

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

In the Matter of)	
)	
Improving the Resiliency of Mobile Wireless)	PS Docket No. 11-60
Networks)	

RESPONSE OF T-MOBILE USA, INC.

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RESPONSE OF T-MOBILE USA, INC.

T-Mobile USA, Inc. (“T-Mobile”)¹ hereby responds to the Public Safety and Homeland Security Bureau’s (“Bureau”) request for an after-event summary for each event in which T-Mobile used the Wireless Resiliency Cooperative Framework (“Framework”)² in 2017 and 2018.³ The summary that follows, which is organized by event and responds to the questions posed by the Bureau, demonstrates that the Framework works well, has proven effective in ensuring network resiliency, and has facilitated service restoration in the wake of disasters.

INTRODUCTION AND SUMMARY

Developed in 2016, the Framework is an industry-led, voluntary initiative that imposes cooperation and mutual aid obligations upon declaration of the Emergency Support Function 2

¹ T-Mobile USA, Inc. is a wholly-owned subsidiary of T-Mobile US, Inc., a publicly traded company.

² See Federal Communications Commission, Wireless Resiliency Cooperative Framework, <https://www.fcc.gov/wireless-resiliency-cooperative-framework> (last visited Nov. 21, 2018); see also Letter from Joan Marsh, AT&T Services, Inc.; Charles McKee, Sprint; Grant Spellmeyer, U.S. Cellular; Scott Bergmann, CTIA; Steve Sharkey, T-Mobile USA; and William H. Johnson, Verizon, to Marlene Dortch, Secretary, Federal Communications Commission, PS Docket Nos. 11-60 & 13-239, at 1 (Apr. 27, 2016) (“Framework”) (“[A] voluntary initiative that will enhance coordination and communication to advance wireless service continuity and information sharing during and after emergencies and disasters.”).

³ Letter from Lisa M. Fowlkes, Chief, Public Safety and Homeland Security Bureau, Federal Communications Commission, to Steve Sharkey, Vice President Government Affairs, Technology and Engineering Policy, T-Mobile USA, PS Docket No. 11-60 (Nov. 6, 2018) (“Bureau Letter”).

(“ESF #2”) and the activation of the FCC’s Disaster Information Reporting System (“DIRS”) in the wake of major disasters or other major events. The Framework contains five prongs to improve coordination and communication among carriers to advance wireless service continuity and information sharing during and after emergencies. Specifically, the Framework:

- Provides for reasonable roaming among wireless providers under disaster arrangements when technically feasible;
- Fosters mutual aid among wireless providers during emergencies;
- Enhances municipal preparedness and restoration by committing to convene with local government public safety representatives to develop best practices, and to provide contact information for a provider/Public Safety Answering Point contact database;
- Increases consumer readiness and preparation through development and dissemination with consumer groups of a “Consumer Readiness Checklist;” and
- Improves public awareness and stakeholder communications on service and restoration status through Commission posting of data on cell site outages on an aggregated, county-by-county basis in the relevant area through its DIRS reports.

Based on T-Mobile’s experience, the Framework has been extremely successful due to its flexibility. The Framework recognizes that cooperation will be provided when necessary and feasible. This flexibility has allowed wireless carriers to effectively and dynamically allocate resources thereby improving disaster recovery.⁴

⁴ In light of the success of the Framework for wireless carriers, T-Mobile reiterates its belief that a similar cooperative framework model among backhaul providers likely would improve wireless network resiliency. *See* Comments of T-Mobile USA, Inc., PS Docket No. 11-60 at 8-9 (July 16, 2018); Comments of T-Mobile USA, Inc., PS Docket No. 17-344 at 13 (Jan. 22, 2018) (“T-Mobile Hurricane Comments”). In addition to physical resources, companies also engage in substantial outreach to government officials at all levels before, during, and after significant events, with the scope of outreach varying depending upon the nature and severity of damage (both anticipated and actual).

Comments filed in response to the 2017 Hurricane Season Public Notice reveal that the Framework successfully advanced wireless service continuity and restoration.⁵ CTIA, for example, observed that “roaming arrangements and the provision of mutual aid among carriers ... helped customers stay connected during unprecedented conditions,” while mutual aid commitments allowed carriers to share resources, such as “space on a cargo plane to transport generators to Puerto Rico following Hurricane Maria.”⁶ The FCC also reported to the Governmental Accountability Office (“GAO”) that (i) several national carriers had implemented mutual aid arrangements following Hurricanes Irma and Maria⁷ and (ii) four wireless carriers opened up roaming in Puerto Rico to collectively serve the maximum population with the current coverage available following Hurricane Maria.⁸

As requested by the Bureau, T-Mobile provides additional, storm-specific detail regarding the Framework below.

