

**Written Statement of**

**Kevin J. Martin  
Chairman  
Federal Communications Commission**

**Hearing on  
Communications in a Disaster**

**Before the  
Committee on Commerce, Science and Transportation  
United States Senate**

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## **INTRODUCTION**

Good Morning Chairman Stevens, Chairman Inouye and members of the Committee. I appreciate the opportunity to be with you today. As we all know, Hurricane Katrina devastated the Gulf Coast. People lost their homes, their businesses, and even their lives. Our hearts go out to all of the survivors who are now struggling with putting their lives back together.

My statement focuses on the effects of the hurricane on the nation's communications infrastructure. First, I will briefly discuss the immediate impact on communications services in the area and provide a status report on the extent to which services have been restored. Second, I will describe the steps the Federal Communications Commission has taken both to facilitate the restoration of service and to provide support for evacuees. Finally, I will offer some initial lessons learned from this terrible tragedy.

## **IMPACT ON COMMUNICATIONS INFRASTRUCTURE**

The destruction to the facilities of the communications companies in the region, and therefore the services upon which citizens rely, was extraordinary. More than three million customer telephone lines were knocked down in the Louisiana, Mississippi, and Alabama area. Significant damage was inflicted both on the wireline switching centers that route calls and on the lines used to connect buildings and customers to the network. Thirty-eight 9-1-1 call centers went down. Local wireless networks also sustained considerable damage with more than one thousand cell sites out of service. Over 20 million telephone calls did not go through the day after the hurricane. While we were not able to contact every station in the immediate aftermath, we estimate that approximately 100 broadcast stations were knocked off the air. Hundreds of thousands of cable customers lost service. As a result, it was extremely difficult for hundreds of thousands of people to receive news and emergency information and to communicate with their loved ones. Emergency workers and public safety officials had difficulty coordinating.

It was at times like these that we were reminded of the importance of being able to communicate. While no communications network could be expected to remain fully operational in the face of a direct hit from a category four or five hurricane, that fact was little consolation to the people on the ground.

Fortunately, the work to restore communications services began almost immediately. While considerable problems remain, the companies in the region have made meaningful progress. They have overcome significant obstacles – including flooding, lack of power, dwindling fuel resources for generators, and security – to rebuild, reconnect and broadcast. Three radio stations in New Orleans continued to operate throughout the storm, and a fourth resumed operations within several hours of losing power. Wireline carriers were able to begin restoring service within five days, with significant improvement accomplished within a week. Wireless carriers began to restore service within two days and achieved substantial improvement by the first weekend. These extraordinary efforts are being performed by the employees of these companies, many of whom have suffered their own personal losses, yet still continue to work to restore services to all.

To the best of our knowledge, the current status is as follows:

*Wireline.* Approximately 2,500,000 customer lines have been restored, leaving 301,000 customer lines still out of service (268,000 in Louisiana and 33,000 in Mississippi). Thirty-five 9-1-1 call centers have been restored; three in Louisiana remain out of service.

*Wireless.* All wireless switching centers in the affected areas are operational. Over one thousand cell sites have been restored. Approximately 600 cell sites continue to be out of service, the majority within New Orleans and other areas of Louisiana. BellSouth has committed its facilities in New Orleans to wireless providers to make restoration of wireless service a priority.

*Broadcast.* Three television stations have come back on-the-air; four remain off-the-air. Although we cannot determine exactly how many radio stations have been restored, we do know that only 36 stations remain off-the-air.

*Cable.* We cannot estimate how many customers have had their cable service restored since the hurricane. We do know that approximately 143,000 customers have had their service restored in the last two weeks, and that approximately 280,000 remain without service.

*Satellite.* Fortunately, satellite service providers did not experience damage to their infrastructure. They have helped to bridge some of the gaps left by the outages by providing satellite phones and video links to law enforcement officials, medical personnel, emergency relief personnel, and news outlets. Additionally, direct broadcast satellite providers provided equipment to over 100 shelters so that evacuees can receive critical information – as well as entertainment – from television.

## **COMMISSION ACTIONS TO SUPPORT RESTORATION**

The Commission has devoted significant time and resources to enable first responders to communicate and to facilitate companies' ability to quickly restore services in the region. On August 30th, the Commission established an internal Task Force to coordinate hurricane response efforts. The Task Force's activities centered around three major goals: (1) Regulatory Relief for Industries; (2) Industry Outreach and Coordination with Other Federal Agencies; and (3) Assistance to consumers and evacuees. Hundreds of FCC employees have been directly involved in these efforts. The Commission stayed open late every day, seven days a week, for three weeks following the hurricane in order to assist consumers, the industries, and other Federal agencies. I am extremely proud of the efforts and dedication of the FCC staff that have helped us in this endeavor.

### **Summary of Commission Actions**

The Commission has taken a number of steps to cut bureaucratic "red tape." Although a thorough discussion of the Commission's actions can be found in the appendix, I will discuss a few here. Almost immediately after the hurricane subsided, the Commission notified all communications providers of expedited treatment for requests of special temporary authority ("STA"). We have granted over 70 STA requests and more than 100 temporary frequency authorizations for emergency workers, organizations and companies to provide wireless and broadcast service in the affected areas and shelters around the country. In most cases these

requests were granted within 4 hours, with all requests approved within 24 hours. The Commission released several public notices and quickly adopted orders to provide temporary relief, and we waived numerous rules to enable telephone companies to re-route traffic, disconnect and reconnect lines, and switch long distance providers so that consumers' phone calls can get through. We have extended filing deadlines, construction requirements, and discontinuance of service rules for wireless licensees in the affected areas.

From the beginning, the Commission has reached out to the impacted industries – often numerous times a day – to identify their needs to pass along to the Federal Emergency Management Agency (FEMA) and the National Communications System (NCS). The Commission provides the critical information about the necessary resources to FEMA and NCS, who are responsible for ensuring that priority needs are met, and we update FEMA and NCS daily on these evolving needs.

In addition, critical information on operational status of communications companies is transmitted on a daily basis to the National Coordinating Center (NCC) for its Situation Reports. The Commission also has been coordinating with the Interagency Coordinating Council on Individuals with Disabilities, organized by the Department of Homeland Security, to ensure that the needs of the disability community are addressed in the coordinated federal relief efforts.

Finally, the Commission has worked closely with the communications industry to help identify resources for use by disaster response personnel. The agency both transmits this information to NCC and facilitates industry's communication with other federal officials. For example, we granted an STA to Time Domain for an ultra-wideband through the wall imaging system to help law enforcement authorities locate hurricane victims, and special temporary authority was granted to Intel to set up Wi-Max broadband communications systems to provide Internet service at Red Cross relief centers.

Consumers in the Gulf Coast, and evacuees to other areas, also need information and assistance, and the Commission has worked to provide that support. We have manned our toll-free consumer line 7 days a week to help individuals get access to critical information about telecommunications and broadcast services in the affected area. Consumers, industry, and other agencies also can access the Commission's special webpage that provides information on all of the Commission's actions, and provide other valuable information. Finally, we have facilitated disaster relief efforts and fundraising efforts by temporarily reassigning the toll free 800-number "1-800-RED-CROSS" to the National Chapter of the American Red Cross, as well as providing temporary waivers to non-commercial radio and TV stations that wish to air Hurricane Katrina fundraising programming.

### **Proposal for Next Steps**

Last week, I announced my intention for the Commission to take three major actions in an effort to continue to provide immediate relief to consumers and businesses, and to enhance the Commission's planning and response efforts.

#### **(1) Provide over \$200 million of immediate relief to the affected areas**

First, I proposed to provide \$211 million in universal service funding to the disaster area. We will work through four existing programs to provide this support. We will use the Low Income Program to help those who have been cut off to reestablish their lines of communication. For all people eligible for FEMA disaster assistance, we will provide support for wireless handsets and a package of 300 free minutes for evacuees and people still in the affected area without telephone service. For all people eligible for FEMA disaster assistance, we also will provide support to pay the costs of reconnecting consumers to the network as the disaster-struck area is rebuilt.

Through the Rural Health Care Program, we will support those individuals providing emergency health care services in the region. We will allow public and non-profit health care providers, including American Red Cross shelters, to apply for support of their telecommunications needs. We will increase discounts from 25% to 50% for qualified providers in the area. To speed the delivery of support, we will modify the filing window for this Funding Year to allow health care providers to submit new or revised applications.

We will use the E-rate Program to help reconnect schools and libraries throughout the region. We will open a new Funding Year 2005 filing window for schools and libraries affected by the hurricane. We will treat schools and libraries struck by the hurricane at the highest level of priority (90%) for Funding Years 2005 and 2006. The Commission can authorize \$96 million in E-rate funds for the approximately 600 schools and libraries in Louisiana, Mississippi, and Alabama hit by the hurricane. We will also allow schools and libraries serving evacuees to amend their Funding Year 2005 applications to account for the unexpected increase in population.

Finally, we will allow carriers to use the High Cost Program to prioritize rebuilding facilities damaged by the hurricane. We will allow telephone companies greater flexibility to use USF support to prioritizing rebuilding wire centers affected by the hurricane.

**(2) Examine ways to improve network reliability and public safety communications in times of crisis**

Second, I am establishing an independent expert panel composed of public safety and communications industry representatives that will be charged with reviewing the impact of Hurricane Katrina on the communications infrastructure in the affected area. The panel will make recommendations to the Commission regarding ways to improve disaster preparedness, network reliability, and communication among first responders such as police, fire fighters and emergency medical personnel.

**(3) Create a new FCC bureau to better coordinate our planning and response efforts when disaster strikes**

Third, I announced my intention to create a new Public Safety/Homeland Security Bureau. The Bureau will coordinate public safety, national security, and disaster management activities within the FCC. The Bureau will develop policies and rules to promote effective and reliable communications for public safety, national security, and disaster management. It will have responsibility for issues including:

- o Public Safety Communications, including 911 centers and first responders
- o Priority Emergency Communications
- o Alert and Warning of U.S. Citizens
- o Continuity of Government Operations
- o Disaster Management Coordination (*i.e.*, infrastructure reporting and analysis in times of disaster)
- o Disaster Management Outreach
- o Communications Infrastructure Protection
- o Network Reliability and Interoperability
- o Network Security

## **LESSONS LEARNED**

While there is still much work for the Commission to do to facilitate the restoration of services in the Gulf Coast, I think it is important that we take the time to learn from this tragedy in order to improve our ability to serve the public in the event of another disaster. We need to assess what worked, what did not, and what the Commission should do now to make our communications networks more robust in the future. The planned expert panel will be tasked with answering some of these questions, but for now, I have three suggestions.

### **(1) Ensure that the public has the tools necessary to know when an emergency is coming and to contact first responders**

We should take three steps to help ensure that the public has these critical and life-saving tools. First, we should have a comprehensive alert system that allows officials at the national, state and local levels to reach affected citizens in the most effective and efficient manner possible. It should incorporate the internet, which was designed by the military for its robust network redundancy functionalities, and other advances in technology so that officials can reach large numbers of people simultaneously through different communications media.

Second, we need to ensure that all providers comply with our 9-1-1 rules. The 911 system is quite literally one of life or death. It is critical to our nation's ability to respond to a host of crises. The Commission has been working hard to minimize the likelihood of situations where users are unable to access it. The obligation to provide access to emergency operators should be not optional for any telephone service provider - regardless of whether that provider is wireless, wireline, cable or VoIP.

Third, we should ensure that Public Safety Answering Points (PSAPs) are redundant. Hurricane Katrina severed communications links to multiple Public Safety Answering Points (PSAPs), the key facilities that handle local emergency and first responder calls. Going forward, we need to establish a process to work with states and municipalities to improve the redundancy of critical communications links that serve PSAPs. As part of this effort, the Federal Government should take a lead role to facilitate and encourage cooperation among local

jurisdictions to address mutual restoration and redundant routing that will help create a more resilient network to aid public safety first responders.

## **(2) Enable First Responders to Communicate Seamlessly**

First responders need an interoperable, mobile wireless communications system that can be rapidly deployed anywhere in the country. Such a system must have two essential features. First, the system must be interoperable – it must allow different organizations from different jurisdictions to communicate with each other immediately, through both voice and data transmissions. This requires that there be sufficient spectrum devoted to these purposes. And, equally importantly, it requires that first responders have equipment capable of operating on multiple frequencies in multiple formats, so that different systems can connect with each other. So-called “smart radios” are ideally suited to this purpose, as they can intelligently jump to different frequencies and formats as needed to establish communications. Properly implemented, a system with adequate spectrum and smart radios would help to ensure that both data and voice are transmitted between agencies instantly, replacing multiple, lengthy phone calls to multiple agencies.

Second, the system must be capable of rapid deployment and/or restoration. This requires the use of multiple, flexible technologies and truly mobile infrastructure. If we learned anything from Hurricane Katrina, it is that we cannot rely solely on terrestrial communications. When radio towers are knocked down, satellite communications are, in some instances, the most effective means of communicating. At the same time, we should use new technologies so that first responders can take advantage of whatever terrestrial network is available. Smart radios would enable first responders to find any available towers or infrastructure on multiple frequencies, and Wi-Fi, spread spectrum and other frequency hopping techniques would enable them to use limited spectrum quickly and efficiently. Additionally, mobile antennas – for both satellite and terrestrial technology – should be used to establish communications as quickly as possible. This could include inflatable antennas, antennas-on-wheels, or other mobile facilities. A system taking advantage of such measures would be capable of truly rapid deployment.

## **(3) Enhance Network Resiliency**

We should ensure that all communications providers develop and adhere to best practices to ensure reliability in the event of a disaster and quick restoration of service and facilities in the event service is disrupted. These best practices should address, among other things, maintaining service during extended commercial power outages through the use of back-up generators and equipment.

We also should take full advantage of IP-based technologies to enhance the resiliency of traditional communications networks. IP technology provides the dynamic capability to change and reroute telecommunications traffic within the network. In the event of systems failure within the traditional network, greater use of these technologies will enable service providers to restore service more quickly and to provide the flexibility to initiate service at new locations chosen by consumers.

## **CONCLUSION**

I look forward to working cooperatively with members of this Committee, other Senators, the House of Representatives, and my colleagues at the Commission to achieve the goals outlined above. We would appreciate any guidance you may have on these issues. Thank you for the opportunity to testify, and I would be happy to answer any questions you may have.

