United States Government Accountability Office

Report to Congressional Requesters

April 2018

# EMERGENCY COMMUNICATIONS

# Increased Regional Collaboration Could Enhance Capabilities

GAO-18-379

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GAO Highlights

Highlights of GAO-18-379, a report to congressional requesters

### Why GAO Did This Study

During emergencies, reliable communications are critical. Disasters, such as 2017's hurricanes, continue to test the nation's emergency communications capabilities. As disasters can cross jurisdictional boundaries, collaboration within and across regions is very important.

GAO was asked to review implementation of the Post-Katrina Act's provisions related to disaster preparedness, response, and recovery. This report examines: (1) challenges related to emergency communications that selected stakeholders have experienced; (2) their views on DHS's emergency communications assistance; and (3) the regional working groups established by the Post-Katrina Act and their effect on emergency communications capabilities. GAO reviewed DHS's reports and grant data for fiscal years 2011–2016 and conducted case studies of three cities—Houston, Los Angeles, and Boston—selected based on the number of declared disasters, DHS grant funding, and geographic diversity. GAO interviewed DHS officials; leaders of all 10 regional working groups and other stakeholders, including public safety officials in the case study cities; and others chosen for their expertise.

### What GAO Recommends

FEMA should work with regional working-group members to reach consensus and implement an ongoing mechanism, such as a national-level working group, to encourage nationwide collaboration across regions. DHS concurred with this recommendation.

View GAO-18-379. For more information, contact Mark Goldstein at (202) 512-2834 or GoldsteinM@gao.gov.

### What GAO Found

Selected first responders and public safety officials identified various challenges related to emergency communications. These challenges include attaining the interoperability of communication systems, obtaining funding, ensuring ongoing training, and increasing the emphasis on communications during emergency response exercises. For example, some stakeholders told GAO about challenges related to equipment that is not interoperable, and others said first responders need training after investments are made in new interoperable communications equipment.

To help address these challenges and as required by the Post-Katrina Emergency Management Reform Act of 2006 (Post-Katrina Act), the Department of Homeland Security (DHS) has provided technical assistance, such as training, and Federal Emergency Management Agency (FEMA) grants. It has also established regional emergency communications coordination working groups, which bring together stakeholders from different levels of government and the private sector within FEMA's 10 regions.

While emergency communications challenges persist, stakeholders told GAO that DHS's technical assistance generally meets their needs and that FEMA grants have helped them enhance emergency communications capabilities. In particular, stakeholders found training for specific communications positions was useful. Houston-area officials said this training was critical in preparing first responders for Hurricane Harvey. Some stakeholders told GAO that FEMA grants helped them address needs that would otherwise go unfunded, including interoperable communications networks and equipment.

GAO found that the regional working groups have enhanced emergency communications capabilities through building relationships and sharing information. Within the respective regions, group members have:

- assisted each other during disasters and emergencies,
- developed technical solutions to enhance interoperability, and
- addressed policy concerns, such as the use of interoperable radio channels during emergencies.

However, most regional group leaders told GAO that more collaboration across the groups was needed. GAO's prior work has also found that including all relevant participants can enhance collaborative efforts. Further, DHS's strategic plan for emergency communications established a vision of collaboration among stakeholders across the nation. While FEMA has encouraged collaboration among regional working-group leaders, cross-regional efforts have been limited and do not involve all group members. Developing and implementing an appropriate ongoing mechanism for collaboration could enhance emergency communications capabilities, such as by helping group members address common challenges. Without ways for all members of these groups to collaborate across regions, members may be missing opportunities to share information and leverage the knowledge and experiences of their counterparts throughout the nation.

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## Abbreviations

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| DHS | Department of Homeland Security |
| DOD | Department of Defense |
| FEMA | Federal Emergency Management Agency |
| FirstNet | First Responder Network Authority |
| LMR | land mobile radio |
| OEC | Office of Emergency Communications |
| Post Katrina Act | Post-Katrina Emergency Management Reform Act of 2006 |
| RECCWG | regional emergency communications coordination working group |
| WPS | Wireless Priority Service |

U.S. GOVERNMENT ACCOUNTABILITY OFFICE
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Congressional Requesters

For first responders in emergency situations, reliable communications are critical for a rapid and sufficient response. Hurricane Katrina exposed gaps in how federal, state, and local entities responded to the catastrophic storm, gaps that include revealing that the equipment the first responders used for emergency communications were often not operable and interoperable.[1] Congress passed the Post-Katrina Emergency Management Reform Act of 2006 (Post-Katrina Act) to improve the federal government's preparation for and response to natural and manmade disasters.[2] Among the more than 300 reforms in the Post-Katrina Act, two of the provisions relate to emergency communications during disaster response and recovery. These provisions required

- that the Department of Homeland Security (DHS) provide assistance to support the rapid establishment of interoperable emergency communications in urban areas and other areas deemed to be consistently at a high level of risk from disasters; and
- the establishment of regional emergency communications coordination working groups (RECCWG) in each of the 10 Federal Emergency Management Agency (FEMA) regions.

While DHS has provided assistance in the form of technical assistance and funding and Congress has established the RECCWGs (commonly pronounced rec-wigs), natural disasters such as hurricanes Harvey, Irma, and Maria in 2017 continued to test the nation's emergency communications capabilities. These types of events can cross jurisdictional borders, highlighting the critical need for collaboration of first responders and public safety officials both within and across regions.

[1]Emergency communications interoperability refers to the ability of first responders—such as police officers, firefighters, and emergency medical-services personnel—as well as public safety officials (i.e., emergency preparedness and management officials) to use their radios and other equipment to communicate with each other across agencies and jurisdictions when needed and as authorized.

[2]The Post-Katrina Act was enacted as Title VI of the Department of Homeland Security Appropriations Act of 2007, Pub. L. No.109-295, 120 Stat. 1355, 1394 (2006). The Post-Katrina Act's provisions became effective upon enactment, October 4, 2006, with the exception of certain organizational changes related to the Federal Emergency Management Agency, most of which took effect on March 31, 2007.

You asked us to evaluate how the implementation of the Post-Katrina Act's provisions has affected disaster preparedness, response, and recovery in general. In this report, we examined:

- the challenges selected stakeholders have experienced related to emergency communications;
- the emergency communications assistance—technical assistance and funding—provided by DHS and selected stakeholders' views on these efforts; and
- the RECCWGs established by the Post-Katrina Act and their effect on emergency communications capabilities.

To address these objectives, we reviewed RECCWG annual reports from 2011 to 2016, the most recent years available. We also reviewed relevant reports and documentation from DHS—such as reports on national preparedness and on specific emergency incidents and technical assistance offerings—as well as other documents we identified through a literature search. We analyzed FEMA data on preparedness grant funding from fiscal years 2011 to 2016.[3] After reviewing relevant documentation and discussing the data with FEMA staff, we determined that the data were sufficiently reliable to describe the approximate total amounts of funding for each grant program that had been provided to support emergency communications.

In addition, we interviewed DHS officials from FEMA and the Office of Emergency Communications (OEC). We selected 41 emergency communications stakeholders and through interviews or written responses, obtained their perspectives on the general topics covered in our review—challenges relating to emergency communications, DHS technical assistance and grants, and the RECCWGs. These stakeholders included 20 RECCWG leaders (representing all 10 FEMA regions)[4]

[3]Specifically, we reviewed data from FEMA's Grants Reporting Tool, which contains data from nine preparedness grant programs, as reported by states in their Biannual Strategy Implementation Reports. We selected the period 2011-2016 in order to report on several years of the most recent data, given the evolving nature of emergency communications, and to align with the time period for which we analyzed activities of the RECCWGs.

