chairman Ajit Pai repealed critical safeguards put in place after Superstorm Sandy. Chairman Pai has ignored the recommendations of the FCC's own staff reports after the botched responses by industry to natural disasters such as Hurricanes Michael, Irma and Maria. Nor has Chairman Pai responded to the repeated requests from Democratic Commissioners Jessica Rosenworcel and Geoffrey Starks to address network reliability concerns, most recently highlighted by the California wildfires. The current FCC has further aggravated this situation by misclassifying as an "information service" every modern method of telecommunication – broadband, SMS Texting, facilities based voice over IP (VOIP) –in a deliberate effort to render these services immune to FCC or state jurisdiction.

We therefore ask that you and other members of the subcommittee require Chairman Pai to address these concerns at your upcoming oversight hearing. Below, we provide documentation of declining quality of basic telephone service for millions of Americans, and dangerous declines in network reliability throughout the United States. We stress that these are only a few examples, and that the failure of the FCC to engage in any comprehensive investigation into national network reliability, or to engage in any follow up on the impact of repeal of the post-Superstorm Sandy "Technology Transition" safeguards, makes it impossible to assess the full scope of the problem. What is clear is that we are experiencing broad, systemic failure of critical communications infrastructure, while the agency that Congress created to protect the American people stands idly by.

1. Evidence of Lack of Resiliency: California Wildfire and Power Shut-Offs

For years, the telecom industry has urged policymakers to ignore worries over critical infrastructure by promising us a shiny future of fiber and 5G. The widespread power outages in California designed to mitigate the risk of wildfires, and the resulting havoc these outages caused to California's telecommunications network in a time of crises, should finally show these airy promises for the smoke screen they are. We cannot build a reliable and resilient digital future on a fractured and faulty foundation.

After the wildfires of 2018, all telecommunications carriers were on notice that California power companies might engage in extended "power downs" to reduce the risk of wildfires, or that power might be interrupted as a consequence of wildfires and firefighting activities. In April of 2019, the California Public Utility Commission (CPUC) published "Safety Principles for Communications Providers," a report outlining lessons learned from California's 2018 wildfires and steps necessary to ensure reliable and resilient communications for the 2019 wildfire season.¹ The Report also noted the carriers' claims regarding legal barriers to the CPUC directly requiring carriers to take these steps as a consequence of both state and federal deregulatory action.

Despite this advance warning, California suffered massive failure of its communications networks when most critically needed. Nearly 875 cell sites failed, including over half the cell sites in Marin County.² Over 700 of these failures were due to power failure from a lack of sufficient back up power. At one point, based on *voluntary* carrier reporting, the FCC stated that over 390,000 VoIP customers did not have service due to inadequate back-up power in networks and customer locations.³ More troubling, it appears that PG&E executives, and millions of California residents, are unaware that landline voice-over-IP services do not work in a blackout. As reported by the Associated Press:⁴

¹ California Public Utility Commission, *Safety Principles for Communications Providers*, 2019, available at: [https://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Communications_-_Telecommunications_and_Broadband/Reports_and_Presentations/Principles%20for%20Comm%20Providers%20Final%203-29-19%20\(003\).pdf](https://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Communications_-_Telecommunications_and_Broadband/Reports_and_Presentations/Principles%20for%20Comm%20Providers%20Final%203-29-19%20(003).pdf).

² https://www.vice.com/en_us/article/ywa4p5/wildfire-victims-dont-have-cell-service-thanks-to-greedy-telecoms

³ [FCC Communications Status Report for Areas Impacted by California Public Safety Power Shutoffs, October 27, 2019](#)

⁴ <https://apnews.com/64fdb75d7e434722bd0229e1b458eebc>

Mark Quinlan, PG&E Senior Director for emergency preparedness and response, appeared stumped Tuesday night when asked how people should get information when the power is already out and many cell phones have stopped working.

“People could get the information from a website through family,” he suggested. “Or just get it the old-fashioned way, through calling on a landline.”

As explained by several consumer protection organizations in a letter to the CPUC, communications between public safety and residents were further hampered by the refusal of the FCC to disclose granular data on outages.⁵ Public Knowledge, Consumers Reports,⁶ and Free Press have, in different contexts and proceedings, repeatedly urged the FCC to make this data available to the public, but the FCC has consistently refused to do so. Additionally, Public Knowledge and other consumer organizations have urged the Commission to require that facilities-based VOIP providers offer customers 24-hour back up power at no charge. This request remains pending at the FCC.⁷

2. Evidence of Lack of Resiliency: Hurricanes and Other Natural Disasters

The events in California have prompted speculation that communications failures would be even worse in the event of a major earthquake.⁸ Recent response to hurricanes – a far more

⁵ Letter of Regina Costa, Telecommunications Policy Director, The Utility Reform Network; Melissa W. Kasnitz, Legal Director, Center for Accessible Technology, and Olivia Wein, Staff Attorney, National Consumer Law Center, to President Marybel Batjer, Commissioner Martha Guzman Aceves, Commissioner Liane M Randolph, Commissioner Clifford Rechtschaffen, Commissioner Genevieve Shiroma, Re: R.18-03-011, Order Instituting Rulemaking Regarding Emergency Disaster Relief Program and R.18-12-005, Order Instituting Rulemaking to Examine Electric Utility De-Energization of Power Lines in Dangerous Conditions (October 30, 2019).

