FCC Federal Communications Commission

Consumer & Governmental Affairs Bureau

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Communicating During Emergencies	FCC Consumer Facts

Background

During emergencies - local, state, and national - the importance of our country's communications system, including telecommunications, broadcast, cable, and satellite systems, becomes clear. We use our phones to call 911 or to call our family members to make sure they are safe. We turn on our televisions and radios to get information updates.

While there is no doubt that our country has one of the world's most extensive and dependable communications systems, unusual conditions can put a strain on it.

The following information will help you better understand what happens with our communications system during an emergency and how best to use the various components of our communications system during a crisis or disaster.

Emergency Communications Components

There are three main components to emergency communications:

1. 911 telephone call processing and delivery through Public Safety Answering Points (PSAP) and call dispatch;

2. The Emergency Alert System; and

3. Radio and/or broadcast or cable television station news and updates.

All of these components must operate effectively in order to achieve a successful response to an emergency.

911 Calls

Emergency personnel and others often learn about emergencies through 911 calls. 911 is the official national emergency number in the United States and Canada. Dialing 911 quickly connects you to a PSAP dispatcher trained to route your call to local emergency medical, fire, and law enforcement agencies.

The 911 network is a vital part of our nation's emergency response and disaster preparedness system. This network is constantly being upgraded to provide emergency help

more quickly and effectively. For example, most traditional wireline 911 systems now automatically report to the PSAP the telephone number and location of calls, a capability called "Enhanced 911" or "E911." By receiving the telephone number of the caller, the PSAP is able to call back in the event the call gets disconnected. The PSAP is also able to determine the location of the caller by cross-referencing the telephone number against a location database. Traditional wireline E911 is available in most parts of the country.

Public Safety Answering Point and Call Dispatch

The emergency dispatcher uses location information to direct public safety personnel responding to the emergency to ensure the shortest possible emergency response time.

At the PSAP, the operator verifies the caller's location, determines the nature of the emergency, and decides which emergency response teams should be notified. Sometimes, a single primary PSAP will answer for an entire region. In most cases, the caller is then transferred to a secondary PSAP from which help will be sent.

Secondary PSAPs are sometimes located at fire dispatch offices, municipal police headquarters, or ambulance dispatch centers. Communities that don't have PSAPs rely on public safety emergency operators and communications centers to process emergency calls.

Once the call is processed, the PSAP operator or dispatch center alerts the appropriate emergency response team. During emergencies, radio systems frequently are used by emergency units and officers at the scene to coordinate activities among all emergency personnel - fire, rescue, police, dispatchers, etc. - with the emergency units on their way and with dispatchers at command bases.

Wireless and E911

While new telecommunications technologies can be important tools for public safety, they sometimes create special challenges for public safety personnel. For example, the mobility of wireless telephone service makes determining a wireless user's location more complicated than is true for traditional wireline services, which are associated with a fixed location or address.

In an effort to increase the ability of emergency personnel to respond to wireless 911 calls, the Federal Communications Commission (FCC) has adopted rules requiring wireless telephone carriers to provide Enhanced 911 (E911).

Wireless carriers have begun to deploy technologies to meet the FCC's E911 rules. When fully implemented, wireless E911 will provide PSAPs with information about the location of consumers dialing 911 from mobile phones. However, since wireless E911 will not be available everywhere immediately, it is important for consumers to follow a few basic steps when calling 911 from their mobile phones:

- Tell the emergency operator the location of the emergency right away.

- Give the emergency operator your wireless phone number so that if the call gets disconnected, the operator can call you back.

- If your wireless phone is not "initialized" (i.e., you do not have a contract for service with a wireless service provider) and your emergency call gets disconnected, you must call the emergency operator back because he or she does not automatically receive

your telephone number and therefore cannot contact you.

VoIP and E911

The FCC also has imposed E911 obligations on providers of "interconnected" Voice over Internet Protocol (VoIP) services. Interconnected VoIP service allows you to make and receive calls to and from traditional wireline phone numbers using any high-speed (broadband) Internet connection (i.e., DSL, Cable Modem). VoIP can be used in place of traditional phone service. Typically, interconnected VoIP technology works by either placing an adapter between a traditional phone and a broadband connection, or by using a special VoIP phone that connects directly to your computer or Internet connection. While you may choose to use interconnected VoIP service from a single location, like a residence, interconnected VoIP services can be used wherever you travel as long as a broadband Internet connection is available.