[4]We obtained responses from two leaders in every region. Each RECCWG is led by a chair and a co-chair. In some cases, the FEMA regional emergency communications coordinators responded to our questions on behalf of the groups' chairs. In addition, at the request of the groups, in two cases we interviewed former co-chairs because the current co-chairs were new to their positions.

representatives of 2 public safety associations and 2 tribal emergency-management organizations; and 17 other public safety officials and first responders with knowledge of emergency communications. We selected these individuals based on their involvement with the RECCWGs, as part of our case studies (described below), or because of their emergency communications experience. We conducted case studies of emergency communications in Houston, Boston, and Los Angeles. We selected these urban areas to include variation in geographic location, in the types of declared disasters and emergencies experienced from 2011 to 2016, and in the amounts of DHS grant funding for emergency communications received from fiscal years 2011 to 2016. For each case study we reviewed documents about emergency communications in that urban area, such as reports about emergency events or articles identified in our literature search, and interviewed multiple stakeholders, including the relevant statewide interoperability coordinator and FEMA regional emergency communications coordinator, a city or county emergency manager, at least one first responder with knowledge of emergency communications, and other selected public safety officials.[5] While the results from our case studies and interviews are not generalizable, they provide illustrative examples of challenges related to emergency communications, views on DHS-provided technical assistance and funding, and how the RECCWGs have enhanced emergency communications capabilities. We compared the collaborative efforts of the RECCWGs' and FEMA's efforts to facilitate such collaboration with the National Emergency Communications Plan,[6] as well as practices for enhancing interagency collaboration that we identified in prior work[7] and federal standards for internal control. [8]

We conducted this performance audit from December 2016 to April 2018 in accordance with generally accepted government auditing standards.

[5]The statewide interoperability coordinator is responsible for implementing a statewide strategic vision for emergency communications' interoperability, and FEMA's regional emergency-communications coordinator is responsible for providing emergency communications assistance on an as-needed basis and coordinating FEMA's tactical communications support during a disaster or emergency.

[6]DHS, *National Emergency Communications Plan* (Washington, D.C.: 2014).

[7]GAO, *Managing For Results: Key Considerations for Implementing Interagency Collaborative Mechanisms,* GAO-12-1022 (Washington, D.C.: Sept. 27, 2012).

[8]GAO, *Standards for Internal Control in the Federal Governmen*t, GAO-14-704G (Washington, D.C.: Sept. 10, 2014).

Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

## Background

Effective communications are vital to first responders' ability to respond to emergencies and ensure the safety of both their personnel and the public. In particular, first responders use communications systems to gather information, coordinate a response, and request additional resources and assistance from neighboring jurisdictions and the federal government.

First responders use different communications systems, such as land mobile radio (LMR) and commercial wireless services.

- LMR: These systems are the primary means for first responders to gather and share information while conducting their daily operations and to coordinate their emergency response efforts. LMR systems are intended to provide secure, reliable voice communications in a variety of environments, scenarios, and emergencies.[9] Across the nation, there are thousands of separate LMR systems. They operate by transmitting voice communications through radio waves at specific frequencies and channels within the radio frequency portion of the electromagnetic spectrum.[10]
- Commercial wireless services: For data transmissions (such as location information, images, and video) public safety entities often pay for commercial wireless services.[11] Some jurisdictions also use commercial wireless services for voice communications.

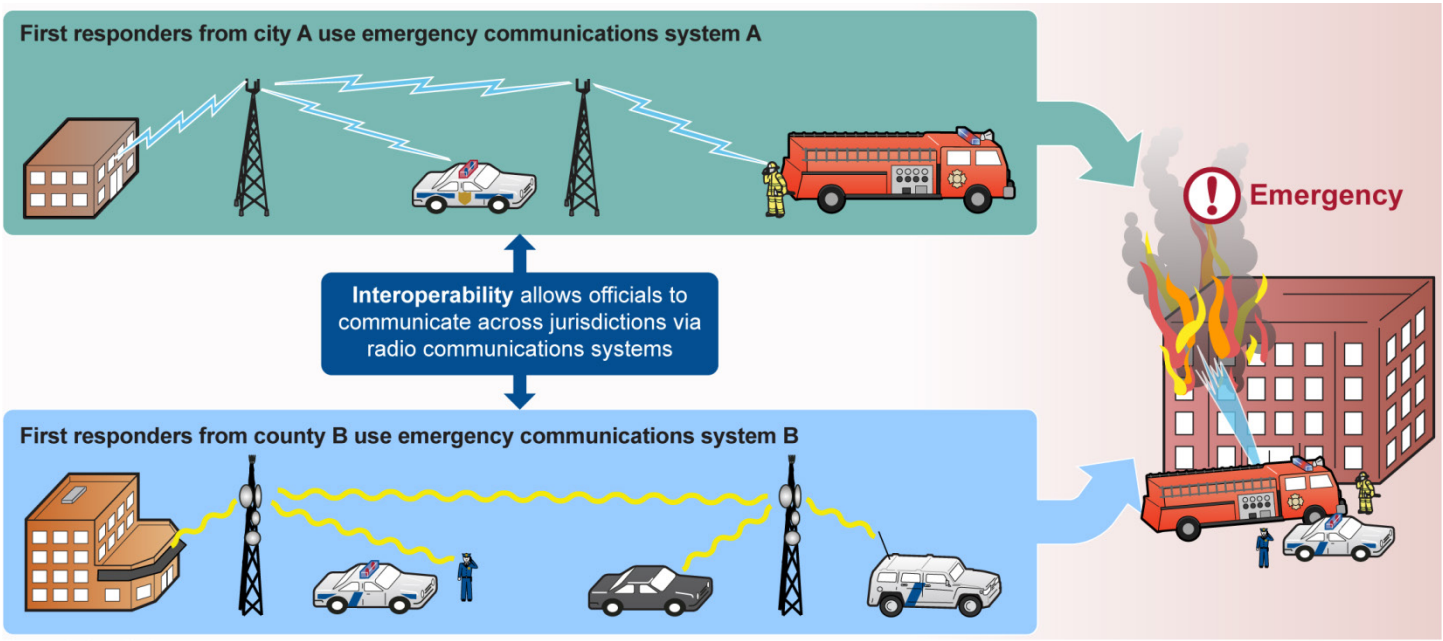
[9]For additional information on LMR see GAO, *Emergency Communications: Improved Procurement of Land Mobile Radios Could Enhance Interoperability and Cut Costs*, GAO-17-12, (Washington D.C.: Oct. 5, 2016).

[10]The electromagnetic spectrum covers the full range of all possible frequencies of electromagnetic radiation, including frequency ranges such as radio, microwave, infrared, visible, ultraviolet, X-rays, and gamma rays.

[11]We have previously reported that commercial networks do not always support the reliability and other requirements that public safety officials need. See GAO, *Public-Safety Broadband Network: FirstNet Should Strengthen Internal Controls and Evaluate Lessons Learned*, GAO-15-407 (Washington, D.C.: Apr. 28, 2015); GAO, *Emergency Communications: Various Challenges Likely to Slow Implementation of a Public Safety Broadband Network*, and GAO-12-343 (Washington, D.C.: Feb. 22, 2012).

These systems must work together, or be interoperable, to ensure effective communication. Emergency communications interoperability refers to the ability of first responders and public safety officials to use their radios and other equipment to communicate with each other across agencies and jurisdictions when needed and as authorized, as shown in our hypothetical example of response to a fire in figure 1.

**Figure 1: Hypothetical Example of Emergency Communications Interoperability**




Source: GAO. | GAO-18-379

First responders may use designated radio frequencies—known as interoperability channels—to help communicate among different jurisdictions. Certain interoperability channels have been designated for federal agencies to communicate with non-federal agencies, and others have been designated for use at the state and local levels.