# **APPENDIX A**

# **FCC Hurricane Katrina Relief Efforts**

## **As of September 21, 2005**

The Commission continues its work to assist consumers, industries and other Federal agencies with Hurricane Katrina relief efforts. Below is a list of FCC actions taken since the start of the disaster. The list is arranged by service with state-specific actions noted separately. Public Notices and other decisions can be viewed on FCC-established Hurricane Katrina webpage (<http://www.fcc.gov/cgb/katrina/>). The webpage was created on August 31, 2005, in order to centralize and disseminate hurricane related information.

### **WIRELIN**

#### **General FCC Actions:**

- FCC granted a temporary waiver of a variety of procedural rules relating to the Universal Service Fund to carriers, state commissions, and other program beneficiaries, such as schools and libraries. Accordingly, affected entities in the hurricane-affected areas may postpone filing numerous USF forms, payments, and data, allowing affected parties adequate time to file appropriately (9/21/05).
- FCC granted a temporary waiver of Commission rules that require BellSouth and other incumbent LECs to provide advance notice and waiting periods before certain network changes may be implemented to help speed restoration of network services (9/21/05).
- FCC granted an STA giving BellSouth temporary authority to provide interLATA (long distance) services using its internal corporate network in order to relieve its over-burdened separate affiliate, BellSouth Long Distance (9/13/05).
- FCC granted a temporary waiver for certain carrier change requirements to allow customers whose long distance service has been disrupted by Hurricane Katrina to be connected to an operational long distance provider (9/5/05).
- FCC granted a temporary waiver of the FCC's rule for aging residential numbers for customers in the affected areas. Waiver of this rule will allow carriers, upon request, to disconnect temporarily customers' telephone service to avoid billing issues, and reinstate the same number when the service is reconnected for customers in the affected areas (9/4/05).
- FCC assisted LaFourche Telephone Company's restoration of long distance service (9/4-9/5/05).
- FCC provided BellSouth with information necessary to port the Mississippi Department of Wildlife's 800 number from Sprint to BellSouth because Sprint's facilities used to provide that number are down (9/4/05).
- FCC granted an STA for Verizon to use 4 microwave POPs in Baton Rouge to restore damage due to the hurricane (9/3/05).

- FCC granted the emergency request of the American Red Cross for reassignment of the toll free number 1-800-RED-CROSS to help in the disaster relief and coordination effort for the multi-state area affected by the hurricane (9/2/05).
- FCC provided authority to NeuStar (the North American Telephone Number Administrator) and other service providers to use local number portability technology to reroute telephone traffic to switches unaffected by the hurricane (9/1/05).
- FCC granted a 60-day extension to carriers operating in Louisiana, Mississippi, or Alabama for the filing of Form 477 local competition and broadband data. This extension also applied to carriers that rely on personnel, facilities, or records located in these states (9/1/05).
- FCC reached out to VoIP service providers in Alabama, Louisiana, and Mississippi to determine whether adjustments were needed in the filing deadline for VoIP E911 status report due September 2, 2005 (8/31/05).

## **WIRELESS**

### **General FCC Actions:**

- FCC granted an STA to Chevron USA, Inc. to use frequency in the Gov/Non-Gov M941 – M944 shared band for the purpose of restoring communications capabilities damaged by Hurricane Katrina (9/15/05).
- FCC modified the STA previously granted on 9/2/05 to Verizon for Rivada to allow leasing of spectrum to Ericsson on behalf of Northcom (9/9/05).
- FCC granted an STA to the North Carolina Forestry Commission to operate VHF mobile units in the disaster area (9/8/05).
- FCC released a Public Notice to list the names and contact information of the FCC-certified frequency coordinators for land mobile radio operations and coordinating bodies for microwave radio operations (9/7/05).
- FCC released a Public Notice to ensure that wireless service providers do not improperly disconnect consumers displaced by the hurricane because they are unable to pay their bills (9/7/05).
- FCC granted an STA to Florida Power and Light to use 900 MHz frequencies in Louisiana, Mississippi, and Alabama for electric power maintenance and restoration (9/7/05).
- FCC granted an STA to Detroit Edison to use VHF and UHF frequencies in hurricane-affected areas (9/7/05).
- FCC informed amateur radio operators that they have the authority to make transmissions necessary to meet essential communication needs and facilitate relief actions and that prior FCC approval is not required (9/1/05).
- FCC issued a Public Notice that provides information to wireless licensees in the affected areas about STAs, FCC points of contact for various radio services, rule sections addressing

“emergency communications,” and the temporary waiver of application filing deadlines (e.g., renewals, construction notifications, discontinuance notices, etc.), construction requirements, and discontinuance of service requirements (9/1/05).

- FCC granted STA to BellSouth to use GMRS radios (commercially available walkie talkie-type radios that require licenses) in support of restoration of communications facilities in Florida, Alabama, Louisiana, and Mississippi (8/31/05).
- FCC granted an STA to Detroit Edison Company to operate on eleven VHF mobile frequencies in Florida in support of restoration of electrical service to areas affected by Hurricane Katrina (8/31/05).
- FCC granted an STA to Ameren, a utility services company licensed in the Industrial Radio Service, to operate outside its licensed area of operation due to hurricane relief (8/31/05).

### **Louisiana-Specific Actions:**

- FCC granted an STA to Verizon to use 6 microwave paths (18 and 10 GHz) in the New Orleans, LA area to restore communications due to damage from Hurricane Katrina (9/16/05).
- FCC granted an STA to Chevron USA, Inc. to use frequency pair 451/456.3125 MHz in Plaquemines County, LA, to replace communications lost in Chevron’s Venice offshore loading facilities when Nextel’s facilities sustained damage (9/16/05).
- FCC granted an STA to the State of Louisiana to use twenty 700 MHz frequency pairs in New Orleans, LA, to replace all first responder’s public safety communications (9/16/05). These channels are in addition to those 700 MHz channels authorized under their state license.
- FCC modified the STA previously granted on 9/3/05 to Verizon to use 4 microwave POPs in Baton Rouge to restore damage due to the hurricane (9/15/05).
- FCC granted an STA to Cingular Wireless LLC to operate on PCS spectrum at two sites located in Columbia and Monroe, LA, to provide critically needed communications services in support of the relief effort from Hurricane Katrina (9/14/05).
- FCC granted an STA to BellSouth to operate two microwave paths on 18 GHz microwave and fixed satellite service frequencies as part of emergency radio systems that help restore BellSouth’s telecommunications to the New Orleans area (9/14/05).
- FCC granted an STA to Chevron USA, Inc. to use a single base frequency 451.1125 MHz and five mobile frequencies in Plaquemines County, LA, to replace communications lost in Chevron’s storage facility when Nextel’s facilities sustained damage (9/14/05).
- FCC granted an STA to Amoco Production Company to use frequency 153.335 MHz within 40 KM of the Mandelville, LA, area for restoration of petroleum facilities (9/12/05).

- FCC granted an STA to the State of New Jersey to operate a repeater and 200 mobiles on 806/851.3375 MHz in New Orleans for law enforcement assistance (9/12/05).
- FCC granted an STA to Texas Utilities to operate station WPFM603 in Louisiana (currently operation is limited to Texas only) for restoration of utilities (9/12/05).
- FCC granted an STA to Chevron to operate 900 MHz microwave links from the coast at Leeville, LA, and Coden, AL, to offshore platforms in the Gulf of Mexico (9/9/05).
- FCC granted an STA to Motorola to use channels licensed to Saint John the Baptist Parish and Jefferson Parish in New Orleans for public safety; the Parishes' systems are not operational due to storm damage, and the Parishes have consented to Motorola's request (9/9/05).
- FCC granted an STA to Chemtura Corp. for one base frequency and ten mobile frequencies in the 460 - 470 MHz band in the Saint Charles County, LA area (9/9/05).
- FCC granted an STA to the California Highway Patrol to operate portable and mobile radios in support of other law enforcement and relief agencies in Louisiana (9/6/05).
- FCC granted an STA to Duke Energy to operate an 800 MHz system near Tangipahoa Parish in Louisiana (9/6/05).
- FCC granted an STA to LifeCom/Air Methods to set up a control center with mobile radio communications in the 460 MHz band in the New Orleans area for disaster relief (9/6/05).
- FCC granted an STA to Alltel to operate a 17-watt short range cellular system in direct support of the FEMA Director. The system will operate initially from Baton Rouge and will later be moved to the New Orleans Superdome (9/3/05).
- FCC granted an STA to Cingular wireless to operate on microwave frequencies at on 6 GHZ microwave frequencies at 21 sites in Louisiana (9/2/05).
- As part of a Public Notice in the 800 MHz proceeding initiating "Wave 2" negotiations in the 800 MHz rebanding process, FCC granted a request from the 800 MHz Transition Administrator to move Louisiana from Wave 2, which begins in October 2005, to Wave 3, which begins in January 2006. This will enable public safety entities in Louisiana to focus on immediate public safety needs (9/2/05).
- FCC granted Alcatel an equipment authorization for a new digital microwave radio system that will be deployed by Verizon Wireless in Baton Rouge and the southern Louisiana area for transport facilities to replace equipment lost in the hurricane (9/1/05).

**Mississippi-Specific Actions:**

- FCC granted an STA to Clearwire to allow operation in BTA 042 (Biloxi-Gulfport-Pascagoula, MS) to permit service in and around Biloxi, MS, and to the Hancock Medical Center in Bay Saint Louis, MS, to provide Internet services and computers for access by victims (9/16/05).

- FCC granted an STA to Sea Tow International to use Marine VHF channel 7 in Harrison County, MS, and marine channel 8 in Hancock County, MS, to provide marine rescue and recovery services (9/14/05).
- FCC granted an STA to an amateur radio operator providing communications services to the American Red Cross in Ocean Springs, Mississippi, to operate on High Frequency bands that he could not otherwise use (9/11/05).
- FCC granted an STA to the California Highway Patrol to operate portable and mobile radios in support of other law enforcement and relief agencies in Mississippi (9/6/05).

**Alabama-Specific Actions:**

- FCC granted an STA to the Marengo County Commission in Demopolis, Alabama, to operate on two VHF public safety frequencies (156.12 and 159.12) for mobiles and base stations within the county (9/8/05).

**Tennessee-Specific Actions:**

- FCC granted an STA to a Red Cross office to use GMRS frequencies to provide security and support in Knoxville, TN (9/7/05).

**BROADCAST AND CABLE**

**FCC Actions:**

- FCC granted an STA for silent authority to WLTV-AM, WLTV, Inc., Mobile, AL (9/15/05).
- FCC released a Public Notice to extend retransmission consent/must carry elections in areas affected by Hurricane Katrina (extension from October 1, 2005 to November 15, 2005) (9/14/05).
- FCC granted an STA for silent authority to two LPTV stations: W30ID, New Orleans, and W36CU, Gulfport (9/12/05).
- FCC granted an emergency authorization to the Houston Independent Media Center for use of a low power FM system on 95.3 MHz to broadcast emergency information to evacuees housed in the vicinity of the Astrodome from an area adjacent to the Astrodome (9/11/05).
- FCC granted an application from Austin Airwaves to operate stations on 94.9, 95.3, and 99.5 MHz to broadcast emergency information to evacuees inside the Astrodome (9/5/05). As of 9/8/05, Harris County officials have suspended use of these stations within the Astrodome.
- FCC released a Public Notice to remind video program distributors of the need to make emergency information regarding Hurricane Katrina evacuation and relief effort accessible to persons with hearing and vision disabilities (9/9/05).
- FCC granted an extension for the FCC Cable Horizontal and Vertical Ownership Limits Proceeding Reply Period (9/8/05).

- FCC released a Public Notice to extend the Auction No. 84 settlement period for certain mutually exclusive AM auction applications and for the submission of Section 307(b) showings; extension given from September 16, 2005 to October 31, 2005 (9/7/05).
- FCC created database to capture information about AM/FM/TV broadcasters impacted by the hurricane (9/4/05).
- FCC released a Public Notice waiving certain noncommercial educational (NCE) rules to permit NCE television and radio stations in the New Orleans area to simulcast and rebroadcast commercial station programming (9/2/05).
- FCC compiled information regarding the radio and television broadcast operations in Louisiana, Mississippi, and Alabama through direct calls and e-mails to over 150 AM/FM/TV broadcasters in the area; continually updating information and referring needs to other federal agencies (9/1/05-Present).
- FCC granted waivers to the following non-commercial FM and TV stations to permit them to air fundraising programming to aid disaster relief efforts (9/1-present):
  - Association of Public Television Stations, for all its member public television stations to permit interruptions in regular programming for fundraising
  - National Public Radio, on behalf of its affiliates, to permit interruptions in regular programming for fundraising for victims and for NPR affiliates directed affected by the hurricane
  - National Federation of Community Broadcasters, on behalf of its 183 member stations, to permit interruptions in regular programming for fundraising
  - KXPW-LP, Georgetown, TX – two week fundraising effort
  - WITF-FM, Harrisburg, PA, for one-minute fundraising spots, from 9/9/05 to 9/30/05
  - WBGO, Newark, NJ, for four-hour benefit concert from Lincoln Center, on 9/17/05
  - Arkansas Educational Television Commission on behalf of its five-station network
  - Greater Cincinnati Television Educational Foundation to permit fundraising by WCET-TV
  - KRFC(FM), Fort Collins, CO to permit the broadcast of an 8-hour benefit concert on 9/3/05
  - Grand Valley State University, Michigan Association of Public Broadcasters, and Michigan Public Radio Network, on behalf of Michigan NCE radio and television stations to permit interruptions in regular programming for fundraising
  - KATB(FM), Anchorage, Alaska, to permit interruptions in regular programming to air pre-produced 30- and 60-second segments supporting the North American Mission Board's Disaster Relief efforts, running from 9/2-9/9/05
  - WACC-LP, Enfield, Connecticut, to promote and air coverage of a fundraising car wash to be held on 9/10; proceeds to be donated to the American Red Cross
  - WRNK-LP, Lanett, Alabama, to make announcements requesting that listeners drop off certain items (bottled water, personal hygiene items, etc., but not cash or other money) from 9/6-9/8/05; donated items will be taken to the New Life Family Church in Biloxi, Mississippi

- WHCF-FM, Bangor, Maine, to conduct an on-air fundraiser soliciting pledges for Operation Blessing International, a relief agency based in Virginia Beach, Virginia
  - KTIS-FM, Minneapolis, Minnesota, to participate in a fundraising campaign with at least 24 other stations in the market on 9/9/05; funds raised will be given to the Red Cross
  - KULA-LP, Ili'ili, American Samoa, to permit KULA-LP to broadcast a fundraising program to benefit disaster relief efforts on 9/8/05
  - WVUA-FM, Tuscaloosa, Alabama, to permit the station to promote a fundraising concert to be held on 9/9/05; this is a periodic fundraiser for the station – in this instance, 25% of the proceeds will be donated to the Red Cross
  - KBCS-FM, Bellevue, Washington, to permit the station to air fundraising requests to help rebuild NCE station WWOZ, New Orleans
  - WETD, Alfred, New York, to permit the station to air a live broadcast of a “Coins for Katrina Benefit Concert” on 9/11/05
- FCC released a Public Notice to help radio and television stations resume and maintain broadcast operations to residents of the affected areas by outlining streamlined instructions to apply for STAs and by waiving requirements that stations notify the FCC within 24 hours of using emergency antennas (8/31/05).
  - FCC released a Public Notice to assist cable television and other multichannel video programming distributors in the affected areas by outlining streamlined instructions to apply for STAs to install temporary facilities or modify existing facilities and by waiving certain technical requirements (8/31/05).

