TESTIMONY OF HAROLD FELD,
SENIOR VICE PRESIDENT, PUBLIC KNOWLEDGE
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Chairwoman Rosenworcel, thank you for inviting me to speak today. For years, you have been one of the few public officials to champion this issue even after the press coverage died down and the public has moved on to something else. I want to especially thank you for making network reliability and resiliency one of the FCC's central priorities.

Given time limitations and the nature of this hearing, I have focused on weather related issues rather than man-made events, such as the failure of the AT&T 911 relay system after the Christmas Day bombing last year in Nashville, TN,[1] or network failures/"sunny day outages" such as the failure of T-Mobile's network in June of 2020.[2]

We Have A Systemic Problem.

In 2019, at the height of the California wildfire season, California's power utility PG&E advised the public that they could find out when power would be restored by visiting their website. A reporter asked how people without power could visit the website. The PG&E executive giving this advice responded that they should use a landline to call a relative or friend who could give them the information from their web page.[3] He was apparently unaware that not only have a majority of people "cut the cord" and dropped their landline, but that modern landlines are not self-powered.

This anecdote illustrates a number of points I want to touch on. First, of course, is the vital importance of power to the modern communications grid at every stage. This includes not only power to cell towers, but power at the premises. While the industry and some states – such as

[1] *See* Jennifer Kraus, "AT&T Provides No Explanation to Regulators After the Nashville Bombing," News Channel 5 Nashville (February 3, 2021). Available at: https://www.newschannel5.com/news/newschannel-5-investigates/at-t-provides-no-explanation-to-regulators-about-911-failures-after-the-nashville-bombing

[2] *See* PSHS Bureau, "June 15, 2020 T-Mobile Network Outage Report," PS Docket No. 20-183.

[3] Jonathan J. Cooper and Juliet Williams, "Anger Grows as Utility Struggles to Get Its Blackouts Right," Associated Press (October 31, 2019). Available at: https://apnews.com/64fdb75d7e434722bd0229e1b458eebc

California – have made progress on power to cell towers, virtually nothing has been done to address the need for power in the home or power at the network operating center.

Second, this story underscores the changing ways in which responsible parties communicate with the public during a crisis. We no longer rely solely on the broadcast Emergency Alert System for critical real time updates or 911. We depend on internet access to provide important information during a crisis and its aftermath. Maintaining/restoring voice communications, or voice and text, is not enough. Local governments and first responders use websites and social media to keep people informed – especially when wildfires require sudden and immediate evacuation of specific geographic areas. People use social media to alert the public and public safety to new emergencies – often with video clips and audio recordings.

Finally, it emphasizes how slowly we have adjusted to these new realities. While local and state officials and first responders are constantly innovating in the face of life-threatening crises, our mentality around network resilience remains mired in the analog age. e are still struggling to address back-up power to cell towers – an issue identified by the FCC's post-Katrina report more than 15 years ago. We have done virtually nothing on back-up power in the premises since the Commission's rulemaking 5 years ago – which resulted in rules that numerous advocates considered inadequate then, and even more so now. Power utilities continue to act as if landline systems are self-powered, and coordination between power utilities and communications providers is so poor that one source of outages post-disaster is power crews cutting or removing replacement fiber lines.[4]

Nor is the importance of communications networks or their functions sufficiently recognized by disaster planners. As the Government Accountability Office (GAO) recently reported, recovery efforts in Puerto Rico in the wake of Hurricane Maria suffered because DHS literally has no idea what the FCC should be doing to help disaster recovery.[5] Coordination between the FCC and state agencies, or state agencies with communications providers, is at best sporadic and lacks standards and best practices designed for the modern communications environment. It was not

[4] 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)("*Hurricane Michael Report*"), available at: https://www.fcc.gov/document/fcc-releases-reportcommunication-impacts-hurricane-michael-0

[5] GAO, "FCC Assisted in Hurricane Maria Network Restoration, But a Clarified Disaster Response Role and Enhanced Communications Are Needed," (released June 1, 2021). Available at: https://www.gao.gov/products/gao-21-297

until this Commission's Order last March that states and first responders could access vital real-time data in the Commission's outage reporting databases.[6]

We Need a Fundamental Change of Mindset for the Modern World.

