

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554**

In the Matter of	)	
	)	
Response Efforts Undertaken During 2017	)	PS Docket No. 17-344
Hurricane Season	)	

**REPLY COMMENTS OF CTIA**

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CTIA submits these reply comments in response to the *Public Notice* issued by the Public Safety and Homeland Security Bureau (“Bureau”) regarding response efforts undertaken during the 2017 hurricane season.<sup>1</sup>

**I. INTRODUCTION AND SUMMARY.**

The initial comments in response to the *Public Notice* reflect that wireless networks proved remarkably resilient throughout the unprecedented 2017 hurricane season. Affected jurisdictions, public safety, and wireless industry stakeholders observe that millions of Americans relied on mobile wireless services to access important emergency services, like 9-1-1, offer help to friends and neighbors, and connect with family and loved ones. Availability of mobile wireless service largely was due to the wireless industry’s application of lessons learned from past storms and the flexibility afforded by the Wireless Network Resiliency Cooperative Framework (“Cooperative Framework” or “Framework”), which encourages wireless providers to prepare and implement measures that promote network resiliency and respond to the unique circumstances of a natural disaster or emergency.

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<sup>1</sup> *Public Safety and Homeland Security Bureau Seeks Comment on Response Efforts Undertaken During 2017 Hurricane Season*, Public Notice, 32 FCC Rcd 10245 (2017) (“*Public Notice*”).

In light of these positive steps, proposals to impose additional and inflexible regulatory mandates, as some commenters suggest, would be counterproductive to enhancing network resiliency. Specifically, the Commission should not require wireless carriers to disclose the conditions of cell towers prior to an emergency, to file individual emergency plans in lieu of participation in the Cooperative Framework, or to increase the frequency and granularity of Disaster Information Reporting System (“DIRS”) reports. These suggestions will only divert attention and resources from maintaining and restoring networks during the next emergency or disaster.

To further promote the maintenance of wireless communications during disasters and emergencies, the record demonstrates that the Commission should continue to facilitate deployment of wireless networks by modernizing infrastructure siting processes. Reducing barriers to infrastructure deployment will enable continued wireless network densification, which the record makes clear has enhanced network resiliency during emergencies and disasters.

Finally, the record demonstrates that the overall communications system is both complementary and interdependent. Stakeholders across the communications ecosystem, including energy, broadcast, and cable, should be encouraged to voluntarily implement relevant elements of the Framework. Collaboration and information sharing across the communications ecosystem will help to promote resiliency, preparedness, and public awareness of communications during emergencies and disasters.

## **II. THE RECORD CONFIRMS THAT LESSONS LEARNED AND THE FLEXIBILITY AFFORDED BY THE WIRELESS NETWORK RESILIENCY COOPERATIVE FRAMEWORK ENHANCED WIRELESS SERVICE CONTINUITY AND RESTORATION DURING THE 2017 HURRICANE SEASON.**

Commenters representing a broad range of stakeholders demonstrate that the wireless industry's preparation and response, including lessons learned from past storms and steps taken pursuant to the Cooperative Framework, delivered the resources and coordination necessary to maintain and restore wireless services during the 2017 hurricane season. By taking steps in accordance with the Framework, wireless carriers were able to focus in real time on the most pressing needs and to tailor their efforts to the unique challenges presented by each of the storms.

### **A. The Record Confirms the Resilience of the Wireless Networks to Support Consumer Reliance on Wireless Services.**

As CTIA explained in its comments, wireless providers have expended significant resources to strengthen networks, and as each of the 2017 storms approached, carriers pre-positioned resources and operationalized disaster preparedness plans.<sup>2</sup> T-Mobile describes how it has “invested billions of dollars to fortify its network” and deployed resources, including 2,000 generators, to further service restoration and resiliency.<sup>3</sup> Similarly, Verizon notes how its high level of resiliency was due, in part, to a variety of methods and practices specifically designed to increase network resiliency during and after events like the 2017 hurricanes.<sup>4</sup>

These efforts and the flexibility outlined in the Framework produced positive results. The City of Houston, for example, confirms the resiliency of wireless networks during Hurricane Harvey, a Category 4 storm, where “[w]ireless networks in the immediate area of Houston stayed

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<sup>2</sup> CTIA Comments at 2.

<sup>3</sup> T-Mobile Comments at 7.