### **Louisiana-Specific Actions**

- FCC granted an STA for silent authority to WBOK-AM, Christian Broadcasting Corporation, New Orleans, LA (9/15/05).
- FCC granted an STA for silent authority to WDSU-TV and WDSU-DT, Hearst-Argyle Television, New Orleans, LA (9/15/05).
- FCC granted an STA for silent authority to KMRL-FM, White Dove Fellowship, Buras, LA (9/14/05).
- FCC granted an STA for silent authority to WTUL-FM, Tulane Educational Fund, New Orleans, LA (9/14/05).
- FCC granted tolling pursuant to Section 73.3598(b)(1) via letter to American Family Association, extending the period to construct KSUL-FM, Port Sulphur, LA, by at least six months (9/14/05).
- FCC granted 90 additional construction days via letter to Star Over Orlovista, permittee of WEUS(AM), Orlovista, FL (9/14/05).
- FCC granted an STA for silent authority to WHNO-TV, CH 20, New Orleans, LA (9/13/05).

- FCC sent a letter to Equity Offices, in Louisiana, to expedite entrance by station staff to WUPL-TV facility located in Jefferson Parish, LA (9/13/05).
- FCC granted an emergency authorization pursuant to the Salvation Army to operate an emergency FM station on 107.9 MHz to broadcast to residents and recovery workers in New Orleans, LA (9/12/05).
- FCC granted an STA for WWOZ(FM), Friends of WWOZ, Inc., New Orleans, LA, to remain silent; station has been silent since August 27, 2005 (9/9/05).
- FCC granted an STA for WVUE and WVUE-DT, LA, licensed to Emmis Television, to remain silent (9/8/05).
- FCC granted an STA for WWL-DT (WWL's digital station), New Orleans, LA, licensed to Belo Corporation, to remain silent (9/8/05).
- FCC granted an STA for WTIK-AM, WTIK, Inc., New Orleans, LA, that ceased operations on August 29, 2005, to remain silent (9/7/05).
- FCC granted an STA for WTNO-LP, New Orleans, LA, licensed to Tiger Eye Finance, Inc., to remain silent (9/7/05).
- FCC granted an STA for WWNO(FM), New Orleans, LA, to operate from its licensed site with an emergency antenna and reduced power (9/7/05).
- FCC granted an STA for stations licensed to American Family Association in Louisiana that ceased operations on August 28, 2005, to remain silent (9/6/05).
- FCC granted an STA to WUPL(TV) of Slidell, LA, to remain silent for 60 days (9/1/05).

**Mississippi-Specific Actions:**

- FCC expedited grant of program test authority and covering license for major facilities upgrade to WBBN, Taylorsville, MS, providing greatly increased coverage area (9/13/05).
- FCC granted an STA to permit Mississippi Public Broadcasting, licensee of NCE station WMAH-TV, Biloxi, MS, to rebroadcast September 11 NFL games of the New Orleans Saints and Green Bay Packers (9/8/05).
- FCC granted an STA to Hancock County Emergency Management to operate an emergency FM station on 103.5 MHz to broadcast to the Bay City-Wavelend-Shoreline Park, Mississippi area; we understand this to be the only station operating in the area (9/8/05).
- FCC granted an STA for stations licensed to American Family Association in Mississippi that ceased operations on August 28, 2005, to remain silent (9/6/05).
- FCC granted an STA for WFMM(FM), Telesouth Communications, Inc., Sumrall, Mississippi, to remain silent after it went silent on 8/29/05 (9/6/05).

# SATELLITE

## **General FCC Actions:**

- FCC granted Harris the authority to operate twelve temporary-fixed earth stations to transmit voice and data communications between points in the Gulf Coast Region and various agencies in Florida in their disaster relief efforts (9/21/05).
- FCC granted an STA to BBC News to use 1.2 Meter temporary -fixed Ku-Band antenna to provide news coverage of the Hurricane Katrina aftermath (9/19/05).
- FCC granted an STA to PetroCom for use of a C-Band antenna to restore its digital backhaul operations from the Gulf of Mexico (9/13/05).
- FCC granted an STA for Maritime Telecommunications Network to use 5 conventional Ku-band earth stations for communications in the area affected by the hurricane (9/10/05).
- FCC granted an STA to Viasat to operate conventional Ku-Band VSAT to provide Internet access service to FEMA (9/7/05).
- FCC granted an STA to BJ Services to operate conventional Ku-Band VSAT remotes to reinitiate Internet access services lost by Katrina (9/7/05).
- FCC granted an STA to ARD German Television to use a suitcase antenna on a German satellite newsgathering truck to provide news coverage (9/5/05).
- FCC granted an STA to Maritime Telecommunications Network to operate 5 satellite dishes providing transportable Internet access (9/4/05).
- FCC granted an STA to MTN to offer satellite Internet access on 3 government-run cruise ships (9/4/05).
- FCC granted an STA to Canada TV to use a transportable satellite news gathering truck (9/3/05).
- FCC granted an STA to Iridium to use spectrum owned by Globalstar to increase Iridium's capacity (9/2/05). Iridium has turned on its equipment on this frequency and no interference problems have been reported.
- FCC granted an STA to Loral Skynet for authority to use a satellite dish transportable on a Humvee to provide free VoIP and Internet access at the site of the relief efforts (9/2/05).
- FCC released a Public Notice to help satellite and submarine cable providers maintain operations to emergency communications services in the affected areas by outlining streamlined instructions to apply for STAs (9/1/05).
- FCC granted an STA to Independent Television News to use satellite spectrum to serve a transportable news gathering truck from London in support of hurricane relief (9/1/05).

### **Louisiana-Specific Actions:**

- FCC granted an STA to VSL Networks to use a Ku-band antenna to provide service to Motorola in support of the Louisiana state police (9/7/05).

### **Mississippi-Specific Actions:**

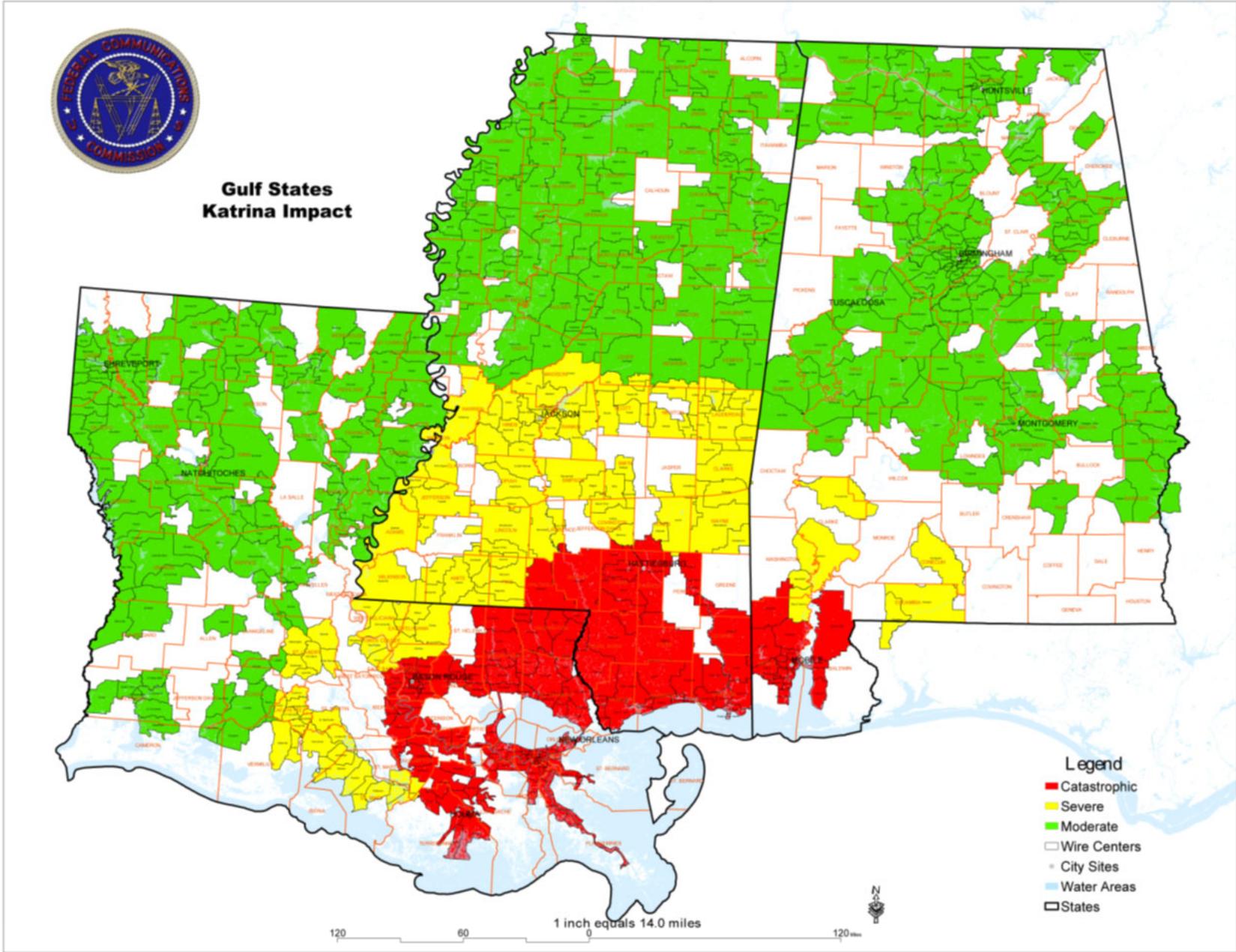
- FCC granted an STA to Telenor Satellite Services to operate one 1.8 meter temporary fixed C-Band antenna to communicate with NSS-7 @ 2.2 W.L. at Camp Barron Point, MS (9/16/05).
- FCC granted an STA to permit Telenor Satellite Services to operate a 2.4 meter temporary fixed C-Band antenna on a hospital ship at Bay St. Louis, MS (9/9/05).

## **COORDINATION WITH NTIA**

- FCC assisted with NTIA's grant of STAs for the U.S. military to use 75 frequencies.
- FCC granted an STA to Intel Corporation for operation in the frequency band 3650 - 3700 MHz to provide wireless services for relief center located at Kelly Air Force Base, Texas (9/8/05).
- In coordination with NTIA, FCC granted an STA to Intel Corporation for operation in the frequency band 3485.5 - 3585.5 MHz to provide wireless services for relief center located at Kelly Air Force Base, Texas (9/8/05).
- In coordination with NTIA, FCC granted an STA for Intel to set up a WiMax system in the area from Biloxi and New Orleans to provide Internet connectivity to 225 Red Cross Disaster Centers (9/3/05).
- In coordination with NTIA, FCC granted an STA request from Time Dominion for authorization to use high power ultra-wide band equipment for through-the-wall imaging system operations (9/2/05).
- In coordination with NTIA, FCC granted an STA to France Telecom to provide Inmarsat services and to operate Inmarsat terminals in support of hurricane relief (9/1/05). FCC extended STA on 9/8/05.