DISCUSSION

Set forth below is a list of events in 2017 and 2018 that triggered the Framework due to a declaration of ESF #2 and the activation of DIRS, along with responses to the Bureau’s questions for each event. As demonstrated below, T-Mobile honored the terms of the Framework for each event in 2017 and 2018 that triggered its applicability.

⁵ See, e.g., T-Mobile Hurricane Comments at 4, 7, 13; Comments of CTIA, PS Docket No. 17-344, at 8-12 (Jan. 22, 2018) (“CTIA Hurricane Comments”).

⁶ CTIA Hurricane Comments at 10-12.

⁷ U.S. Government Accountability Office, GAO-18-198, *Telecommunications: FCC Should Improve Monitoring of Industry Efforts to Strengthen Wireless Network Resiliency*, at 24 (Dec. 2017), <https://www.gao.gov/assets/690/688927.pdf>. Notably, this included both signatory and non-signatory wireless carriers.

⁸ *Id.*; see also Federal Communications Commission, Communications Status Report for Areas Impacted by Hurricane Maria, at 2-3 (Oct. 12, 2017), https://transition.fcc.gov/Daily_Releases/-Daily_Business/2017/db1012/-DOC-347207A1.pdf.

I. HURRICANE MICHAEL (OCTOBER 9 – OCTOBER 26, 2018)

A. GEOGRAPHIC IMPACT

Hurricane Michael resulted in the activation of DIRS in 110 counties throughout Alabama, Florida, and Georgia.⁹ T-Mobile provided service prior to the storm from cell sites located in each of these counties with the exception of Liberty County in Florida and the following counties in Georgia: Baker, Ben Hill, Calhoun, Clay, Early, Glascock, Irwin, Miller, Quitman, and Seminole.

Hurricane Michael was the first Category 4 hurricane to make landfall in the Florida Panhandle.¹⁰ The storm was the third-most-intense continental U.S. landfall.¹¹

B. USE OF MUTUAL AID AND ROAMING

Prior to the hurricane, T-Mobile reached out to wireless carriers serving the areas of predicted impact and coordinated regarding potential disaster recovery scenarios.¹² T-Mobile also exchanged contact information with Framework signatories in advance of the storm.

T-Mobile did not make or receive any roaming requests for this storm. Thus, there were no event-specific roaming agreements. T-Mobile did note an increase in data traffic, however, from a pre-existing LTE roaming partner.

⁹ See Federal Communications Commission, Communications Status Report for Areas Impacted by Hurricane Michael (Oct. 13, 2018), <https://docs.fcc.gov/public/attachments/DOC-354533A1.pdf>.

¹⁰ The Weather Channel, *Hurricane Michael Recap: Historic Category 4 Florida Panhandle Landfall; Swath of Wind Damage and Flooding Into the Carolinas, Mid-Atlantic* (Oct. 13, 2018), <https://weather.com/storms/hurricane/news/2018-10-11-hurricane-michael-recap-gulf-coast-southeast>.

¹¹ *Id.*

¹² T-Mobile also granted a request from a nationwide wireless carrier to share staging space after the storm, but ultimately the carrier did not need to utilize this staging space.

In addition, although not part of the Framework, T-Mobile deployed more than 100 generators and provided generators to local agencies to allow them to resume operations, including operations at five voting locations. T-Mobile also deployed a mobile Command Center, nine temporary sites (cells-on-wheels (“COWs”) and cells-on-light-trucks (“COLTs”)) to restore service and ensure communications capabilities at local shelters and governmental Emergency Operations Centers (“EOCs”). It deployed temporary microwave facilities to restore communications for the Bay County Sheriff’s Office, Bay County Jail, and Jackson County Courthouse. T-Mobile also supplied two portable light towers for an outdoor food kitchen that fed more than 5,000 people.

Moreover, T-Mobile deployed trucks from around the nation to deliver supplies like chargers, devices, water, blankets, baby supplies, hygiene products, in the hardest hit areas. It also provided cradle and hotspot equipment for:

- 6 comfort stations where people could shower, cool down in air conditioning, or get foot and water);
- 1 Federal Emergency Management Agency mega shelter serving up to 2000 people;
- Various Disaster Supplemental Nutrition Assistance Program locations;
- Free community Wi-Fi at the Bay County Public Library;
- Florida Highway Patrol;
- United Way of Northwest Florida;
- Church of Jesus Christ of Latter Day Saints;
- Bay County Board of County Commission Administration;
- Bay County Attorney’s Office;
- Bay County Transportation;
- Bay County Volunteer & Donations Help Desk;
- University of Florida, Center for Urban Transport; and
- Good Shepard Lutheran Church.

