

**Statement of Sandra Torres López**  
**President, Puerto Rico Telecommunications Regulatory Board**

Puerto Rico experienced a disaster that was unprecedented not only in the Island's history but in the history of the United States. In September 2017, Puerto Rico was hit by two devastating hurricanes, Irma and Maria, with Category 4 or greater winds within weeks of each other, something that had never happened anywhere in the nation.

It is unparalleled, that an entire state population lost power, water, communication systems, and other services, with devastation so extreme that it took months and even in some area a full year to restore these services. With this event, sadly but truly, Hurricane Maria electrical impact surpassed all other U.S. blackouts in recorded history, and it is the second-longest blackout in world history, according to a report from the Rhodium Group, an economic research firm.

Being an island, none of the solutions to our challenges was easy, and the logistics to bring in needed resources was long, expensive, and time-consuming. Based on this, in many ways, this was the first truly catastrophic natural disaster in modern U.S. history.

As part of the response efforts, we had to relocate our Emergency Operation Center from the municipality of Caguas to the San Juan Convention Center, a more suitable structure for an island-wide emergency. Appointed by the then Governor and being the Telecommunication Bureau the ESF-2 within the structure for coordinating interagency support for a State and Federal response to an incident, the Telecommunication Bureau was given the responsibility to lead all efforts in restoring the telecommunication within Puerto Rico. Recognizing that critical services such as 9-1-1 were not operational, that 95% of the wireless communication was down and that infrastructure to perform financial activities such as the use of ATMs, Debit/Credit transaction and even the EBTs were not working; in most of the cases due to the lack of power.

In the Convention Center, we had a designated area, room 203, in which we included all telecommunication carriers and ISPs towers owners; to convey daily working together to ensure we could bring back the communication as quickly as possible. And when we say work together, we mean working together. The carriers did not start with this mindset, and we thought each provider could accomplish on its own, which is the norm in Puerto Rico, due to its very competitive environment, they quickly learned that they had to set the competitive mindset aside and recognize that if we didn't join efforts, the road ahead was going to be more prolonged and more costly.

At the same time, we realized that nowadays a mobile device is a means to call 9-1-1, a family member or a neighbor that could assist you in emergency or moment of distress. With this realization, the industry made an unprecedented confidentiality and no-compete agreement that included a never done before sharing of the infrastructure with an open roaming agreement,

allowing companies to use other providers' networks as an alternative to provide communication to customers. Something of which I'm very proud, and it serves as proof of the level of the commitment that the providers in Puerto Rico have with their customers.

Before Hurricane Maria, the Government of Puerto Rico did not consider the telecommunications an essential service; it was only water and electricity. We learned the hard way that we were wrong and that we needed to ensure that within the Government, we managed all efforts related to telecommunication as an essential service. For this reason, the then Governor signed law #5 of 2018, which does designate the telecommunication as an essential service being of general interest, and therefore, subject to specific public service obligations to cover both economic and non-economic activities. Taking the view that telecommunication is an essential element of the Puerto Rico model of society and necessary for increasing the quality of life for all citizens.

The Bureau at that time, the telecommunication Board had signed a Collaborative Agreement with the Committee of the Telecommunications Industry for Emergency Management to join efforts between public and private entities to restore and protect the telecommunications and cable television infrastructure, and coordinate and prioritize the recovery efforts within the disasters or emergencies.

From that room, we facilitate and worked on one of the significant issues we confronted, not having power, we had to bring from outside of the island generators, facing a limited inventory of generators within the mainland, due to the impact of the hurricane Harvey. We had carriers that brought generators from the Dominican Republic and other areas that required a waiver from the Environmental Protection Agency (EPA). Also, we worked with the Puerto Rico Department of Treasury to avoid taxing these generators, as they were brought in only to attend the emergency and had to be shipped out once power was restored.

An Executive Order was made by the then Governor in which allowed the carriers to perform all necessary recovery efforts with a streamlined permitting process to expedite the recovery.

The loss of the wireless connectivity made us realized that we did not have the luxury of being able to provide a pin or drop to provide to FEMA or any of the mobilized resources for the specific location to be served in any field operation. We were quick to bring in a local company specialized in GIS and loaded a telecommunication layer from zero with the information provided by the carriers and tower owners. This system was updated twice a day, and we were able to offer coverage details to the public daily. But most importantly, we had the proper location of the affected area to have the support personnel perform the field operation.

