Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)
	)
Resilient Networks	) PS Docket No. 21-346
	)
Amendments to Part 4 of the Commission's Rules	) PS Docket No. 15-80
Concerning Disruptions to Communications	)
	)
New Part 4 of the Commission's Rules Concerning	) ET Docket No. 04-35
Disruptions to Communications	)
	)

COMMENTS OF CTIA

Thomas C. Power
Senior Vice President and General Counsel

Scott K. Bergmann
Senior Vice President, Regulatory Affairs

Michael Mullinix
Director, Regulatory Affairs

CTIA
1400 16th Street, NW
Suite 600
Washington, DC 20036
(202) 785-0081

Dated: December 16, 2021

Table of Contents

In the Matter of	)	
	)	
Resilient Networks	)	PS Docket No. 21-346
	)	
Amendments to Part 4 of the Commission's Rules Concerning Disruptions to Communications	))	PS Docket No. 15-80
	)	
New Part 4 of the Commission's Rules Concerning Disruptions to Communications	))	ET Docket No. 04-35
	)	

COMMENTS OF CTIA

CTIA submits these comments in response to the *Notice of Proposed Rulemaking* reviewing the reliability and resiliency of communications networks during emergencies.[1]

I.   INTRODUCTION AND SUMMARY.

As the effects of climate change are felt more broadly, disaster events are increasing in both severity and frequency. In the aftermath of winds exceeding 150 mph, unprecedented floodwaters, extreme temperatures, and wildfires, our communities face widespread destruction—massive property damage, flying debris, fallen trees, flooded streets, and destroyed or even burned homes and businesses. The challenges left in their wake are compounded when infrastructure is affected, causing power outages, loss of indoor heating in winter or air conditioning in summer, and restrictions on access to drinking water.

To combat wireless network outages, the wireless industry is evolving and enhancing its approach to resiliency. As explained herein, three critical elements of this enhanced approach

---

[1] *Resilient Networks; Amendments to Part 4 of the Commission's Rules Concerning Disruptions to Communications; New Part 4 of the Commission's Rules Concerning Disruptions to Communications*, Notice of Proposed Rulemaking, FCC 21-99 (rel. Oct. 1, 2021) (*NPRM*).

are: investments in strengthening networks and resiliency by design, preparedness and rapid response, and coordination and collaboration. These efforts have resulted in wireless providers densifying networks with overlapping cell sites that can maintain service if one or more cell sites goes down; pre-positioning deployable equipment—temporary cell sites, portable generators, fuel and fuel trucks to keep generators up and running, and much more—along with regional rapid response teams for speedy restoration; and enhancing coordination with other communications providers, electric utilities, and federal and state emergency managers.

These investments in time, material, and people are paying dividends. Each disaster or emergency event poses its own unique challenges, but wireless networks are stronger today than ever before. Indeed, wireless networks and services proved remarkably resilient in the face of Hurricane Ida, whose sustained winds of 150 mph and historic flooding shattered the power grid and left over a million people without electricity. And the wireless industry continues to build on lessons learned from previous events and develop best practices to prepare for future events.

CTIA thus shares herein additional thoughts on how best to leverage lessons learned to improve wireless resiliency. The Wireless Network Resiliency Cooperative Framework (Wireless Resiliency Framework or Framework) is one important element for strengthening wireless resiliency. While the Framework advances resiliency solutions across a number of areas, Roaming under Disasters (RuD) has garnered attention recently. New practices for enhancing the implementation of the RuD tool can further improve the effectiveness of these arrangements in maintaining and restoring services during disasters. In addition, implementing the Framework for a wider variety of events that warrant coordination and cooperation can further enhance the ability of Americans to access wireless services during significant events. To combat interruptions to wireless services caused by outages in the commercial electricity grid

and inadvertent cuts to fiber backhaul, the wireless industry is investing in portable backup power solutions in those regions of the country most susceptible to significant events like hurricanes and wildfires and enhancing coordination with investor owned utilities. And to facilitate greater situational awareness regarding the status of wireless networks during a disaster, CTIA and its members stand ready to build on their steps to date to enhance information sharing while protecting the confidentiality of sensitive outage data.

With this background, CTIA and its members encourage the Commission to keep the following observations top of mind as this proceeding unfolds:

First, each disaster event is different, posing its own set of challenges and requiring boots-on-the-ground coordination in challenging, often hard-to-reach circumstances. There is no once-size-fits-all approach to resiliency and restoration.