Further, T-Mobile also provided free phones with one month of T-Mobile service (approximately 9,000) to first responders, healthcare providers, local authorities, and customers who were having trouble obtaining wireless connectivity from other carriers. Among those receiving free phones and/or service were staff at the Gulf Coast Regional Medical Center, Bay

County teachers, the 14th Judicial Circuit of Florida, AmeriCorps, the National Guard, police departments and administrators in Mexico Beach, Panama City and Panama City Beach, and the State of Florida Emergency Medical Services.

T-Mobile also continued its support for the non-profit, military veteran-led Team Rubicon hurricane recovery efforts, donating \$5,000 per home run plus \$1 per Twitter or Instagram post using #HR4HR during the Major League Baseball Postseason. T-Mobile increased this support to \$10,000 per home run and \$2 per Twitter or Instagram post using #HR4HR during the World Series. Since its inception after the devastation of hurricanes Maria, Harvey and Irma last year, T-Mobile has donated more than \$4 million to Team Rubicon's hurricane recovery efforts.

In addition to its support of Team Rubicon's hurricane recovery efforts, T-Mobile established a "Text to Give" program enabling its customers to donate to Hurricane Michael relief efforts.¹³

C. IMPLEMENTATION OF CTIA BEST PRACTICES

1. Standard Pre-Planning Activity

In advance of each hurricane season, T-Mobile generally coordinates with other carriers, vendors, and industry partners regarding mutual aid with respect to backhaul and roaming support. For example, each May T-Mobile's roaming team coordinates with their AT&T counterparts – the nationwide wireless provider with the most technically compatible network – to update information that would be necessary to facilitate roaming in emergencies. T-Mobile also conducts similar outreach with other carriers on a case-by-case basis as events warrant. T-Mobile also has entered into a number of contracts with vendors to assist with disaster recovery efforts.

¹³ News Release, T-Mobile, *T-Mobile Responds to Hurricane Michael* (Oct. 8, 2018) ("T-Mobile Hurricane Michael News Release"), <https://www.t-mobile.com/news/hurricane-michael>.

T-Mobile has established an enterprise-wide Business Continuity Recovery Program and annually seeks certification that the program satisfies the requirements of the CTIA Business Continuity/Disaster Recovery Program. Among other things, this Business Continuity Recovery Program facilitates efforts towards gap analysis, risk assessment, mitigation and improved business resiliency during disasters and other emergency scenarios. T-Mobile has implemented a training and awareness program for its employees on business continuity requirements and conducts an annual drill to ensure the effectiveness of the Business Continuity Recovery Program.

Further, in advance of specific storms, T-Mobile pre-stages assets (including mobile generators, COWs, and COLTs), temporary microwave/satellite communications, and supplies (including fuel) in advance of major storms. In addition, T-Mobile also mobilizes expert recovery and restoration teams, completes internal preparedness checklists to ensure readiness, and coordinates with vendors that may be used in the recovery process.

2. Storm-Specific Pre-Planning Activity

T-Mobile coordinated with its primary transport provider in Florida – AT&T – regarding potential recovery procedures. T-Mobile also staged fuel trucks, water, and food supplies to ensure rapid deployment in the wake of the storm.

As a result of the Company's extensive pre-planning and collaboration with the other carriers, combined with the rapid response and deployment of temporary backhaul and power solutions, T-Mobile remained operational in many areas during the Storm and, while individual cell sites may have remained down, was able to achieve a solid layer of coverage throughout the impacted areas relatively quickly by deploying COWs and COLTs which were operational by October 15, 2018.

3. Coordination During and After Emergencies

T-Mobile's Government Affairs Team coordinated closely with FCC staff and Department of Homeland Security/National Coordinating Center for Communications ("DHS/NCC") personnel before, during, and after the storm.¹⁴

T-Mobile actively reached out to government stakeholders to keep them apprised of restoration activities in the impacted areas. For example, T-Mobile was in regular contact with representatives from Florida's Federal delegation, as well as State administrators.

T-Mobile also has compiled a list of PSAP contact information and updates this list regularly. T-Mobile has enabled real time updates to this database and created a mailbox to improve tracking of communication with PSAP emergency contacts.

Finally, T-Mobile issued numerous Press Releases and leveraged social media outlets to provide hurricane preparation tips to subscribers and provide them with the latest information about network restoration and other forms of relief and support (*e.g.*, extended service and billing).¹⁵ To help impacted customers focus on rebuilding, T-Mobile took several steps to provide additional relief by, among other things, waiving service and applicable charges through

¹⁴ T-Mobile participated in daily NCC calls.