By the end of 2005, all interconnected VoIP providers must automatically provide E911 services to all customers as a standard, mandatory feature without customers having to specifically request this service. VoIP providers may not allow their customers to "opt-out" of E911 service.

Before interconnected VoIP service providers can activate a new customer's service, providers must obtain from the customer the physical location at which the service will first be used so that emergency services personnel will be able to locate callers who dial 911. Interconnected VoIP providers must also provide one or more easy ways for all customers to update the physical location they have registered with the provider, if it changes.

VoIP/911 Tips

If you have or are thinking of subscribing to a VoIP service, here are some important tips and questions to ask:

- Is your VoIP an "interconnected" service that is subject to the FCC rules? Make sure you have a clear understanding of any limitations of your 911 service;

- Inform children, babysitters, and visitors about your interconnected VoIP service and its 911 limitations, if any;

- If your VoIP provider supplies you with warning stickers, place them on and/or near the equipment used in conjunction with the interconnected VoIP service;

- When you dial 911, be sure to tell the emergency operator where you are and what your phone number is right away so they can find you and call you back if you are disconnected. (Some emergency service providers are not capable of receiving or processing the location information or call-back number that interconnected VoIP providers must be capable of providing.);

- Be familiar with your interconnected VoIP service provider's procedures for updating your address, and promptly update address information in the event of a change; and,

- If the power is out or your broadband connection is down, be aware that your

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> interconnected VoIP service may also be out. Consider installing a backup power supply, maintaining a traditional phone line, or having a wireless phone as a backup.

Using TTYs to Dial 911

TTYs also called text telephones have a typewriter keyboard and allow persons to type their telephone conversations via two-way text. At present, traditional wireline phones and **analog wireless** phones can transmit 911 calls to PSAPs from callers using TTYs. The FCC encourages TTY users to call 911 directly for immediate service. If TTY users choose to contact a PSAP via Telecommunications Relay Service (TRS), TRS centers need to then forward the TTY caller's phone number to the PSAP, delaying transmission of this information to the PSAP.

Wireless service providers have made technological changes to their networks to provide TTY compatibility for **digital wireless** calls for consumers with select TTY-compatible hand-sets. However, in certain locations TTY users may not be able to complete 911 calls successfully to 911 emergency call centers using these newly available digital wireless services. The FCC is encouraging public safety organizations, vendors of TTY equipment for 911 call centers, TTY vendors, and wireless service providers to work together both to better identify the extent of these difficulties and to develop solutions. In the meantime, TTY users should consider alternatives for placing an emergency 911 call, such as landline phone service, analog wireless service, or TRS.

Network Damage and Black-outs

If the telecommunications network is damaged in a disaster, your traditional wireline, wireless, or VoIP phone and text pager may not work. If only your electricity goes out (a "black-out"), your traditional telephone may still work. In a black-out, you still may be able to use your traditional wireline phone because electricity and telephone transmissions travel on different wires. If you keep the battery on your wireless phone and text pager fully charged, you should be able to use these, too, in a black-out. Unless you have a backup power supply, your VoIP phone will not work if your broadband connection is down or in a black-out.

Text pagers have a built-in radio transmitter/ receiver. Messages are transmitted over the wireless network, a nationwide network of radio towers that transmit data. Some text pagers can subscribe to the National Oceanic and Atmospheric Administration's (NOAA) National Weather Service for any weather alerts.

Why E-mail May Work When Phone Lines Don't During a Natural Disaster or State of Emergency

When a telephone call is completed on the public telephone network, transmission circuits are assigned and dedicated between the two users for the length of the call. The telephone network is engineered so that during normal usage there are adequate facilities that can be assigned and dedicated to handle the number of calls during the peak period.

However, if during a disaster or emergency the number of calls exceeds that peak (or if the network transmission capacity is reduced), then some calls will be blocked. And, of course, if the phone being called is already in use, the call will be blocked.

The Internet backbone uses shared rather than dedicated transmission facilities so that even during heavy usage the Internet will work, albeit perhaps more slowly. However, if Internet traffic is heavy enough, VoIP phones may not work. Cable modem and DSL users who have dedicated Internet access can generally get through to their e-mail systems, although dial-up Internet users may experience some blocking when they try to dial their Internet Service Provider (ISP), either because the local telephone system is congested or all ISP's lines are busy. E-mail itself is an Internet application which has the additional characteristic that the recipient doesn't have to be available at the same time as the sender, and instead can connect to his or her own mail system at his or her convenience to retrieve messages that have been delivered there.