# **APPENDIX B**

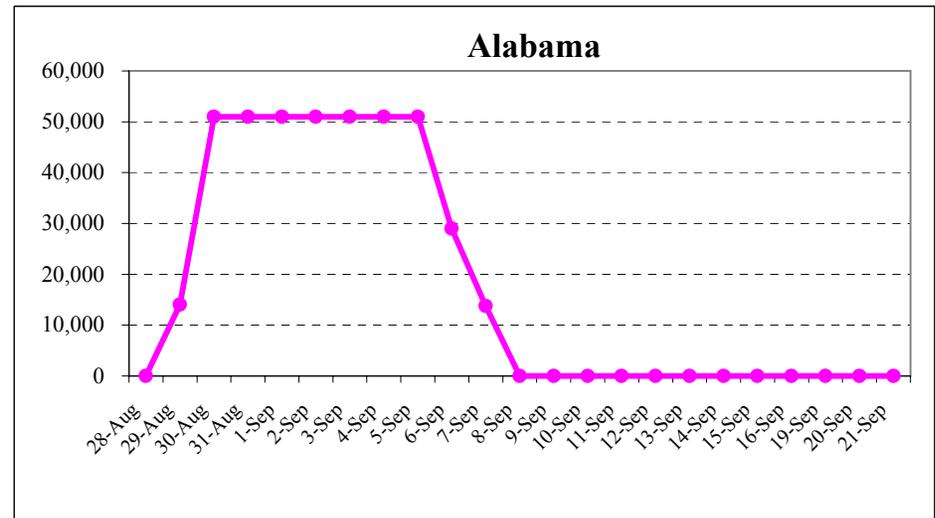
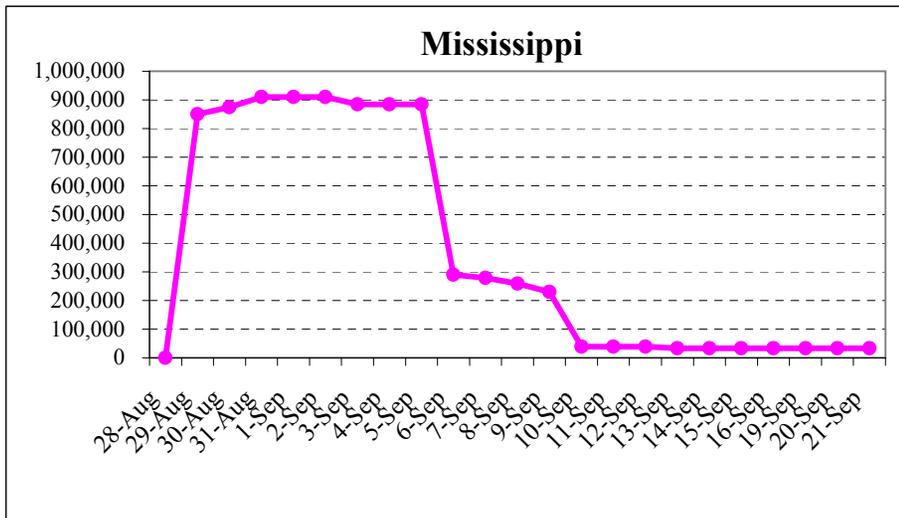
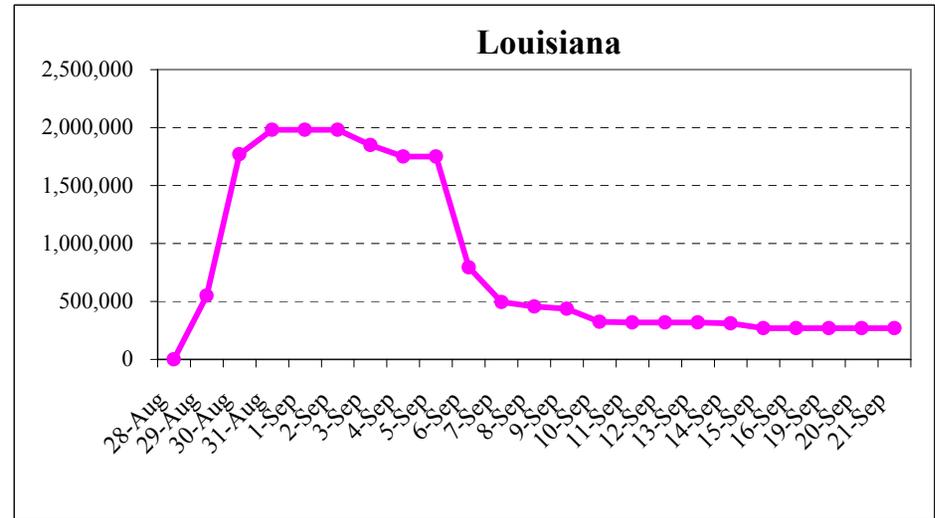
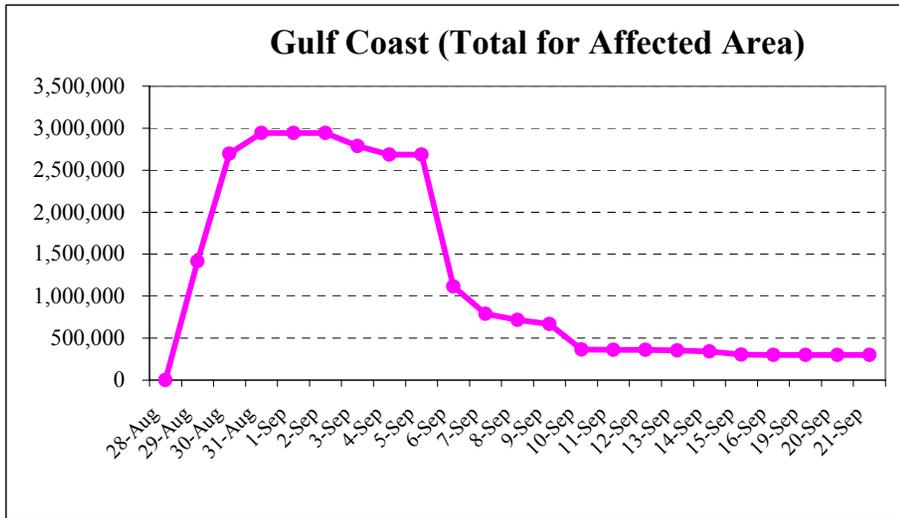
# Federal Communications Commission





# Federal Communications Commission

## Consumers Out of Service

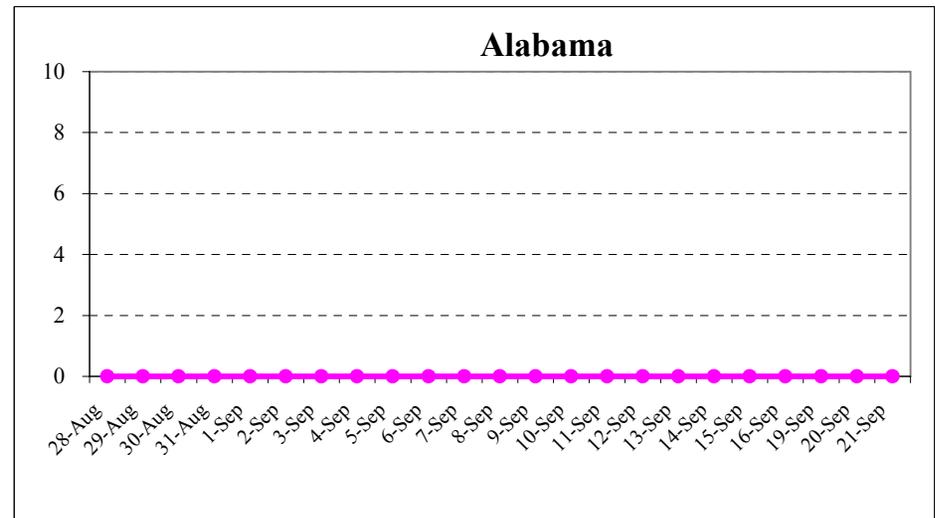
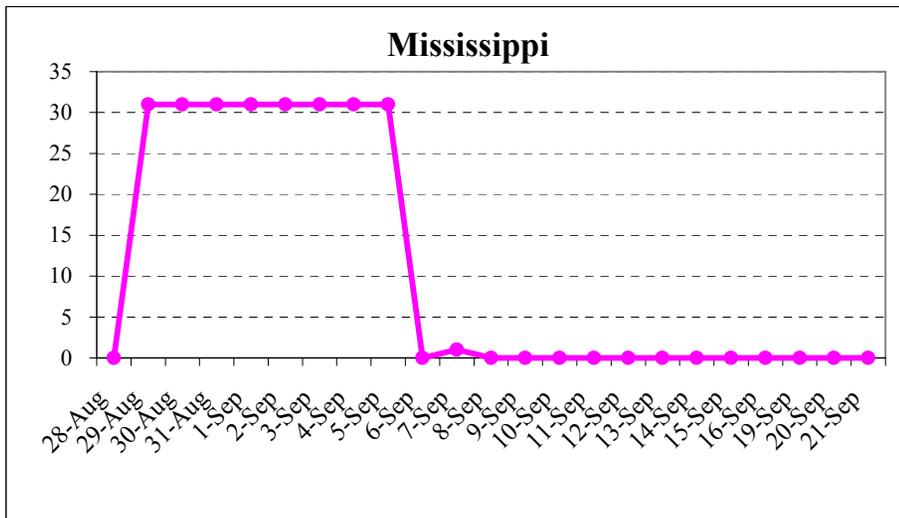
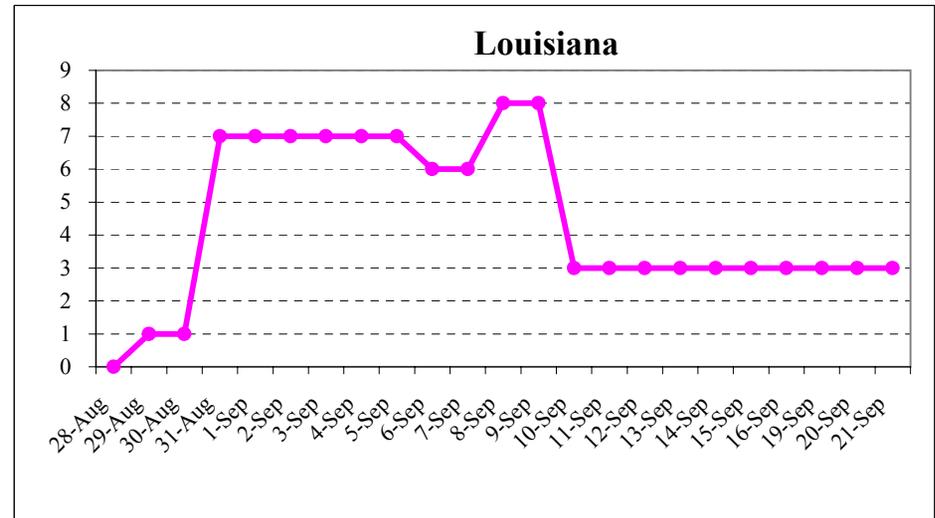
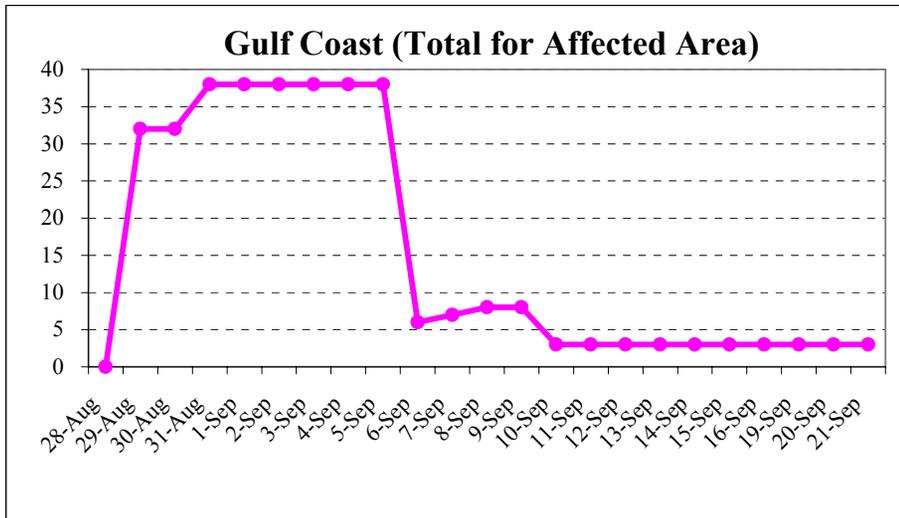


Source: Official FCC Network Outage Reports.  
 Note: As of Sept. 16, daily data are collected only Monday through Friday.



# Federal Communications Commission

## 911 Call Centers Out of Service

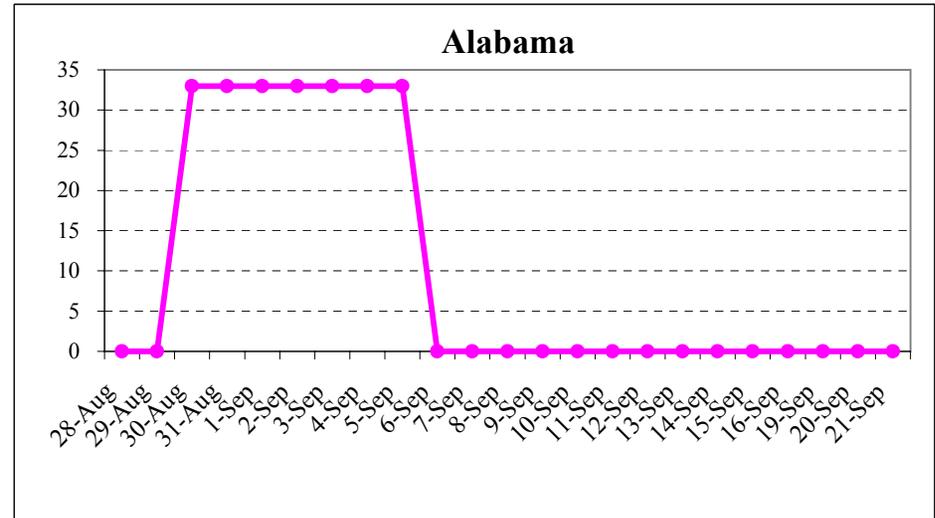
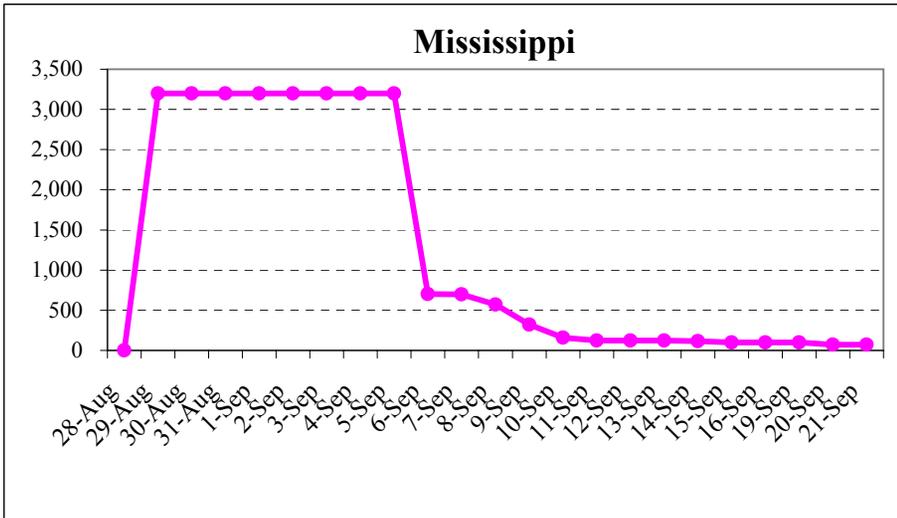
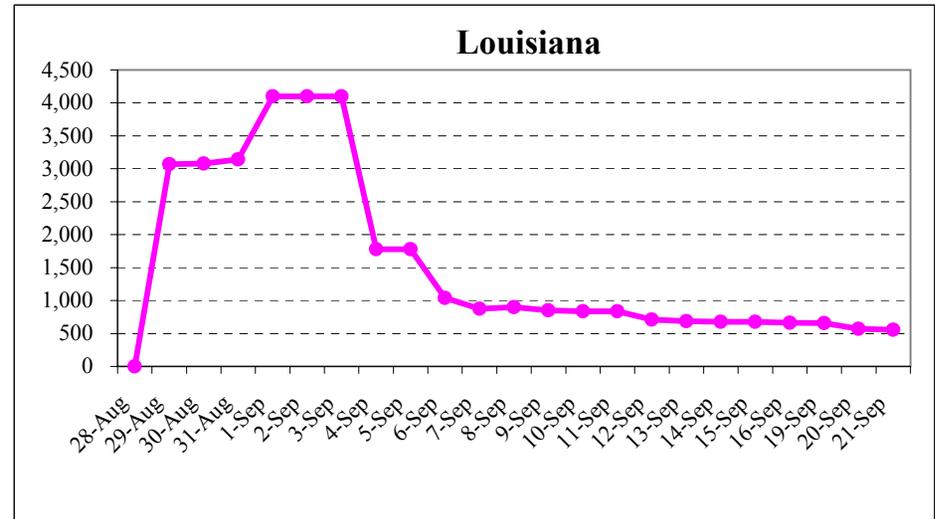
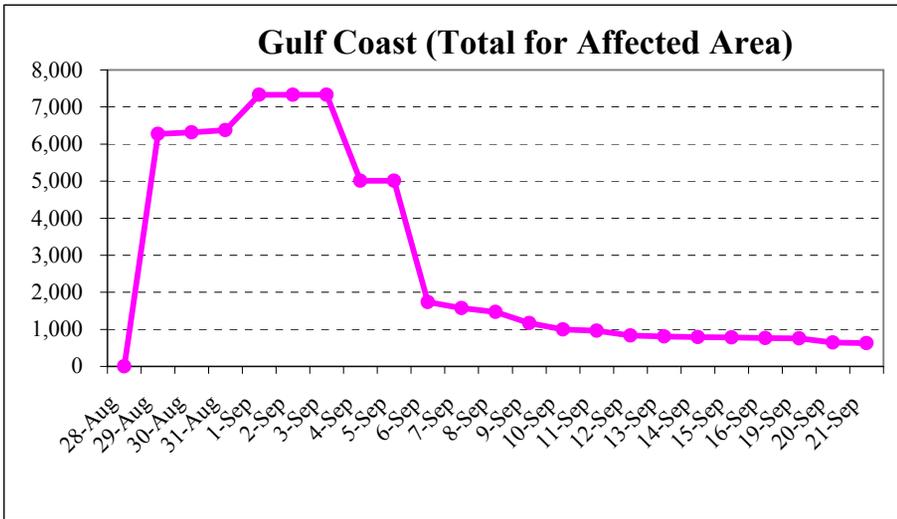