¹⁵ See, *e.g.*, T-Mobile Hurricane Michael News Release, *supra* note 13; News Release, T-Mobile, *T-Mobile Prepares for Hurricane Season* (May 31, 2018), <https://www.t-mobile.com/news/t-mobile-prepares-for-2018-hurricane-season>; Christopher Coltrain, *Hurricane Michael Response – T-Mobile*, YouTube (Oct. 28, 2018), <https://www.youtube.com/watch?v=V6sAcufTaQ>; News Release, T-Mobile, *T-Mobile Prepares for 2017 Hurricane Season* (May 30, 2017) ("T-Mobile 2017 Hurricane Season News Release"), <https://www.t-mobile.com/content/t-mobile/corporate/-news/articles/2017/05/t-mobile-prepares-for-2017-hurricane-season.html>.

the end of October, suspending collections, waiving charges for SIM cards for customers who choose to come to T-Mobile, and waiving device replacement fees.¹⁶

II. HURRICANE FLORENCE (SEPTEMBER 12 – SEPTEMBER 24, 2018)

A. GEOGRAPHIC IMPACT

Hurricane Florence resulted in the activation of DIRS in 99 counties throughout Georgia, North Carolina, South Carolina, and Virginia.¹⁷ T-Mobile provided service prior to the storm from cell sites located within each of these counties with the exception of Hyde and Pamlico counties in North Carolina.

Hurricane Florence was the wettest tropical cyclone on record in the Carolinas and the first major hurricane of the 2018 Atlantic hurricane season.¹⁸ Hurricane Florence made landfall as a Category 1 storm before weakening and slowly moving inland.¹⁹

B. USE OF MUTUAL AID AND ROAMING

Prior to the hurricane, T-Mobile reached out to wireless carriers serving the areas of predicted impact and coordinated regarding potential disaster recovery scenarios. T-Mobile also exchanged contact information with Framework signatories in advance of the storm.

¹⁶ See, e.g., News Release, T-Mobile, *Hurricane Michael: Update for Customers* (Oct. 17, 2018), <https://www.t-mobile.com/news/hurricane-michael-update>; John Legere (@JohnLegere), Twitter (Oct. 16, 2018, 4:14 PM), <https://twitter.com/johnlegere/status/1052336967021543425?lang=en>.

¹⁷ See Federal Communications Commission, Communications Status Report for Areas Impacted by Hurricane Florence (Sept. 14, 2018), <https://docs.fcc.gov/public/attachments/DOC-354079-A1.pdf>.

¹⁸ National Oceanic and Atmospheric Administration, Historic Hurricane Florence, September 12-15, 2018 <https://www.weather.gov/mhx/Florence2018> (last visited Nov. 21, 2018).

¹⁹ Steve Kiggins, *Hurricane Florence: What we know on Friday*, USA Today (Sept. 14, 2018), <https://www.usatoday.com/story/news/2018/09/14/hurricane-florence-what-we-know-and-what-expect/1299858002>.

T-Mobile granted a request from another nationwide wireless carrier to share staging space after the storm, but ultimately the carrier did not need to utilize this staging space. T-Mobile did not make any roaming requests for this storm, but did agree to waive an in-market roaming restriction in an existing agreement for one carrier. There were no event-specific roaming agreements.

T-Mobile continued its support for Team Rubicon's hurricane recovery efforts and established a "Text to Give" program enabling its customers to donate to Hurricane Florence relief efforts.²⁰

C. IMPLEMENTATION OF CTIA BEST PRACTICES

T-Mobile engaged in the pre-planning activity described in Section I.C.1. T-Mobile also staged fuel trucks, water, and food supplies to ensure rapid deployment in the wake of the storm. T-Mobile also actively reached out to government stakeholders to keep them apprised of restoration activities in the impacted areas.

Moreover, T-Mobile has compiled a list of PSAP contact information and updates this list regularly. T-Mobile has enabled real time updates to this database and created a mailbox to improve tracking of communication with PSAP emergency contacts.

Finally, T-Mobile leveraged social media outlets to provide hurricane preparation tips to subscribers and provide them with the latest information about the company's preparations for the storm.²¹

²⁰ News Release, T-Mobile, *Following Florence, T-Mobile Brings Back #HR4HR, Home Runs for Hurricane Recovery, for MLB Postseason* (Oct. 2, 2018) ("T-Mobile Home Runs News Release"), <https://www.t-mobile.com/news/hr4hr-2018>.

²¹ News Release, T-Mobile, *T-Mobile Responds to Hurricane Florence; Monitors Other Storms* (Sept. 17, 2018), <https://www.t-mobile.com/news/hurricane-florence>.

III. HURRICANE LANE (AUGUST 22 – AUGUST 26, 2018)

A. GEOGRAPHIC IMPACT

Hurricane Lane resulted in the activation of DIRS for all five counties in Hawaii.²² T-Mobile provided service prior to the storm from cell sites located within each of these counties with the exception of Kalawao. The storm, which never made landfall in Hawaii, had minimal impact on T-Mobile's network.