At this Operation location, we heard the needs of the Bank Association, which shared the frustration of their customers not being able to perform bank transactions or use of the ATMs. Admitting that it provoked a dire straight situation as rightful bank customers wanted access to withdraw their money.

We also attended the Pharmaceutical and Medical Devices industry, in which we learned that the impact of not having internet connectivity at the production sites was impacting the world supply as some of the drugs and medical devices are produced in Puerto Rico only. The Industry admitted that they prepared themselves for not having power and water. For Internet connectivity, they had contracts for services with two and even three ISPs, but never expected a total “Comms Down” scenario.

To this Operation Room, we brought twice the Executive Director of the Puerto Rico Electric Power Authority (PREPA), Ricardo Ramos, in which he shared the gloomy reality that Puerto Rico was going to face of not having power for a minimum of 6 months. We recognize that you expect to run on a generator for a couple of hours, maybe a day or two, based on what was shared to the carriers, we were not prepared to generate internally the power to work for months. Sad to say, that today we can recognize that we had areas without power for even longer than six months.

The amount of the hours maintaining the generators and refueling logistics was a new reality for the carriers after Maria. Internally these carriers realized that the information just provided by the Executive Director of PREPA, had a significant financial impact on the day to day operation, and a considerable amount of credits had to be given to their customers.

We spend 60 plus days in the Convention Center, which were indeed long days, seven days worked weeks starting at 5 am with a state and federal briefing and action plans updates. It was agreed with the Carriers to have twice a day status meeting to provide the progress of the efforts. We implemented a healing plan template, which each carrier had to submit to illustrate progress of the efforts of recovering the telecommunications. This 203 room became an operation and logistic center that had a diverse pool of resources that included multi-governmental agency personnel, technical, legal, and executive resources from the carrier, telecommunication towers owners. From the Federal side, we had members from FEMA, Homeland Security, Army Core of Engineers, and, last but not least, members of the FCC. In specific, your colleges Juan Silva and Roberto Mussenden, which Roberto happens to be here today with us, and I will like to take this opportunity to express to him our appreciation for his support and dedication to Puerto Rico.

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As we approach the third anniversary, in the telecommunication side, a lot has been done, but we do admit that we still have more to do in these efforts.

Within the Government side efforts, we have identified a series of Course of Action or COAs that we believe, if completed, will provide to Puerto Rico the resilience needed for future disaster events. Some of these COAs are:

- Streamline the Permitting and Rights of Way Processes for Towers and the Deployment of Fiber-Optic Cable
  - Municipal Hotspots
  - Establish Puerto Rico Communications Steering Committee
  - Auxiliary Communications with volunteer Radio Groups and Organizations
  - Among others

In the Private Sector, the carriers have made a significant investment and are proof of the commitment they have with Puerto Rico.

Currently, all suppliers have increased the amount of equipment and spare inventory stored on the island and are in strategic locations to respond more quickly to an emergency. Depending on the service or type of business/technology they have equipment such as satellite phones, cells on wheels (COWs), satellites on light trucks (SALT COLTS), solar equipment to recharge equipment, backup batteries, alternate generators and parts inventory for maintenance, Telcom cards, materials and equipment to make repairs to the fiber-optic network, antennas, microwave radio and telecommunications facilities, among others.

To achieve a more robust, resilient, and less dependent network on aerial fiber optic cabling, service providers have taken the necessary steps to secure many of their infrastructures by trenching the fiber optic cabling. Since the passage of Hurricane Maria, about 1,000 miles of Fiber Optics has been buried. This amount represents a significant achievement and a very positive impact on achieving the resilience desired for the telecommunications in Puerto Rico.

As bad as the situation was, there were reasons for hope. The complete and widespread devastation allowed Puerto Rico to view our island as a blank canvas, upon which we can implement innovative solutions that can make Puerto Rico a showcase for the world with a modern and more resilient infrastructure. The recent earthquake affecting the south part of the island allowed us to challenge the action taken for more resilient infrastructure. The main reason for the Comms Down we had in Hurricane Maria was that we had a 100% power loss. In this new kind of disaster, we suffered a 100% loss of power, but I'm pleased to inform you, Commissioner, that all Comms were up. With 100% intake of calls to 9-1-1 and close to 85% of all debits/credits and EBTs transaction completed. On day three, we saw some cell sites go down as batteries drain, and operators brought in portable generators. Bottom-line the investment made by the telecommunication providers paid off, and I will like to thank them publicly and state "job well done, kudos to the industry".