Source: Official FCC Network Outage Reports.  
 Note: As of Sept. 16, daily data are collected only Monday through Friday.



# Federal Communications Commission

## High Capacity Long Distance Links Out of Service

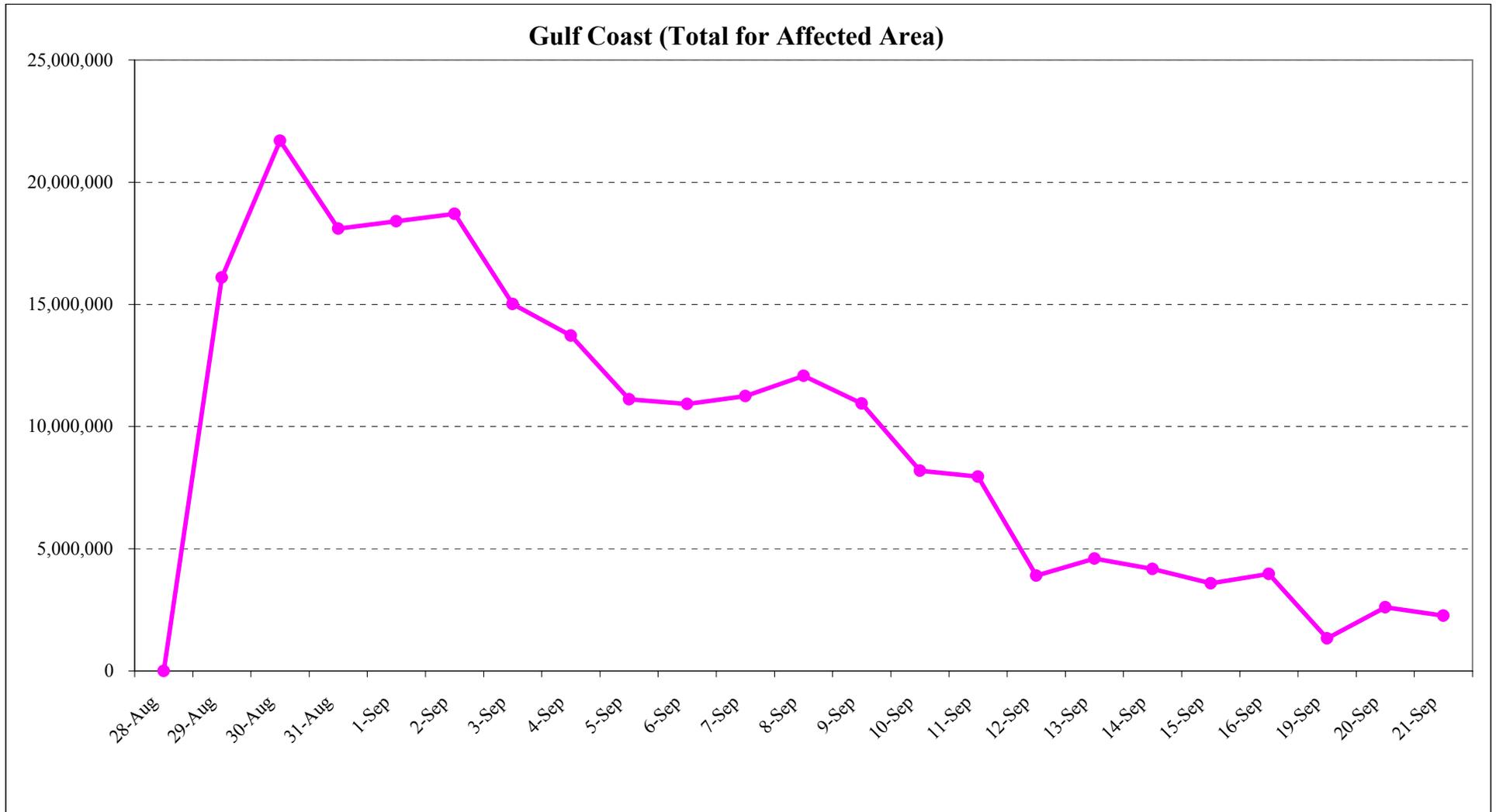


Source: Official FCC Network Outage Reports.  
 Note: As of Sept. 16, daily data are collected only Monday through Friday.



# Federal Communications Commission

## Daily Failed Calls



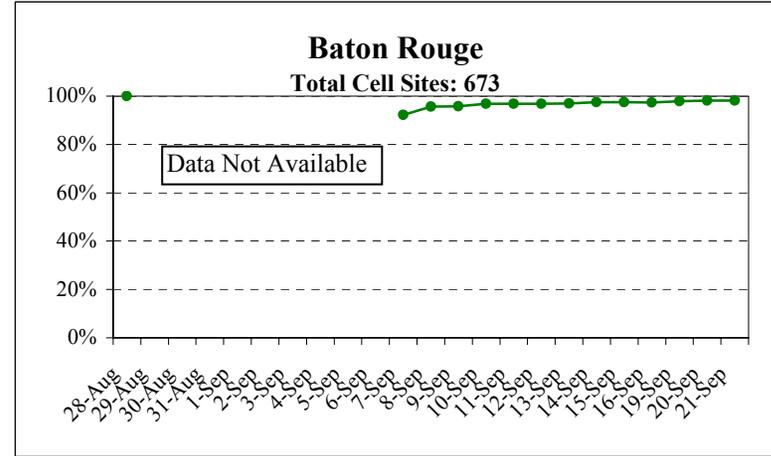
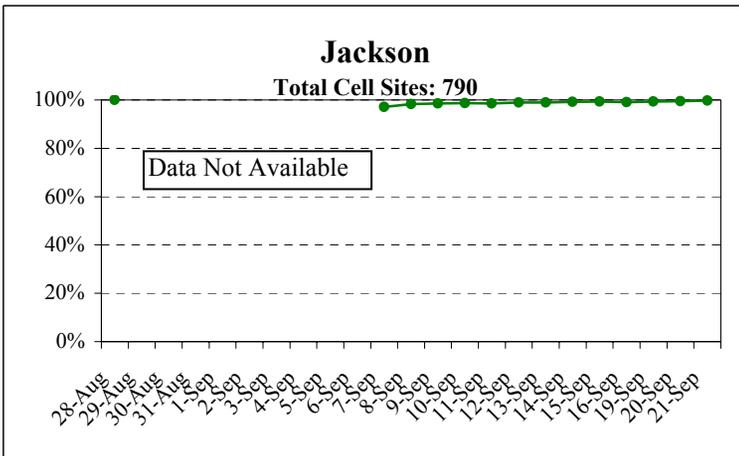
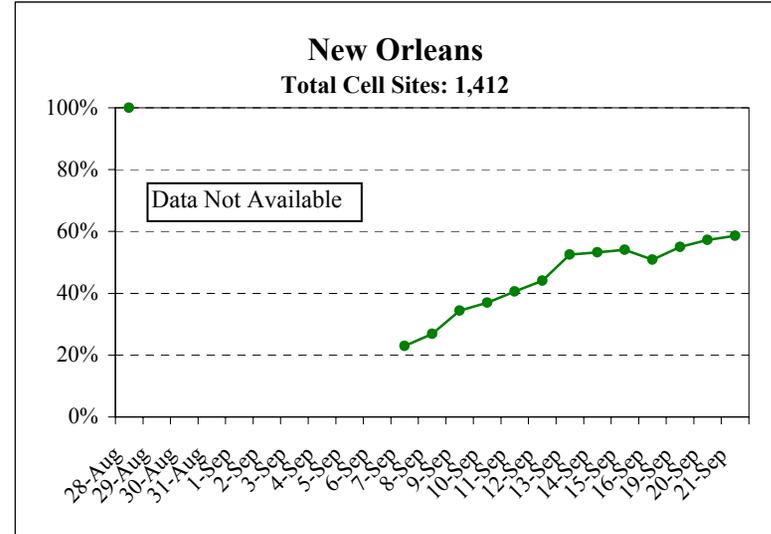
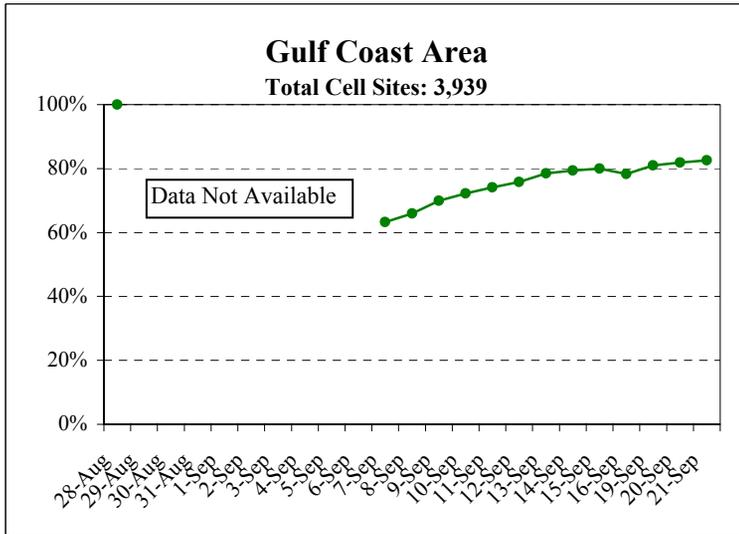
Source: Official FCC Network Outage Reports.

Note: As of Sept. 16, daily data are collected only Monday through Friday.