We must fundamentally change our approach to how we view network preparedness and crisis response. At the moment, each player in the communications environment is on its own, responsible for its own network hardening and response. The existing wireless framework[7] reflects this mentality. First, it is wireless only – despite the fact that wireless communications depend on functioning wireline broadband networks for backhaul. One of the important changes in the information made publicly available during Ida through the Disaster Information Reporting System (DIRS) was more granular data as to why wireless towers were down. This allowed the public to see and understand that it is not just a question of power, or physical destruction, but also a question of functioning wireline networks to provide communication from the cell tower to the network. We cannot have reliable wireless communications in an emergency without expanding the framework to include the entire communications ecosystem.

More importantly, the current Wireless Communications Framework makes mutual aid and assistance between networks a matter of last resort. Only after a network has done everything in its power to stay online and come back online, and only if it will not inconvenience the functioning network, will networks offer each other mutual assistance. The attitude continues to be "everyone is on their own." But one of the greatest strengths of our modern communications network is its redundancy and adaptability. Rather than one wireline network hardened to maximum reliability (and collecting the cost through a regulated rate), we have multiple networks that interconnect and can interoperate with one another. Any engineer will tell you that redundancy is a critical part of reliability, but we continue to require every network to behave as if it were the only player in the game.

Ideally, coordination and mutual assistance would begin before the disaster hits so that we can minimize the interruptions to vital communications throughout the crisis, rather than wait until the disaster has passed. State governors and the Federal Government frequently declare a state of emergency before a hurricane or other severe weather event so that emergency services can start preparations can begin. We need the same for the telecom environment. Ideally, emergency

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[6] *See* "FCC to Share Communications Outage Information With State, Federal and Tribal Nation Agencies," Available at: https://docs.fcc.gov/public/attachments/DOC-370857A1.pdf

[7] In re Improving Resiliency of Wireless Communications Networks; Reliability and Continuity of Communications Networks, Including Broadband Technologies, *Order* PS Docket Nos. 13-239, 11-60 (rel. Dec. 20, 2016).

roaming agreements and other coordination of traffic load and response would begin as soon as a state of emergency or other imminent disaster trigger occurred. Coordination and mutual assistance would continue until the FCC ascertained that the DIRS database was no longer necessary.

Specific Recommendations.

Changing the current culture from "every network for itself" to "we're all in this together" will obviously take a good deal of time. In the meantime, there are specific things the FCC, other state and federal agencies, and the private sector can do to make our networks more resilient in the face of increasingly violent weather events.

- ***Expand the Wireless Emergency Framework to all communications providers, including broadcasters, public safety, and utility services.*** Obviously, different obligations and responsibilities will apply to different entities as appropriate. But we should begin by having a "Communications Resiliency Framework," not merely a "Wireless Resiliency Framework."

- ***Make the Framework mandatory for all wireless carriers.*** Although an expanded framework must begin as a voluntary framework, there is no reason why the existing framework should not be mandatory for all mobile carriers.

- ***Make emergency voice, SMS and data roaming mandatory for all carriers on a bill-and-keep basis.*** If nothing else, the Commission should require mandatory emergency roaming agreements for the entire industry, on a "bill-and-keep" basis. The sunset of 3G networks removes the problem of networks using incompatible standards. All wireless networks will soon be on LTE and 5G. Additionally, moving to bill-and-keep will reduce administrative costs and enable small carriers to activate roaming agreements swiftly and maintain them for the duration of the emergency. Because public safety now involves voice, text and data, the emergency mandatory agreement must include SMS and data, not merely voice.

