



PUBLIC NOTICE

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PUBLIC SAFETY AND HOMELAND SECURITY BUREAU SEEKS COMMENT ON RESPONSE EFFORTS UNDERTAKEN DURING 2017 HURRICANE SEASON

PS Docket No. 17-344

Comments Due: January 22, 2018
Reply Comments Due: February 21, 2018

Introduction

The Public Safety and Homeland Security Bureau (PSHSB or Bureau) of the Federal Communications Commission (FCC or Commission) seeks comment on the resiliency of the communications infrastructure, the effectiveness of emergency communications, and government and industry responses to the 2017 hurricane season. Of particular note, the 2017 season included four hurricanes which made landfall in the United States and its territories.¹ Hurricanes Harvey, Irma, Maria and Nate led to Presidential emergency or major disaster declarations for seven states and two territories.² These storms devastated communities and the communications networks that service them. As emphasized by Chairman Pai, “Access to reliable communications services during times of emergency is critical to enabling Americans in danger to request help and our heroic first responders to do their jobs.”³ The purpose of this Public Notice is to seek information to better understand how well such access was provided during these hurricanes in order to assess what lessons may be learned for the future.

The FCC was created to, *inter alia*, ensure the availability of a “Nation-wide, and world-wide wire and radio communication service with adequate facilities . . . for the purpose of the national defense .

¹ These hurricanes were Harvey, Irma, Maria and Nate. See, e.g., Jonathan Erdman, *2017 Atlantic Hurricane Season Among Top 10 Most Active in History* (Oct. 2, 2017), <https://weather.com/storms/hurricane/news/2017-atlantic-hurricane-season-one-of-busiest-september#!>.

² The states and territories for which emergency or disaster declarations were made were Texas, Florida, Louisiana, Alabama, Georgia, South Carolina, Mississippi, Puerto Rico, and U.S. Virgin Islands. See, e.g., FEMA, Disasters, <https://www.fema.gov/disasters/>.

³ See Chairman Ajit Pai, *September 2017 Open FCC Meeting, Presentation on FCC Response to Hurricanes Harvey, Irma and Maria*, Statement (Sept. 26, 2017), <https://www.fcc.gov/document/presentation-fcc-response-hurricanes-harvey-irma-and-maria/pai-statement-0>.

. . . [and] for the purpose of promoting safety of life and property.”⁴ The FCC must also, “for the purpose of obtaining maximum effectiveness from the use of radio and wire communications in connection with safety of life and property,” study the “best methods of obtaining the cooperation and coordination of these [radio and wire] systems.”⁵ Under the Homeland Security Act, the FCC shares responsibilities with other federal and state authorities for the “coordination of effective multi-jurisdictional, multi-agency emergency communications networks for use during natural disasters, acts of terrorism, and other man-made disasters.”⁶ In response to emergencies, disasters and other significant events, the FCC engages in a wide range of efforts under its various sources of authority to address the communications needs in the affected areas, such as coordinating on frequency assignment and allocation with federal partners, participating in whole-of-government response coordination efforts, and issuing public notices, orders, and waivers. The Commission also provides situational awareness of the communications infrastructure through radiofrequency monitoring and analysis and reporting from the data filed voluntarily by communications service providers in the Disaster Information Reporting System (DIRS).⁷

During the 2017 hurricane season, the FCC provided a variety of public safety functions. The FCC’s 24/7 Operations Center served as an answering point for receiving requests for assistance and information (RFAs and RFIs) from various stakeholders, including but not limited to, consumers, industry, and federal, state, local, tribal, and territorial government (SLTT) entities. During the 2017 hurricane season, the FCC responded to RFIs and RFAs on issues, such as the need for access to fuel, generators, and power from the electrical grid. The FCC activated DIRS for reporting communications status and outages.⁸ Using DIRS information, the FCC issued over 85 communications status reports detailing impacts to the communications infrastructure. These reports were provided to the Federal Emergency Management Agency (FEMA) and other government agencies to aid recovery efforts. The Commission also released public versions of these reports.⁹ The FCC granted over 200 requests for special temporary authority (STAs) and issued over 30 public notices and orders, which permitted the flexible use of spectrum or other non-standard actions to support incident response.¹⁰ The FCC also provided access to Universal Service Fund support to service providers responsible for rebuilding the

⁴ See 47 U.S.C. § 151.