# Federal Communications Commission

## Wireless Network Status - Percentage of Cell Sites Operational



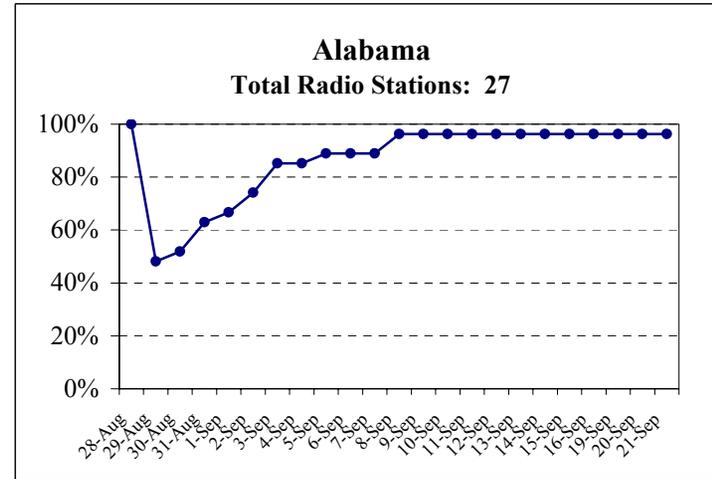
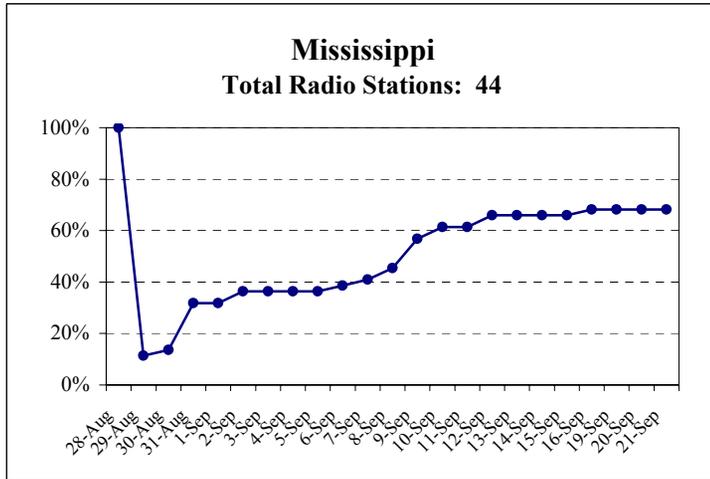
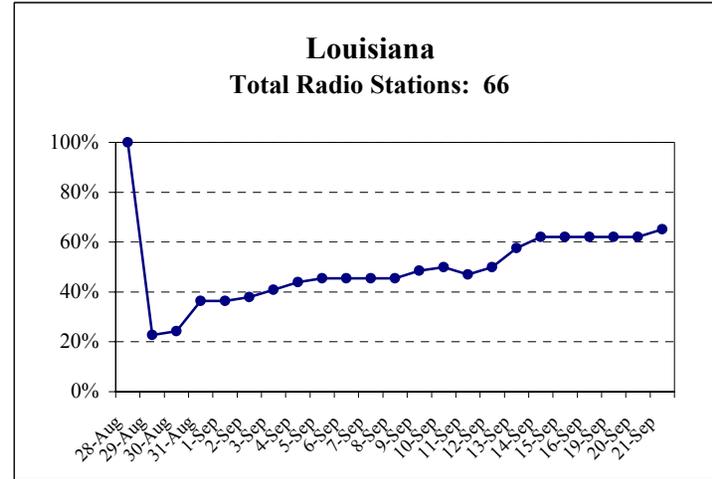
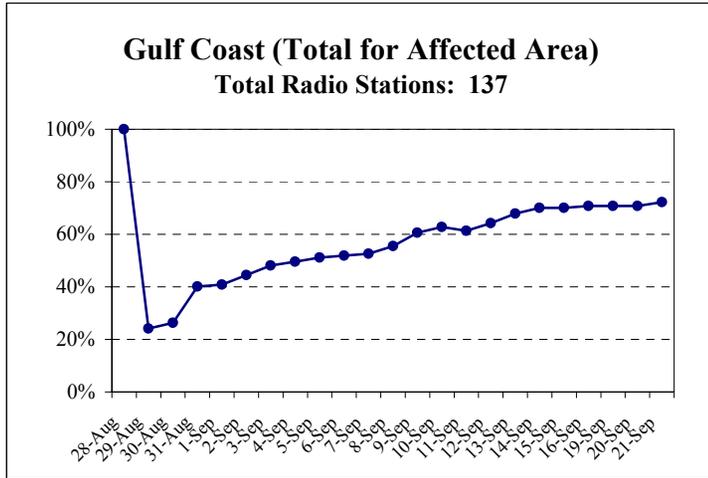
Source: Unofficial information reported by affected companies after Hurricane Katrina.

Note: As of Sept. 16, daily data are collected only Monday through Friday.



# Federal Communications Commission

## Radio Stations on the Air

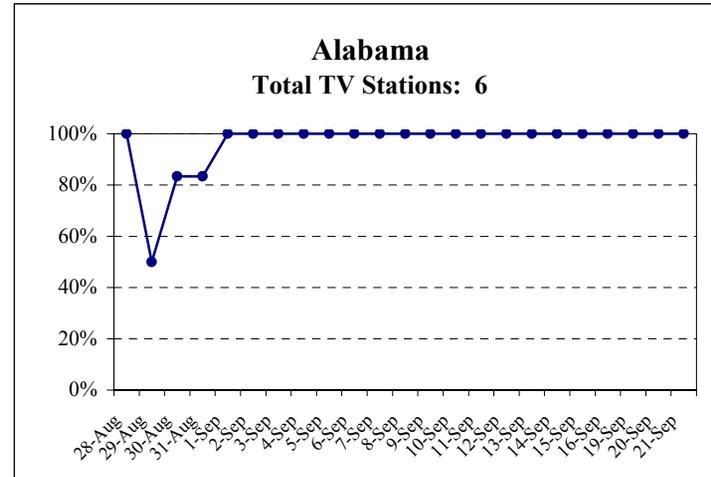
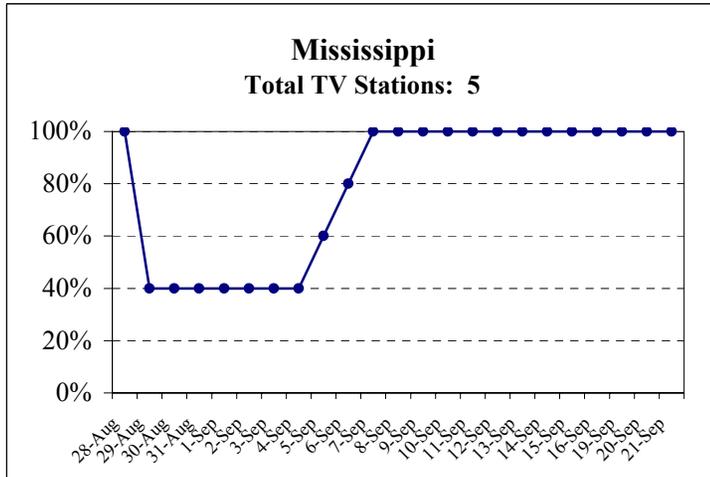
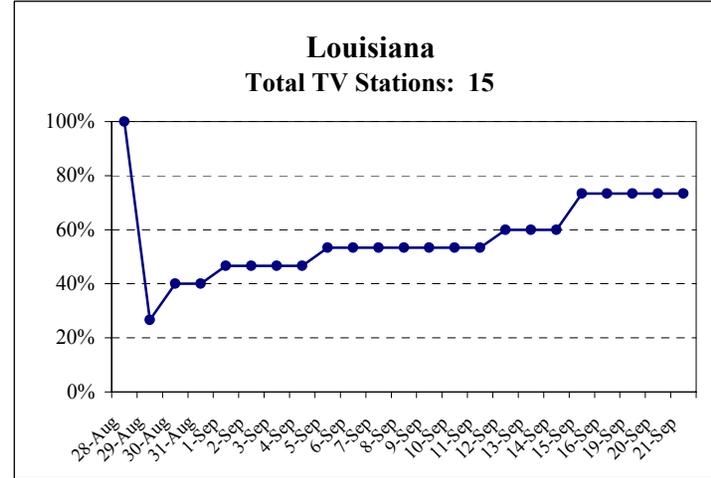
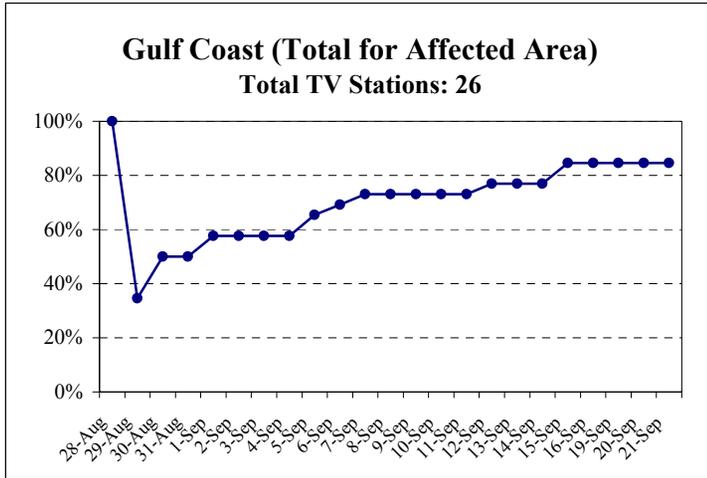


Note: As of Sept. 16, daily data collected only Monday through Friday.



# Federal Communications Commission

## Television Stations on the Air

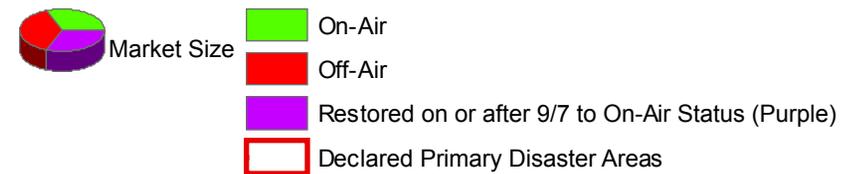
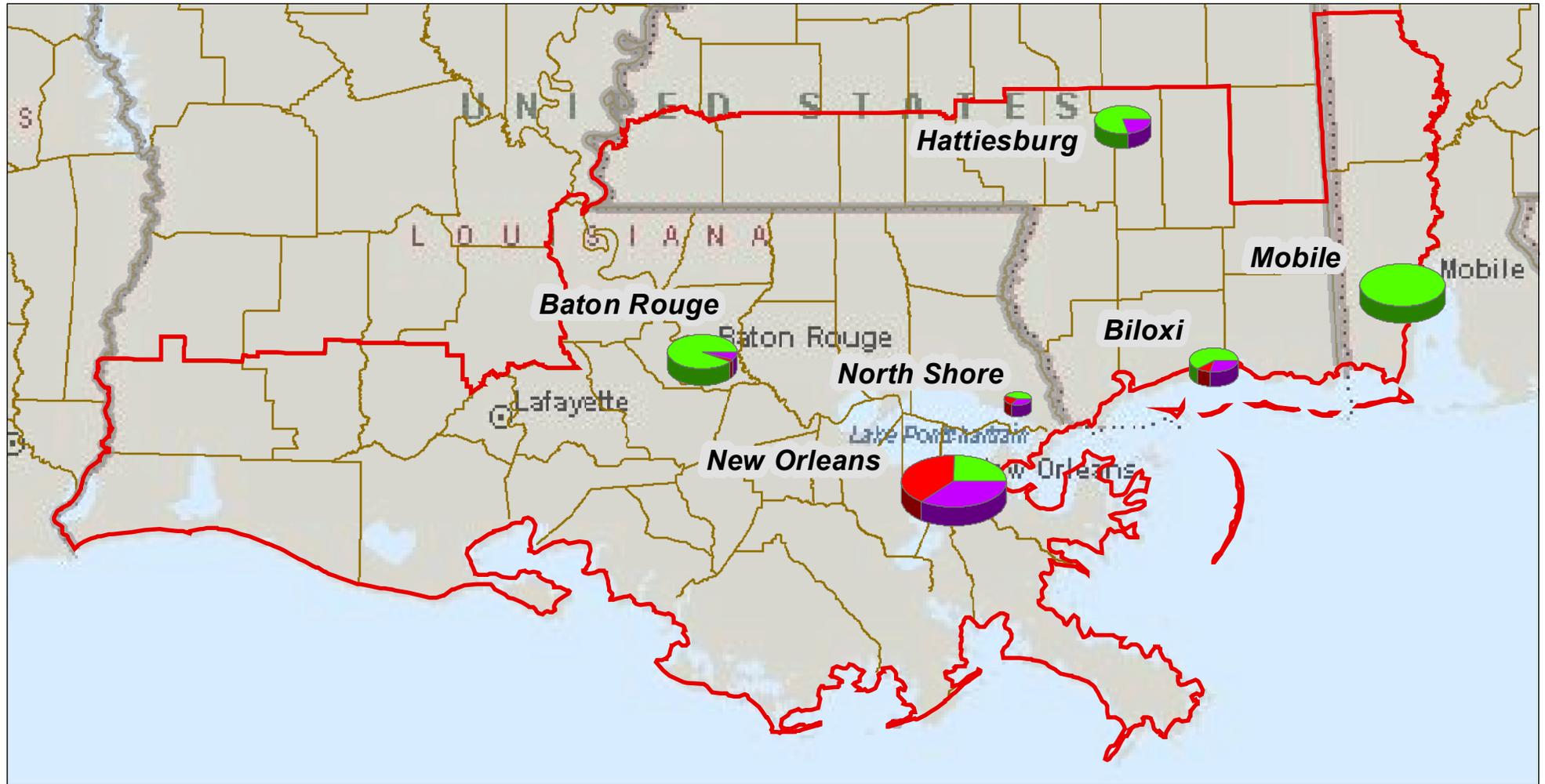


Note: As of Sept. 16, daily data collected only Monday through Friday.