OEC, created within DHS in 2007, has taken a number of steps aimed at supporting and promoting the ability of public safety officials to communicate in emergencies and work toward operable and interoperable emergency communications nationwide. OEC develops policy and guidance supporting emergency communications across all levels of government and various types of technologies. OEC also provides technical assistance—including training, tools, and online and

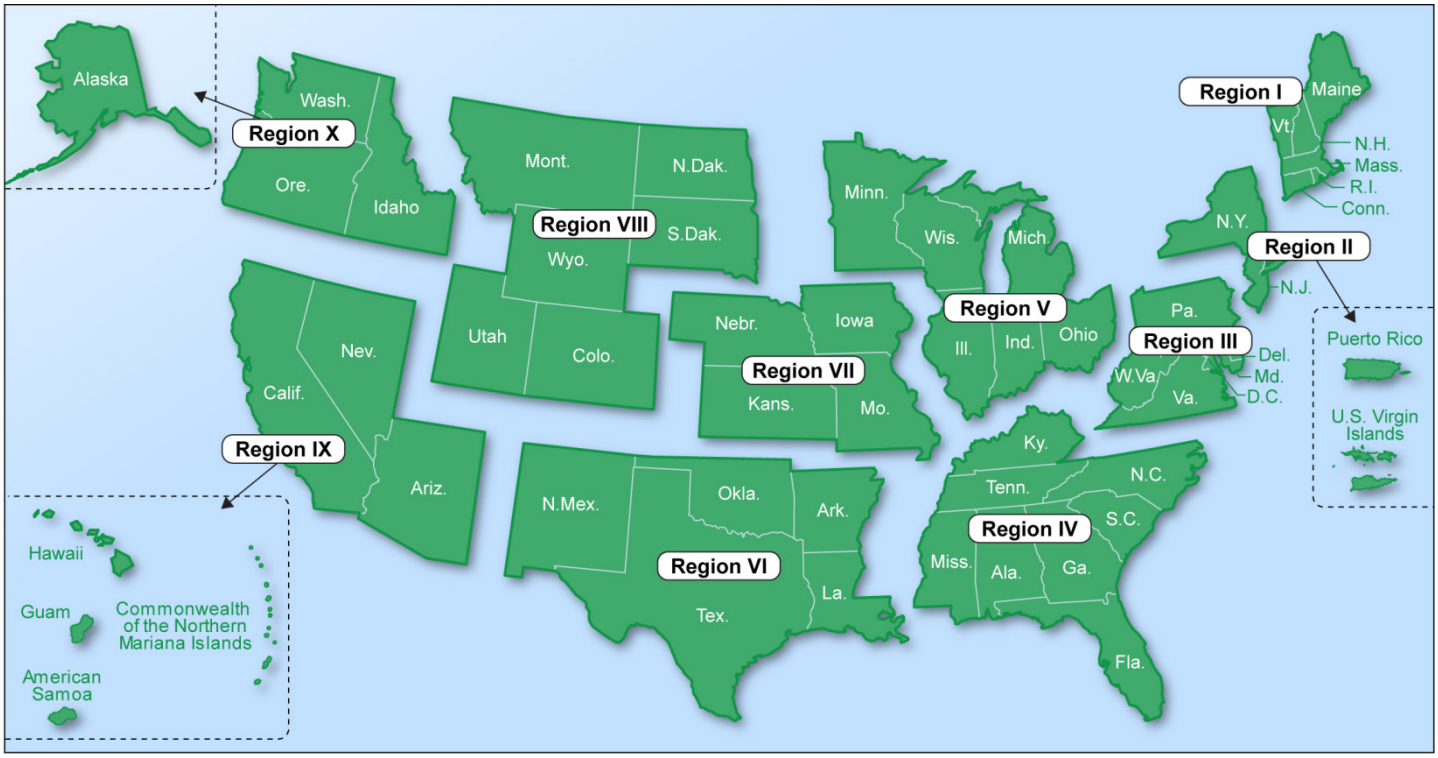
on-site assistance for federal, state, local, and tribal first responders. Also as required by the Post-Katrina Act, OEC developed the National Emergency Communications Plan in 2008 and worked with federal, state, local, and tribal jurisdictions to update it in 2014 to reflect an evolving communications environment. The long-term vision of the plan—which OEC views as the nation's current strategic plan for emergency communications—is to enable the nation's emergency response community to communicate and share information across levels of government, jurisdictions, disciplines, and organizations for all threats and hazards, as needed and when authorized.

FEMA is responsible for coordinating government-wide disaster response efforts, including on-the-ground emergency communications support and some technical assistance. Additionally, FEMA provides a range of grant assistance to state, local, tribal, and territorial entities, including preparedness grants that can be used for emergency communications. FEMA provides assistance to the RECCWGs, which report to their respective FEMA regional administrator. A chair and co-chair serve as the leaders for each RECCWG and provide direction in determining activities and priorities.[12] These groups are comprised of federal, state, and local officials, and coordinate with private sector stakeholders. For example, members include representatives from local fire departments, state and local police departments, tribal officials, telecommunications companies, and federal agencies.[13] Figure 2 shows the member states and territories that compose each group.

[12]According to FEMA officials, the chair of each group is generally the FEMA regional administrator. The co-chair is chosen from the group's membership.

[13]RECCWG members include employees of the National Telecommunications and Information Administration, the Federal Communications Commission, and many other federal agencies.

**Figure 2: Member States and Territories That Compose Each Regional Emergency Communications Coordination Working Group.**




Sources: Federal Emergency Management Agency and Map Resources (map). | GAO-18-379

The Post-Katrina Act established the RECCWGs and requires each group:

- to assess local emergency communications systems to meet goals of the National Emergency Communications Plan,
- to ensure a coordination process for multijurisdictional and multi-agency emergency communications networks through the expanded use of mutual aid agreements for emergency-management and public-safety communications, and
- to coordinate support services and networks designed to address immediate needs in responding to disasters, acts of terrorism and other manmade disasters.[14]

[14]6 U.S.C.§ 575(d).

According to FEMA officials, these groups are run by their members and determine their own activities. FEMA plays a role in facilitating the groups and provides some administrative support. Each group reports annually on the status of the region's operable and interoperable emergency-communications initiatives. In these reports, the groups describe how they fulfill their responsibilities and identify areas for improvement. FEMA compiles the reports into a RECCWG annual report with an executive summary and distributes it to the heads of OEC, the Federal Communications Commission, and the National Telecommunications and Information Administration, as well as to the groups themselves, which may further distribute the final report as they see fit.[15]

## Selected Stakeholders Cited Ongoing Interoperability, Funding, and Training Challenges

We identified several prevalent challenges to emergency communications based on our analysis of RECCWG annual reports, case studies, and interviews with emergency communications stakeholders. These challenges included achieving the interoperability of communication systems, obtaining funding, ensuring ongoing training, and increasing the emphasis on communications during emergency response exercises. As discussed in more detail later, DHS technical assistance and grant programs as well as coordination efforts of the RECCWGs have focused on addressing these ongoing challenges.

### Interoperability Challenges

We identified ongoing technical and non-technical challenges in achieving interoperability of emergency communications systems. In the 2016 RECCWG annual report, most of these groups (7 of 10) cited interoperability as a challenge to emergency communications in their regions.[16] We have reported over the years that interoperability issues can affect mission operation and put first responders and the public at risk when responding officials cannot communicate with one another.[17]

[15]When we discuss the RECCWG annual reports, we are referring to the final compiled report.

[16]DHS, FEMA, *2016 Regional Emergency Communications Coordination Working Group Annual Report*, (Washington D.C.: June 2017)

[17]For example, see: GAO, *Emergency Communications: Actions Needed to Better Coordinate Federal Efforts in the National Capital Region*, GAO-16-249, (Washington D.C.: March, 2016); and GAO, *Border Security: Additional Efforts Needed to Address Persistent Challenges in Achieving Radio Interoperability,* GAO-15-201 (Washington, D.C.; Mar. 23, 2015).

## Technical Challenges

Interoperability challenges can exist due to technical issues such as equipment's incompatibility. As mentioned previously, first responders primarily rely on LMR to communicate and coordinate during emergencies. Although LMR systems have similar components, such as handheld portable radios and mobile radios mounted in vehicles, systems that operate on different radio frequency bands are not always interoperable, making it difficult for different jurisdictions to communicate with each other without technical solutions such as multi-band radios and interoperable gateways.[18] Within Los Angeles County, local stakeholders told us that many jurisdictions use LMR systems that operate on different radio frequency bands across the area's 88 cities and 56 law enforcement agencies. When an emergency involves first responders from a variety of jurisdictions, communication among them can be challenging. For example, one stakeholder told us about an incident in September 2015 where a carjacking turned into a car chase through multiple jurisdictions before the suspect barricaded himself with hostages in a restaurant. The restaurant was surrounded by multiple law enforcement entities and none of them could immediately communicate with each other since their LMR systems operated on different radio frequency bands. According to this stakeholder, this interoperability challenge was dangerous because the officers could not share information such as a description of the suspect.[19]

Interoperability challenges can also exist because of a reliance on commercial wireless providers for voice and data emergency communications. In such cases, if the commercial network is overloaded or damaged, first responders could be unable to communicate within their own agency. This situation could also result in interoperability challenges when an agency's first responders cannot communicate with other jurisdictions. According to a 2017 OEC report,[20] reliance on commercial

[18]Multi-band radios can operate on more than one radio frequency band, with the goal of allowing emergency responders to communicate with partner agencies regardless of the radio frequency band on which they operate. Interoperable gateways use "bridging" or network approaches to enhance interoperability, by using radio network bridges or "gateways" that provide a direct interface between separate radio networks.

