

## SUGGESTED PLANNING ACTIVITIES FOR REGIONS AND STATES

In 2007, Congress required the Commission to assess the vulnerability of the Nation's critical communications infrastructure and the feasibility of various technologies to serve as a back-up communications system for emergency responders.<sup>1</sup> The Commission conducted extensive interviews with first responders and their emergency communications planners and managers. These interviews and discussions highlighted the continuing need to increase interoperability and revealed the role that joint operations planning and preparation plays in the achievement of such interoperability. Furthermore, the FCC's Public Safety National Coordination Committee<sup>2</sup> earlier recommended that interoperability planning be coordinated on a statewide basis and specifically that every state create a Statewide Interoperability Executive Committee (SIEC).<sup>3</sup>

The material in this web page is intended for SIECs and others responsible for planning interoperable emergency communications, specifically interoperable communications among emergency responders from multiple agencies and/or jurisdictions.<sup>4</sup>

The interviews with first responders and their emergency communications planners and managers illustrated the importance of advance planning and preparation among the agencies and

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<sup>1</sup> Section 2201(b) of the Implementing Recommendations of the 9/11 Commission Act of 2007, Pub. L. No. 110-53, § 2201(b), 121 Stat. 266, 539-540 (9/11 Act).

<sup>2</sup> The Public Safety National Coordination Committee was a federal advisory committee established by the Commission in 1999 to address and advise the Commission on operational and technical parameters for use of the 700 MHz public safety band. It also provided voluntary assistance in the development of coordinated regional plans.

<sup>3</sup> The following were the final recommendations on governance of interoperability planning: (1) that all states be required to create a Statewide Interoperability Executive Committee, or equivalent, within a time certain; (2) that SIECs be given jurisdiction over all interoperability channels; (3) that states create an interoperability plan and file same with the Commission within a time certain; (4) that the interoperability plan be timely updated whenever substantive changes are made to it, and, in any event, every three years; and (5) that state interoperability plans be accessible from an electronic data base by suitably authorized officials. *See Ex parte* letter from Kathleen M. H. Wallman, Chair, to Michael Powell, Chairman of the FCC, WT Docket No. 96-86, July 25, 2003, page 5.

<sup>4</sup> The Department of Homeland Security has developed a Statewide Communications Interoperability Planning (SCIP) methodology for states to use in developing their statewide interoperability strategic plans. See the SCIP web site (<http://www.safecomprogram.gov/SAFECOM/tools/scip/>, last visited May 7, 2008) and various pages linked to it for considerations in developing a strategic plan. Among the linked sites, strategic planning methods and questions and issues to consider are provided in the Statewide Interoperability Planning Guidebook ([http://www.safecomprogram.gov/SAFECOM/library/interoperabilitybasics/1311\\_statewideinteroperability.htm](http://www.safecomprogram.gov/SAFECOM/library/interoperabilitybasics/1311_statewideinteroperability.htm), last visited May 7, 2008) and the Statewide Communications Interoperability Planning (SCIP) Methodology v2.0 document (available at [http://www.safecomprogram.gov/SAFECOM/library/interoperabilitycasestudies/1223\\_statewidecommunications.htm](http://www.safecomprogram.gov/SAFECOM/library/interoperabilitycasestudies/1223_statewidecommunications.htm), last visited May 7, 2008). The strategic plans are intended to provide a future vision for communications interoperability and to align emergency response agencies with the goals, objectives and initiatives for achieving that vision across the State (or territory). Detailed planning and implementation are done in post-SCIP stages. The material provided in this web page is intended to complement SCIP efforts by helping planners when they get to the detailed planning and implementation stages.

jurisdictions that may require interoperable communications during a large-scale (regional, state, or larger) emergency, as compared with having a common network or networking technology.<sup>5</sup>

The responses to the 2007 southern California forest fires are illustrative of the importance of advance planning and preparation. The emergency communications systems in southern California are not based on a single network or system. Because they are instead a collection of systems used by multiple counties and agencies, responding agencies have applied a number of different technologies and methods coupled with advance inter-jurisdictional planning to respond effectively to wide-area emergencies like forest fires.<sup>6</sup> Despite lacking a single unifying network, they have developed plans that incorporate lessons learned from earlier emergencies.