Second, the Wireless Resiliency Framework provides a meaningful array of tools to facilitate coordination in the run up and in the aftermath of disaster events. The Framework facilitates coordination among competitors in a competitive industry to aid all Americans in times of disaster, not just their own customers.

And third, CTIA welcomes a discussion on how the Framework might evolve, but the Commission should continue to prioritize policies that encourage industry investment and that provide flexibility for wireless providers to tailor solutions to the unique needs of each locality and disaster event.

II. AS THE FREQUENCY AND SEVERITY OF DISASTER EVENTS INCREASE, THE WIRELESS INDUSTRY IS IMPROVING NETWORK RESILIENCY AND RESTORATION.

As climate change contributes to the increasing severity and frequency of disasters and emergencies, the wireless industry is responding by evolving and enhancing its approach to resiliency. Three critical elements of this enhanced approach are: investments in strengthening

networks and resiliency by design, preparedness and rapid response, and coordination and collaboration. CTIA takes this opportunity to discuss each of these elements in further detail and to update the Commission on the wireless communications during Hurricane Ida.

     A.   **The Wireless Industry is Strengthening Networks Through Investment and Resiliency by Design.**

Wireless providers are making investments that are resulting in more resilient networks. The wireless industry made capital investments totaling nearly $30 billion in 2020—the third straight year of increased investment—and nearly $140 billion since 2016.[2] This investment includes expansive growth in new cell sites, particularly in new small cell deployments. Small cell deployments involve overlapping coverage areas and incorporate diversity in wireless networks. Today's networks often keep consumers connected even when nearby cell sites are impacted by extreme weather.[3]

Wireless providers are also designing networks for resiliency from the outset—tailoring deployments to unique regions of the country and anticipated emergency events. For instance, in recent years as extreme weather events have become more frequent, wireless providers have started using sophisticated risk-analysis tools to inform key aspects of network design and keep critical network assets out of harm's way.[4] These are often site-specific, region-specific

---

[2] CTIA, *2021 Annual Survey Highlights*, at 3 https://api.ctia.org/wp-content/uploads/2021/07/2021-Annual-Survey-Highlights.pdf.

[3] *See*, *e.g.*, *id.* at 5 (noting that the number of cell sites has increased by 35% since 2016).

[4] As one example of this practice, AT&T has joined forces with the Department of Energy's Argonne National Laboratory to create a climate change tool that predicts the near- and long-term impacts of extreme weather on the provider's network infrastructure. AT&T is already using the model to inform key aspects of its network design in the southeastern region of the country. Ina Fried, *1 Big Thing: Climate Change Challenges Wireless Industry*, Axios (Nov. 25, 2019), https://www.axios.com/newsletters/axios-login-dace70d7-f3cc-48a5-9f9e-a0aa9aa4305a.html.

decisions—whether it goes to placement, hardening, or power supply. For example, wireless

providers have installed more permanent generators in the Gulf region, elevated equipment to

account for future flooding in Texas and Louisiana, and buried new fiber in Panama City,

Florida.[5] Wireless providers have used steel rather than wood poles to better withstand high

winds in Puerto Rico and the U.S. Virgin Islands.[6] And in wildfire prone areas, providers have

equipped critical cell sites with permanent generators and deployed backup battery power at

other sites along with densifying the network.[7] These are often site-by-site decisions in which

network, environmental, community, and access considerations all contribute.

We see that these investments in network resiliency are paying dividends in areas across

the country. For instance, in the aftermath of 2020's Hurricane Delta, the percentage of cell sites

in the overall affected area of Louisiana never fell below 89 percent on a given day.[8] More than

83 percent of cells sites remained in service in areas impacted by Hurricane Sally, despite the

storm's 105 mph winds, tornadoes, storm surges, and flooding.[9] And in the face of increasingly

frequent and widespread wildfires in the western region of the country, data shows that wireless

networks continue to meet the challenges posed by these devastating disasters. In 2019, 96

---

[5] *See*, *e.g.*, Ina Fried, *1 Big Thing: Climate Change Challenges Wireless Industry*, Axios (Nov. 25, 2019), https://www.axios.com/newsletters/axios-login-dace70d7-f3cc-48a5-9f9e-a0aa9aa4305a.html.