<sup>4</sup> Verizon Comments at 4.

up and operational with only limited localized interruptions.”<sup>5</sup> According to T-Mobile, more than 85 percent of its network remained operational in the aftermath of Hurricane Harvey.<sup>6</sup> Similarly, Verizon reports that more than 98 percent of its network facilities in the hardest hit areas of Texas remained in service during and after Harvey.<sup>7</sup> When service interruptions did occur, the City of Houston notes that services were restored by wireless carriers in as short as “a few hours” in some cases.<sup>8</sup> And consumers relied on the networks when they needed them most.<sup>9</sup> For example, the City of Houston reports that the Houston Emergency Center received 60,000 9-1-1 calls in one day during Hurricane Harvey, a ten-fold increase over the 6,000 calls the center receives on an average day, and that the deaf and hard of hearing community was able to reach 9-1-1 via text-to-9-1-1 on mobile devices.<sup>10</sup>

In Puerto Rico, the Puerto Rico Telecommunications Regulatory Board (“Puerto Rico TRB”) notes that cell “towers in Puerto Rico withstood the hurricane well.”<sup>11</sup> According to the Puerto Rico TRB, less than two percent of Puerto Rico’s cell towers were damaged by the 2017 hurricanes.<sup>12</sup> The Wireless Infrastructure Association cites to a host of similar examples of

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<sup>5</sup> City of Houston Comments at 6.

<sup>6</sup> T-Mobile Comments at 9.

<sup>7</sup> Verizon Comments at 1. However, because wireless networks are designed with numerous, overlapping cell sites that provide maximum capacity and continuity of service even when individual sites are inoperable, the number of cell site outages does not necessarily correlate to the availability of wireless service to consumers.

<sup>8</sup> City of Houston Comments at 7.

<sup>9</sup> CTIA Comments, Attachment.

<sup>10</sup> City of Houston Comments at 4-5.

<sup>11</sup> Puerto Rico TRB Comments at 2.

<sup>12</sup> *Id.* at 2-3.

wireless infrastructure withstanding the 2017 hurricane season.<sup>13</sup> In fact, the Puerto Rico TRB and others largely attribute prolonged service outages to issues beyond the control of wireless providers, including lack of electricity, theft of generators, fuel, and copper, and accidental damage done by third-party recovery efforts.<sup>14</sup> Today, more than 94 percent of cell sites are operational across Puerto Rico and the U.S. Virgin Islands following the devastation wreaked by Hurricanes Irma and Maria.<sup>15</sup>

Assertions that wireless networks were not as resilient and did not recover as quickly as radio networks following Hurricane Maria<sup>16</sup> are contradicted by the available data. According to the Commission's DIRS data, fewer than half of radio stations in Puerto Rico and the U.S. Virgin Islands are confirmed operational today,<sup>17</sup> as compared to 94 percent of cell sites.<sup>18</sup> While the use of wireless and broadcast services during emergencies should more appropriately be viewed as complementary, rather than comparatively, the record makes clear that mobile wireless services were one of the most reliable communications services for consumers throughout the 2017 hurricane season because of the resilience of wireless networks.

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<sup>13</sup> Wireless Infrastructure Association Comments at 2 (noting that one of its members companies reported that none of its approximately 60 sites in Texas suffered any damage from Hurricane Harvey, none of its 160 towers in Florida, South Carolina, and Georgia were affected by Hurricane Irma, and only two of its fifteen towers in Puerto Rico were damaged by Hurricane Maria).

<sup>14</sup> See Puerto Rico TRB Comments at 13 ("obstacles faced to rapidly restore the communications systems in Puerto Rico were: lack of electricity, lack of physical access to sites, multiple incidents of copper theft, fiber optic cuts, theft of generators and fuel..."); see also Puerto Rico Telephone Company, Inc. Comments at 7-8; T-Mobile Comments at 12.

<sup>15</sup> See, FCC, Communications Status Report for Areas Impacted by Hurricane Maria, at 5 (Feb. 14, 2018), [https://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2018/db0214/DOC-349234A1.pdf](https://transition.fcc.gov/Daily_Releases/Daily_Business/2018/db0214/DOC-349234A1.pdf).

<sup>16</sup> National Public Radio Comments at 4.

<sup>17</sup> FCC, Communications Status Report for Areas Impacted by Hurricane Maria, at 6-7 (Feb. 14, 2018), [https://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2018/db0214/DOC-349234A1.pdf](https://transition.fcc.gov/Daily_Releases/Daily_Business/2018/db0214/DOC-349234A1.pdf).

