

Regulatory Perspective on Emergency Preparedness and Response

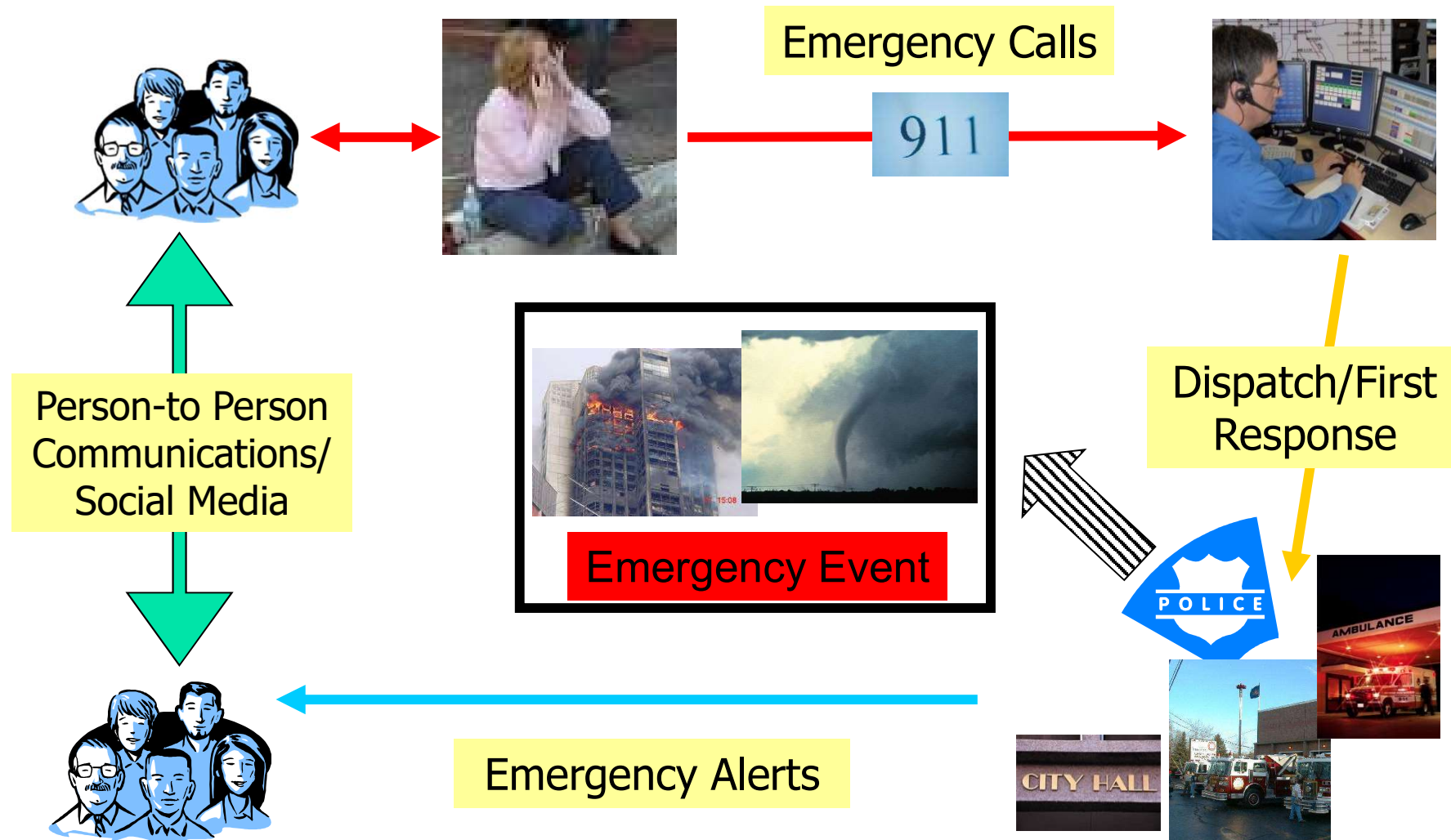