⁵ See 47 U.S.C. § 154 (o); see also *id.* § 403 (“The Commission shall have full authority and power at any time to institute an inquiry, on its own motion, in any case and as to any matter or thing . . . concerning which any question may arise under any of the provisions of th[e] [Communications] Act . . .”).

⁶ 6 U.S.C. § 575 (d)(3); see generally *id.* at § 575 (establishing Regional Emergency Communications Coordination Working Groups, mandating FCC participation therein, and setting forth duties of these Working Groups for assessing and coordinating the establishment and operations of emergency communications).

⁷ See FCC, *Disaster Information Reporting System (DIRS)*, <https://www.fcc.gov/general/disaster-information-reporting-system-dirs-0> (last visited Dec.7, 2017).

⁸ See *id.* See also FCC, *Network Outage Reporting System (NORS)*, <https://www.fcc.gov/network-outage-reporting-system-nors> (last visited Dec.7, 2017).

⁹ See, e.g., FCC, *Hurricane Harvey*, <https://www.fcc.gov/harvey> (last visited Dec.7, 2017).

¹⁰ See, e.g., *Public Safety and Homeland Security Bureau Temporarily Waives Location Accuracy Obligations for 911 Calls for Certain Providers in Areas Affected by Hurricane Maria*, Public Notice, DA 17-997 (Public Safety and Homeland Security Bureau, Oct. 10, 2017), 2017 WL 4545919 (waiving, temporarily, location requirements for providers affected by Hurricane Maria that utilize a network-based location solution); *Wireless Telecommunications Bureau and Public Safety and Homeland Security Bureau Extend Filing and Regulatory Deadlines and Streamline Environmental Notification Process for Areas Affected by Hurricane Maria*, Public Notice, DA 17-983, (Wireless Bureau, Public Safety and Homeland Security Bureau, Oct. 6, 2017), 2017 WL 4511102 (waiving *inter alia*, “filings regarding certain minor license modifications, license renewals, and notifications of construction”).

communications infrastructure.¹¹ The Commission issued waivers and orders of rules related to the Lifeline, E-rate, Rural Health Care Programs and the contributions related to the USF programs.¹² The FCC also allowed for the flexible use of numbering resources.¹³ The FCC conducted numerous radiofrequency scans to verify the status of AM, FM, and TV broadcasters to provide emergency alerting and other important information to the public. Finally, the Commission deployed personnel to the affected regions to support the FEMA and other federal and SLTT responders. The FCC continues to work actively with government and industry partners on the response efforts underway. Through the FCC's Hurricane Recovery Task Force, the Commission will continue to work on the recovery efforts that will be ongoing for months to come.¹⁴

Request for Comment

PSHSB seeks comment on the questions below. The Bureau will identify, from the comments received, areas for further exploration in workshop(s) to be held in the coming months on improving future response efforts.¹⁵ While this Public Notice is primarily focused on the effectiveness of preparation and response activities for the 2017 hurricane season, PSHSB will coordinate with the Hurricane Recovery Task Force on issues or opportunities which should be addressed in long-term Hurricane Maria recovery efforts in Puerto Rico and the U.S. Virgin Islands, including potential recovery-focused workshop(s). The areas below focus on impacts to the communications infrastructure; FCC response efforts; and experiences of communications service users as well as communications services providers. In addition to providing comment on the specific questions below, commenters are encouraged to provide any additional information relevant to the 2017 hurricane season's impact on communications, generally, or specific to any hurricane event. Commenters are also encouraged to include examples of effective and/or ineffective practices/methods.

A. Questions Regarding Impacts to Communications Infrastructure

1. What were the major causes of communications outages due to the hurricanes? Were there unique factors that affected outages and/or resilience during any particular hurricane?
2. What were the cascading effects of communications outages? Did communications service outages have impacts on supervisory control and data acquisition systems (SCADAs) of other critical infrastructure?
3. To what extent was the communications infrastructure resilient to the hurricanes? What methods were employed prior to hurricane landfall to address infrastructure resiliency?
4. Are there industry best practices that address communications operations in high risk areas (e.g., flood, high-wind areas)? If so, were these practices implemented and did they prevent

¹¹ See *Connect America Fund*, WC Docket No. 10-90, Order, 32 FCC Rcd 79819 (2017) (making "up to \$76.9 million immediately available for restoration of communications networks in Puerto Rico and the U.S. Virgin Islands").