⁶ Formerly called Consumers Union.

⁷ Petition for Reconsideration of the National Association of State Utility Consumer Advocates et al., *In the Matter of Ensuring Customer Premises Equipment Backup Power for Continuity of Communications*, PS Docket No. 14- 174 (Oct. 11, 2016), available at: <https://ecfsapi.fcc.gov/file/101139461574/NASUCA%20et%20al%20Pet%20for%20Recon%2010%2011%202016.pdf>.

⁸ Leila Miller and Rong-Gong Lin II, *California suffered widespread cellphone outages during fires. A big earthquake would be much worse*, LA Times (Nov. 5, 2019), available at:

frequent occurrence than major earthquakes – certainly suggest that telecommunications providers have not hardened their networks to maintain reliable and resilient communications in times of national emergency. Yet the Trump FCC has not merely stood idly by, it has actively removed safeguards put in place following Superstorm Sandy.

In 2017, Hurricanes Irma and Maria laid waste to the Island of Puerto Rico and the U.S. Virgin Islands. As documented in a report by Free Press in May 2019,⁹ the communications outages on Puerto Rico were devastating. Full recovery did not occur until after 182 days, the longest communications outage since Hurricane Katrina and among the longest in modern U.S. history. The failure of communications infrastructure complicated disaster relief efforts, and contributed to the suffering and death toll. But other than re-designating \$954 million in Universal Service Fund money for recovery efforts, the FCC’s response was surprisingly anemic – particularly when compared to its reaction to previous storms of similar magnitude and impact. The FCC’s final staff report on the 2017 Hurricane Season recommended little change in the existing voluntary wireless disaster recovery framework.¹⁰

In 2018, in response to an extended outage of over 10 days by some carriers in the wake of Hurricane Michael, the FCC conducted a second inquiry into the Wireless Disaster Recovery Framework. This Report was far more critical of carrier conduct, and of the continued reliance of the FCC on an unenforceable voluntary framework.¹¹ Nevertheless, the Report declined to recommend any follow up regulatory steps that might provide a more robust response.

Indeed, rather than increase oversight or accountability of telecommunications providers, the Commission took the opposite tack. In November of 2017, mere months after Hurricanes Irma and Maria, the Commission relaxed numerous notification safeguards and quality standards

<https://www.latimes.com/california/story/2019-11-05/mass-cellphone-outages-during-blackouts-and-fires-are-a-grim-preview-of-life-after-a-major-earthquake>.

⁹ *Connecting the Dots: The Telecommunications Crisis in Puerto Rico*, Free Press (May 2019), available at: https://www.freepress.net/sites/default/files/2019-05/connecting_the_dots_the_telecom_crisis_in_puerto_rico_free_press.pdf.

¹⁰ *Report on the 2017 Atlantic Hurricane Season’s Impact on Communications*, Public Safety and Homeland Security, FCC (rel. Aug. 24, 2018), available at: <https://www.fcc.gov/document/2017-atlantic-hurricane-season-report-impact-communications>.

¹¹ *FCC’s Hurricane Michael Investigation Finds Backhaul, Roaming, And Coordination Problems Hindered Recovery Of Wireless Services*, Public Safety and Homeland Security, FCC (rel. May 9, 2019), available at: <https://www.fcc.gov/document/fcc-releases-report-communication-impacts-hurricane-michael-0>.

relating to network maintenance and replacement adopted following Superstorm Sandy.¹² The Commission relaxed these safeguards even further in 2018.¹³ In December of 2017, the FCC classified broadband as an “information service,” a decision the D.C. Circuit remanded in part because the FCC refused to consider how its abdication of authority over broadband would impact public safety and universal service.¹⁴ This surrender of its authority to promote public safety and reliability hurts everyone; but the loss of copper lines particularly hurts low-income communities, communities of color, seniors and communities in rural America, which are disproportionately dependent on traditional copper telephone lines for traditional telephone service and on DSL for broadband.¹⁵

The Commission claimed these deregulatory steps would encourage carriers to upgrade their networks. Instead, as discussed below, deregulation has created the opposite effect. Increasingly, networks throughout the United States have degraded to the point where they can hardly be considered operational. Even where networks are functional, multi-state outages for no apparently reason are now occurring, with no accountability or plans to prevent them in the future.