[6] *See*, *e.g.*, *id.*

[7] *See*, *e.g.*, Response of Cellco Partnership et al. to Motion of the Public Advocates Office, Cal. Pub. Utils. Comm'n R.18-03-011, at 6 (filed June 19, 2019), https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M333/K045/333045575.PDF ("Verizon has backup power (battery, generator, or both) for nearly all of its 'macro-sites.'")

[8] CTIA, *The Wireless Industry Responds to Hurricane Delta* (Oct. 14, 2020), https://www.ctia.org/news/the-wireless-industry-responds-to-hurricane-delta.

[9] CTIA, *The Wireless Industry Responds to Hurricane Sally* (Sept. 20, 2020), https://www.ctia.org/news/blog-the-wireless-industry-responds-to-hurricane-sally.

percent of cell sites remained operational throughout the areas of California affected by preemptive public safety power shutoffs—despite the fact that more than 2.7 million Californians were without power.[10]

And within the last week wireless once again proved resilient when severe storms and tornadoes devasted parts of the southwest and central portions of the country. For instance, AT&T reported that its networks performed at 97% of normal in Kentucky and 99% of normal in Illinois, Indiana, Michigan, and Tennessee immediately after the devastating storms, and the first Communications Status Report issued after the tornadoes showed that more than 99% of cell sites remained operational in the hardest hit areas.[11] Wireless providers also responded by offering unlimited calling, texting, and data for consumers in impacted regions—ensuring that wireless services play a critical part in the recovery efforts in the days and weeks ahead.[12]

These statistics do not diminish the frustrating and threatening experiences consumers suffered from these devastating events. Yet they help highlight how the wireless industry's resiliency approach has enabled providers to effectively prepare and respond to diverse emergency events.

---

[10] *See, e.g.*, FCC, *Communications Status Report for Areas Impacted by California Public Safety Power Shutoffs*, at 3 (Oct. 28, 2019), https://docs.fcc.gov/public/attachments/DOC-360482A1.pdf.

[11] AT&T, *Southeast & Midwest Severe Storms* (Dec. 12, 2021), https://about.att.com/pages/disaster_relief/severe-storms.html; FCC, *Communications Status Report for Areas Impacted by Kentucky Tornadoes*, at 3 (Dec. 15, 2021), https://docs.fcc.gov/public/attachments/DOC-378689A1.pdf; *see also* T-Mobile, *T-Mobile Responds to Devastating Tornadoes Across Southwest and Central Regions* (Dec. 11, 2021), https://www.t-mobile.com/news/community/t-mobile-responds-to-devastating-tornadoes-across-southwest-and-central-regions.

[12] *See, e.g.*, Verizon, *Verizon Response: unlimited call/text/data for parts of Kentucky, Illinois* (Dec. 12, 2021), https://www.verizon.com/about/news/verizon-response-kentucky-illinois.

B. The Wireless Industry is Committed to Preparedness, Rapid Response, and Restoration.

Climate change has resulted in more storms that are more powerful, threatening all infrastructure, including wireless networks. Storm winds in excess of 100 mph inevitably result in property destruction and flying debris, and communications facilities—wired and wireless—are by their nature put in harm's way. While no single, one-size-fits-all strategy will address each unique storm incident, pre-planning, rapid response, and—when needed—restoration go a long way to enhance wireless resiliency.

Wireless providers deploy regional response teams and pre-position a wide range of temporary assets used to maintain and quickly restore services in the event of a commercial power outage. These teams employ disaster preparedness playbooks that are constantly evolving, leveraging lessons learned from past storms and disasters and applying them to the next. For example, in advance of many events, wireless providers now prepare for extended commercial power outages, with more portable generators than ever, as discussed more fully below in Section IV. This means scores of portable generators—one wireless provider reported that it deployed over a thousand generators to restore business-as-usual service in the aftermath of Hurricane Ida.[13] It also means plans in place to maintain ongoing operations: providers pre-position fuel tankers and arrange for continuous sources of fuel to keep the generators up and running, and their response teams engage in regularly scheduled generator maintenance and upkeep to keep them running. Commercial power outages may be the source of many out-of-

---

[13] Stephanie Doiron, Director, External Affairs, AT&T Statement to Louisiana Pub. Serv. Comm'n., at 2 (Sept. 22, 2021), http://lpsc.louisiana.gov/_docs/__IdaPress/Presentation_AT&T%20Submission%20to%20PSC.pdf.

service cell sites, but wireless providers are developing plans to restore service—and maintain it—well before commercial power is back up and running.