[19]According to the official, the Los Angeles region currently uses a patchwork of 40 aging radio networks to communicate, and there is an effort under way to create a new LMR system. The official said the system is expected to be fully operational in 2020 and will help address this type of interoperability challenge.

[20]DHS, Office of Emergency Communications, *Interoperable Communications Capabilities Analysis Program, After Action Report/Improvement Plan, New Orleans, Louisiana, Mardi Gras,* (Washington D.C.: March 2017)

providers for first responders' voice and data access can be problematic for a variety of reasons—including that they must share these networks with the public. According to the report, recent events around the country have demonstrated that regional and city commercial networks are sometimes overwhelmed and compromised by both routine events and large gatherings of people. For instance, the report stated that during the 2017 Mardi Gras celebrations in New Orleans, first responders' wireless voice and data connections were impaired while responding to an accident along the parade route, possibly because of the spike in cellular usage by the public.[21] Additionally, two stakeholders from the same region told us that a state in their region does not have a statewide LMR system and relies on commercial wireless service for emergency communications; such reliance could cause interoperability challenges in the event of an emergency.

The First Responder Network Authority (FirstNet) is working to establish a nationwide dedicated network for public safety use that is intended to foster greater interoperability, support important data transmissions, and meet public safety officials' reliability needs.[22] FirstNet is working with five jurisdictions designated as "early builder projects" of the public-safety broadband network that are deploying local and regional public-safety broadband networks similar to what FirstNet must do on a national scale.[23]

## Non-Technical Challenges

Interoperability challenges can also result from non-technical or human factors such as a lack of coordination or not properly using interoperability

[21]According to OEC officials, OEC has contracts to provide Wireless Priority Services (WPS) on all major telecommunications providers. WPS is a priority telecommunications service that improves the connection capabilities for authorized public safety and national security and emergency preparedness cell phone users. In the event of congestion in the wireless network, an emergency call using WPS will be given priority in the call queue for the next available channel. OEC officials noted that during the 2017 Mardi Gras celebrations it is unclear if the first responders knew of these services or used them.

[22]Unlike current LMR systems, the devices operating on FirstNet's network are expected to be interoperable among first responders using the network, since they are using the same radio frequency band nationwide and will be required to be built to the same open, non-proprietary, commercially available standards. For additional information on FirstNet's activities see: GAO, *Public-Safety Broadband Network: FirstNet Has Made Progress Establishing the Network, but Should Address Stakeholder Concerns and Workforce Planning,* GAO-17-569 (Washington, D.C.: June 20, 2017).

[23]These projects are located in California, Colorado, New Jersey, New Mexico, and Texas. For additional information on them, see: GAO-15-407.

channels. Additionally, as we reported in 2016, 23 states' responses to our survey indicated that they have experienced interoperability difficulties when communicating or attempting to communicate with federal partners during disasters.[24] For example, following Hurricane Harvey, stakeholders with the City of Houston and Harris County reported interoperability challenges when they were unable to communicate with members of FEMA's Urban Search & Rescue teams deployed to the area. However, according to stakeholders we interviewed, they were initially unaware these teams were operating in the area because the teams did not share information—including the LMR channels on which they were operating—with local first responders. According to a stakeholder from the State of Texas this was a communications coordination challenge. Stakeholders from the City of Houston, Harris County, and the State of Texas told us that having this information would have been useful to help coordinate emergency response. FEMA officials told us that they were aware of this issue, which they noted was an isolated incident, and have emphasized to these teams the importance of sharing this information in the future.

We also found that at least one stakeholder in each of our case study locations identified challenges due to first responders not using interoperable LMR channels properly. Additionally, a report about the response to the Boston Marathon bombings stated that first responders underutilized dedicated channels or had difficulty accessing them, a situation that limited coordination.[25] Two stakeholders in Boston told us that officials in the city develop a comprehensive communications plan for major events to help allow all levels of government to better communicate, but one of these stakeholders said there is a continued need for training on using interoperability channels. As discussed later, DHS offers technical assistance and grants to improve interoperability.

## Challenges with Training and Exercises

Based on RECCWG annual reports, our case studies, and interviews with stakeholders, we identified: (1) an ongoing need for training and (2) the lack of a communications component in emergency response exercises

[24]GAO-16-681. Respondents noted in written comments that the interoperability issues included a lack of understanding by federal responders about the local radio systems, federal responders not using the statewide system, and federal radios not configured to the interoperable channels or talk groups, which allow the users to easily share communications and information.

[25]Massachusetts Emergency Management Agency et al, *After Action Report for the Response to the 2013 Boston Marathon Bombings* (December 2014).

as both challenges to emergency communications. Stakeholders in each of our three case study locations told us there is an ongoing need for training and practice in using emergency communications equipment. Additionally, this issue was raised in a recent RECCWG annual report and a report about the response to the 2013 Boston Marathon bombing. Stakeholders in two of our case study locations, Los Angeles and Boston, told us that first responders continue to need training after investments are made in new interoperable communications equipment, posing an ongoing need for training. In addition, stakeholders from all three of our case study locations told us that first responders need training on the proper use of interoperability channels. For example, this gap in training was the case during the response to the Boston Marathon bombing when responders used their everyday channels rather than interoperable channels. If all responders are not operating on the same channels, there is the possibility of missing critical information. Additionally, with staff turnover and position changes, four stakeholders told us there is a constant need to educate first responders and other personnel. For example, officials from one department told us that emergency communications training is always a challenge with their approximately 10,000 personnel. Other stakeholders also told us that public safety officials must know how to properly use new technologies and that evolving technology requires additional training. OEC officials said that their training and technical assistance has evolved to address new and emerging technologies such as broadband. For example, OEC's current technical assistance catalog contains new or revised offerings on topics related to Next Generation 911 such as the technical and procedural challenges associated with integrating digital communications into these 911 systems.[26] OEC officials told us they work with various emergency communications stakeholders, such as state and local agencies, to stay informed about training needs.

Exercises—which can be planned and carried out at the federal, state, or local level—are important in preparing for emergencies because they can expose challenges, which can then be addressed before an actual emergency, according to stakeholders we interviewed. According to OEC officials, these exercises are intended to simulate large-scale disasters or emergencies and bring participants (including first responders, state and federal officials, hospital personnel, etc.) together to test equipment and

[26]Next Generation 911 uses Internet protocol-based technology to deliver and process voice calls and data. Under these systems, 911 call centers will be able to accommodate emergency communications from the range of technologies in use today.

actual response procedures. According to DHS's Interoperability Continuum, implementing effective exercise programs to practice communications interoperability is essential for ensuring that the technology works and that first responders are able to effectively communicate.[27] One stakeholder in Houston told us that planned events prior to Hurricane Harvey revealed that many first responders in the area were not comfortable using interoperability channels because they did not typically operate on these channels or did not need to use radios for their daily work. After planned events (such as the 2017 Super Bowl), they gained experience and familiarity, and were able to use these interoperability channels without incident during the response to Hurricane Harvey, according to this stakeholder.

According to RECCWG annual reports in 2015 and 2016, major emergency-response exercises often do not include a large communications component, which can limit the preparedness of state and local public safety officials. Additionally, the 2016 RECCWG annual report states that in a large-scale disaster, compromised or insufficient communications can have dramatic effects on response efforts.[28] All 10 RECCWGs agreed on the need to test communications during emergency response exercises, and two of these groups cited this need as a specific priority for the upcoming year. FEMA officials told us they are working to build scenarios into exercises that will also help to test communications. Three stakeholders told us that during large-scale events, there is still too often an assumption that emergency communications systems will remain operational in the event of an emergency. The stakeholders said exercises are more beneficial and realistic when communications personnel are included in exercise planning and the exercises include a communications component. OEC officials told us that communications are frequently either omitted from or only notionally included in exercises and assessments, and because of this situation, OEC offers training on planning exercises. As discussed later, DHS offers technical assistance to help address the above challenges related to training and exercises.

[27]DHS's Interoperability Continuum is a tool designed to assist emergency response agencies and policy makers to plan and implement interoperable data and voice communications.