3. Evidence of Widespread Network Degradation

On December 27, 2018 CenturyLink experienced a network shutdown for over 24 hours, impacting 22 million customers in 39 states.¹⁶ This outage impacted not merely CenturyLink service territory, but numerous 911 routing services that rely on CenturyLink’s network. The

¹² *In the Matter of Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, Report and Order, Declaratory Ruling, and Further Notice of Proposed Rulemaking, WC Docket No. 17-84 (rel. Nov. 29, 2017), available at: <https://www.fcc.gov/document/fcc-acts-enable-investment-next-generation-networks-0>

¹³ *In the Matter of Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, Second Report and Order, WC Docket No. 17-84 (rel. June 8, 2018), available at: <https://www.fcc.gov/document/fcc-eliminates-needless-barriers-next-generation-networks-services-0>

¹⁴ *Mozilla Corp. v. FCC*, 940 F.3d 1 (D.C. Cir. 2019).

¹⁵ Roberto Gallardo and Brian Whitacre, *DSL, the Slowest Technology, Remains the One Most Available in Rural*, The Daily Yonder (Sept. 18, 2019), available at: <https://www.dailyyonder.com/dsl-the-slowest-technology-remains-the-one-most-available-in-rural/2019/09/18/>.

¹⁶ Matt Kapko, *FCC Issues Scathing Report on 37-Hour CenturyLink Outage*, SDxCentral (Aug. 20, 2019), available at: <https://www.sdxcentral.com/articles/news/fcc-issues-scathing-report-on-37-hour-centurylink-outage/2019/08/>.

outage also impacted performance on Verizon Wireless and Comcast, which use CenturyLink to carry portions of their network traffic.¹⁷ The FCC Report traced the outage back to a single malfunctioning network card generating “malformed packets,” combined with an insufficiently robust network architecture. This followed a “sunny day” 911 outage on CenturyLink’s network 6 months earlier due to a technician’s “misconfiguration” of 911 routing.¹⁸

The rise of such “technical glitches” and lack of accountability in our increasingly complicated and interconnected communications infrastructure would on its own be cause for alarm, and a reason for the FCC to exercise greater oversight. But more than a decade of pervasive deregulation, combined with aggressive use by the FCC of preemption and forbearance authority, has created a growing crisis of voice and broadband outages for everyone, with rotting copper and poor cell phone service in an ever-larger swath of rural America. An investigation by the Minnesota Attorney General found evidence of broad, comprehensive problems in Frontier’s provision of phone service, evidence of outages lasting months, and a lack of available voice service in some areas placing lives at risk.¹⁹

A recent California study reached similar conclusions with regard to AT&T and Frontier.²⁰ That study found that AT&T and Frontier had followed a strategy of underinvestment in rural areas where competition did not exist, and had focused investment on wealthier communities with higher potential rates of return. As a result, traditional telephone service had degraded, often failing to meet state quality standards and suffering an increasing number of outages.

¹⁷ *December 27, 2018 CenturyLink Network Outage Report*, Public Safety and Homeland Security Bureau, FCC (Aug. 19, 2019), available at: <https://docs.fcc.gov/public/attachments/DOC-359134A1.pdf>.

¹⁸ *FCC Announces Settlements with CenturyLink & West Safety Communications Regarding 911 Outage In August 2018*, FCC News (Nov. 4, 2019), available at: <https://docs.fcc.gov/public/attachments/DOC-360612A1.pdf>.

¹⁹ Letter of Linda Jensen, Assistant Attorney General for Minnesota Department of Commerce to Daniel Wolf, Executive Secretary of Minnesota Public Utilities Commission, at 2-3 (Jan. 4, 2019), available at: <http://mn.gov/commerce-stat/pdfs/frontier-service-quality-report-final.pdf>.

²⁰ *Examination of the Local Telecommunications Networks and Related Policies and Practices of AT&T California and Frontier California*, Economics and Technology, Inc., at 1-3 (Apr. 2019), available at: https://www.tellusventure.com/downloads/cpuc/quality/cpuc_network_examination_2010_2017_executive_summary_redacted_22jul2019.pdf.

FCC preemption and deregulation have made it difficult for states to address these growing problems on their own. For example, in *Charter v. Lange*, 903 F.3d 715 (8th Cir. 2018), the 8th Circuit found that the FCC’s decision to preempt VOIP services from state regulation preempted all state authority to regulate VOIP offerings. California officials have also noted how deregulation and preemption have hampered the efforts to require carriers to maintain minimum standards conducive to safe operation.

Conclusion

We cannot “win the race to 5G” or “compete globally in the broadband world” with a crumbling foundation of neglected infrastructure. *Everyone* in the United States should expect their communications system to work regularly and reliably – especially in times of crisis and natural disaster. Congress created the FCC for this very purpose.²¹ But the FCC has increasingly neglected this critical responsibility.

We strongly urge the Committee to hold the Commission accountable for these lapses and demand that they take necessary action to provide Americans with the reliable and resilient infrastructure we both need and deserve.

Respectfully Submitted,

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²¹ See 47 U.S.C. §151.

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cc:

The Honorable Frank Pallone, Jr., Chairman, Committee on Energy & Commerce
The Honorable Greg Walden, Ranking Member, Committee on Energy & Commerce
Members of the Subcommittee on Communications & Technology