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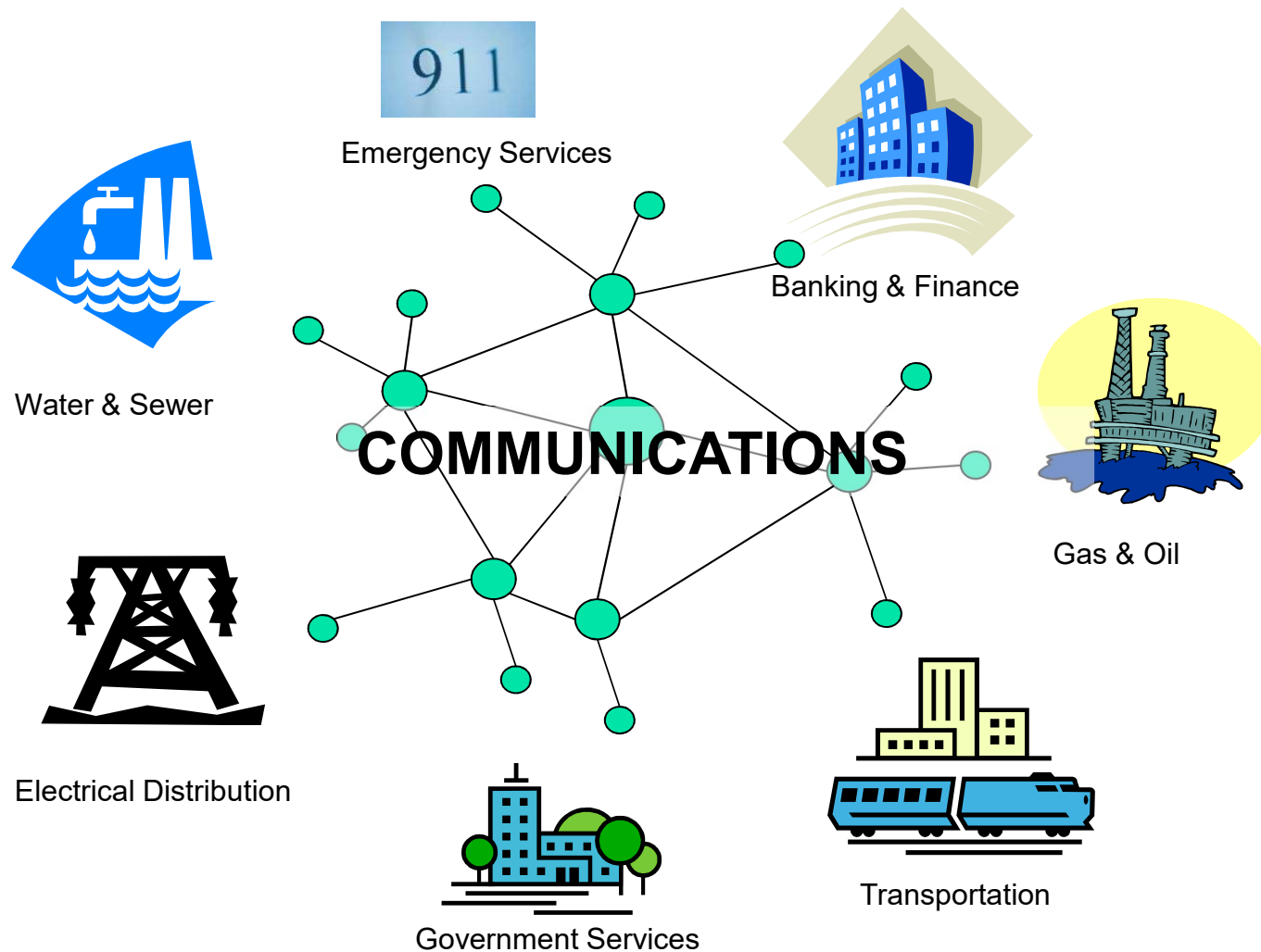
Emergency Preparedness and Response