<sup>18</sup> Id. at 5. National Public Radio reaches a different conclusion by assuming that a radio station is operational if its status cannot be confirmed by the Commission.

**B. The Record Confirms That Lessons Learned and the Cooperative Framework Contributed to Wireless Network Resiliency.**

The lessons learned from past storms and the flexible practices described in the Cooperative Framework enabled wireless providers to collaborate and utilize innovative solutions tailored to the individual needs of affected communities during this historic hurricane season. The Puerto Rico TRB notes that wireless carriers “worked together toward their shared goal of providing services to the people,” through, among other things, roaming agreements and the fostering mutual aid.<sup>19</sup> As one example, the Puerto Rico TRB cited Project Loon, a joint venture involving T-Mobile, AT&T, and Google, which yielded “great results.”<sup>20</sup> The Association of Public-Safety Communications-Officials-International, Inc. (“APCO”) similarly acknowledges the efforts of the communications industry to assist the public, noting that “many infrastructure and service providers set business interests aside in favor of the public good.”<sup>21</sup>

As T-Mobile recounts, it takes numerous steps to develop resilient networks, including comprehensive planning around network hardening, continuously adding capacity to the network, conducting ongoing assessments throughout the year, pre-staging equipment, and coordinating with other carriers and industry partners regarding mutual aid.<sup>22</sup> T-Mobile describes their efforts to develop a response plan when Hurricanes Irma and Maria struck Puerto Rico that not only benefitted their own customers, but consumers across the entire territory.<sup>23</sup> The carrier utilized a dozen cargo planes and multiple barges to move supplies for service

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<sup>19</sup> Puerto Rico TRB Comments at 11.

<sup>20</sup> *Id.* at 6.

<sup>21</sup> APCO Comments at 1.

<sup>22</sup> T-Mobile Comments at 3.

<sup>23</sup> *Id.* at 6 (noting, for example, that T-Mobile “shipped food and water, and partnered with local entities to help some of the devastated communities.”).

restoration efforts and the needs of third parties, including the Department of Homeland Security, the Federal Aviation Administration, and other carriers.<sup>24</sup>

Other commenters note similar experiences. Verizon describes the effectiveness of its existing best practices to maximize network resiliency, including siting and placement of wireless equipment to account for the likelihood of hurricanes and natural disasters, as well as efforts to pre-stage fuel deliveries and temporary transmitter facilities to respond to hard-hit areas as quickly as possible.<sup>25</sup> The company noted that “[t]he Wireless Resiliency Framework to date has served consumers, state and local governments and service providers well through its flexible and practicable approach.”<sup>26</sup> Similarly, APCO expresses support for additional carriers to adopt the Framework.<sup>27</sup>

CTIA and the wireless provider signatories remain committed to the Framework. The Best Practices for Enhancing Emergency and Disaster Preparedness and Restoration, released in December 2017, offer further methods and flexible tools based on past experiences to help wireless providers and state and local governments work together to streamline logistics before, during and after an emergency or disaster.<sup>28</sup> Consistent with the Framework, CTIA and its members also continue to support efforts to create a database of carrier and PSAP contacts and

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<sup>24</sup> *Id.*

<sup>25</sup> Verizon Comments at 4-5.

<sup>26</sup> *Id.* at 19.

<sup>27</sup> APCO Comments at 4-5. Even communications companies outside of the wireless industry acknowledge the importance of flexibility in successful disaster recovery. Specifically, Comcast notes that the best strategy for disaster recovery “is to promote policies that allow flexibility to adapt to changing facts on the ground...” Comcast Corporation Comments at 11-12.

<sup>28</sup> CTIA, *CTIA Announces New Best Practices to Help Local Governments Maintain Wireless Service During Natural Disasters* (Dec. 20, 2017), <https://www.ctia.org/industry-data/press-releases-details/pressreleases/ctia-announces-new-best-practices-to-help-local-governments-maintain-wireless-service-during-natural-disasters>.

will continue to adhere to the other relevant tenets of the Framework during future emergencies and disasters.<sup>29</sup> The 2017 hurricane season demonstrates that the Framework and other resiliency activities are successfully helping providers work proactively and collaboratively to maintain resilient networks tailored to local conditions.