Another lesson learned has involved pre-positioning of temporary backhaul links to help address instances where loss-of-service may be driven by transport issues rather than, not power. These temporary links can be especially relevant in areas that rely heavily on aerial fiber for backhaul. In recognition of the critical role these assets play in response efforts, wireless providers are stepping up investments in backhaul resources. T-Mobile, for instance, recently doubled the size of its emergency management fleet of satellite-equipped vehicles, while UScellular is working to deploy unlicensed microwave links for its COLT deployments.[14] These investments will help providers respond to extended backhaul outages.

Pre-staging also includes trailers that supply housing and food for response teams, which may be on the ground for days if not weeks. These dedicated teams also engage in around-the-clock site-based preparatory work: from verifying cell site battery backup, to topping off backup generator fuel tanks, to securing all attachments to towers and poles. Through investments like these, the wireless industry is demonstrating its commitment to preparedness, rapid response, and restoration.

C.   **The Wireless Industry is Enhancing Coordination and Collaboration.**

Response and restoration efforts are also facilitated by around-the-clock engagement and coordination. Even as the wireless industry invests in redundant and well-designed networks and response team efforts, there is broad recognition that coordination with other providers, partners in government, public safety stakeholders, and the energy sector further advances preparedness

---

[14] *See* T-Mobile, *Preparing for the 2020 Hurricane Season* (May 18, 2020), https://www.t-mobile.com/news/community/preparing-for-the-2020-hurricane-season

and restoration. To this end, CTIA and the nationwide providers all serve on the Cybersecurity and Infrastructure Security Agency's (CISA) National Coordinating Center for Communications (NCC), a forum in which wireless operators participate in "blue skies" Emergency Support Function-2 exercises, share planning and network status information, and coordinate response activities. This federal coordination is enhanced through regular engagement at state Emergency Operations Centers, which facilitate preparation among a wide variety of stakeholders—wireless providers, electric companies, and state and local government and public safety officials—for the types of events most common for that region.

And as the Commission is well aware, the wireless industry has launched initiatives to further coordination among interdependent stakeholders, most notably the Wireless Cooperative Framework and the Cross-Sector Resiliency Forum. For instance, CTIA worked with congressional and FCC leaders following Hurricane Sandy to develop the Framework to identify best practices for wireless providers to work together and accelerate response and recovery efforts from disaster events. More recently, CTIA united with the Edison Electric Institute, NCTA – The Internet & Television Association, US Telecom – The Broadband Association, and others as part of the Cross-Sector Resiliency Forum, an initiative convening representatives from the communications and energy industries to identify actions that can improve information sharing and preparedness. The Forum has fostered collaboration between the industry sectors, from facilitating contact information for coordination before, during and after an event, to fostering participation in exercises, workshops and summits, to enhancing response and developing targeted initiatives to promote overall resiliency.[15] These activities and initiatives

---

[15] Letter from Matthew Gerst, CTIA; Steve Morris, NCTA-The Internet & Television Association; Aryeh B. Fishman, Edison Electric Institute; and Patrick Halley, USTelecom-The

reflect an understanding that coordinated efforts between interdependent stakeholders can advance communications resiliency.

D.   Wireless Services Proved Resilient in the Face of Historic Conditions During Hurricane Ida.

Hurricane Ida presented historic conditions in the Gulf region—the fifth strongest storm ever to make landfall in the US. Ida unleashed sustained winds of 150 mph, knocked down over 30,000 utility poles, flooded whole communities, shattered the power grid, and left over a million people without electricity.

Wireless infrastructure in Ida's path proved to be remarkably resilient. Anticipating long periods without commercial power, wireless providers worked in advance of landfall to stage equipment such as COLTs, COWs, movable microwave hops, temporary satellite links, and portable generators just outside the projected impact zone so they could be deployed quickly. These temporary facilities provide key coverage often in the hardest hit communities. Once Ida passed, wireless providers response teams were among the first on the ground, and many braved dangerous post-storm debris, used airboats, and launched drones to help quickly assess and respond to Hurricane Ida's damage.