Emergency Communications Ecosystem (Highly Simplified)

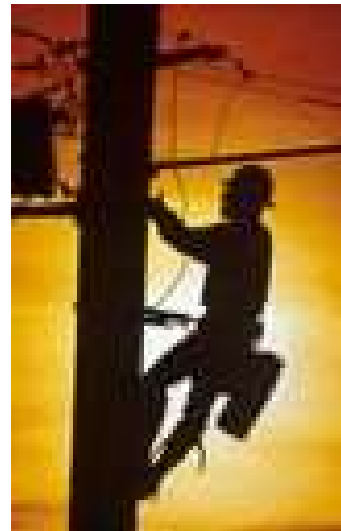


Critical Infrastructure



Impact of Disasters on Communications

- Communications network outages
- Damaged/destroyed infrastructure
 - Central office switches
 - Cell towers
- Lack of power
- Lack of access to facilities
- Communications network congestion
- Increased communications needs to support first responders

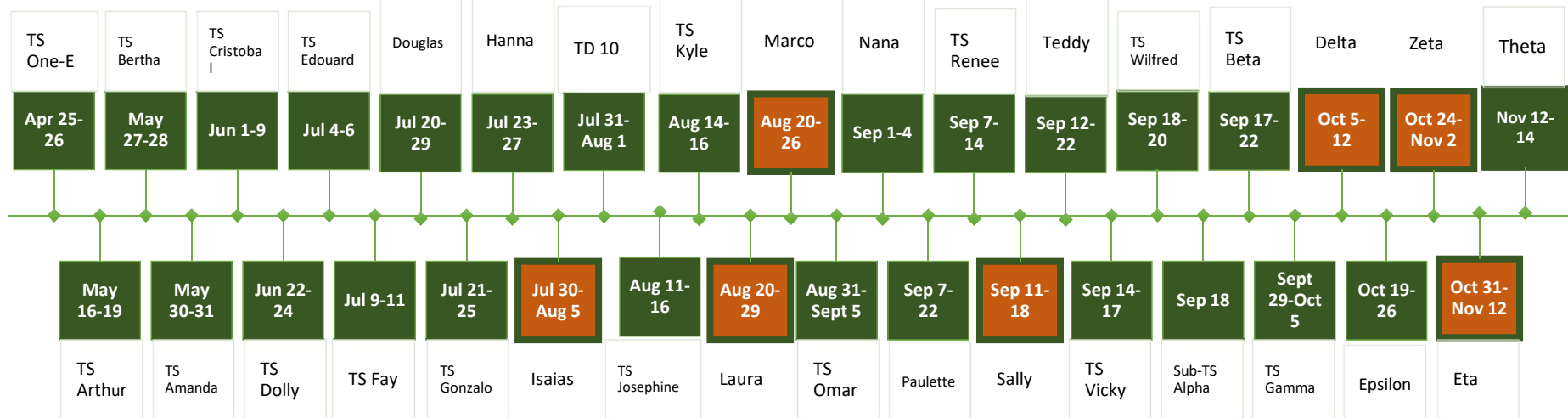
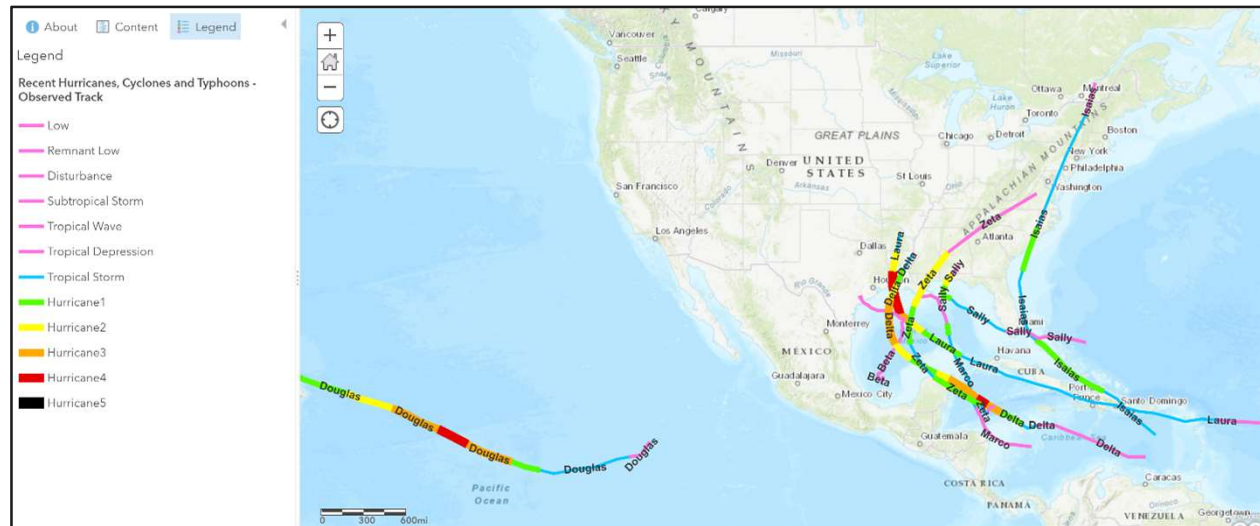