The Emergency Alert System Radio and Television Updates

In the event of an emergency, many people rely on local radio and/or television stations to receive updates on what is happening and what to do.

There is a nationwide broadcast system in place for national disaster or other large-scale disasters. The Emergency Alert System (EAS) currently provides not only the President, but national, state, and local authorities with the ability to give emergency information to the general public via broadcast, cable, and wireless cable systems.

All broadcast stations and cable systems currently are required to broadcast emergency alerts and messages for national security emergencies initiated by the President.

In October, 2005, the FCC expanded its rules to require EAS participation by digital television (DTV) broadcasters, digital cable television providers, digital broadcast radio, Digital Audio Radio Service (DARS), and Direct Broadcast Satellite (DBS) systems. These rules are effective as of December 31, 2006, except for DBS, whose effective date is May 31, 2007. The FCC continues to consider ways to enhance the EAS to ensure that all Americans, including those with hearing and vision disabilities and those who speak languages other than English, receive EAS alerts.

EAS participants are not required to broadcast EAS alerts and messages initiated by state and local authorities, but the FCC encourages them to transmit emergency alerts as a public service. Information about local natural disasters is often broadcast via EAS.

All EAS alerts should be accessible by audio and visual means, or simple visual means, including closed-captioning, open-captioning, crawls or scrolls.

Exception: If your local television/radio tower or studio is damaged during a natural disaster like a tornado, you may not receive the signal.

EAS was designed, however, so that if one link in the dissemination of alert information is broken, the public has multiple alternate sources of warning.

Accessibility of Emergency Information

The FCC has separate requirements to meet the needs of persons with disabilities in cases of local emergencies. The FCC requires that any information that is intended to further the protection of life, health, safety, or property, such as immediate weather situations, civil disorder, evacuation orders, school closings, relief assistance, etc., be accessible to persons with disabilities. These rules apply to all local broadcasters, cable operators, and satellite television service providers. Critical details about the emergency must be provided in a

visual format, such as open captions, scrolls, or even hand-lettered signs.

The critical details must also be provided in an aural format. If crawls or scrolls are provided during regular programming, an aural tone is required to indicate to persons who are blind or who have low vision that emergency information is being provided.

Other Emergency Organizations:

The Federal Emergency Management Agency (FEMA) is responsible for responding to national disasters and for helping state and local governments and individuals prepare for emergencies.

The Department of Homeland Security is responsible for preventing terrorist attacks within the United States, reducing America's vulnerability to terrorism, and is also responsible for minimizing the damage and handling recovery operations if attacks do occur.

The Homeland Security Advisory System provides a way to distribute information regarding the risk of terrorist acts to federal, state, and local authorities and to the American people. The system provides warnings in the form of a set of graduated "Threat Conditions" that increase as the risk of the threat increases. State Civil Defense alerts the public of any changes to the threat level through the news media. In case of level red, the state sounds the emergency alert siren. At each threat condition, federal departments and agencies implement a corresponding set of "Protective Measures" to further reduce vulnerability or increase response capability during a period of heightened alert.

Threat Conditions:

- **Severe Condition (Red)** - Severe risk of terrorist attacks.

- **High Condition (Orange)** - High risk of terrorist attacks.

- **Elevated Condition (Yellow)** - Significant risk of terrorist attacks.

- **Guarded Condition (Blue)** - General risk of terrorist attacks.

- **Low Condition (Green)** - Low risk of terrorist attacks.

Tips

In the event of an emergency:

- Always have a battery-operated radio with fresh batteries on hand;

- If you have cable, always have one television set that can receive over-the-air signals so that you can still receive a television signal if your cable system goes out;

- Always keep your cell phone battery charged;

- Assemble a first aid kit for your home and for each vehicle; and,

- To help public safety personnel allocate emergency resources, you should learn and use the designated number in your state for highway accidents or other non-life-threatening incidents. Often, states reserve specific numbers for these types of incidents. For example, "#77" is the number used for highway accidents in Virginia. The number to call for non-life-threatening incidents in your state can be found in the front of your phone book.

For More Information

For information on communicating during emergencies, please call the FCC's Consumer Center toll-free at 1-888-225-5322 (TTY: 1-888-835-5322).

For information on other telecommunications issues, please visit the Consumer & Governmental Affairs Bureau's Web site at www.fcc.gov/cgb.

For additional information and/or advice on communicating during emergencies or what to do during a national or local emergency, visit FEMA's Website, www.fema.gov or the Department of Homeland Security's website, www.dhs.gov/.

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