B. USE OF MUTUAL AID AND ROAMING

Prior to the hurricane, T-Mobile reached out to wireless carriers serving the areas of predicted impact and coordinated regarding potential disaster recovery scenarios. T-Mobile also exchanged contact information with Framework signatories in advance of the storm. T-Mobile did not make or receive any roaming requests for this storm. Thus, there were no event-specific roaming agreements.

C. IMPLEMENTATION OF CTIA BEST PRACTICES

T-Mobile engaged in the pre-planning activity described in Section I.C.1. Among other things, field technicians verified that all fixed generators were operational and fueled in advance of the storm. Active portable generators on Hawaii and Oahu also were prepared for deployment and 10 generators were shipped from Los Angeles to Hawaii in preparation for the storm. Further, recovery personnel also increased the quantity of spare parts in their vehicles to facilitate rapid recovery. T-Mobile also staged fuel trucks, water, and food supplies to ensure rapid deployment in the wake of the storm.

²² See Public Safety and Homeland Security Bureau Announces the Activation of the Disaster Information Reporting System in Response to Hurricane Lane, *Public Notice*, DA 18-874 (rel. Aug. 22, 2018).

Moreover, T-Mobile has compiled a list of PSAP contact information and updates this list regularly. T-Mobile has enabled real time updates to this database and created a mailbox to improve tracking of communication with PSAP emergency contacts. T-Mobile also actively reached out to State and local emergency operations centers, which were activated 48 hours prior to the forecasted impact from Hurricane Lane.

Finally, T-Mobile leveraged social media outlets to provide hurricane preparation tips to subscribers and provide them with the latest information about the company's preparations for the storm.²³

IV. HURRICANE MARIA (SEPTEMBER 20, 2017 – MARCH 23, 2018)

A. GEOGRAPHIC IMPACT

Hurricane Maria resulted in the activation of DIRS for all counties in Puerto Rico and the U.S. Virgin Islands.²⁴ Prior to the 2017 Hurricane Season, T-Mobile provided service from cell sites located within each of these counties with the exception of Loiza in Puerto Rico and St. John, U.S Virgin Islands.

Hurricane Maria was an exceptional event. The storm has been characterized as the worst natural disaster in Puerto Rico's history and was the tenth most intense Atlantic hurricane ever.²⁵ It caused more than \$100 billion in damage and decimated the island's power grid and

²³ News Release, T-Mobile, *T-Mobile Responds to Hurricane Lane* (Aug. 23, 2018), <https://www.t-mobile.com/news/hurricane-lane-hawaii>.

²⁴ See Federal Communications Commission, Communications Status Report for Areas Impacted by Hurricane Maria (Sept. 21, 2017), <https://docs.fcc.gov/public/attachments/DOC-346840-A1.pdf>.

²⁵ Daniel Chaitin, *Hurricane Maria cracks top-10 hurricane list as it strengthens and heads to Puerto Rico*, Wash. Exam'r (Sept. 19, 2017), <http://www.washingtonexaminer.com/hurricane-maria-cracks-top-10-hurricane-list-as-it-strengthens-and-heads-to-puerto-rico/article/2634982>.

backhaul networks.²⁶ The impact was exacerbated because the storm followed closely on the heels of Hurricane Irma. This one-two punch made this natural disaster truly unique.

B. USE OF MUTUAL AID AND ROAMING

Prior to the hurricane, T-Mobile reached out to wireless carriers serving the areas of predicted impact and coordinated regarding potential disaster recovery scenarios. T-Mobile also exchanged contact information with Framework signatories in advance of the storm.

T-Mobile received requests from three carriers to open roaming in 19 Location Area Codes (“LACs”) in the wake of the storm and provided the requested roaming capabilities. T-Mobile sought roaming support from various carriers in the impacted area and each of T-Mobile’s requests was approved. In all instances with the exception of Sprint, roaming was provided pursuant to the terms of pre-existing roaming agreements. Although no new agreements were required in these instances, the agreements contained prohibitions on in-market roaming that the parties waived during the disaster recovery period. With regard to the Sprint request, T-Mobile and Sprint entered into a roaming agreement to provide the requested support during Sprint’s recovery efforts.

T-Mobile utilized numerous cargo aircraft loaded with supplies needed for restoration efforts and, as part of voluntary mutual aid efforts, provided space on cargo aircraft to transport generators needed for a competitor to restore service. T-Mobile also provided a large generator to the Federal Aviation Administration to help keep the airport open to facilitate the delivery of life-saving supplies,²⁷ and provided a generator to a competitor. T-Mobile also shared its

²⁶ See Jeff Masters, *Hurricane Maria Damage Estimate of \$102 Billion Surpassed Only by Katrina*, Weather Underground (Nov. 22, 2017), <https://www.wunderground.com/cat6/-hurricane-maria-damages-102-billion-surpassed-only-katrina>.