### **III. GIVEN THE SUCCESS OF THE COOPERATIVE FRAMEWORK, IMPOSING NEW REGULATORY MANDATES ON WIRELESS PROVIDERS WOULD BE COUNTERPRODUCTIVE TO NETWORK RESILIENCY.**

#### **A. Suggestions to Mandate Disclosure of Network Information and Submission of Emergency Plans Ignore the Benefits of a Flexible Cooperative Approach.**

The experiences of the 2017 hurricane season demonstrate that wireless carriers are the best equipped to anticipate and implement measures to promote network resiliency and respond to the unique circumstances of a natural disaster or emergency. Prescriptive regulations, such as those called for by Public Knowledge, would undermine this flexibility and innovation, and instead create counterproductive requirements that are unlikely to enhance resiliency or restoration.

For example, Public Knowledge’s proposal to require wireless carriers to disclose the conditions of cell towers *prior* to an emergency situation would not promote resilient wireless communications or situational awareness.<sup>30</sup> As an initial matter, such mandates would divert critical resources and attention as carriers prepare for an emergency. Moreover, as carriers

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<sup>29</sup> See Letter from Joan Marsh, AT&T; Charles McKee, Sprint; Grant Spellmeyer, U.S. Cellular; Scott Bergmann, CTIA; Steve Sharkey, T-Mobile; and William H. Johnson, Verizon, to Marlene H. Dortch, Secretary, Federal Communications Commission, PS Docket Nos. 11-60 & 13-239 at 3 (Apr. 27, 2016) (“Cooperative Framework”) (discussing the commitment that signatories to the Framework “will provide relevant up-to-date contact information for a carrier/PSAP contact database, subject to an agreement by all participating entities that such data be kept confidential”); see also CTIA, *CTIA Announces New Best Practices to Help Local Governments Maintain Wireless Service During Natural Disasters* (Dec. 20, 2017), <https://www.ctia.org/industry-data/press-releases-details/pressreleases/ctia-announces-new-best-practices-to-help-local-governments-maintain-wireless-service-duringnatural-disasters>.

<sup>30</sup> Public Knowledge Comments at 8.

densify networks with numerous, overlapping cell sites, cell site outage information will become even less relevant to gauge the availability of wireless service in emergency situations. As noted in CTIA's initial comments and as explained in further detail below in III.B., CTIA and its member companies welcome further discussions with Commission staff on potential enhancements to DIRS reporting that can yield more relevant, useful data about wireless service availability to provide situational awareness to government officials and consumers.<sup>31</sup>

Further, Public Knowledge's suggestion that wireless carriers file individual emergency plans in lieu of participating in the Cooperative Framework similarly ignores the results that wireless carriers, implementing the Framework, were able to accomplish in the face of an unprecedented hurricane season. Notably, Public Knowledge does not explain why filing such individual plans, rather than providers voluntarily committing to adhere to the Framework, would enhance wireless network resiliency. And there are many reasons why such a proposal would be counterproductive to network resiliency that depends upon collaboration among various stakeholders.

First, each provider develops their emergency plans through an iterative process that accounts for the evolving capabilities of each network and lessons learned from past emergencies. For this reason, it would be counterproductive to expect providers to strictly adhere to each element of an individual emergency plan, when the 2017 hurricane season clearly demonstrated that the flexibility enabled by the Framework was most effective at enabling providers to account for local conditions. Further, as carriers are constantly updating their emergency plans, it would be counterproductive to spend time and resources establishing a

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<sup>31</sup> CTIA Comments at 22.

process that would protect highly confidential and commercially sensitive information that each providers' emergency plans likely would contain.

Finally, Public Knowledge's proposal to mandate the submission of carrier-specific emergency plans would more likely undermine the collaborative efforts and mutual aid that proved so valuable during the 2017 hurricane season.<sup>32</sup> For the same reasons, a separate Public Knowledge proposal to rank the response and resiliency of carriers after natural disasters similarly would also undermine the mutual aid efforts that the Cooperative Frameworks has successfully advanced.<sup>33</sup>

The Commission traditionally has facilitated collaboration and the exchange of expertise and input among industry stakeholders in the context of emergency and disaster response.<sup>34</sup> Indeed, the *2016 Wireless Network Resiliency Order* supporting the Framework acknowledged that "the Commission has long encouraged the incorporation of voluntary industry approaches in lieu of regulation."<sup>35</sup> In his statement on the *2016 Wireless Network Resiliency Order*, then-Commissioner Ajit Pai agreed, stating that the voluntary efforts captured in the Cooperative Framework are "a far more appropriate path" than regulations the Commission initially had proposed.<sup>36</sup> The Commission should continue to pursue this effective, flexible, and collaborative

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<sup>32</sup> See, e.g., Puerto Rico TRB Comments at 12 (noting the success of experimental technology, including Project Loon).