While Ida's devastating forces severely impacted infrastructure and property, wireless restoration was impressive. For instance, more than half of cell site outages were back online within 48 hours of the storm's landfall, and more than 95% of cell sites in affected areas of Louisiana were up and running within nine days of the storm making landfall, even as

---

Broadband Association, to Marlene H. Dortch, Secretary, Federal Communications Commission, PS Docket No. 11-60 (June 7, 2021).

approximately half a million customers across the state were without commercial power.[16] In many areas, wireless networks provided a critical lifeline as wired broadband and other communications networks were impacted by the storm. And wireless providers also transmitted 235 Wireless Emergency Alerts to cellphones along Ida's path as the storm made landfall and progressed through the eastern United States.[17]

As previously noted, these statistics do not diminish Americans' experiences during Ida and other disaster events, but they do highlight how wireless providers were able to effectively prepare and respond to this challenging emergency event.

III. THE COOPERATIVE FRAMEWORK HAS STRENGTHENED WIRELESS NETWORK RESILIENCY AND RESTORATION AND CAN EVOLVE WITH NEW PRACTICES THAT WILL DELIVER FURTHER BENEFITS.

A. The Framework Provides a Flexible, As-Needed, Voluntary Array of Tools that Help Wireless Providers Address the Unique Circumstances Posed by Each Individual Disaster Event.

Following Hurricane Sandy, CTIA worked with congressional and FCC leaders to develop the Cooperative Framework by incorporating best practices for wireless providers to work together and accelerate response and recovery efforts from disaster events like Hurricane Ida. Critically, the Framework was designed to facilitate coordination among competitors in a competitive industry to aid all Americans in times of disaster or emergency, not just their own customers.

---

[16] FCC, Communications Status Report for Areas Impacted by Hurricane Ida, at 4 (Sept. 7, 2021), https://docs.fcc.gov/public/attachments/DOC-375534A1.pdf. In some parishes, Louisianans did not have electricity for weeks. *See* Sophie Kasakove, *Three Weeks After Hurricane Ida, Parts of Southeast Louisiana Are Still Dark*, N.Y.Times (Sept. 18, 2021), https://www.nytimes.com/2021/09/18/us/ida-louisiana-power-outages.html.

[17] *See* Meredith Attwell Baker, *Wireless Answers the Call—Keeping You Connected After Ida*, CTIA (Sept. 10, 2021), https://www.ctia.org/news/wireless-answers-the-call-keeping-you-connected-after-ida.

Today, the Framework is an important element of the wireless industry's collaborative strategy to jumpstart response and recovery. It contains five elements: (i) providing for reasonable roaming under disaster arrangements when technically feasible; (ii) fostering mutual aid during emergencies; (iii) enhancing municipal preparedness and restoration; (iv) increasing consumer readiness and preparation; and (v) improving public awareness and stakeholder communications on service and restoration status. Notably, the Framework recognizes that each disaster is different and requires boots-on-the-ground assessments in challenging, often hard-to-reach circumstances. It thus provides an array of tools to help coordinate and speed recovery. As CTIA has explained in other proceedings, the Framework's elements have meaningfully advanced wireless resiliency over the past five years.

This proceeding presents an opportunity to examine whether additional lessons learned and new practices warrant evolving the Framework. However, any evolution should continue to recognize two points key to the Framework's success to date. First, each disaster event is different, and communications providers need flexibility and the ability to use a variety of tools depending on the circumstances on the ground. And second, policies incenting investment will most effectively advance wireless resiliency.[18] With these points in mind, the Framework should remain voluntary to ensure that providers can focus on the unique challenges presented by

---

[18] Moreover, it is widely acknowledged that rules mandating the sharing of infrastructure will disincentivize investment. *See*, *e.g.*, *Improving Competitive Broadband Access to Multiple Tenant Environments et al.*, Notice of Proposed Rulemaking and Declaratory Ruling, 34 FCC Rcd 5702, 5763 (2019) (statement of Commissioner Brendan Carr) (noting that "a rule that requires providers to share their communications facilities with competitors generally reduces incentives to invest"); *Building Resilient Networks: Hearing Before the Senate Subcommittee on Communications, Media, and Broadband*, 117th Cong. 1 (2021) (statement of Harold Feld, Senior Vice President, Public Knowledge) (acknowledging that carriers that invest in more reliable networks will face a "free-rider problem" if network sharing is mandated).

each event, and not evolve into a regulatory checklist that threatens to divert resources at critical periods.