¹² See *Schools and Libraries Universal Service Support Mechanism, et. al*, Order, DA 17-984 (Wireline Comp. Bur. 2017).

¹³ See *Telephone Number Portability, Numbering Resource Optimization*, CC Docket No. 95-116 and 99-200, Order, 32 FCC Rcd 6723 (Wireline Comp. Bur. 2017) (waiving the number portability rules to allow carriers to port numbers to destinations outside the affected rate centers due to damage to the communications systems).

¹⁴ See *FCC Chair Announces Hurricane Recovery Task Force*, News Release, (Oct. 6, 2017); <https://www.fcc.gov/document/fcc-chairman-announces-hurricane-recovery-task-force>.

¹⁵ Additional information regarding the workshop(s) will be provided in forthcoming public notice(s).

and/or mitigate outages? To what extent do these best practices involve cross-industry and/or government participation and was such participation effective?

B. Questions Regarding the FCC's Response

1. Are there actions that the FCC could take to improve the support and coordination it provides to industry and government (federal and SLTT) partners? For example, was the FCC support to Emergency Support Function #2 effective?¹⁶
2. Are there any actions that the FCC should consider to improve the communications industry response to hurricanes? If so, what would those be?
3. The FCC provided information to the industry and the public before and during the course of hurricane season. For example, the FCC released public notices providing information, including but not limited to, emergency contact information for the FCC's 24/7 center and process guidance on seeking waivers/STAs.¹⁷ The FCC also created event-specific webpages to share information such as communications status reports, public notices, and orders.¹⁸ Was this information helpful? Is there additional information or assistance that the FCC should provide at the beginning or during an event?
4. How effective were the FCC's responses with respect to RFIs, RFAs, and requests for STAs and waiver requests? Do the processes for handling these requests need improvement and, if so, how can they best be improved?
5. To what extent did the data provided by DIRS aid response efforts? Is there additional information, including licensee information, which would improve response and coordination efforts?
6. The FCC monitors radiofrequency spectrum via deployed and/or fixed sensors to determine operational status of licensees. Were the reports related to such efforts effective in improving response of federal and SLTT partners? Should the FCC take actions to provide awareness and education on these capabilities?
7. The FCC provides assistance to industry, first responders, and others in coordinating ad hoc emergency uses of spectrum in the affected areas. To what extent was the coordination process effective?
8. Were there interoperability issues among local spectrum users and those that arrived to assist in response? If yes, to what extent and how were they resolved? To what extent was unlicensed spectrum used and were there interoperability issues?
9. Should the FCC publicly post information about interoperable channels assignments to facilitate spectrum coordination?

C. Questions Regarding Communications Service User Experience

1. To what extent did government agencies issue emergency alerts to the public, particularly over the Emergency Alert System (EAS) and the Wireless Emergency Alerts (WEA)? What

¹⁶ There are fifteen Emergency Support Functions (ESFs), which provide for coordinated federal response to incidents. The FCC supports ESF #2 which focuses on response related to the communications infrastructure. See FEMA, *Emergency Support Function Annexes*, <https://www.fema.gov/media-library/assets/documents/25512> (last visited Dec.7, 2017).

¹⁷ See, e.g., FCC, *FCC Provides 24/7 Emergency Contact Information Amid Hurricane Harvey*, Public Notice, 32 FCC Rcd 6682 (PSHSB 2017).

¹⁸ See, e.g., FCC Hurricane Maria (last updated Oct. 31, 2017), <https://www.fcc.gov/maria>.