Hurricane Katrina – 2005

- August 29, 2005 -- Hurricane Katrina struck the Gulf Coast of the United States, causing significant damage in Alabama, Louisiana, and Mississippi
- The storm and subsequent flooding caused widespread destruction of communications facilities:
 - Three million phone lines out of service
 - Wireline central offices, switches, and outside plant damaged or destroyed
 - Over 1000 cell sites knocked out of service
 - At hurricane's height, more than 25 911 call centers out of service
 - Some Louisiana parishes without 911 service for weeks



2020 Hurricane Season





FCC Emergency Response Role

- Monitor and report on status of communications services during emergencies
- Identify communications power/restoration needs
- Support restoration and emergency operation of essential communications facilities
- FCC participation in response to major US hurricanes
 - 2008 – Gustave, Ike
 - 2012 – Sandy
 - 2016 – Matthew
 - 2017 – Harvey, Irma, Maria, Nate
 - 2018 – Florence, Lane, Michael
 - 2019 – Barry, Dorian
 - 2020 – Isaias, Laura, Marco, Sally, Delta, Zeta, Eta



FCC Outage Reporting Systems

- Network Outage Reporting System (NORS)
 - Always on (24/7/365)
 - All US communications service providers (wireless, wireline, cable, VoIP) must report outages above a set threshold (based on duration/affected population), regardless of cause of outage
 - NORS reports are confidential, providers must update within 30 days on outage cause and resolution
- Disaster Information Reporting System (DIRS)
 - Only activated during major disasters for affected areas
 - Service providers in affected areas provide daily outage reports (much more detailed than NORS reports) and are exempt from NORS reporting while DIRS is activated
 - DIRS reports are confidential but aggregated data is public
 - DIRS is deactivated when service is restored to pre-disaster status



Wireless Cooperative Resiliency Framework

- Voluntary agreement among major US wireless carriers since April 2016
- Signatories agree to coordinate, offer mutual aid, and share information during major emergencies:
 - Cross-provider roaming in affected areas
 - Mutual aid (e.g., cooperation in providing back-up power)
 - Enhanced outreach to local government to facilitate preparedness and restoration
 - Support for increased consumer readiness and preparation
 - Public posting of service and restoration status in DIRS
- Framework has been activated in major disasters since 2017
- Under consideration: Expanding the framework to improve coordination among wireless providers, backhaul providers, and power companies