<sup>33</sup> *Id.* at 9.

<sup>34</sup> See, e.g., FCC, *Charter of the FCC's Communications Security, Reliability, and Interoperability Council* (2017), <https://www.fcc.gov/file/12251/download>.

<sup>35</sup> *Improving the Resiliency of Mobile Wireless Communications Networks*, Order, 31 FCC Rcd 13745, ¶ 10 (2016) ("*2016 Mobile Wireless Resiliency Order*").

<sup>36</sup> Statement of Commissioner Ajit Pai, FCC 16-173 (Dec. 20, 2016) (regarding *2016 Mobile Wireless Resiliency Order*).

model, and not act on proposals to mandate disclosure of tower information or individual emergency plans.

**B. While DIRS Reporting Could Be Enhanced, Any Modifications to DIRS Reporting Should Maintain Flexibility and Avoid Overly Burdensome Requirements.**

In its comments, CTIA urged the Commission to maintain flexibility in the DIRS reporting process to allow the Commission to tailor the information it provides in these reports based on the particular circumstances of an emergency or disaster.<sup>37</sup> The Commission should reject calls by a handful of commenters to increase DIRS reporting burdens on wireless providers that would divert resources from efforts to maintain and restore wireless networks during emergencies.<sup>38</sup>

Proposals to require more frequent DIRS filings and more granular – and burdensome – information would undermine the voluntary DIRS program. Increasing requirements in the DIRS program potentially would chill participation, undermining any perceived benefits of imposing more frequent and granular filings. And as noted by T-Mobile, Puerto Rico Telephone Company, and Virgin Islands Telephone Corp., increasing the burdens on DIRS filers may require wireless carriers to divert valuable resources during emergencies.<sup>39</sup> As a number of commenters explain, flexibility in DIRS reporting helps ensure that the public receives relevant information about the status of communications networks during and in the aftermath of emergencies and disasters.<sup>40</sup>

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<sup>37</sup> CTIA Comments at 3.

<sup>38</sup> See, e.g., APCO Comments at 4; Puerto Rico TRB Comments at 6.

<sup>39</sup> See T-Mobile Comments at 14; Puerto Rico Telephone Company Comments at 9; Virgin Islands Telephone Corp. Comments at 18-19.

<sup>40</sup> See Verizon Comments at 16 (noting that it may be appropriate to modify the DIRS process when disaster events present extreme circumstances); Puerto Rico Telephone Company Comments at 9

The Commission similarly should not act on APCO's recommendation to provide carrier-specific cell site information, the nature of the outage, and expected repair time to municipalities and public safety entities.<sup>41</sup> In making this recommendation, APCO asserts that a cell site with no backhaul is not reported as out of service in DIRS, and uses this example to justify additional reporting requirements.<sup>42</sup> However, as an initial matter, the underlying assertion is incorrect; a cell site with no backhaul is reported as out of service in DIRS. Additionally, wireless carriers already provide targeted and specific information regarding the availability of wireless services as it relates to 9-1-1 service. Specifically, wireless carriers provide detailed information regarding the nature of the outage, its best-known cause, the geographic scope of the outage, the estimated time for reports, and any other information that may be useful to the management of any affected 9-1-1 facility in Part 4 of the Commission's rules.<sup>43</sup> Further, as noted above, the utility of information about particular cell-site outages will be increasingly more limited as wireless networks are designed with numerous, overlapping cell sites that provide maximum capacity and enrich coverage. Finally, mandating provision of the detailed information to the Commission that APCO suggests, including GIS files and text information from internal carrier reporting systems, would subject sensitive proprietary and security-related data to increased risks

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(recommending the Commission consider streamlining the information requested by DIRS to take into account the state of emergency that carriers face immediately after a natural disaster); Virgin Islands Telephone Corp. Comments at 18-19 (praising the Commission for providing carriers with flexibility regarding the type of data that they could submit to DIRS and the manner in which carriers could submit such data).

<sup>41</sup> APCO Comments at 4.

<sup>42</sup> *Id.* at 4.

<sup>43</sup> See 47 C.F.R. § 4.9(h). Similarly, the Bureau released best practices last month that will help wireless carriers further improve upon practices for information sharing with PSAPs during emergencies and disasters. See *Public Safety and Homeland Security Bureau Shares Recommended Practices from September 11, 2017 911 Workshop*, Public Notice, DA 18-6 (rel. Jan. 2, 2018).

of cyberattacks and unauthorized disclosure. Thus, APCO's proposal would create significant new burdens and security risks without clear benefits over existing reporting.