²⁷ See generally Neville Ray, *On the Road to Recovery in Puerto Rico*, T-Mobile Blog (Oct. 27, 2017), <https://www.t-mobile.com/news/puerto-rico-network>.

generators at collocation sites and transport hubs. Further, T-Mobile allowed a representative from a competing carrier to share a helicopter for damage reconnaissance.

C. IMPLEMENTATION OF CTIA BEST PRACTICES²⁸

T-Mobile engaged in the pre-planning activity described in Section I.C.1. T-Mobile also staged fuel trucks, water, and food supplies to ensure rapid deployment in the wake of the storm.

T-Mobile actively reached out to government stakeholders – including members of the Governor’s Cabinet and the Puerto Rico Telecommunications Regulatory Board – to keep them apprised of restoration activities in the impacted areas.

Moreover, T-Mobile has compiled a list of PSAP contact information and updates this list regularly. T-Mobile has enabled real time updates to this database and created a mailbox to improve tracking of communication with PSAP emergency contacts.

Finally, T-Mobile leveraged social media outlets to provide hurricane preparation tips to subscribers.²⁹ To help impacted customers focus on rebuilding, T-Mobile took several steps to

²⁸ The Bureau Letter asks T-Mobile to describe how it complied with CTIA Best Practices for Enhancing Emergency and Disaster Preparedness and Restoration (“Best Practices”) for all events triggering the Framework in 2017 and 2018. The Best Practices, however, were not finalized and published until December 2017 and, therefore were not in place for the 2017 Hurricane Season. See Press Release, CTIA, *CTIA Announces New Best Practices to Help Local Governments Maintain Wireless Service During Natural Disasters* (Dec. 20, 2017), <https://www.ctia.org/news/ctia-announces-new-best-practices-to-help-local-governments-maintain-wireless-service-during-natural-disasters>; CTIA, *Best Practices for Enhancing Emergency and Disaster Preparedness and Restoration*, <https://api.ctia.org/docs/default-source/default-document-library/best-practices-for-enhancing-emergency-and-disaster-preparedness-and-restoration.pdf> (last visited Nov. 21, 2018). Nevertheless, T-Mobile provides information addressing the factors included in the Best Practices for the 2017 storms.

²⁹ See, e.g., T-Mobile 2017 Hurricane Season News Release, *supra* note 15.

provide additional relief by, among other things, providing customers in Puerto Rico unlimited data and the ability to call or text anywhere in the US for free through October 31, 2017.³⁰

V. HURRICANE NATE (OCTOBER 8 – OCTOBER 9, 2017)

A. GEOGRAPHIC IMPACT

Hurricane Nate resulted in the activation of DIRS in 8 counties in Alabama, Florida, and Mississippi.³¹ T-Mobile provided service prior to the storm from cell sites located within each of these counties. Hurricane Nate was the fourth Atlantic hurricane to strike the U.S. in 2017, and actually had two U.S. landfalls, first striking Louisiana and subsequently making landfall in Mississippi. The storm caused more than \$835 million in damage, but had very little impact on T-Mobile's network,³² which was approximately 99% operational at the height of the event.

B. USE OF MUTUAL AID AND ROAMING

Prior to the hurricane, T-Mobile reached out to wireless carriers serving the areas of predicted impact and coordinated regarding potential disaster recovery scenarios. T-Mobile also exchanged contact information with Framework signatories in advance of the storm.

T-Mobile did not make or receive any roaming requests for this storm. Thus, there were no event-specific roaming agreements.

³⁰ See, e.g., News Room, T-Mobile, *T-Mobile Responds to Hurricane Maria* (Sept. 18, 2017), <https://www.t-mobile.com/news/t-mobile-responds-to-hurricane-maria>; T-Mobile, Focus On, Hurricane relief, <https://www.t-mobile.com/responsibility/community/emergency/disaster-response> (last visited Nov. 21, 2018).

³¹ See Federal Communications Commission, Communications Status Report for Areas Impacted by Hurricane Nate (Oct. 9, 2017), <https://docs.fcc.gov/public/attachments/DOC-347137A1.pdf>.

³² Daniel Uria, *As hurricane season ends, 2017 settles firmly into record book*, San Angelo Now (Nov. 30, 2017), <http://www.sanangelonow.com/as-hurricane-season-ends-2017-settles-firmly-into-record-book>.

C. IMPLEMENTATION OF CTIA BEST PRACTICES

T-Mobile engaged in the pre-planning activity described in Section I.C.1. T-Mobile also staged fuel trucks, water, and food supplies to ensure rapid deployment in the wake of the storm.

Moreover, T-Mobile has compiled a list of PSAP contact information and updates this list regularly. T-Mobile has enabled real time updates to this database and created a mailbox to improve tracking of communication with PSAP emergency contacts.