- other alerting methods were used? Were those communications effective? For example, were the alerts easy to understand, read, and geographically accurate? Were they accessible to people with disabilities and sent in languages other than English? Were there consumers that the alerts did not or could not reach? If public safety officials chose not to use EAS or WEA, why not?
2. Were consumers able to effectively reach 911 services via voice and/or text (where text-to-911 was available) during and after the hurricanes? If not, why not? Are there actions that the FCC should take to improve 911 resiliency and reliability during events such as the hurricanes?
 3. Were emergency communications services available to people with disabilities and others with specific communications needs? What actions can be taken to improve emergency communications for these communities?
 4. Were consumer complaints related to communications outages responded to by service providers in an appropriate and expedited manner? Is there any action that the FCC should take to improve this process?
 5. To what extent were the operations of Public Safety Answering Points (PSAPs) affected by the hurricanes? Were PSAPs able to receive 911 calls during the storms, and if so, did redundancy and diversity in the circuits to the PSAPs contribute significantly to 911 reliability? Were PSAPs able to handle the call volume before, during and after landfall? Did PSAPs receive prioritized restoration for their service outages?
 6. To what extent were first responders able to use their own wireless communications networks and devices? If not, what alternatives were used, if any? What was their experience with land mobile radio and microwave radio services in each hurricane?
 7. The FCC oversees the National Security/Emergency Preparedness (NSEP) priority service programs, which provide for service restoration and provisioning and mobile wireless and wireline priority.¹⁹ To what extent were the priority service programs effective? Did NSEP users receive improved performance (higher percentage of call completion) when using the Government Emergency Telecommunication Service (GETS) and Wireless Priority Services (WPS)²⁰ compared to non-prioritized voice calls? If not, why not? Were GETS calling cards distributed across emergency responder organizations? Were emergency responder cell phones equipped with WPS? Are there any actions that the FCC could take to improve the effective use of the priority services programs?
 8. To what extent were response efforts facilitated by amateur radio operators? Going forward, should efforts be made to increase the use of amateur radio services in connection with the planning, testing and provision of emergency response and recovery communications?

D. Questions Regarding Communications Service Provider Experience

1. To what extent were service providers able to pre-position equipment, supplies, and/or resources close to the affected areas in advance of each hurricane? How did this impact the continued availability of communications services or facilitate recovery?
2. Did small and rural providers, including those serving Puerto Rico and the U.S Virgin Islands, face any unique challenges in preparing for, responding to and recovering from the hurricanes?

¹⁹ See 47 C.F.R. § 64, Appendices A and B.

²⁰ WPS is also referred to in the Commission's rules as Priority Access Service (PAS). See 47 C.F.R. § 64, Appendix B.

3. Was radio frequency information shared among service providers? Were there instances of interference and were they resolved in a timely and effective manner?
4. How could DIRS notices sent to participating communications providers during the storms be improved? Were there any problems/issues in reporting outage information into DIRS? Should DIRS be modified to improve user experience, and if so, how?
5. What were the most effective means to restore connectivity to the communications infrastructure (e.g. backhaul, last mile) and how long did it take to do so?
6. Were communications services, such as satellite services, mobile ad-hoc networks, Wi-Fi services, mesh-based communications architectures, experimental projects or other services/technologies used and effective in providing connectivity when other services were limited or down? Should the FCC encourage inclusion of these services in future mitigation plans?
7. Were service providers able to route 911 calls effectively to PSAPs or alternate numbers permitted under the rules?²¹
8. What were the obstacles to rapidly restoring communications systems? To what extent did these impediments impact and/or extend the duration of outages? Were FCC efforts to address the impediments helpful?²²
9. Were there challenges with the use of back-up power for network equipment? Are there ways to improve the ability of communications infrastructure to operate when commercial power is lost?
10. To what extent was the Wireless Resiliency Framework and each of its elements, *i.e.* providing reasonable roaming under disaster agreements, providing mutual aid to carriers, enhancing municipal preparedness, increasing consumer readiness, and posting data in DIRS, effective in each hurricane-impacted area?²³ Were there examples of positive impacts and/or deficiencies in the utilization of the Framework, and, if so, what should be improved?
11. Does the market and/or government, currently offer sufficient incentives to encourage the build-out and maintenance of resilient communications infrastructure? Are there actions that the FCC should take to encourage industry to build and maintain a resilient communications infrastructure?
12. What was the impact of the hurricanes on broadcast radio and television services? Did broadcasters face any unique challenges in the face of any of the four hurricanes? To what extent did broadcast-specific best practices exist prior to the hurricanes? Were they implemented? If so, did they prove effective?