CTIA and its member companies welcome further discussions with Commission staff on potential enhancements to DIRS reporting aimed at improving the situational awareness of government officials and the public in an efficient manner. For example, CTIA supports including additional relevant information in the Commission's DIRS reports, such as the status and availability of commercial power, to the extent such information is publicly available from other federal agencies. CTIA also supports further consideration of T-Mobile's proposal to revise DIRS reporting to more accurately reflect service availability subject to certain parameters, such as ensuring flexibility and critical protections for proprietary information and security-sensitive data.<sup>44</sup>

#### **IV. ADDITIONAL ACTIONS CAN FURTHER ENHANCE WIRELESS NETWORK RESILIENCY AND RESTORATION EFFORTS.**

##### **A. Commenters Recognize the Importance of Policies That Allow for the Densification of Wireless Networks.**

As CTIA discussed in its comments, modernizing infrastructure deployment processes will allow wireless carriers to continue to densify networks, which, in turn, increases wireless resiliency.<sup>45</sup> Commenters agree. For example, T-Mobile notes that "ongoing densification of the network in Houston allowed [it] to optimize operational cell sites to provide coverage to areas impacted by damaged sites."<sup>46</sup> Similarly, Verizon states that its "prior efforts to deploy small cells and other diverse network architecture provided an added degree of network

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<sup>44</sup> See T-Mobile Comments at 13-14.

<sup>45</sup> CTIA Comments at 20-21.

<sup>46</sup> T-Mobile Comments at 8.

redundancy” that enabled the continuation of service to its customers.<sup>47</sup> CTIA therefore urges the Commission to continue to take actions to lower regulatory barriers for private investment in network densification.<sup>48</sup> This will not only advance deployment of new, advanced networks, but will enhance network resiliency as well.

**B. As the Communications Ecosystem Is Complementary and Interdependent, Additional Stakeholders Should Be Encouraged to Adopt Elements of the Cooperative Framework.**

The record demonstrates that the overall communications system is both complementary and interdependent. For example, the Virgin Islands Public Broadcasting System notes the importance of radio service and Internet service to broadcast television and radio stations.<sup>49</sup> T-Mobile highlights the interdependence of communications systems, noting that the destruction of aerial backhaul fiber networks in Puerto Rico was a significant contributing factor to outages on the island.<sup>50</sup> And Charter explains that its successful recovery in Texas and Florida in response to Hurricanes Harvey and Irma involved extensive coordination with a variety of stakeholders, including cell tower providers and carriers.<sup>51</sup>

Accordingly, stakeholders across the communications ecosystem, including energy, broadcast and cable, should be encouraged to voluntarily implement relevant elements of the Framework. As one example, such providers could agree to provide outage information to the

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<sup>47</sup> Verizon Comments at 8.

<sup>48</sup> See Comments of CTIA, WT Docket No. 17-79 & WC Docket No. 17-84 (June 15, 2017); Joint Comments of CTIA and the Wireless Infrastructure Association, WT Docket No. 17-79 (June 15, 2017); Reply Comments of CTIA, WT Docket No. 17-79 & WC Docket No. 17-84 (July 17, 2017); Joint Reply Comments of CTIA and the Wireless Infrastructure Association, WT Docket No. 17-79 (July 2017, 2017).

<sup>49</sup> Virgin Islands Public Broadcasting System Comments at 2.

<sup>50</sup> T-Mobile Comments at 12.

<sup>51</sup> Charter Communications Comments at 4.

FCC that can enhance the value of DIRS reports by providing greater situational awareness to government officials and the public about service availability during emergencies. Consistent with the Framework, collaboration and information sharing across the communications ecosystem can only help to promote resiliency, preparedness, and public awareness of communications during emergencies and disasters.

## **V. CONCLUSION**

The record in this proceeding demonstrates the success of the Cooperative Framework and other industry-led efforts to promote wireless network resiliency. In light of this record, the Commission should not act on proposals from some commenters that would prove counterproductive to enhancing network resiliency. Instead, to further promote effective communications during disasters and emergencies, the Commission should continue to facilitate investment in wireless networks through modernizing infrastructure deployment processes and should encourage communications system stakeholders to adopt elements from the Framework that facilitate collaboration and cooperation during emergencies.

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