In order to be best prepared to respond to a future large-scale emergency, a state would benefit from advance interoperability and resiliency planning, including training and exercises for emergency responders. Below we list planning activities that multiple entities indicated are useful whether the regions or states involved have a single unifying network or not. The planning activities described below permit the combination of feasible discrete solutions to assist efforts toward a cohesive solution for interoperable and resilient emergency responder communications.<sup>7</sup>

The following activities are suggested for SIECs and others planning interoperability to consider:

- Develop, document and implement standard operating procedures for facilitating interoperable communications during statewide or regional (multi-jurisdictional) emergencies. A number of factors to consider when doing this planning are described below.
- Interoperability
  - Develop a plan, including use of mutual aid<sup>8</sup> and interoperability channels and possibly the use of gateways,<sup>9</sup> for interoperable communications between systems that use

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<sup>5</sup> This Suggested Planning Activities list was composed as a result of interviews conducted for the report described in Section 2201(b) of the Implementing Recommendations of the 9/11 Commission Act of 2007, Pub. L. No. 110-53, § 2201(b), 121 Stat. 266, 539-540 (9/11 Act).

<sup>6</sup> See FCC Report to Congress, Vulnerability Assessment and Feasibility of Creating a Back-Up Emergency Communications System (Pursuant to Public Law No. 110-53), available at <http://www.fcc.gov/pshs/docs/clearinghouse/case-studies/ECS-vulnerability-assessment-report.pdf> (last visited Apr. 25, 2008).

<sup>7</sup> These are planning activities that interviewees found to be valuable. However, the list is not comprehensive. Other sources may provide planning recommendations, for example, the SAFECOM website and library, at <http://www.safecomprogram.gov> (visited May 7, 2008); and the FCC Public Safety & Homeland Security Bureau Best Practices web site, at <http://www.fcc.gov/pshs/clearinghouse/best-practices.html> (visited May 7, 2008).

<sup>8</sup> Mutual aid channels are channels available to public safety agencies that allow multiple agencies to coordinate their efforts as needed outside of their normal day-to-day operations. These channels, which are separate from the operational channels used by an agency, can be accessed by simply changing to the appropriate frequency. Thus, they can be especially useful during an emergency. Use is normally limited to interagency communication to allow multiple agencies to communicate directly with each other. Part 90 of the Commission's rules designates channels within each frequency band for mutual aid. In addition to the mutual aid frequencies specified in rules, agencies may agree to use common frequencies for this purpose. The primary advantage of mutual aid channels is that they permit emergency responders to use their own radios. This allows first responders to be familiar with the operation of the equipment.

<sup>9</sup> A gateway is a device used to interconnect networks of dissimilar technology, protocol or ownership.

disparate frequencies or incompatible technologies.

- Under some conditions, planning may be easier if the state is divided into regions, with multiple counties or municipalities in each region. (Sometimes a region may include parts of several states, such as the National Capital Region, which includes the District of Columbia and parts of Maryland and Virginia.) Initial plans may then be developed by region. With this approach, regions would include municipalities and counties likely to respond to each other's large-scale emergencies.
- Include in the planning process representatives of all agencies and jurisdictions whose cooperation may be needed during an emergency. These may include multiple counties and/or municipalities; police and fire departments, emergency medical services, 911 call centers, and federal entities.
  - Including representatives of the 911 call centers helps ensure that these centers stay functional and provide needed information to callers during large-scale emergencies.
  - Collocating police and fire department command centers in the same building with each other and with the 911 call center may facilitate interdepartmental communications during a crisis.
- Plan for communications among various agencies and municipalities that have implemented their own systems, including the use of different frequency bands (VHF, UHF, 800 MHz, 700 MHz). Consider the use of bridge and/or gateway technology to allow systems on different bands to interoperate.
- Plan for communication between and among those parties who will need to coordinate during an emergency. For example, agency supervisors need to be able to talk both with the people they supervise, and also with incident command. The planning process must identify these parties, assign them to appropriate talk groups, and ensure the talk groups are assigned to appropriate channels. The complicated nature of channel and talk group assignments makes advance planning of talk group assignments critical to successful emergency communications.
- Plan for re-use of frequencies, if necessary. This could include positioning agencies that use the same channels for internal communications far enough apart at the emergency site that they do not interfere with each other.
- Plan for the use of radio caches. Agencies can sometimes achieve interoperability by having one agency distribute cached radios to a visiting agency. Caching may be more cost effective if done on a regional or statewide basis. Rather than buying one cache per county, a few caches per state or region may be adequate.
  - Agencies must assign personnel to make sure that cached radios are maintained. Batteries must be charged. If there is any programmability of radios, the programs need to be updated. This is particularly important if one local agency is tasked to do the maintenance functions for other agencies and/or localities.
  - Not all caches necessarily should have the same kinds of radios. For example, in a rural area, a cache might be primarily VHF, but with some 800 MHz sets to connect