[28]DHS, FEMA, *2016 Regional Emergency Communications Coordination Working Group Annual Report* (Washington D.C.; June 2017).

## Funding Challenges

Based on RECCWG annual reports and interviews with emergency communication stakeholders we identified challenges in obtaining funding for acquiring and maintaining interoperable equipment and systems, as well as for travel and training. For example, a recent RECCWG annual report noted that determining funding sources to address interoperability needs was a challenge.[29] This report raised concerns that two federal grant programs that jurisdictions previously used to address interoperability needs are no longer funded.[30] Stakeholders told us that DHS grant programs have been important for emergency communications projects in their regions. They also noted that within a jurisdiction many projects compete for a limited amount of funding. For example, one stakeholder explained that even after his jurisdiction used a DHS grant to purchase a new LMR system, the jurisdiction must continue to seek funding to upgrade and maintain the system. Further, one recent RECCWG annual report identified funding limitations as causing many states and agencies to make trade-offs among capabilities essential for operable and interoperable communications—such as deciding whether to upgrade equipment or systems. As existing communications systems and equipment continue to age or become obsolete, these trade-offs put the agencies at an increasing risk of not being able to effectively exchange communications during an event response, according to this recent RECCWG annual report.

Additionally, leaders from all 10 RECCWGs also told us funding was currently a challenge to emergency communications in their region.[31] For example, half (10 of 20) of these group cited limited funding to upgrade or replace equipment as a challenge in their region. According to a leader in one region that identified funding as a major challenge, many entities within the region need funding for this purpose. They noted that efforts to

[29]DHS, FEMA, *2015 Regional Emergency Communications Coordination Working Group Annual Report* (Washington D.C.; August 2016).

[30]The Interoperable Emergency Communications Grant Program was funded by Congress in fiscal years 2008 to 2010. The purpose of this grant program is to provide governance, planning, training and exercises, and equipment funding to state, territories, tribal, and local governments to carry out initiatives to improve interoperable emergency communications. The Public Safety Interoperable Communications Grants Program was a one-time transfer program where funds were awarded by September 30, 2007. The purpose of this program was to assist public safety agencies in the acquisition of, deployment of, or training for the use of interoperable communications systems.

[31]As noted earlier, we refer to the chairs, co-chairs, or their designees as the leaders of these groups.

find alternative funding sources have not been successful and that as emergency communications technology evolves it will grow increasingly difficult for first responders to keep pace with the changes. Likewise, representatives from one public safety association told us that maintaining interoperable communications is a challenge due to the expense of new radios and software. As a result, they noted that jurisdictions, particularly those in less populated areas, might decide to purchase less costly equipment that is not interoperable. Such purchases can result in emergency communications challenges. The leader of one RECCWG told us that due to consistent budget shortfalls over the past several years, one state in the region has deferred maintenance of communications infrastructure. This deferral is expected to create more expensive problems in the future.

Leaders from 5 of the 10 RECCWGs told us they have also experienced funding challenges related to travel or training. For example, one regional group leader told us that funding is a challenge because funding shortfalls prevent personnel from attending courses that would increase their knowledge of equipment and new technologies. Another regional group leader told us that funding is a challenge in that travel money is very limited. Given the large geographic area covered by this RECCWG, it is expensive for group members to travel to meetings, inhibiting participation and information sharing at RECCWG meetings.

## Stakeholders Indicated DHS's Technical Assistance and Grants Have Enhanced Emergency Communications in Their Regions

### Technical Assistance

Technical assistance, including guidance and training, is one of OEC's main responsibilities, and while FEMA does provide certain technical assistance, it is not the agency's primary responsibility. These OEC and FEMA efforts are intended help address emergency communications challenges, including those discussed above.

- OEC offers various types of technical assistance, such as workshops and assessments to help participants strengthen their communications plans and governance structures, as well as a seminar to help participants incorporate communications into emergency response exercises. According to OEC officials, they have delivered more than 2,000 technical-assistance-training courses and workshops since OEC was created in 2007. In addition, OEC has developed other resources, such as a toolkit for managing emergency communications at planned events such as the Super Bowl.[32] According to OEC officials, they have a technical assistance budget of approximately $9 million per year, and OEC delivers this assistance at no cost to the requesting state or territory. OEC also has 11 subject matter experts located across the country who help jurisdictions with their communications programs and resources. These individuals seek to build partnerships across different levels of government and the private sector and are involved with their respective RECCWGs.
- FEMA offers training related to emergency communications, such as various courses on emergency management topics.[33] FEMA also has 10 regional emergency communications coordinators who are responsible for providing assistance on an as-needed basis to their respective regions and coordinating FEMA's tactical communications support during a disaster or emergency. These coordinators also support the RECCWGs.
- OEC and FEMA jointly provide training to first responders and other public safety officials to prepare them to act as communications unit leaders. [34] OEC also provides training for other specialized communications support roles. The communications unit is part of a standardized organizational emergency response structure called the Incident Command System.[35] When a disaster or emergency occurs, the communications unit is responsible for managing the operational

[32]This toolkit addresses designated National Special Security Events.

[33]FEMA provides these courses through its Emergency Management Institute.

[34]OEC first offered the communications unit-leader-training course in 2007 and has since developed courses for other communications unit positions. Since 2009, OEC has collaborated with FEMA to provide the communications unit leader training through FEMA's Emergency Management Institute.

[35]The Incident Command System is a management system designed to enable effective and efficient domestic incident management by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure.

and technical aspects of communications. For example, one of the unit leader's tasks includes developing a plan to coordinate the radio frequencies used by first responders, to help ensure interoperability. The unit may also include a communications technician who provides the technical skills to implement the required equipment and systems. OEC trained more than 8,000 individuals between 2007 and August 2017 to serve in communications unit positions, according to OEC information.

While stakeholders continue to face a range of emergency communications challenges, they are generally satisfied with DHS's technical assistance to help address them. Specifically, nearly all the stakeholders we contacted (36 of 41) were generally satisfied with technical assistance from OEC, FEMA, or both.[36] In addition, in 2016 we reported that all states had received OEC technical assistance and that almost all were satisfied with the support they received from OEC.[37]

When asked about the general topic of DHS technical assistance, more than half (25 of 41) of stakeholders we interviewed said that training for communications unit positions was useful in advancing emergency communications capabilities in their jurisdictions. OEC and FEMA also employ a "train-the-trainer" approach for the communications unit-leader course. Houston-area stakeholders told us that over 1,000 local personnel across the state had received communications unit training and that the area now has a large number of local trainers. Five stakeholders we interviewed for our Houston case study praised this training and said it was critical in preparing communications personnel to respond to Hurricane Harvey. Specifically, one stakeholder who served as a communications unit leader during Hurricane Harvey told us that this training prepared him to develop an effective interoperable radio communications plan for the storm. This individual also said that first responders who came to assist from outside the region often brought their own communications unit leaders with them, and because this training is

[36]As discussed previously, the Post-Katrina Act required DHS to provide technical guidance and training—which we refer to as technical assistance—to support interoperable communications in urban and other high-risk areas. However, OEC and FEMA provide technical assistance nationwide, so we asked all stakeholders we contacted about their experiences with technical assistance from OEC and FEMA. Not all stakeholders we contacted had experience with both OEC and FEMA technical assistance, and a few did not have recent experience with either.

[37]See GAO-16-681. We conducted a survey of statewide interoperability coordinators in all 50 states, the District of Columbia, and 5 territories and 52 coordinators responded.

consistent nationwide, the outside groups knew how the response effort would be organized and whom to call about which radio frequencies to use. However, a stakeholder from the Los Angeles area told us that while having the communications unit train itself was useful, it was insufficient without opportunities to practice the skills in real-life situations, a challenge that other stakeholders also noted in a recent RECCWG annual report. Based on feedback from state and local personnel, OEC is assisting states with establishing policies and procedures for their communications unit resources, including a process to demonstrate skills required for these specialized positions.