DIRS Operation During Disasters

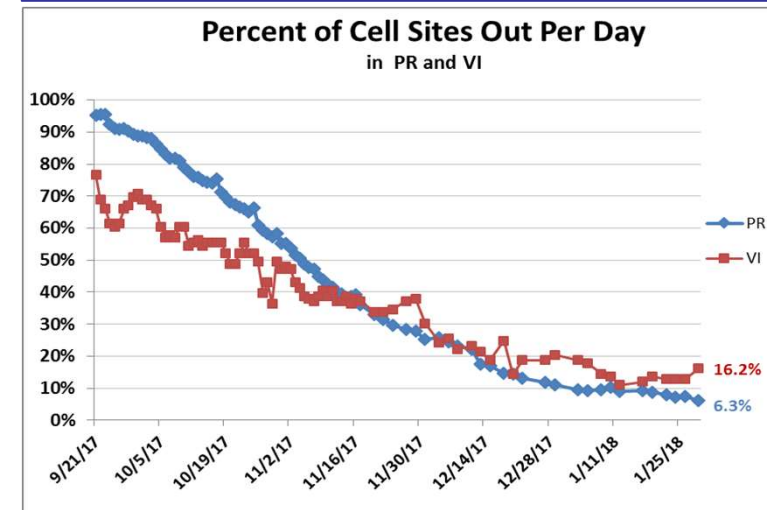
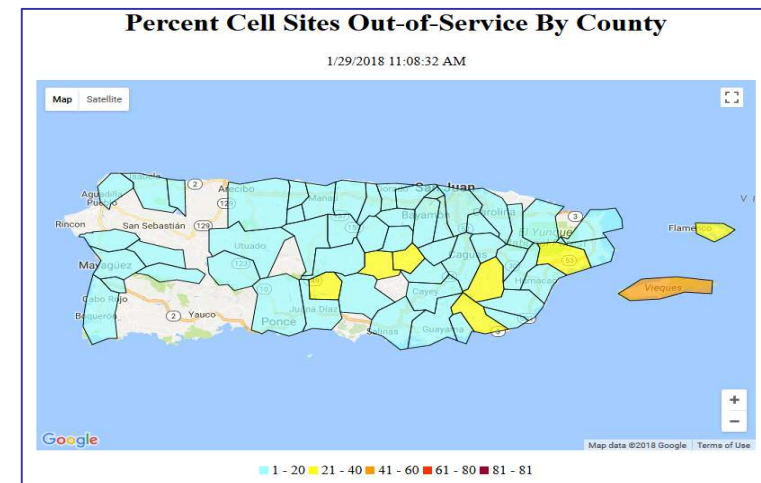
- Goals

- Track status of communications assets during disasters
- Track recovery efforts
- Share and publish key data