<div align="center">B.   The Wireless Industry Continues to Build on Lessons Learned to Further
Strengthen Roaming Under Disasters.</div>

While the wireless industry has advanced resiliency solutions across all elements of the Framework, RuD has garnered the most attention. Where technically feasible, RuD arrangements can serve as an important tool in the toolbox for wireless providers, and multiple RuD agreements were activated during Hurricane Ida, as they have been in response to other disasters such as Hurricane Michael and Hurricane Maria. RuD arrangements can raise complicated technical issues—they can require careful and deliberate decisions to ensure reliable and consistent performance for wireless users.

Wireless stakeholders have been developing new practices for enhancing the implementation and effectiveness of the Framework's RuD tool based on lessons learned during earlier disaster events. CTIA provides below a brief summary of the some of the new practices currently under development.

- *Facilitating common understanding in disaster-based roaming*. As a disaster event unfolds, a wireless provider assesses the state of its network, and if it determines its customers would benefit from new or expanded roaming, it will engage with other providers. Promoting common understanding through the use of uniform terminology throughout the RuD request process will advance the transparency of requests between services providers and roaming teams, which in turn will aid proactive planning and more effective implementation of RuD arrangements. To better facilitate this, CTIA and its members are developing resources for Framework signatories to use when making requests for RuD arrangements.

- *Preparatory Best Practices*. As recognized in the *NPRM*, pre-event, preparatory work may be able to improve the ability and speed with which wireless providers initiate RuD arrangements. To that end, CTIA and its members are exploring a number of practices aimed at steps that can be taken prior to the start of a disaster to facilitate disaster-based roaming:

    o Establishing provider connectivity for roaming (i.e., confirming a roaming partner's subscriber devices know the host roaming network and vice versa) can expedite the initiation of roaming RuD arrangements during a disaster. A best practice encouraging wireless providers to respond promptly to connectivity requests from other providers—so that wireless providers are ready to initiate RuD arrangements in the event of a disaster—might advance the utility of disaster-based roaming arrangements.

    o As the Commission has recognized, establishing RuD agreements prior to an event in disaster-prone areas can help to advance service continuity and restoration. An industry-led practice for providers to establish the terms of such agreements in advance of an event may help to advance disaster-based roaming arrangements.

- *Timely responses to RuD requests*. Wireless providers recognize the importance of timely responses by potential host network providers to requests for RuD arrangements. To ensure responses are provided as quickly as possible, CTIA and its members are developing a practice for wireless providers to use good-faith and reasonable efforts to respond promptly to RuD requests. This practice would help ensure RuD arrangements

are implemented expeditiously when needed to facilitate service continuity and restoration for wireless consumers in disaster areas.

- *Blue Skies Exercises*. Blue skies exercises are an important component of cooperation and coordination between wireless providers and among other impacted stakeholders (e.g., public safety stakeholders, electricity providers, etc.). Because similar pre-event exercises may yield benefits in the context of disaster-based roaming, CTIA and its members are considering an industry-led practice that would result in incorporating RuD arrangements into existing blue skies disasters exercises.[19]

Recognizing the crucial objective of ensuring the resiliency and reliability of wireless networks, these additional RuD steps can further advance the wireless industry's other efforts to develop and implement effective networks resiliency, disaster preparation, and recovery initiatives to sustain wireless communications during and after disasters.

C. The Framework May Expand its Reach to Consumers in Disaster Events that Occur Outside of the ESF #2 and DIRS Context.

The Department of Homeland Security is charged with activating ESF #2 when it expects or observes a significant impact to the nation's communications infrastructure. For this reason, the Framework's drafters deemed ESF #2 activation as the best proxy for identifying whether an emergency or disaster is impacting communications networks.

Of course, wireless providers engage in resiliency and restoration activities and coordination efforts outside of ESF #2 events. At the same time, CTIA appreciates that elements

---

[19] Apart from any commercial roaming arrangements or RuD-specific arrangements, the Commission's 9-1-1 rules require wireless providers to transmit all 9-1-1 calls to public safety answering points regardless of whether the call is placed by a subscriber or non-subscriber. 47 C.F.R. § 9.10(b). This rule effectively allows consumers to place 9-1-1 calls even when their wireless provider's network is down—even if there is no roaming arrangement between the consumer's provider and the host provider whose network "hears" the 9-1-1 call.

of the Framework could be helpful during events that do not raise to the level of ESF #2

activation, such as wildfires. CTIA is thus open to working with the Commission to consider

other objective activation triggers that might aid cooperative efforts during events that impact

communications networks.