Procedural Matters

Interested parties may file comments on or before the dates indicated on the first page of this document. Comments may be filed using the FCC's Electronic Comment Filing System (ECFS). All filers should include their full name, U.S. Postal Service mailing address, and the applicable docket number: PS Docket No. 17-344. *See Electronic Filing of Documents in Rulemaking Proceedings*, 63 FR 24121 (1998).

²¹ *See* 47 C.F.R. § 20.18 (b).

²² *See supra* Introduction.

²³ *See* Letter from CTIA, AT&T Services, Inc., Sprint, US Cellular, T-Mobile USA, and Verizon to Marlene H. Dortch, Secretary, Federal Communications FCC (April 27, 2016). This framework was adopted by the FCC. *See Improving the Resiliency of Mobile Wireless Communications Networks*, et al., Order, 31 FCC Rcd 13745 (2016).

- Electronic Filers: Comments may be filed electronically using the Internet by accessing the ECFS: <https://www.fcc.gov/ecfs/filings>.
- Paper Filers: Parties who choose to file by paper must file an original and one copy of each filing. If more than one docket or rulemaking number appears in the caption of this proceeding, filers must submit two additional copies for each additional docket or rulemaking number.

Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the FCC's Secretary, Office of the Secretary, Federal Communications Commission FCC.

- All hand-delivered or messenger-delivered paper filings for the FCC's Secretary must be delivered to FCC Headquarters at 445 12th St., SW, Room TW-A325, Washington, DC 20554. The filing hours are 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes and boxes must be disposed of before entering the building.
- Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9050 Junction Drive, Annapolis Junction, MD 20701.
- U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12th Street, SW, Washington DC 20554.

People with Disabilities: To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an e-mail to fcc504@fcc.gov or call the Consumer and Governmental Affairs Bureau at (202) 418-0530 (voice), (202) 418-0432 (tty).

Parties wishing to file materials with a claim of confidentiality should follow the procedures set forth in section 0.459 of the FCC's rules. Casual claims of confidentiality are not accepted. Confidential submissions may not be filed via ECFS but rather should be filed with the Secretary's Office following the procedures set forth in 47 C.F.R. § 0.459. Redacted versions of confidential submissions may be filed via ECFS. Parties are advised that the FCC looks with disfavor on claims of confidentiality for entire documents. When a claim of confidentiality is made, a public, redacted version of the document should also be filed.

This Notice initiates a new proceeding which will follow the "permit-but-disclose" rules contained in the FCC's *ex parte* rules.²⁴ By requiring as such, the public interest is served by ensuring transparency regarding the persons commenting in this proceeding. Persons making *ex parte* presentations must file a copy of any written presentation or a memorandum summarizing any oral presentation within two business days after the presentation (unless a different deadline applicable to the Sunshine period applies). Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentation must (1) list all persons attending or otherwise participating in the meeting at which the *ex parte* presentation was made, and (2) summarize all data presented and arguments made

²⁴ 47 C.F.R. §§ 1.1200 *et seq.*

during the presentation. If the presentation consisted in whole or in part of the presentation of data or arguments already reflected in the presenter's written comments, memoranda or other filings in the proceeding, the presenter may provide citations to such data or arguments in his or her prior comments, memoranda, or other filings (specifying the relevant page and/or paragraph numbers where such data or arguments can be found) in lieu of summarizing them in the memorandum. Documents shown or given to FCC staff during *ex parte* meetings are deemed to be written *ex parte* presentations and must be filed consistent with rule 1.1206(b). In proceedings governed by rule 1.49(f) or for which the FCC has made available a method of electronic filing, written *ex parte* presentations and memoranda summarizing oral *ex parte* presentations, and all attachments thereto, must be filed through the electronic comment filing system available for that proceeding, and must be filed in their native format (*e.g.*, .doc, .xml, .ppt, searchable .pdf). Participants in this proceeding should familiarize themselves with the FCC's *ex parte* rules.

For further information regarding this proceeding, contact Anita Patankar-Stoll, Public Safety and Homeland Security Bureau at (202) 418-7121, Anita.Patankar-Stoll@fcc.gov.

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