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Emergency Communications: Homeland Security Issues in the 116th Congress

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Overview

First responders and other emergency personnel use emergency communications systems to communicate with each other during day-to-day operations and large-scale disasters. Emergency communication systems are also used to enable communications between the public and response agencies. Emergency communication systems include

- 911 systems that receive calls from the public, requesting assistance or reporting an emergency, and that relay those calls to response agencies (e.g., local police and fire departments);
- land mobile radio (LMR) systems that allow police, firefighters, and emergency medical service (EMS) workers to communicate with each other during day-to-day operations and disasters;
- the First Responder Network (FirstNet), the nationwide public safety broadband network, which is currently under deployment and scheduled for completion in 2022, will enable response agencies at all levels of government to communicate via voice and data (e.g., text, videos); and
- alerting systems that notify people of emergencies and warn people of danger.

These systems often rely on different technologies that can inhibit interoperability and response. For example, 911 systems are not able to send 911 text messages to first responders in the field. State and local police and fire agencies use various radio technologies that can connect responders within their agency, but may not be interoperable with surrounding systems.

Federal, state, and local public safety agencies are investing in Internet Protocol (IP)-based technologies to improve communications, coordination, and response. The federal government has created an IP-based national alerting system that allows authorized agencies to send a single alert through multiple alerting systems. The federal government has also invested in FirstNet, a nationwide seamless, IP-based, high-speed mobile communications network that will enable public safety users to communicate via voice and data with other public safety agencies. There is also interest at all levels of government in upgrading 911 systems to next generation, IP-based systems, to enable callers to share data and to interconnect systems.

Opportunities and Challenges of New Technologies

As emergency communications systems converge toward a common IP-based platform, there are opportunities and challenges. Advancements in geo-location technologies present opportunities to find 911 callers more easily; however, integration of these technologies into legacy 911 systems is challenging. Advancements in alerting have enabled officials to send alerts to mobile phones, yet some people still rely on landline phones for communications. Interconnecting systems could improve information sharing but presents challenges in terms of privacy and security of data flowing across multiple networks.

IP-based technologies enable emergency communications systems to interconnect, creating the potential for nationwide systems. The emergence of nationwide systems may create a need for new policies that integrate these new technologies into response plans and protocols, and policies that support collaborative planning, training, and exercises across all levels of government to improve response.

Further, migration to new technologies is costly. Not all jurisdictions may be able to fund technology upgrades. Adoption of new technologies may also require upgrades to and investments in emergency communications systems and private telecommunications networks.

Issues for the 116th Congress

The 116th Congress may continue its oversight of the effectiveness of emergency communications before, during, and after natural or man-made disasters (e.g., hurricanes, wildfires), and the roles and responsibilities of federal, state, and local agencies, and private telecommunications providers during response. Congress may also to examine the effectiveness of federal programs established to promote and support emergency communications, including

- National 9-1-1 Program administered by the National Highway and Traffic Safety Administration (NHTSA) in the U.S. Department of Transportation, which provides federal leadership and coordination in supporting and promoting optimal 911 services;
- First Responder Network Authority (FirstNet), the federal authority within the National Telecommunications and Information Administration (NTIA) in the U.S. Department of Commerce established to create the nationwide public safety broadband network;
- Integrated Public Alert and Warning System (IPAWS), the national alerting system administered by the Federal Emergency Management Agency (FEMA);
- Emergency Communications Division in the U.S. Department of Homeland Security's Cybersecurity and Infrastructure Security Agency (CISA), which is responsible for promoting interoperable and coordinated communications across all levels of government; and
- federal grant programs that fund emergency communications.

Congress may also focus on the activities of the Federal Communications Commission (FCC) Public Safety and Homeland Security Bureau (PSHSB), which administers FCC policies related to emergency communications, including rules for carriers supporting 911 services; state and local use of 911 fees; public safety spectrum; public alerts, including rules for carriers delivering wireless alerts to mobile phones; disaster management and reporting of private network outages; and restoration efforts.