While stakeholders are generally satisfied with technical assistance, many (19 of 41) stakeholders said their jurisdictions would still benefit from additional technical assistance, aligning with a challenge we identified earlier regarding the need for training. Four stakeholders told us that OEC adapted technical assistance offerings to the needs of their jurisdictions. OEC officials told us that they customize technical assistance as needed—for example, when providing communications-planning support to a local jurisdiction, OEC will collect local agencies' policies and facilitate a discussion with stakeholders to determine the best overall approach. A stakeholder in Texas said that OEC's technical assistance—including communications-focused exercises and support with developing a statewide interoperability plan—had helped to advance capabilities in the state. Another stakeholder told us that FEMA's training has been critical in helping tribal nations build emergency-management programs, including providing an introduction to emergency communications. When asked about their experiences with technical assistance, six stakeholders specifically told us they had benefited from OEC's support with communications planning or coordination for special events, such as the Super Bowl. Each state or territory can request up to five offerings per year from OEC's technical assistance catalog, and OEC officials told us that, given their available resources, they can generally fulfill about 60–70 percent of requests each year.[38]

## Grant Funding

DHS administers several grant programs to help address emergency communications challenges. Three programs provided the majority of DHS's grant funding aimed at improving emergency communications from

[38]The statewide interoperability coordinator or other designated official receives requests for OEC technical assistance from public safety stakeholders within their state or territory and submit requests to OEC.

fiscal year 2011 to 2016, based on our analysis of data from FEMA's Grants Reporting Tool. FEMA administers these three grant programs, which are intended to support a wide range of emergency response capabilities, one of which is operational communications.

- Urban Area Security Initiative: Assists high-threat, high-density urban areas in efforts to build and sustain the capabilities necessary to prevent, protect against, mitigate, respond to, and recover from acts of terrorism. This assistance can include building, sustaining, and enhancing emergency preparedness activities, including emergency communications interoperability.
- State Homeland Security Program: Assists state, local, tribal, and territorial preparedness activities that address high-priority preparedness gaps across all emergency preparedness capabilities—including communications to prevent, protect against, respond to, and recover from acts of terrorism and other catastrophic events.
- Emergency Management Performance Grant: Assists state, local, tribal, and territorial emergency-management agencies in preparing for "all hazards," and can be used to support all capabilities, including communications. Each state and territory and the District of Columbia receive a base amount of funding, and the program requires recipients to commit matching funds.

According to FEMA's data, which is reported by recipients, between fiscal years 2011 and 2016 more than $700 million in grants were provided to support emergency communications, as described in table 1.

**Table 1: Approximate Amounts of Department of Homeland Security's (DHS) Funding for Emergency Communications Provided by Three Main Grant Programs (Fiscal Years 2011–2016), as Reported by Recipients**

| Grant program | Approximate emergency communications funding |
|---|---|
| Emergency Management Performance Grant | $37 million |
| State Homeland Security Program | $300 million |
| Urban Area Security Initiative | $377 million |
| **Total** | **$714 million** |

Source: GAO analysis of Federal Emergency Management Agency data. | GAO-18-379

Note: The three grant programs listed comprise the majority of DHS's funding that was used to support operational communications.

According to FEMA officials, these funding amounts are approximate totals because the recipient-reported data have certain limitations. For example, the information may be incomplete if the recipient does not submit required biannual reports.[39] In addition, FEMA officials told us that recipients identify which core capability the funding was used to support, but the data might not capture all aspects of a project because only one core capability may be selected at a time. FEMA officials told us that FEMA tracks funds obligated and dispersed at the overall grant level and uses the recipient-reported data to have a general understanding of how funding supports emergency communications and other capabilities. According to FEMA officials, recipient-reported data is sufficient for that general purpose. We have a substantial body of work related to DHS's grant program management[40] and in 2013 recommended that FEMA make improvements in collecting and validating performance data for certain grant programs. [41] FEMA implemented these improvements in 2017. FEMA officials told us they have also initiated a multi-year effort to improve the oversight and monitoring of grants and support data analytics for improved efficiencies—called the Grant Management Modernization program—which is scheduled to be operational in 2020. Given these ongoing actions, we did not assess FEMA's grants management efforts as part of this review.

Some state and local stakeholders told us that DHS grants (outlined in table 1 above) have allowed them to build and enhance communications capabilities that their jurisdictions would otherwise lack funding to address. These grants have been used to, among other things, build interoperable communications networks and purchase equipment, for example:

[39]FEMA officials told us that they check whether reports have been submitted and follow-up with recipients, but they noted some states are persistently late in submitting reports.

[40]For example, see GAO, *Federal Emergency Management Agency: Strengthening Regional Coordination Could Enhance Preparedness Efforts,* GAO-16-38 (Washington, D.C.: Feb. 4, 2016); *National Preparedness: Actions Taken by FEMA to Implement Select Provisions of the Post-Katrina Emergency Management Reform Act of 2006,* GAO-14-99R. (Washington, D.C.: Nov. 26, 2013); *National Preparedness: FEMA has Made Progress, but Additional Steps Are Needed to Improve Grant Management and Assess Capabilities,* GAO-13-637T (Washington, D.C.: June 25, 2013).

[41]GAO, *Grants Performance: Justice and FEMA Collect Performance Data for Selected Grants, but Action Needed to Validate FEMA Performance Data*, GAO-13-552 (Washington, D.C.: June 24, 2013).

- Urban Area Security Initiative grant funds were used to enhance a regional radio system in the Houston area. According to stakeholders, the system helped the region respond to Hurricane Harvey because it enhanced interoperability in the Houston area, so that first responders from multiple counties and agencies were all using the same system to communicate. Urban Area Security Initiative grant funds have also been used to help build the LMR component of an interoperable communications network in Los Angeles County.[42]
- Urban Area Security Initiative and State Homeland Security Program grants funds were used to build a large radio cache in Massachusetts, with over 400 multi-band radios that can be quickly deployed into the field to support both emergency and planned events across multiple jurisdictions. One stakeholder told us that these radios are requested on a regular, often weekly, basis.
- Emergency Management Performance grants have been used to establish and enhance state and local emergency operations centers across the country. These centers are activated during disasters and emergencies and provide a single location for leaders to coordinate the response effort, including the coordination of communications.

## RECCWGs Have Enhanced Capabilities in Several Ways, but Collaboration across Regions Is Limited

As part of the Post-Katrina Act, Congress established the RECCWGs to help address emergency communications issues, such as a lack of equipment interoperability. We found the RECCWGs have enhanced emergency communications capabilities through relationship building and information sharing—with demonstrated benefits. Although these groups have had successes, they still face challenges, such as ensuring continuous and broad participation and increasing the national visibility of the groups. Further, collaboration across these groups is limited. Without ways to collaborate across the regions, RECCWG members may be missing opportunities to share best practices and leverage the experience of their counterparts nationwide.

[42]This network, known as the Los Angeles Regional Interoperable Communications System, will consist of a radio system as well as a public safety broadband network that uses the FirstNet spectrum.

## RECCWGs Facilitate Relationship Building and Information Sharing, with Demonstrated Benefits

### Relationship Building

The RECCWGs bring together communications stakeholders from different levels of government and the private sector, and all of these groups have identified relationship building as a major benefit, according to our analysis of RECCWG annual reports and interviews with these groups' leaders. Members expand their professional networks and build relationships within their regions when they gather for in-person meetings and participate in regular conference calls. For example, a leader of one RECCWG told us that through these interactions, members learn about each other's areas of expertise and also make connections in the region. A leader of another RECCWG told us that his members were more willing to call on each other for assistance because of the strong working relationships they had developed in the group. The relationships established in these groups have facilitated cooperation and resulted in more effective emergency response efforts, as described below.