- Information Reported

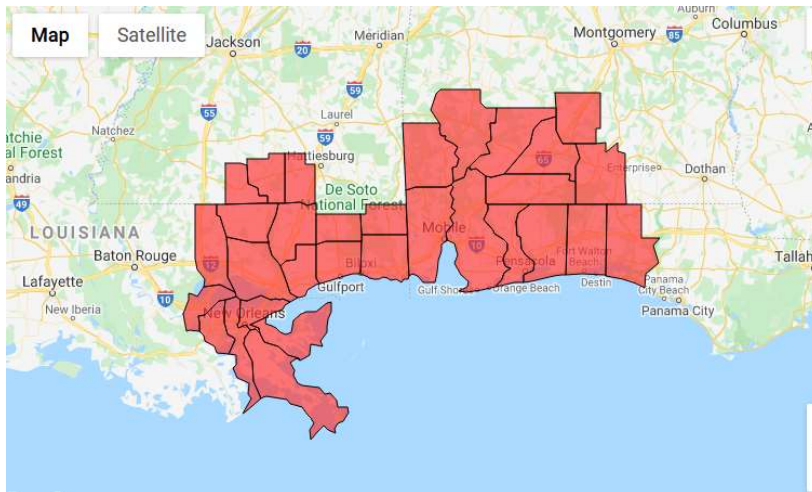
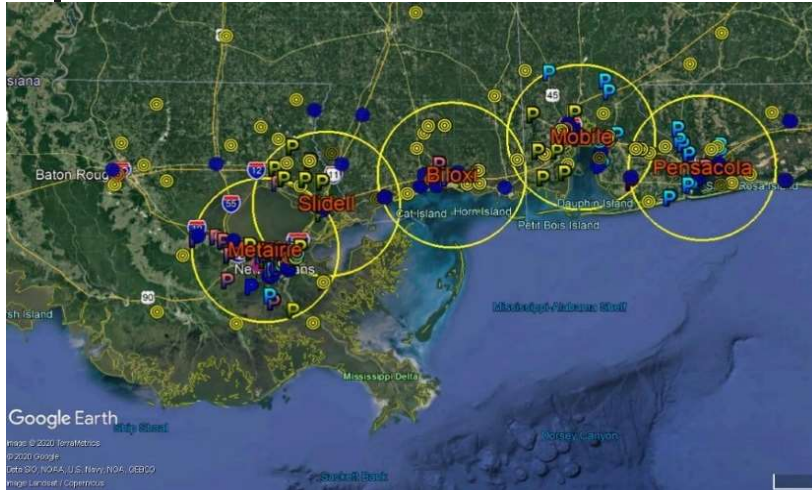
- Cell sites out of service by county
- Operating status of radio and TV stations
- Operating status of 911 call centers
- Wireless/cable customers out of service by county
- Status of major equipment (switches, headends, etc.)

DIRS Reports for Hurricane Maria, 2017-2018



Hurricane Sally

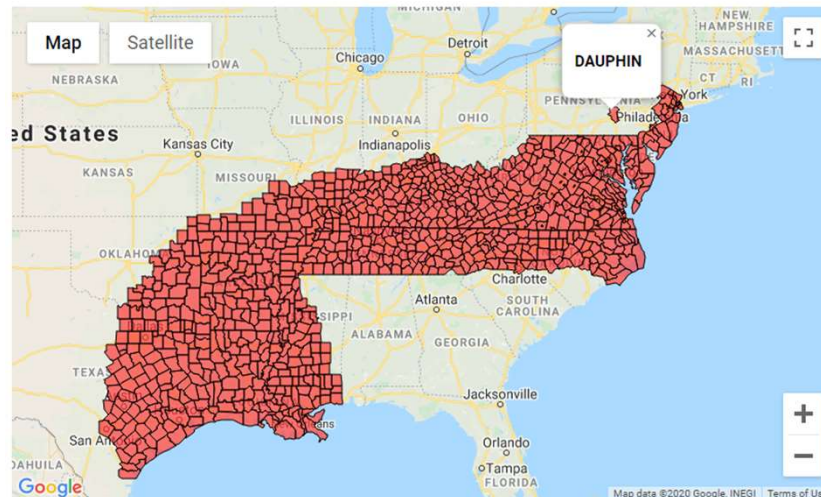
September 11-18, 2020



- 7-day DIRS activation: Sept 11-18
- Data collected from 4 states, 31 counties
- Outage data reported in DIRS:
 - 17.1% of cell sites out at peak
 - 59 switching centers out of service or on back-up power
- Radio/TV stations in affected areas reported on operating status
 - 42 AM/FM radio stations
 - 14 TV stations
- 47 companies that serve the disaster area reported on status, including all major carriers

Hurricanes Marco and Laura

August 20-29, 2020



- 15-day DIRS activation: Aug 25-Sept 9
- Data collected from 19 states, over 900 counties
- Outage data reported in DIRS:
 - 9% of cell sites out at peak
 - 135 switching centers out of service or on back-up power
- Radio/TV stations in affected areas reported on operating status
 - 253 AM/FM radio stations
 - 102 TV stations
- 217 companies that serve the disaster area reported on status, including all major carriers



For More Information

- FCC Website – www.fcc.gov
- Public Safety and Homeland Security Bureau Website – www.fcc.gov/public-safety-and-homeland-security-bureau

Thank You!