



## Regional Emergency Support Function #2 Communications Infrastructure

### Regional Coordinating Organizations

Metropolitan Washington Council of Governments  
Washington Metropolitan Area Transit Authority  
Northern Virginia Transportation Council  
Capital Wireless Integrated Network (CapWIN)

### Local Government Communications Jurisdictions

Alexandria  
Arlington County  
Bowie  
College Park  
District of Columbia  
Fairfax  
Fairfax County  
Falls Church  
Frederick County  
Gaithersburg  
Greenbelt  
Loudoun County  
Montgomery County  
Prince George's County  
Prince William County  
Rockville  
Takoma Park

### State Government Communications Organizations

District of Columbia, Office of the Chief Technology Officer  
State of Maryland, Department of Budget and Management Wireless Office  
Commonwealth of Virginia, Department of Information Technology

### Federal Government Communications Organizations

National Communications System  
Federal Emergency Management Agency  
General Services Administration

### Private-sector Communications Organizations

Hardwire Telephone Service Providers  
Dedicated Line Circuit Providers

Cellular Service Providers  
Internet Service Providers  
Systems Integration Companies  
Emergency Broadcast Network

## **I. Introduction**

### **A. Purpose**

Regional Emergency Support Function (R-ESF) #2—Communications Infrastructure ensures the coordination and communication of information concerning hardware and capacity for interoperability. This function supports regional response efforts before, during, and after a regional incident or regional emergency.

R-ESF #2 will facilitate coordination and communication regarding technical communications requirements across the emergency continuum, including the Regional Incident Communication and Coordination System (RICCS), among R-ESF members, between R-ESF members, and with other key players in regional coordination and communication.

### **B. Scope**

R-ESF #2 facilitates the coordination and communication of information concerning regional actions to be taken to provide the required technical communications support to regional emergency coordination elements. This R-ESF will coordinate the establishment of required temporary communications and the restoration of permanent communications so that RECP communications can take place. R-ESF #2 covers hardware and technical communications procedures between jurisdictions, agencies, regional emergency support functions, the RICCS and within R-ESFs. However, communications within local jurisdictions are the responsibility of that jurisdiction. R-ESF #2 does not include the development of a message, but only the transport and delivery of the message. The primary point of coordination for R-ESF #2 is the Communications Infrastructure Work Group.

## **II. Policies**

- A.** R-ESF #2 will not usurp or override the policies of any federal agency, state government, or local government or jurisdiction.
- B.** The Metropolitan Washington Council of Governments (COG) will facilitate coordination among member organizations to ensure that the R-ESF #2 procedures are maintained and are in concert with the stated missions and objectives of the Regional Emergency Coordination Plan (RECP).
- C.** Essential elements of information (EIs) regarding communication infrastructure will be reported to the RICCS as required by the regional incident or regional emergency.

- D. R-ESF #2 will provide a liaison to R-ESF #5 as required.
- E. Communication tools currently in use or being developed throughout the region include but are not limited to the Washington Area Warning Alert System (WAWAS), Capital Wireless Integrated Network (Cap WIN), Project Agile, Cell on Wheels/Cell on Light Truck (COWS/COLT), and secondary hardwire and cellular services support capabilities. (See *Attachment 2-1* for details on these tools.)
- F. The following list includes communication tools that could be used to facilitate regional communications before, during and after a regional incident or regional emergency.
  - 1. Hardwire “plain old telephone service” (POTS) is available for the normal user. Users will compete with the balance of the regional population and will likely experience severe competition for dial tone. COG, as well as RICCS, can also provide conference bridging.
  - 2. Voice/text messaging cellular service provided by wireless carriers. Users compete with other subscribers for dial tone.
  - 3. Two-way, combination cellular and digital two-way radio service provides private network cellular service and point-to-point two-way radio service.
  - 4. Two-way pager service is a pager service capability combined with a wireless e-mail solution.
  - 5. Switch Redirect (SR) relocates government telephone numbers and subscribed services to local government incident command centers and other emergency locations. SR telephone numbers must be predesignated, and “unused” phones must be available to use at the incident command centers or emergency locations.
  - 6. GETS (Government Emergency Telecommunications Service) land line services, provided by the NCS (National Communications System) using commercial circuits/lines. Provides high-priority, long-distance circuits to complete local calls. Also provides long-distance calling. Local and long-distance calls will compete on the national security emergency preparedness federal government long-distance network. Users compete with other high-priority National Security Emergency Preparedness (NSEP) government users. Call completion depends on first obtaining local dial tone, which GETS does not provide.
  - 7. FTS (Federal Telecommunications System) 2001 land line services, provided by commercial vendors, through the General Services Administration. Provides high-priority, long-distance circuits to complete