IV.   TODAY, WIRELESS PROVIDERS ARE ENGAGED IN MORE EXTENSIVE AND EXPANSIVE PORTABLE BACKUP POWER AND ENHANCED CROSS-SECTOR COORDINATION THAN EVER BEFORE, SIGNIFICANTLY EXPEDITING RESTORATION.

Wireless providers' disaster preparedness playbooks are constantly evolving, leveraging

lessons learned from past storms and disasters and applying them to the next catastrophe.

Backup power is a critical component of these playbooks. In advance of many events, wireless

providers now prepare for extended commercial power outages, not just 24- or 36- or even 72-

hour outages. This means scores of portable generators—one wireless provider reported that

they employed *over a thousand generators* to restore business-as-usual service in the aftermath

of Hurricane Ida.[20] It also means plans in place to maintain ongoing operations: providers pre-

position fuel tankers and arrange for continuous sources of fuel to keep the generators up and

running, and their response teams engage in regularly scheduled generator maintenance and

upkeep to keep them operational over time. Commercial power outages may be the source of

many out-of-service cell sites, but wireless providers have plans to restore service—and maintain

it—well before commercial power is back up and running.

The wireless industry is also working cooperatively to try to prevent electricity outages to

cell sites before they even occur, speed restoration practices, and better coordinate recovery

---

[20] Stephanie Doiron, Director, External Affairs, AT&T Statement to Louisiana Pub. Serv. Comm'n, at 2 (Sept. 22, 2021), http://lpsc.louisiana.gov/_docs/__IdaPress/Presentation_AT&T%20Submission%20to%20PSC.pdf.

efforts—to avoid, among other things, inadvertent fiber cuts that have plagued communications services following recent disasters.[21] CTIA is working through the Cross-Sector Resiliency Forum to foster discussion about longer-term efforts to facilitate sharing of industry-to-industry service expectations and planning needs that not only allow for better coordination during emergency and disaster events, but also promote overall resiliency. These activities and initiatives reflect the wireless industry's understanding that coordinated efforts between interdependent stakeholders can advance communications resiliency.

V.   CTIA AND WIRELESS PROVIDERS ARE COMMITTED TO ENHANCING SITUATIONAL AWARENESS.

CTIA and its members are committed to enhancing situational awareness during disasters. The Framework commits signatories to support the Commission posting of DIRS data in impacted areas. More recently, the nationwide providers committed to make additional confidential service availability data available to Commission staff during and in the aftermath of an emergency or disaster, and to support the publication of outage causation data. And just earlier this year, CTIA and its members supported Commission efforts to expand the framework for sharing of NORS and DIRS outage data to public safety entities on a confidential basis.

The *NPRM* seeks comment on additional ways to promote situational awareness during disasters. CTIA stands ready to work with the Commission to encourage other communications providers, including broadcast, cable, and wireline carriers, to participate in DIRS and support

---

[21] *See, e.g.*, FCC, Public Safety and Homeland Security Bureau, *October 2018 Hurricane Michael's Impact on Communications: Preparation, Effect, and Recovery: Report and Recommendations*, PS Docket No. 18-339, at 16 ¶ 31 (rel. May 9, 2019) (noting that Uniti Fiber, which provides backhaul services in parts of Florida, experienced at least 33 separate fiber cuts during the recovery effort following Hurricane Michael in 2019).

the publication of more granular information regarding the cause of outages to communications systems.

VI. CONCLUSION.

The wireless industry recognizes that resiliency represents an ongoing endeavor. While the investments described herein are helping to promote service continuity, expedite service restoration, and improve coordination and preparedness, CTIA and its member companies remain committed to continuing to identify targeted improvements moving forward and look forward to working with all stakeholders to encourage investment in wireless network resiliency.

Respectfully submitted,

/s/ Michael Mullinix

Michael Mullinix
Director, Regulatory Affairs

Thomas C. Power
Senior Vice President and General Counsel

Scott K. Bergmann
Senior Vice President, Regulatory Affairs

CTIA
1400 16th Street, NW
Suite 600
Washington, DC 20036
(202) 785-0081

Dated: December 16, 2021