### Information Sharing

All of the RECCWGs share best practices and lessons learned, according to the groups' annual reports and the leaders of these groups. Information sharing takes a variety of forms, including discussing lessons learned after disasters or other major events, sharing experiences with new technologies, and presenting information from federal and private industry partners. For example, the Region X group reported in 2016 that members shared lessons learned after declared disasters in several states. Further, according to the 2016 RECCWG annual report, in Region VII, members from Nebraska shared their experiences with expanding their statewide LMR system. This expansion helped members in Iowa construct their own system in a more timely and cost-effective way. RECCWG members share information about communications resources within their regions; that information can be deployed when a disaster or emergency occurs. For example, nearly all of these groups (9 of 10) groups have or are working to compile information about communications assets, such as equipment and personnel. Information sharing about communications resources has been used to facilitate response efforts, as described below. The groups have helped promote awareness of developments in federal programs, such as the public safety broadband network, according to the 2016 RECCWG annual report. The groups also provide a forum for FEMA to understand the regions' capabilities, needs, and vulnerabilities. According to FEMA officials, they use this information

to develop regional plans that help FEMA assist the regions more effectively during a disaster.[43]

## Demonstrated Benefits

### Improved Response Capability

In several instances, RECCWG members have reported assisting each other during disasters and emergencies, drawing on the relationships and information sharing fostered by the groups. For example, a member of the Region I group, which includes New England, told us that prior to his group's formation, emergency communications stakeholders from different levels of government in that region did not meet. However, because of the relationships that regional group helped to build, these stakeholders now meet regularly to develop communications plans for large planned events and have collaborated to provide communications support in responding to the Boston Marathon bombing in 2013, Hurricane Sandy in 2012, and other events both within and outside of the region. According to a leader of the Region X group, relationships developed in the group were also helpful in responding to wildfires in Washington State in 2014 and 2015. In addition, after Hurricane Matthew and a major flood in 2016, Region IV group members drew on relationships developed in the RECCWG to coordinate support from other states in the region to assist South Carolina, according to a leader of that group. As discussed earlier, nearly all of these groups (9 of 10) have or are working to share information about resources that can be deployed during a disaster. At least three regions have consulted these resource compilations during recent disasters. For example, according to the 2016 RECCWG annual report, this information was used during Hurricanes Hermine and Matthew in 2016, severe storms and flooding in Minnesota and Wisconsin in 2016, and severe winter storms in New England in 2015.

### Technical Solutions

Several RECCWGs have or are working to develop technical solutions to enhance interoperability within or bordering their regions, according to the groups' annual reports, the leaders of these groups, and FEMA officials. For example, the group in Region V connected disparate statewide radio systems in Illinois, Indiana, Ohio, and Michigan, so that responders would be able to communicate in the event of a regional disaster or emergency.

[43]These plans are called Regional Emergency Communications Plans. FEMA has also worked with state, local, and tribal stakeholders to develop state annexes to these plans.

The Region VIII group, which includes the border states of Montana and North Dakota, is working to develop solutions to enhance interoperability among states in the region and with Canada. After the Deepwater Horizon oil spill in 2010, the Region IV group, which includes the southeastern states along the Gulf of Mexico, developed a communications network that is still in place and could be used for other events affecting the Gulf Coast. In 2011 this network was modified to connect to Arkansas and Louisiana's statewide communications networks, and was successfully tested during a multi-state hurricane evacuation exercise. The Region IV group is also working to identify technology to directly connect emergency operations centers in the southeastern states to coordinate assistance and evacuations when other communications methods fail, according to the 2016 RECCWG annual report.

### Policy Concerns Addressed

RECCWGs have addressed or are working to address several policy concerns based on joint positions developed within their groups, according to the groups' annual reports, interviews with RECCWG leaders, and FEMA officials. For example, RECCWG efforts led to changes in the National Telecommunications and Information Administration manual allowing for state and local use of federal interoperability channels, according to FEMA officials.[44] In addition, the Region I group raised concerns regarding an interoperability challenge with Department of Defense (DOD) first responders, resulting in a nationwide rule change for DOD's land mobile radios used for domestic response activities. After a corporate jet crashed at Hanscom Air Force Base in Massachusetts in 2014, local first responders could not communicate with the Hanscom Fire Department because the base's radio programming policies did not permit the use of interoperable radio channels. The RECCWG subsequently collaborated with DOD and other federal agencies on an initiative to program DOD radios with national

[44]The National Telecommunications and Information Administration has designated specific radio frequencies, known as federal interoperability channels, which are used among federal agencies and in situations when federal agencies require interoperability with non-federal entities.

interoperability channels.[45] In addition, during a Region VI group meeting, members learned that multiple states were experiencing a common problem with the use of national interoperability channels. They found that in multiple areas, local entities were using these channels for day-to-day operations, meaning they could not be reliably used during disaster and emergency situations because first responders experienced interference on these interoperability channels. In February 2017, the Region VI group raised its concerns to the Federal Communications Commission, which had licensed these channels to local entities for use on a secondary basis, and the group continues to work on addressing this issue. FEMA officials told us that the participation and involvement of federal agencies in the RECCWGs has been critical in addressing policy changes.

## RECCWGs Face Other Ongoing Challenges

Although the RECCWGs have cited several achievements, they have ongoing challenges, such as ensuring broad, continuous participation and establishing national visibility for the groups, according to their annual reports and interviews with group leaders and other selected group members. Various factors can make participation in these groups difficult. Participation is on a volunteer basis, in addition to members' regular work responsibilities, and some groups cover large geographic areas. Leaders or members from four RECCWGs told us their groups have had turnover in membership, such as when individuals move to other positions or retire. FEMA officials told us that this turnover is a challenge shared across the RECCWGs. In the 2016 RECCWG annual report, many of these groups reported progress in broadening and diversifying their membership. For example, 7 of 10 groups added state and local 911 representatives to their membership, and nearly all saw an increase in participation from cellular providers. However, four of the groups identified challenges with tribal participation in 2016, and all 10 groups reported that they have continued outreach to tribal nations in their respective regions. A representative from a tribal emergency-management organization told us that time and resource demands can affect the level of engagement from tribal members, because emergency response personnel for tribal nations often have many other primary responsibilities.

[45]The Federal Communications Commission has designated other specific radio frequencies as national interoperability channels, for use by the public safety community at the state and local levels. These channels are reserved for different agencies or jurisdictions to coordinate and resolve initial interoperability issues when responding to an incident.

The activity level and achievements also vary across the 10 RECCWGs, according to our analysis of the groups' reports, as well as interviews with group leaders, selected group members, FEMA officials, and other stakeholders. As noted earlier, each group determines its own activities. Stakeholders we interviewed told us that some regions have very active groups with many achievements, while other RECCWGs meet less frequently and have had fewer achievements. For example, stakeholders from Region I told us that they meet on a monthly basis and collaborate frequently outside of formal meetings. On the other hand, a leader from another region said that his group has not been very active in recent years. According to the 2016 RECCWG annual report, that group did not have any formal meetings in 2016, and instead stakeholders worked together through other coordination groups in the members' states and territories. We also found that the emergency communications stakeholders' awareness of the activities of the RECCWGs can vary. For example, two stakeholders told us they are interested in regional collaboration but were not aware that these groups existed. In addition, four other stakeholders we interviewed knew about the groups in their respective regions, but they told us the groups' activities were limited or they were not aware of what the group had done.

The RECCWGs have identified other issue areas they are working to address. For example, almost all of these groups (9 of 10) are working to improve the information that states, private sector partners, and others share about communications resources that can be deployed during disasters or emergencies, according to the 2016 RECCWG annual report. In addition, a member of one RECCWG told us it can be challenging to address policy concerns when federal agencies they contact are not aware of the groups or their purpose. This stakeholder said that it was important to increase the national visibility of the groups in order to improve their effectiveness. Increasing national collaboration, as discussed below, could be one way to address this concern.

## Collaboration across RECCWGs Has Been Limited

OEC's National Emergency Communications Plan—which OEC views as the nation's strategic plan for this area—established a vision of enabling the nation's emergency response community to communicate and share information across all levels of government, disciplines, and jurisdictions. This plan has prioritized enhancing coordination among stakeholders, processes, and planning activities across the emergency response community. In addition, our previous work has found that collaboration

can be used to address a range of purposes, including information sharing and communication. [46] In this work, we identified key considerations for implementing interagency collaborative mechanisms, such as ensuring that all relevant participants have been included. Federal internal control standards also speak broadly to the importance of communicating to achieve an entity's objectives.[47]

FEMA has taken some steps to encourage collaboration among RECCWG leaders, but broader collaboration across regions remains limited. RECCWGs have periodically shared information with their counterparts in other regions, but according to our analysis of the groups' annual reports and interviews with group leaders, these exchanges primarily involve one region working with another on an ad-hoc basis. For example, according to one group member in Region VI, members of other RECCWGs reached out to him to learn more about communications successes and challenges during Hurricane Harvey. FEMA has taken some steps to encourage information sharing and collaboration among the RECCWGs. Specifically, FEMA encouraged the establishment of a monthly conference call for RECCWG co-chairs in 2015, and its Disaster Emergency Communications division distributes a biweekly newsletter to RECCWG members, according to FEMA officials. However, there is not an ongoing mechanism for communication across all of the regions so that the full membership can effectively share information with each other and collaborate. While the co-chair conference calls are intended to enhance collaboration across the regions, the meetings do not involve the broader membership of the groups.