local calls. Also provides long-distance calling and allows audio teleconferencing bridge services.

8. Essential Service Protection (ESP) is a service provided by commercial providers that allows for priority local dial tone. ESP can be set up for business, government, or residential phones of critical users.
9. Regional/jurisdictional government dedicated lines. Provides a discrete set of super users with non-competing local service throughout the government telephone network.
10. WAWAS and the National Warning System (NAWAS) provide dedicated line service to over 70 users. The Fire Mutual Aid Response System (FMARS), the Police Mutual Aid Response System (PMARS), and the Hospital Mutual Aid Radio System (HMARS) can also be used.
11. Satellite voice and data communications for either point-to-point communications or connection to networks to and from remote locations. This service can be for voice communications for meeting purposes or data connection for shared information traffic over commercial service providers.
12. High Frequency (HF) and/or Single-Side Band (SSB) radio communications for coordination of sites throughout the metropolitan area. This communication can be through equipment maintained within the jurisdictions, or through volunteer organizations that can coordinate communications for all member jurisdictions. Volunteer organizations, such as REACT and Civil Air Patrol, have extensive radio networks that can provide equipment as well as operators at all necessary locations.
13. The on-line regional tracking system\* will provide real-time information concerning a regional incident or regional emergency such as planned evacuation routes, locations of emergency relief shelters, etc. This software will be implemented at COG and licensed to each emergency management facility within the COG jurisdictions, as well as to state emergency management agencies. (\*Note: At this time, the e-Team software is being tested on a pilot basis for consideration as the regional tracking system.)
14. 1-800 numbers that allow users to access less compatible federal government long-distance circuits to complete local calls.

15. NSEP priority cellular service provides priority, non-encrypted service for emergency use over commercial cell networks.
16. HMARS, the Hospital Mutual Aid Radio System, is to maintain connectivity to health care facilities during times of emergencies.

### **III. Situation**

#### **A. Regional Emergency Condition**

A regional incident or regional emergency may result from a significant natural or man-made disaster, technological emergency, or any other regional event that causes extensive damage and/or results in a high volume of requests from all regional/local authorities for services required to save lives and alleviate human suffering. These authorities require accurate and timely information on which to base decisions and guide response actions. Examples of the types of events that could impact the member jurisdictions communications could include, but are not limited to:

- Electrical outage;
- Electromagnetic pulse radiological incidents;
- Cyber-terrorism;
- Infrastructure collapse;
- Snow/ice storms;
- Hurricanes;
- Flooding;
- Tornadoes;
- Earthquakes; and
- Urban fires.

During such catastrophic events, commercial communications facilities may sustain widespread damage. During these times, when the need for real-time electronically processed information is greatest, the capability to acquire it may be seriously restricted or nonexistent. In such situations, all surviving communications assets of the various government agencies, augmented by extra assets, will be needed immediately to ensure a proper response to the needs of victims of the event.

#### **B. Planning Assumptions**

1. Initially, regional and local officials will focus on coordinating lifesaving activities concurrent with re-establishing control in the disaster area. Working with the communications industry, officials will restore and reconstruct communications facilities as the situation permits.