# Federal Communications Commission

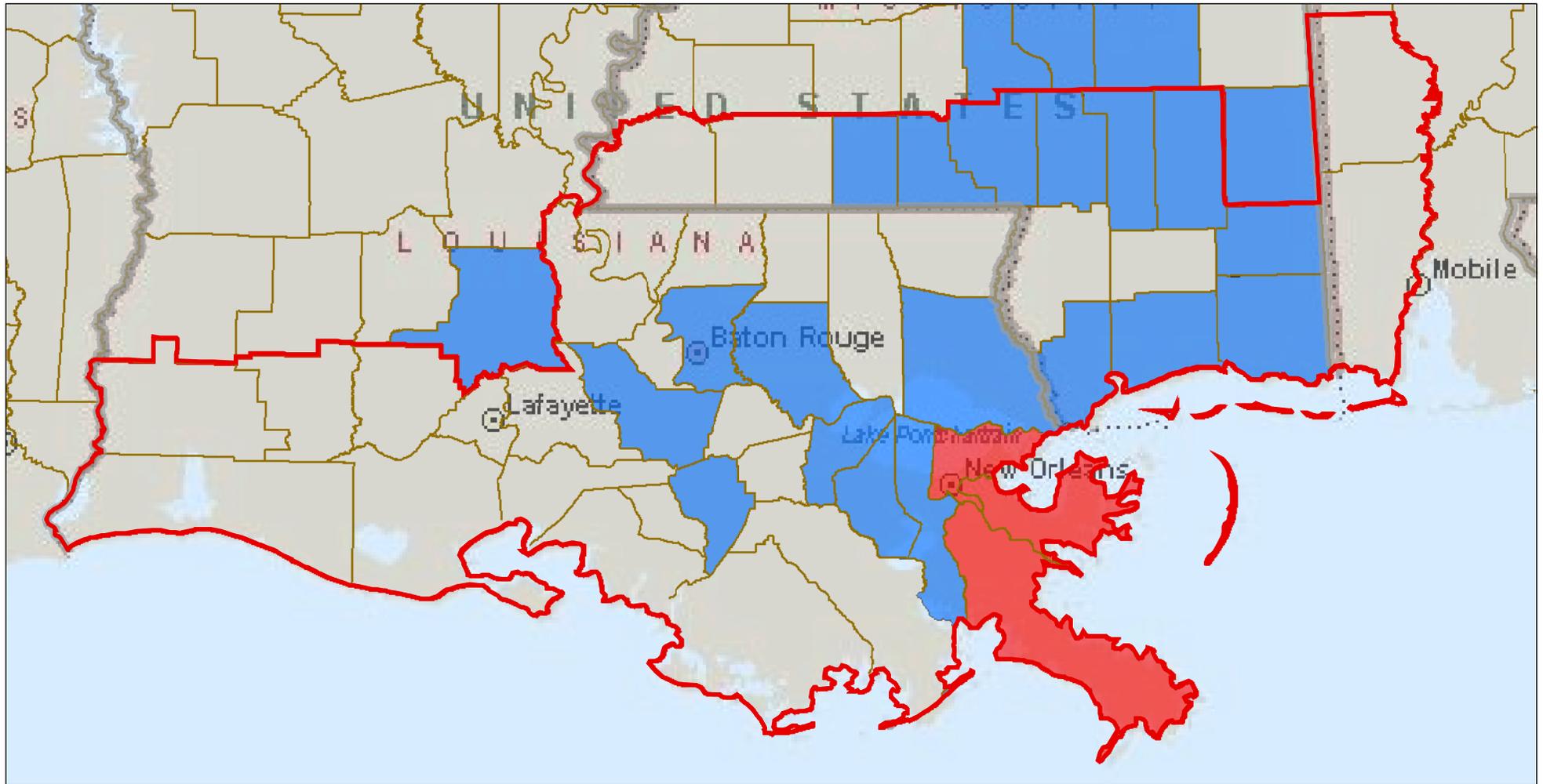
## Cellular Site Status





# Federal Communications Commission

## 911 Call Center Status



SOURCE: Official Federal Communications Commission Network Outage Reports

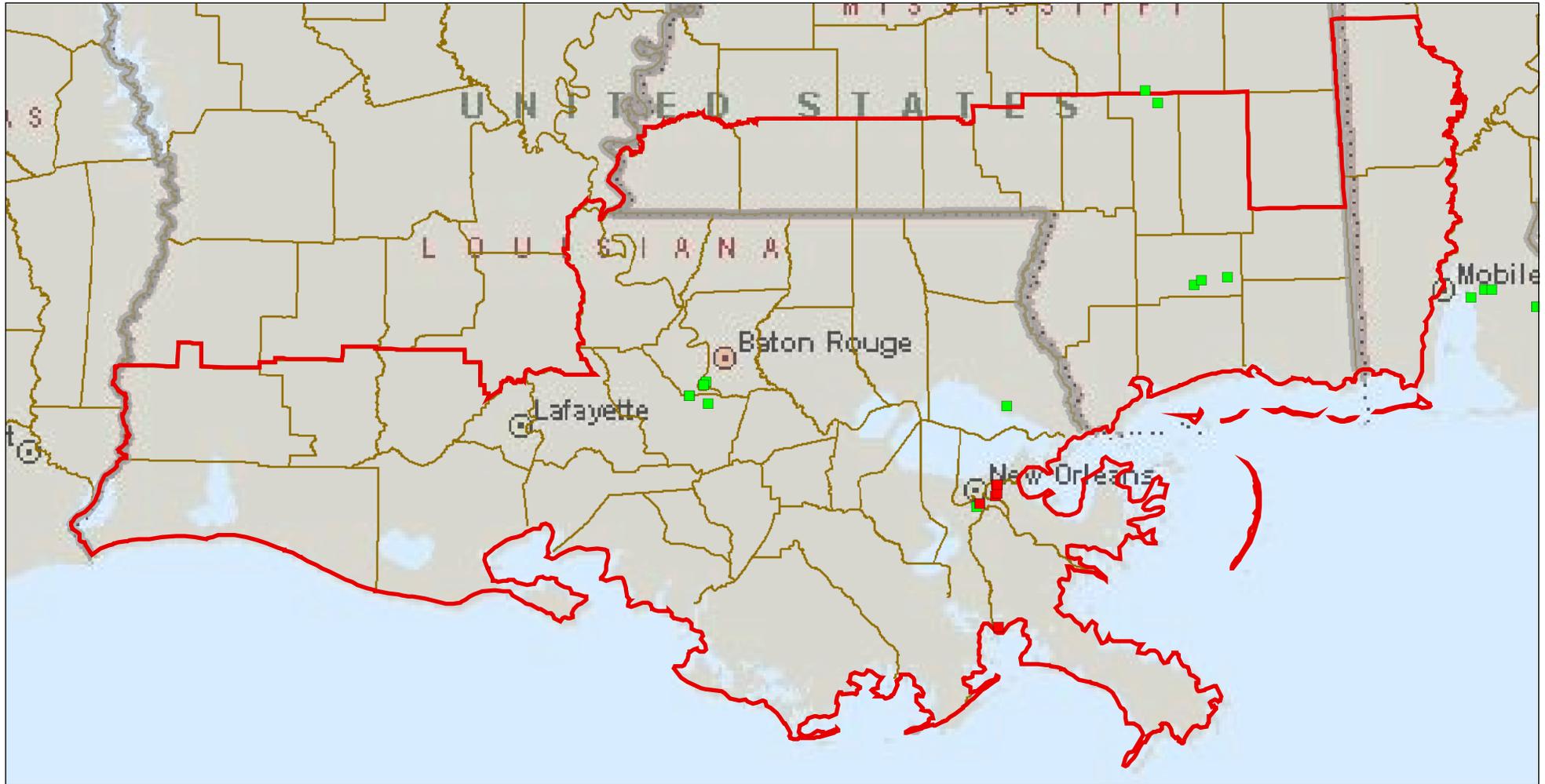
### Status

-  Out of Service as of 9/21 (Red)
-  Experienced Service Outage on or after 8/29 - Currently In Service (Blue)
-  Declared Primary Disaster Areas



# Federal Communications Commission

## TV Station Status



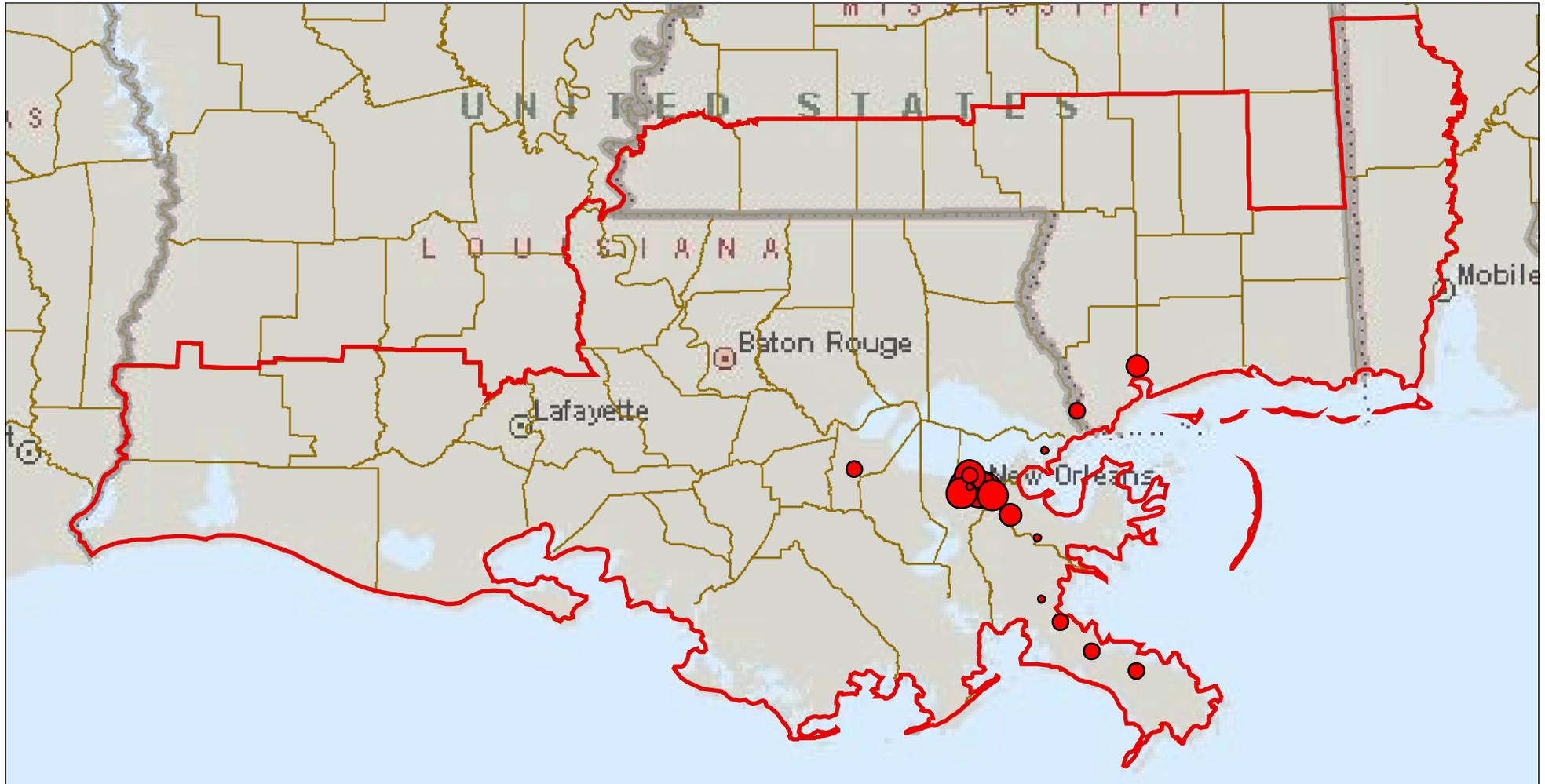
### Station Status

- Off-Air (Red)
- On-Air (Green)
- Declared Primary Disaster Areas



# Federal Communications Commission

## Central Offices Not In Service



SOURCE: Official Federal Communications Commission Network Outage Reports

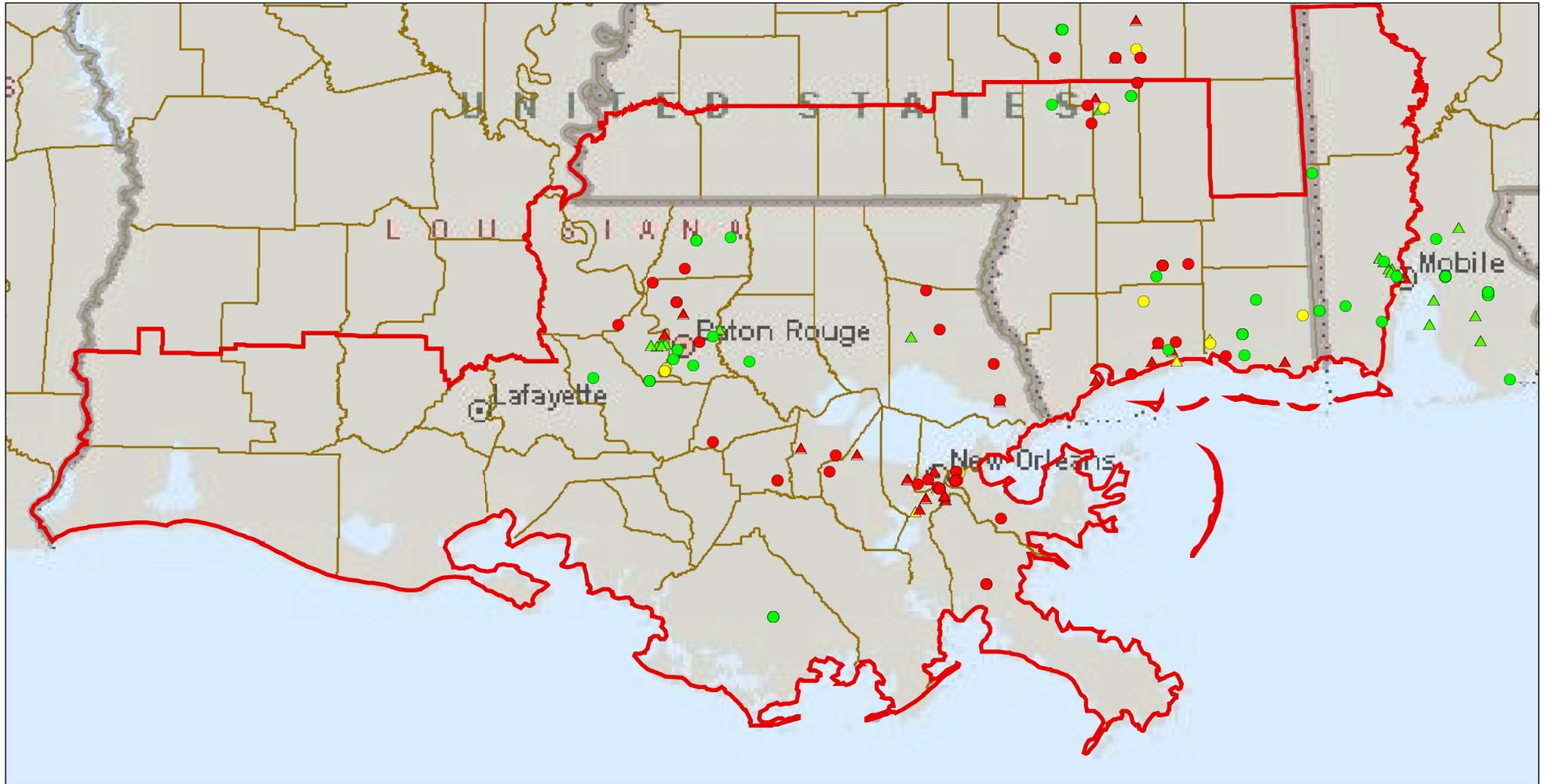
### Affected Consumers

- 236 - 1000
- 1001 - 5000
- 5001 - 10000
- 10001 - 30000
- 30001 - 50000
- Declared Primary Disaster Areas