- ***Revisit the Back-up Power Rules.*** Not simply for cell towers, but for all points in the network — in particular, facilities-based VOIP providers. The Commission needs to

assess the impact of its 2015 back-up power order[8] and whether it should change these rules to ensure adequate backup power to the home. (Spoiler alert: yes.)

- ***Make the NORS data public***. As long as we continue to rely on market incentives, we must recognize that markets need data. Consumers should be allowed to choose their provider based on more than a company's advertising. Companies claim this information is proprietary, but there is a huge difference between "proprietary" and "embarrassing." Outages are not a secret to the people impacted. Prohibiting access to the NORS data does not protect trade secrets, it simply makes it difficult for consumers and state regulators to hold companies accountable.

- ***Use modern spectrum technology to enhance available spectrum for emergency purposes.*** The FCC has two services subject to database control: the TVWS and the CBRS. These databases can authorize devices to use higher power for specific locations and services (such as point-to-point links to restore backhaul or last-mile connectivity). The FCC could also make the 4.9 GHz band available for emergency communications by non-public safety entities where needed. The needs of public safety could be safeguarded in a manner similar to FirstNet, which prioritizes communications by traditional public safety/first responder entities over those of other entities using the network.

- ***Create a new USF fund for network resiliency and restoration.*** The Commission authorized USF funds to assist Puerto Rican carriers after Maria.[9] The FCC should institutionalize this by adding new principles relevant to network resiliency and creating a formal new fund specifically for resiliency upgrades.

- ***Regulatory fee investment credit.*** Section 9a(d)[10] permits the Commission to waive or reduce regulatory fees if it finds doing so will serve the public interest. The Commission can encourage investment in shared infrastructure by offering a credit against regulatory fees. The FCC should carefully structure this credit to incent carriers to create new, shared emergency resources rather than fund mandatory obligations or investments in infrastructure solely for use by their own networks. Doing this will help address the "free rider" problem, since those investing will receive a direct benefit as a consequence.

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[8] In re Ensuring Continuity of 911 Communications, *Report & Order*, PS Docket No. 14-174 (rel. August 7, 2015).

[9] *See* "WCB Waives USF Rules and Deadlines to Aid in Hurricane Recovery," October 17, 2017. Available at: https://www.fcc.gov/document/wcb-waives-usf-rules-and-deadlines-aid-hurricane-recovery

[10] 47 U.S.C. § 159a(d).

- ***Create standards and metrics in partnership with state regulators.*** One of the biggest problems in talking about network reliability and resiliency is we don't have any good way to measure it other than in the grossest terms (e.g., "is the network operating today?") Additionally, while there have been improvements in best practices, some states have been far more active than others in considering how best to respond to the demands of modern communications networks in the face of climate change. The Commission should take the lead in convening discussions with relevant stakeholders, particularly state, local and Tribal governments, to develop the necessary standards, metrics and best practices. I would also like to flag the expertise of organizations such as Telecom Without Borders, which are not traditional industry trade organizations but clearly have significant relevant experience.

We Cannot Afford to Delay Any Longer.

Finally, I want to thank the Chair for including consumer advocates in these discussions about network resiliency. Often these discussions focus on the cost to carriers of resiliency measures and a warning that consumers will pay higher prices as a consequence, without considering the ongoing cost to consumers of our increasingly fragile networks. Consumers pay far more, and all at once, if they cannot reach 911 in a crisis, if they are unable to find crucial information or apply for aid programs during an extended communications outage, or if their business is shut down because communications are out. And, of course, consumers pay when carriers need to rebuild networks because they failed to properly maintain them or harden them in the face of global climate change.

The question therefore is not simply "how much do these precautions cost and will they result in higher prices to consumers?" Or at least, that question is incomplete. We also need to ask, what are the costs to consumers and the economy if we do not take necessary action. As we can see today, the price of inaction is already too high.

Thank you, and I am happy to answer any further questions.