2. Initial damage reports may be fragmented and provide an incomplete picture concerning the extent of damage to communication facilities.
3. Conditions may restrict the ability of suppliers to deploy mobile or transportable communications equipment into the affected area.
4. The affected area's ability to communicate with the rest of the region may be impaired. Some key individuals may be isolated from their offices and/or operational centers.

## **IV. Concept of Coordination**

### **A. General**

1. If COG or any other affected jurisdiction determines that an incident or emergency is of regional significance, they may implement R-ESF #2.
2. An R-ESF #2 representative from the affected jurisdiction will act as the R-ESF #2 lead.
3. The supporting regional agencies in charge of communications infrastructure will coordinate and execute their respective communication authorities and program responsibilities during the regional emergency.
4. R-ESF #2 will establish a capability to collect, analyze, synthesize, and disseminate regional information concerning regional technical communications, hardware, and communications-related issues to the RICCS, the R-ESFs, and the COG work groups.
5. R-ESF #2 will establish the capability to collect, analyze, synthesize, and disseminate regional information and regional recommendations concerning technical communications, hardware, and communications-related issues to the individual jurisdictions.
6. R-ESF #2 will coordinate the upkeep of call-down lists to foster regional communications in the course of a regional emergency and develop a list of chief technical officers who can provide communications advice and troubleshooting in the event of a regional emergency.
7. R-ESF #2 will develop an inventory of technical communications hardware and systems to facilitate communication in the course of a regional emergency.

## **B. Organization**

Operations for a regional incident or regional emergency will normally begin when the RECP is used. R-ESF #2 will selectively activate specific support activities based on the nature and scope of the event, the types of service disruption (e.g., voice, data, e-mail, Internet), and other regional resources required to support coordination and communication efforts.

## **C. Notification**

If COG or any other R-ESF #2 communications infrastructure organization, agency, or jurisdiction determines that an event is of regional significance, they may contact the RICCS concerning the regional incident or regional emergency and ask that the CAOs, Communications Work Group, and/or the Communications Infrastructure Work Group be notified of the incident. There will be RICCS centers in Maryland, Virginia, and the District within the respective emergency operations centers. Regional notification can originate from any one of these centers depending upon the location of the emergency incident. Aside from regional incident notification, these RICCS centers will also be responsible for organizing coordination conference calls and facilitating regional decision-making.

## **D. Coordination**

### **1. Initial Actions**

Prior to a regional incident or regional emergency, R-ESF #2, through the Communications Infrastructure Work Group, will develop and make accessible call-down lists and technical communications hardware resources to the RICCS and the jurisdictions. In addition, R-ESF #2 will make recommendations to the RICCS and to the jurisdictions as to what types of communication technical systems and hardware should be in place to ensure effective and redundant communications throughout the region in the event of a regional incident or regional emergency.

R-ESF #2, through the Communications Infrastructure Work Group, will work to ensure interoperability among communication systems used in the region. In the event of a regional incident or regional emergency, it is necessary that the local entities be able to talk with state entities and states with local entities. As a regional incident or regional emergency occurs, first responders will be state and/or local public safety officials. These officials, within their jurisdictions, should have the capability to notify state emergency managers who can then utilize the RICCS.

If necessary, upon receipt of information concerning a possible regional incident or regional emergency, the RICCS will contact the Communications Infrastructure Work Group (or the RICCS Protocol once developed) for information and guidance on the situation and ongoing response planning.

## **2. Continuing Actions**

As needed, the Communications Infrastructure Work Group can be convened or a conference call can be held to find additional solutions to technical or hardware-related communications problems or to assist with other communications-related issues.

R-ESF #2, using the RICCS through R-ESF #5, will continue to provide updated information concerning the event(s) on a regular basis with information coordinated through the initiating organization or jurisdiction.