Finally, T-Mobile leveraged social media outlets to provide hurricane preparation tips to subscribers and provide them with the latest information about the company's preparations for the storm.³³

VI. HURRICANE IRMA (SEPTEMBER 6 - SEPTEMBER 18, 2017)

A. GEOGRAPHIC IMPACT

Hurricane Irma resulted in the activation of DIRS in all counties in Puerto Rico, the U.S. Virgin Islands, and Florida, three counties in Alabama, and 18 counties in Georgia.³⁴ T-Mobile provided service prior to the storm from cell sites located within each of these counties with the exception of Loiza in Puerto Rico and St. John, U.S. Virgin Islands.

At one point a Category 5 hurricane, Hurricane Irma was the strongest observed hurricane since Hurricane Wilma in 2005. The storm had devastating impacts on many Caribbean islands and caused significant damage in Puerto Rico, but fortunately weakened before hitting Florida. Hurricane Irma caused more than \$65 billion in damage over a wide area.

³³ News Release, T-Mobile, *T-Mobile Prepares for Tropical Storm Nate* (Oct. 6, 2017), <https://www.t-mobile.com/news/t-mobile-prepares-for-tropical-storm-nate>.

³⁴ See Federal Communications Commission, Communications Status Report for Areas Impacted by Hurricane Irma (Sept. 12, 2017), <https://docs.fcc.gov/public/attachments/DOC-346690-A1.pdf>.

Restoration efforts spanned from south Florida to Puerto Rico.³⁵ Geographic coverage for T-Mobile was substantially restored to impacted areas within 5 days, with full recovery in slightly more than 10 days. Commercial power outages associated with this storm, while widespread, were not as lengthy as those associated with other 2017 storms and therefore T-Mobile was able to restore service quickly. Supplemental generators, COWs, and satellite and terrestrial wireless backhaul links were quickly deployed to ensure widespread geographic coverage. A solid coverage layer was quickly re-established to the geographic area covered by the T-Mobile footprint long before all cell sites were repaired. The large volume of cell sites in southern Florida facilitated network optimization efforts to close coverage gaps due to damaged facilities or in areas with limited commercial power or backhaul.

B. USE OF MUTUAL AID AND ROAMING

Prior to the hurricane, T-Mobile reached out to wireless carriers in the areas of predicted impact and reiterated its commitment to provide reasonable roaming and mutual aid where technically feasible. T-Mobile also exchanged contact information with Framework signatories in advance of the storm.

T-Mobile did not receive any requests for mutual aid or roaming for this storm, but it did attempt to obtain roaming support from AT&T in 16 LACs. AT&T initially was unable to grant the request due to network stability and capacity concerns, but once its restoration efforts progressed it did provide roaming support. AT&T provided roaming pursuant to the pre-existing roaming agreement with T-Mobile and merely waived the prohibition on in-market roaming.

³⁵ Rene Rodriguez, *Hurricane Irma damage could be as high as \$65 billion*, Miami Herald (Sept. 19, 2017), <http://www.miamiherald.com/news/weather/hurricane/article174153646.html>.

C. IMPLEMENTATION OF CTIA BEST PRACTICES

T-Mobile engaged in the pre-planning activity described in Section I.C.1. T-Mobile also staged fuel trucks, water, and food supplies to ensure rapid deployment in the wake of the storm.

T-Mobile actively reached out to government stakeholders to keep them apprised of restoration activities in the impacted areas.³⁶ Moreover, T-Mobile has compiled a list of PSAP contact information and updates this list regularly. T-Mobile has enabled real time updates to this database and created a mailbox to improve tracking of communication with PSAP emergency contacts.

Finally, T-Mobile leveraged social media outlets to provide hurricane preparation tips to subscribers.³⁷ To help impacted customers focus on rebuilding, T-Mobile took several steps to provide additional relief by, among other things, providing customers the ability to call (or text) to or from the impacted areas for free.³⁸

VII. HURRICANE HARVEY (AUGUST 25 - SEPTEMBER 5, 2017)

A. GEOGRAPHIC IMPACT

Hurricane Harvey resulted in the activation of DIRS in 55 counties in Louisiana and Texas.³⁹ T-Mobile provided service prior to the storm from cell sites located within each of these counties with the exception of McMullen County in Texas.

³⁶ T-Mobile also engaged in regular calls with the NCC.

³⁷ See, e.g., T-Mobile 2017 Hurricane Season News Release, *supra* note 15.

³⁸ See News Release, T-Mobile, T-Mobile responds to Hurricane Irma (Sept. 5, 2017), <https://www.t-mobile.com/news/t-mobile-responds-to-hurricane-irma>.

³⁹ See Federal Communications Commission, Communications Status Report for Areas Impacted by Hurricane Harvey (Aug. 26, 2017), <https://docs.fcc.gov/public/attachments/DOC-346368A1.pdf>.

