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# EMERGENCY COMMUNICATIONS

## Various Challenges Likely to Slow Implementation of a Public Safety Broadband Network

Highlights of GAO-12-343, a report to congressional requesters

## Why GAO Did This Study

Emergency responders across the nation rely on land mobile radio (LMR) systems to gather and share information and coordinate their response efforts during emergencies. These public safety communication systems are fragmented across thousands of federal, state, and local jurisdictions and often lack "interoperability," or the ability to communicate across agencies and jurisdictions. To supplement the LMR systems, in 2007, radio frequency spectrum was dedicated for a nationwide public safety broadband network. Presently, 22 jurisdictions around the nation have obtained permission to build public safety broadband networks on the original spectrum assigned for broadband use. This requested report examines (1) the investments in and capabilities of LMR systems; (2) plans for a public safety broadband network and its expected capabilities and limitations; (3) challenges to building this network; and (4) factors that affect the prices of handheld LMR devices. GAO conducted a literature review, visited jurisdictions building broadband networks, and interviewed federal, industry, and public safety stakeholders, as well as academics and experts.

## What GAO Recommends

The Department of Homeland Security (DHS) should work with partners to identify and communicate opportunities for joint procurement of public safety LMR devices. In commenting on a draft of this report, DHS agreed with the recommendation. GAO also received technical comments, which have been incorporated, as appropriate, in the report.

View GAO-12-343 . For more information, contact Mark L. Goldstein at (202) 512-2834 or goldsteinm@gao.gov.

## What GAO Found

After the investment of significant resources—including billions of dollars in federal grants and approximately 100 megahertz of radio frequency spectrum—the current land mobile radio (LMR) systems in use by public safety provide reliable "mission critical" voice capabilities. For public safety, mission critical voice communications must meet a high standard for reliability, redundancy, capacity, and flexibility. Although these LMR systems provide some data services, such as text and images, their ability to transmit data is limited by the channels on which they operate. According to the Department of Homeland Security (DHS), interoperability among LMR systems has improved due to its efforts, but full interoperability of LMR systems remains a distant goal.

Multiple federal entities are involved with planning a public safety broadband network and while such a network would likely enhance interoperability and increase data transfer rates, it would not support mission critical voice capabilities for years to come, perhaps even 10 years or more. A broadband network could enable emergency responders to access video and data applications that improve incident response. Yet because the technology standard for the proposed broadband network does not support mission critical voice capabilities, first responders will continue to rely on their current LMR systems for the foreseeable future. Thus, a broadband network would supplement, rather than replace, current public safety communication systems.

There are several challenges to implementing a public safety broadband network, including ensuring the network's interoperability, reliability, and security; obtaining adequate funds to build and maintain it; and creating a governance structure. For example, to avoid a major shortcoming of the LMR systems, it is essential that a public safety broadband network be interoperable across jurisdictions and devices by following five key elements to interoperable networks: governance, standard operating procedures, technology, training, and usage. With respect to creating a governance structure, pending legislation—the Middle Class Tax Relief and Job Creation Act of 2012, among other things—establishes a new entity, the First Responder Network Authority, with responsibility for ensuring the establishment of a nationwide, interoperable public safety broadband network.

The price of handheld LMR devices is high—often thousands of dollars—in part because market competition is limited and manufacturing costs are high. Further, GAO found that public safety agencies cannot exert buying power in relationship to device manufacturers, which may result in the agencies overpaying for LMR devices. In particular, because public safety agencies contract for LMR devices independently from one another, they are not in a strong position to negotiate lower prices and forego the quantity discounts that accompany larger orders. For similar situations, GAO has recommended joint procurement as a cost saving measure because it allows agencies requiring similar products to combine their purchase power and lower their procurement costs. Given that DHS has experience in emergency communications and relationships with public safety agencies, it is well-suited to facilitate joint procurement of handheld LMR devices.