# Federal Communications Commission

## Initial Post-Katrina AM and FM Radio Station Status



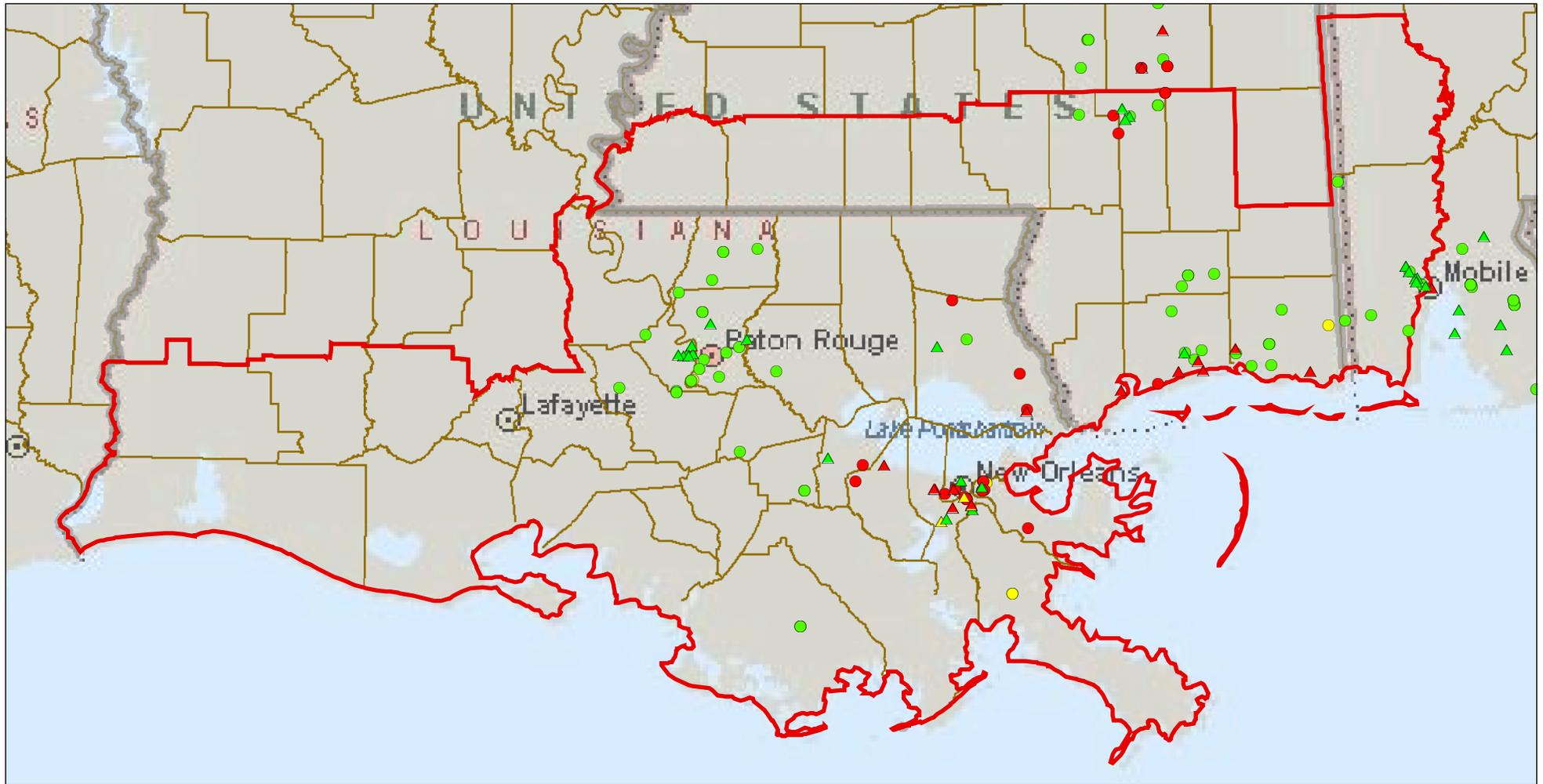
\* Stations "On-Air, Backup Power\*" are generally operating transmitters at reduced power levels.





# Federal Communications Commission

## AM and FM Radio Station Status



\* Stations "On-Air, Backup Power\*" are generally operating transmitters at reduced power levels.



Declared Primary Disaster Areas

### AM Station Status

- ▲ Off-Air (Red)
- ▲ On-Air (Green)
- ▲ On-Air, Backup Power\* (Yellow)

### FM Station Status

- Off-Air (Red)
- On-Air (Green)
- On-Air, Backup Power\* (Yellow)



# Federal Communications Commission

## TELEPHONE NETWORK OUTAGE INFORMATION

### Gulf Coast (Total for Affected Area)

	28-Aug	29-Aug	30-Aug	31-Aug	1-Sep	2-Sep	3-Sep	4-Sep	5-Sep	6-Sep	7-Sep	8-Sep	9-Sep	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	16-Sep	19-Sep	20-Sep	21-Sep
Consumers Out of Service	0	1,414,000	2,696,000	2,941,000	2,941,000	2,941,000	2,786,000	2,686,000	2,686,000	1,114,000	787,800	716,000	665,500	364,000	359,000	359,000	351,000	343,000	303,000	301,000	301,000	301,000	301,000
911 Call Centers Out of Service	0	32	32	38	38	38	38	38	38	6	7	8	8	3	3	3	3	3	3	3	3	3	3
High Capacity Long Distance Links Out of Service	0	6,270	6,313	6,373	7,333	7,333	7,333	5,013	5,013	1,740	1,575	1,470	1,171	996	959	831	807	793	778	762	755	641	629
Daily Failed Calls	0	16,100,000	21,700,000	18,100,000	18,400,000	18,700,000	15,020,000	13,720,000	11,120,000	10,920,000	11,250,000	12,080,000	10,940,000	8,200,000	7,950,000	3,900,000	4,600,000	4,175,000	3,590,000	3,970,000	1,335,000	2,610,000	2,265,000

### Louisiana

	28-Aug	29-Aug	30-Aug	31-Aug	1-Sep	2-Sep	3-Sep	4-Sep	5-Sep	6-Sep	7-Sep	8-Sep	9-Sep	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	16-Sep	19-Sep	20-Sep	21-Sep
Consumers Out of Service	0	550,000	1,770,000	1,980,000	1,980,000	1,980,000	1,850,000	1,750,000	1,750,000	795,000	495,000	457,000	435,500	325,000	320,000	320,000	318,000	310,000	270,000	268,000	268,000	268,000	268,000
911 Call Centers Out of Service	0	1	1	7	7	7	7	7	7	6	6	8	8	3	3	3	3	3	3	3	3	3	3
High Capacity Long Distance Links Out of Service	0	3,070	3,080	3,140	4,100	4,100	4,100	1,780	1,780	1,040	877	900	851	838	838	710	686	678	678	662	655	568	556
Daily Failed Calls	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

### Mississippi

	28-Aug	29-Aug	30-Aug	31-Aug	1-Sep	2-Sep	3-Sep	4-Sep	5-Sep	6-Sep	7-Sep	8-Sep	9-Sep	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	16-Sep	19-Sep	20-Sep	21-Sep
Consumers Out of Service	0	850,000	875,000	910,000	910,000	910,000	885,000	885,000	885,000	290,000	279,000	259,000	230,000	39,000	39,000	39,000	33,000	33,000	33,000	33,000	33,000	33,000	33,000
911 Call Centers Out of Service	0	31	31	31	31	31	31	31	31	0	1	0	0	0	0	0	0	0	0	0	0	0	0
High Capacity Long Distance Links Out of Service	0	3,200	3,200	3,200	3,200	3,200	3,200	3,200	3,200	700	698	570	320	158	121	121	121	115	100	100	100	73	73
Daily Failed Calls	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

### Alabama

	28-Aug	29-Aug	30-Aug	31-Aug	1-Sep	2-Sep	3-Sep	4-Sep	5-Sep	6-Sep	7-Sep	8-Sep	9-Sep	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	16-Sep	19-Sep	20-Sep	21-Sep
Consumers Out of Service	0	14,000	51,000	51,000	51,000	51,000	51,000	51,000	51,000	29,000	13,800	0	0	0	0	0	0	0	0	0	0	0	0
911 Call Centers Out of Service	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
High Capacity Long Distance Links Out of Service	0	0	33	33	33	33	33	33	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Daily Failed Calls	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

\* Failed calls for Louisiana and Mississippi are combined in the source data.

Source: Official FCC Network Outage Reports.

Note: As of Sept. 16, daily data are collected only Monday through Friday.



# Federal Communications Commission

## WIRELESS NETWORK STATUS

### Gulf Coast (Total for Affected Area)

Total Cell Sites: 3,939

	28-Aug	29-Aug	30-Aug	31-Aug	1-Sep	2-Sep	3-Sep	4-Sep	5-Sep	6-Sep	7-Sep	8-Sep	9-Sep	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	16-Sep	19-Sep	20-Sep	21-Sep
Cell Sites Operational	3,939	*	*	*	*	*	*	*	*	*	2,490	2,598	2,756	2,843	2,920	2,986	3,093	3,127	3,151	3,084	3,189	3,226	3,252
Percentage	100%	*	*	*	*	*	*	*	*	*	63%	66%	70%	72%	74%	76%	79%	79%	80%	78%	81%	82%	83%

### New Orleans, LA

Total Cell Sites: 1,412

	28-Aug	29-Aug	30-Aug	31-Aug	1-Sep	2-Sep	3-Sep	4-Sep	5-Sep	6-Sep	7-Sep	8-Sep	9-Sep	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	16-Sep	19-Sep	20-Sep	21-Sep
Cell Sites Operational	1,412	*	*	*	*	*	*	*	*	*	325	380	485	522	573	623	741	752	763	719	777	808	827
Percentage	100%	*	*	*	*	*	*	*	*	*	23%	27%	34%	37%	41%	44%	52%	53%	54%	51%	55%	57%	59%

### Jackson, MS

Total Cell Sites: 790

	28-Aug	29-Aug	30-Aug	31-Aug	1-Sep	2-Sep	3-Sep	4-Sep	5-Sep	6-Sep	7-Sep	8-Sep	9-Sep	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	16-Sep	19-Sep	20-Sep	21-Sep
Cell Sites Operational	790	*	*	*	*	*	*	*	*	*	767	776	779	780	779	782	782	784	785	783	785	786	788
Percentage	100%	*	*	*	*	*	*	*	*	*	97%	98%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	100%

### Baton Rouge, LA

Total Cell Sites: 673

	28-Aug	29-Aug	30-Aug	31-Aug	1-Sep	2-Sep	3-Sep	4-Sep	5-Sep	6-Sep	7-Sep	8-Sep	9-Sep	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	16-Sep	19-Sep	20-Sep	21-Sep
Cell Sites Operational	673	*	*	*	*	*	*	*	*	*	621	644	645	652	652	652	653	656	656	655	659	661	661
Percentage	100%	*	*	*	*	*	*	*	*	*	92%	96%	96%	97%	97%	97%	97%	97%	97%	97%	98%	98%	98%

\* Data not available for these dates.

Source: Unofficial information reported by affected companies after Hurricane Katrina.

Note: As of Sept. 16, daily data are collected only Monday through Friday



# Federal Communications Commission

## BROADCASTER STATION STATUS

**Gulf Coast (Total for Affected Area)**  
Total Radio: 137 Total TV: 26

	28-Aug	29-Aug	30-Aug	31-Aug	1-Sep	2-Sep	3-Sep	4-Sep	5-Sep	6-Sep	7-Sep	8-Sep	9-Sep	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	16-Sep	19-Sep	20-Sep	21-Sep
Radio Stations on Air (Confirmed)	137	33	36	55	56	61	66	68	70	71	72	76	83	86	84	88	93	96	96	97	97	97	99
Percentage	100%	24%	26%	40%	41%	45%	48%	50%	51%	52%	53%	55%	61%	63%	61%	64%	68%	70%	70%	71%	71%	71%	72%
TV Stations on Air (Confirmed)	26	9	13	13	15	15	15	15	17	18	19	19	19	19	19	20	20	20	22	22	22	22	22
Percentage	100%	35%	50%	50%	58%	58%	58%	58%	65%	69%	73%	73%	73%	73%	73%	77%	77%	77%	85%	85%	85%	85%	85%

**Louisiana**  
Total Radio: 66 Total TV: 15

	28-Aug	29-Aug	30-Aug	31-Aug	1-Sep	2-Sep	3-Sep	4-Sep	5-Sep	6-Sep	7-Sep	8-Sep	9-Sep	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	16-Sep	19-Sep	20-Sep	21-Sep
Radio Stations on Air (Confirmed)	66	15	16	24	24	25	27	29	30	30	30	30	32	33	31	33	38	41	41	41	41	41	43
Percentage	100%	23%	24%	36%	36%	38%	41%	44%	45%	45%	45%	45%	48%	50%	47%	50%	58%	62%	62%	62%	62%	62%	65%
TV Stations on Air (Confirmed)	15	4	6	6	7	7	7	7	8	8	8	8	8	8	8	9	9	9	11	11	11	11	11
Percentage	100%	27%	40%	40%	47%	47%	47%	47%	53%	53%	53%	53%	53%	53%	53%	60%	60%	60%	73%	73%	73%	73%	73%

**Mississippi**  
Total Radio: 44 Total TV: 5

	28-Aug	29-Aug	30-Aug	31-Aug	1-Sep	2-Sep	3-Sep	4-Sep	5-Sep	6-Sep	7-Sep	8-Sep	9-Sep	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	16-Sep	19-Sep	20-Sep	21-Sep
Radio Stations on Air (Confirmed)	44	5	6	14	14	16	16	16	16	17	18	20	25	27	27	29	29	29	29	30	30	30	30
Percentage	100%	11%	14%	32%	32%	36%	36%	36%	36%	39%	41%	45%	57%	61%	61%	66%	66%	66%	66%	68%	68%	68%	68%
TV Stations on Air (Confirmed)	5	2	2	2	2	2	2	2	3	4	5	5	5	5	5	5	5	5	5	5	5	5	5
Percentage	100%	40%	40%	40%	40%	40%	40%	40%	60%	80%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

**Alabama**  
Total Radio: 27 Total TV: 6

	28-Aug	29-Aug	30-Aug	31-Aug	1-Sep	2-Sep	3-Sep	4-Sep	5-Sep	6-Sep	7-Sep	8-Sep	9-Sep	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	16-Sep	19-Sep	20-Sep	21-Sep
Radio Stations on Air (Confirmed)	27	13	14	17	18	20	23	23	24	24	24	26	26	26	26	26	26	26	26	26	26	26	26
Percentage	100%	48%	52%	63%	67%	74%	85%	85%	89%	89%	89%	96%	96%	96%	96%	96%	96%	96%	96%	96%	96%	96%	96%
TV Stations on Air (Confirmed)	6	3	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Percentage	100%	50%	83%	83%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Note: Because many broadcasters are operating on back-up power at this time, their service availability is likely below pre-hurricane levels.  
Source: Unofficial information reported by affected companies after Hurricane Katrina.

Note: As of Sept. 16, daily data collected only Monday through Friday.