Hurricane Harvey was one of the costliest hurricanes in U.S. history, causing approximately \$200 billion in damage.⁴⁰ That said, more than 85% of T-Mobile's network remained operational in the affected areas in the aftermath of this Category 4 storm.⁴¹ Additionally, the network was restored to normal operating status within 5 days of the storm.⁴² Because of familiarity with storm and flooding impacts in Texas, T-Mobile built sites on platforms in areas prone to flooding and storm surges, allowing these sites to perform exceptionally well in the wake of the storm. Furthermore, ongoing densification of the network in Houston allowed T-Mobile to optimize operational cell sites to provide coverage to areas impacted by damaged sites. This provides coverage even when a significant percentage of sites are not operational. Finally, there were minimal impacts from loss of commercial power and backhaul due to the more modern infrastructure used in Texas.⁴³

B. USE OF MUTUAL AID AND ROAMING

Prior to the hurricane, T-Mobile reached out to wireless carriers in the areas of predicted impact and reiterated its commitment to provide reasonable roaming and mutual aid where technically feasible. T-Mobile also exchanged contact information with Framework signatories in advance of the storm.

T-Mobile did not receive any roaming requests for this storm. T-Mobile did open a dialog with AT&T once the hurricane made landfall regarding potential roaming, but ultimately

⁴⁰ Jonathan Belles, *Harvey Could Be America's First \$200 Billion Hurricane, but Other Estimates are More Conservative*, Weather.com (Nov. 3, 2017), <https://weather.com/storms/-hurricane/news/2017-11-03-hurricane-200-billion-dollar>.

⁴¹ Letter from Steve Sharkey, Vice President, Technology and Engineering Policy, T-Mobile USA, Inc., to Marlene H. Dortch, Secretary, Federal Communications Commission, PS Docket No. 17-344, Attach. at 5 (Dec. 15, 2017).

⁴² *Id.*

⁴³ *Id.*

determined that there was no need for roaming relief. Thus, there were no event-specific roaming agreements. T-Mobile remained in regular contact with the AT&T roaming team for the remainder of the hurricane season.

On October 7, 2017, T-Mobile announced a major new fundraising effort for hurricane relief and recovery efforts. Specifically, T-Mobile agreed to donate at least \$1 million to the non-profit, military veteran-led Team Rubicon's hurricane recovery efforts. T-Mobile pledged to donate \$10,000 per postseason home run plus \$1 per Twitter post using #HR4HR during the Major League Baseball Postseason. According to the CEO of Team Rubicon, "T-Mobile's support of our mission has been critical to Team Rubicon's growth and impact over the past year. . . . Their contributions supported our initial Hurricane Harvey response efforts, and helped us make a long-term commitment to rebuild 100 storm-damaged homes in the Houston area. We couldn't be more grateful to T-Mobile for their partnership and their support of the broader veteran community."⁴⁴

In addition to its Team Rubicon support, T-Mobile established a "Text to Give" program enabling its customers to donate to Hurricane Harvey relief efforts.⁴⁵

C. IMPLEMENTATION OF CTIA BEST PRACTICES

T-Mobile engaged in the pre-planning activity described in Section I.C.1. T-Mobile also staged fuel trucks, water, and food supplies to ensure rapid deployment in the wake of the storm.

T-Mobile actively reached out to government stakeholders to keep them apprised of restoration activities in the impacted areas.⁴⁶ Moreover, T-Mobile has compiled a list of PSAP

⁴⁴ T-Mobile Home Runs News Release, *supra* note 20.

⁴⁵ News Release, T-Mobile, *T-Mobile Responds to Hurricane Harvey* (Aug. 24, 2017) ("T-Mobile Hurricane Harvey News Release"), <https://www.t-mobile.com/news/t-mobile-responds-to-hurricane-harvey>.

contact information and updates this list regularly. T-Mobile has enabled real time updates to this database and created a mailbox to improve tracking of communication with PSAP emergency contacts.

Finally, T-Mobile issued numerous Press Releases and leveraged social media outlets to provide hurricane preparation tips to subscribers.⁴⁷ To help impacted customers focus on rebuilding, T-Mobile took several steps to provide additional relief by, among other things, providing customers in the impacted areas unlimited data and free texting/calling.⁴⁸

CONCLUSION

As demonstrated above, the Framework has proven effective in ensuring network resiliency and facilitating service restoration in the wake of disasters. If you have any questions regarding the above after-event summaries provided by T-Mobile, please contact the undersigned.

Respectfully submitted,

T-MOBILE USA, INC.

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⁴⁶ T-Mobile also engaged in regular calls with the NCC.

⁴⁷ *See, e.g.*, T-Mobile 2017 Hurricane Season News Release, *supra* note 15.

⁴⁸ T-Mobile Hurricane Harvey News Release, *supra* note 46.