Most RECCWG leaders (15 of 20), as well as 9 other stakeholders, told us that more collaboration across the groups was needed. For example, four stakeholders explained to us that if a RECCWG in another part of the country has identified best practices it would be useful to share the information more broadly. Three other stakeholders who said their groups were less active told us it would still be helpful to receive information about what other groups are doing to enhance emergency communications. Stakeholders suggested several possible methods, such as an in-person conference or a national-level working group that functions using virtual or other means.

[46] GAO-12-1022.

[47] GAO-14-704G.

FEMA officials have considered ways to enhance collaboration but they face certain limitations. Specifically, FEMA officials told us they had considered an in-person national conference, but FEMA's budget for the groups was limited and a national conference would be too resource-intensive. FEMA officials also explained that they facilitate the groups, but the groups are run by their members. According to FEMA officials, they have tried some ways to enhance collaboration across the RECCWGs, such as by encouraging the groups to extend meeting invitations to other regions and use online portals for collaboration. Developing and implementing an appropriate ongoing mechanism for collaboration may be a worthwhile investment because it could further enhance the RECCWGs' efforts to improve emergency communications. Reaching a consensus with RECCWG members may help FEMA determine options that are both useful for the membership and feasible, given FEMA's resource constraints. In the role as a facilitator for RECCWGs FEMA is well positioned to lead this effort.

Without ways for all members of the RECCWGs, not just the groups' leaders, to collaborate across regions, members may be missing opportunities to share best practices and leverage the knowledge and experience of their counterparts throughout the nation. For example, lessons learned from Hurricane Harvey and other natural disasters in 2017—such as how first responders used interoperability channels effectively—may not be shared across all of the regions without additional methods for collaboration. Further, several of these groups are working to address similar challenges and priorities, as discussed above. For example, nearly all of the groups want to improve the way information about emergency communications resources is shared in their regions, so that these resources can be better leveraged during disasters and emergencies. Some of the RECCWGs have explored ways to better leverage these resources, but in the absence of methods to exchange information more broadly, RECCWGs may not be able to easily share what has been successful for their regions.

## Conclusions

When disasters strike or emergencies arise, they can span multiple jurisdictions, making coordination and collaboration critically important for effective emergency response. The RECCWGs established by the Post-Katrina Act have enhanced emergency communications within their regions. While the relationship building and information sharing within these groups have contributed to benefits at the regional level, nationwide collaboration among the groups has been more limited. Such collaboration could help the groups address common challenges by

providing a way to improve the sharing of best practices and lessons learned and to allow members to leverage the knowledge and experience of their counterparts to improve emergency communications capabilities in their regions and nationwide. Therefore, it could benefit FEMA to work with these groups to reach consensus on and to implement a mechanism for accomplishing cross-regional collaboration. A concerted effort focusing on these groups' collaboration needs, while also considering FEMA's resource constraints, could help FEMA and regional stakeholders determine an appropriate mechanism for collaboration moving forward.

## Recommendation for Executive Action

The Administrator of FEMA should work with RECCWG members to reach consensus on and implement an ongoing mechanism to encourage nationwide collaboration across these groups, considering the costs of one or more suitable methods, such as a national-level working group that uses virtual or other means of coordination, as appropriate. (Recommendation 1)

## Agency Comments

We provided a draft of this report to DHS for review and comment. DHS provided written comments, which are reprinted in appendix I. In written comments, DHS concurred with our recommendation and provided an attachment describing the actions it would take to implement the recommendation. DHS noted that FEMA is committed to increased collaboration among RECCWGs to coordinate multi-state efforts and measure progress on and improving survivability, sustainability, and interoperability of communication at the regional level and nationwide. Separately FEMA provided technical comments that we incorporated as appropriate.

As agreed with your offices, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies to the Secretary of Homeland Security and appropriate congressional committees. In addition, the report will be available at no charge on the GAO website at http://www.gao.gov.

If you or members of your staff have any questions about this report, please contact me at (202) 512-2834 or goldsteinm@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may

be found on the last page of this report. Major contributors to this report are listed in appendix II.

Mark L. Goldstein
Director, Physical Infrastructure Issues

*List of Requesters*

The Honorable Ron Johnson
Chairman
The Honorable Claire McCaskill
Ranking Member
Committee on Homeland Security and Governmental Affairs
United States Senate

The Honorable Michael McCaul
Chairman
The Honorable Bennie Thompson
Ranking Member
Committee on Homeland Security
House of Representatives

The Honorable Daniel M. Donovan, Jr.
Chairman
The Honorable Donald M. Payne, Jr.
Ranking Member
Subcommittee on Emergency Preparedness, Response, and Communications
Committee on Homeland Security
House of Representatives

The Honorable Susan Brooks
House of Representatives

The Honorable Martha McSally
House of Representatives

# Appendix I: Comments from the Department of Homeland Security

U.S. Department of Homeland Security
Washington, DC 20528

Homeland Security

April 10, 2018

Mark Goldstein
Director, Physical Infrastructure Issues
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Re: Management Response to Draft Report GAO-18-379, "EMERGENCY COMMUNICATIONS: Increased Regional Collaboration Could Enhance Capabilities"

Dear Mr. Goldstein:

Thank you for the opportunity to review and comment on this draft report. The U.S. Department of Homeland Security (DHS) appreciates the U.S. Government Accountability Office's (GAO) work in planning and conducting its review and issuing this report.

The Department is pleased to note GAO's recognition that the Regional Emergency Communications Coordination Working Groups (RECCWGs) established by the Post-Katrina Act have enhanced emergency communications within their regions. FEMA is committed to increased collaboration among these groups to coordinate multi-state efforts and measure progress on and improving the survivability, sustainability, and interoperability of communication at the regional level and nationwide.

The draft report contained one recommendation with which the Department concurs. Attached find our detailed response to the recommendation. Technical comments were previously provided under separate cover.

Again, thank you for the opportunity to review and comment on the draft report. Please feel free to contact me if you have any questions. We look forward to working with you again in the future.

Sincerely,

JIM H. CRUMPACKER, CIA, CFE
Director
Departmental GAO-OIG Liaison Office

Attachment

## Attachment: Management Response to Recommendation Contained in GAO-18-379

GAO recommended that the Administrator of FEMA:

**Recommendation:** Work with RECCWG members to reach consensus on and implement an ongoing mechanism to encourage nationwide collaboration across these groups considering the costs of one or more suitable methods, such as a national-level working group that uses virtual or other means of coordination, as appropriate.

**Response:** Concur. In order to ensure broad, continuous participation and increase the national visibility of the groups to improve their effectiveness, FEMA and the RECCWGs will address the identified challenges including achieving interoperability of communication systems, obtaining funding, ensuring ongoing training, and increasing the emphasis on communications during emergency response exercises.

During 2018 – 2019, the FEMA Office of Response and Recovery, working with RECCWG Co-Chairs and the RECCWG membership, will propose an approach to formalize cross-regional coordination, and present recommendations for conducting a national RECCWG forum. Specific actions will include:

| Action | Estimated Completion Date (ECD) |
|---|---|
| Brief RECCWG Co-Chair Working Group on GAO report and recommendations | September 30, 2018 |
| Message GAO report recommendations to membership through scheduled monthly conference calls and plenary meetings | December 31, 2018 |
| Solicit member recommendations for national level engagement | March 31, 2018 |
| Based on member input, develop proposed national engagement approach with projected resource requirements | June 30, 2019 |
| Secure funding; implement based on available resources | September 30, 2019 |

Overall Estimated Completion Date: October 30, 2019.

3

# Appendix II: GAO Contact and Staff Acknowledgments

## GAO Contact

Mark Goldstein, (202) 512-2834 or goldsteinm@gao.gov

## Staff Acknowledgments

In addition to the individual named above, David Sausville (Assistant Director); Aaron Kaminsky (Analyst in Charge); Melissa Bodeau; Josh Ormond; Kate Perl; Cheryl Peterson; and Kelly Rubin made key contributions to this report.