with police from outside the area. Other caches might consist of primarily 800 MHz sets. The number and kind of radios that go into each cache must be carefully planned.

- Formal procedures may be put in place to govern distribution of radios from cache in an emergency, and their return after the emergency.<sup>10</sup>
  - Instead of caching, some agencies can enter into agreements with vendors to quickly purchase or lease radios in an emergency.<sup>11</sup>
  - Arrangements to support data communications interoperability may be considered.
- Resilience and Capability for Back-Up
    - Specify environmental hardening requirements for emergency responder communications sites, including LMR towers. These specifications should address earthquake and fire damage in some areas, hurricanes and storms in others, or meet other requirements, depending on regional or state needs.
      - Power: Back-up generators can be installed at emergency communications sites. Plans should set regional standards for how long the generators should be able to operate without refueling, whether and how the network operations center will monitor fuel levels, who will refuel the generators, and how they will gain access, including proper credentialing.
    - Plan to replace a non-operating tower with a portable tower and any back-up generators, back-up equipment, and back-up microwave equipment for backhaul needed to make the portable tower work, including arrangements for frequency authorization/licensing if necessary. Portable towers and peripheral equipment can be mounted on trucks and/or trailers, depending on the terrain in the region or state. Plans should specify storage location and number of trucks or trailers needed. State and regional cooperation can reduce the number of trucks or trailers needed and, therefore, the total cost of systems on wheels. Instead of every county needing one or two, a few per region or even per state may be adequate, but this cannot be known without regional or state planning.
    - Plans may include interoperability gateways on wheels.
    - Plans may include the use of satellite communications, especially for replacing damaged backhaul facilities. However, satellite phones may be less useful in some areas because the signal fades under trees, can be blocked in urban canyons, and can not pass through buildings. Emergency responders who may use satellite phones should be trained in their operation and should use them in training exercises.

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<sup>10</sup> The National Capital Region has formal deployment procedures for its cache of radios. See [http://www.interoperability.virginia.gov/pdfs/NCR\\_Radio\\_Cache\\_Deploym\\_Procs.pdf](http://www.interoperability.virginia.gov/pdfs/NCR_Radio_Cache_Deploym_Procs.pdf).

<sup>11</sup>The State of Florida indicated that it has points of contact to quickly buy or lease radios through commercial vendors. Radios would be available within 24-48 hours. State of Florida, Presentation to FCC Staff preparing 9/11 Act Report (Oct. 23, 2007).

- Plans may include providing personnel with cords to re-charge their handsets with commercial power and/or an automobile's charger.
- Plans may include caches of spare parts.
- Plan to scale capacity in large-scale disasters. At times the cost of additional capacity may be prohibitive, but at least it can be considered early in planning. The planning can at least consider how many responders might arrive for a massive emergency, estimate how much capacity might be needed for those responders, and determine how it can be provisioned and its affordability.
  - Plans can specify features to be disabled during a disaster to allow capacity for more users (*i.e.* telephone interconnect, private calling).
  - Plans can prioritize talk groups and usage.
- Run detailed large-scale joint (multi-agency) training exercises on the statewide or regional interoperability plan implementations several times a year. Exercise the emergency responders' use of emergency communications in an impaired environment by simulating high usage situations and system failures. In both cases it is important to understand the ability of the communications infrastructure to switch gracefully to back-up systems in the event of failure of a primary system; and the ability of emergency responders to operate effectively in the backed-up environment. Such exercises may be less important where there are a sufficient number of actual emergencies and emergency responders gain adequate experience implementing the interoperability plan through implementation during those emergencies.
  - Evaluate success of exercises.
  - Determine if any other measures of plan effectiveness are needed prior to using it in an emergency.
  - Update the plan based on experience with exercises and actual emergencies, as needed.