R-ESF #2 will provide an online Regional Incident Tracking System during all phases of the regional incident or regional emergency, from response to recovery and mitigation. This system, like RICCS, will aid in providing continuing updated information concerning the event(s) on a regular basis. This software will be implemented by COG as well as licensed to COG jurisdictions. (Note: As a pilot program, COG has entered into a contract with E-Team, Inc., to provide a regional incident tracking system. The pilot program is being tested at the Maryland, Virginia, and District of Columbia emergency communication centers, in counties in Maryland and Virginia, and by key federal agencies.)

## **3. Stand Down**

At the point where the regional incident or regional emergency is no longer affecting more than one jurisdiction, a notification will be made through the RICCS and a stand-down debriefing conference call will take place. It will be the responsibility of the initiating jurisdiction or organization, with coordination of all impacted jurisdictions, to make this determination and contact the RICCS.

## **4. After-action Critique**

Within two weeks of the stand down from the regional incident or regional emergency, the chairperson of the Communications Infrastructure Work Group will gather information for an after-action critique. Once the chairperson gathers the initial information, it will be summarized into a report format and provided to all involved jurisdiction work group members for review and comment to create a final document. The final document will be provided to the full working group before the next

meeting to allow for prior review and a more informed and detailed discussion at the scheduled meeting.

## V. Responsibilities

### A. R-ESF #2 Participating and Support Agencies

Jurisdiction emergency support function leads and emergency communications center coordinators participating in a regional response will, to the best of their ability, contribute information to RICCS as required by the incident and RECP policy.

### B. Essential Elements of Information

1. One of the primary purposes of the RECP is to facilitate the exchange of information among the signatory agencies during emergency situations. R-ESF #5—Information and Planning, is responsible for the exchange, analysis, reporting, and dissemination of regional information. The R-ESF #5 Annex to the RECP contains detailed information about the process of information exchange and describes regional EEs that have been determined as the minimum essential information categories to satisfy coordination needs among the R-ESFs and with the RICCS.
2. From the perspective of R-ESF #2—Communications, the agencies are responsible for providing the following EEs concerning regional public emergencies involving regional communications functions:

- Major communications equipment needed;
- Location of alternate EOCs;
- Status of key contractor support;
- Status of regional incident tracking software;
- List of working phone numbers/lines/systems;
- Status of communication systems;
- Status of operating facilities;
- Status of key personnel;
- Resource shortfalls;
- Overall priorities for response;
- Status of R-ESF activation;
- Historical and demographic information;
- Status and analysis of initial assessments (needs assessments and damage assessments, including preliminary damage assessments);
- Status of efforts under federal emergency operations plans; and
- Logistical problems.

3. It will be the responsibility of the initiating organization or jurisdiction to provide regular updates for the RICCS to distribute. These updates should

take into account information gathered from all jurisdictions and organizations impacted by the event.

## **VI. Preparedness Cycle**

The Preparedness Cycle is a means of ensuring a high level of readiness for the RECP through continuous improvement in the plans and procedures. The cycle begins with sound planning practices, followed by training of personnel who will be engaged in executing those plans. When personnel have been trained, plans and procedures are tested through exercises or simulations designed to check planning assumptions against a range of scenarios. The performances of the respective organizations are evaluated as a means of refining the plans and the cycle repeats.

### **D. Planning**

The Communications Infrastructure Work Group and COG are responsible for coordinating planning under R-ESF #2, including review and recommending revisions of R-ESF #2. All participating communications agencies will contribute to the planning of R-ESF #2.

Planning will include a comprehensive assessment of current capabilities in the communications sector and identification of unfunded regional urban communications emergency response and coordination needs.

### **E. Training**

Ongoing and scheduled training related to the RECP and R-ESF #2 responsibilities will be developed by the Communications Infrastructure Work Group. Training courses will involve familiarization with RICCS and other communications systems and will be available to all COG jurisdictions. This training will be both concept and practical in nature, so that not only will the ideas behind these systems be taught but also the actual operation of the individual components that make up these systems will be addressed. The RICCS training sessions are recommended for anyone who can or might possibly utilize or update the system from the jurisdictions, as well as the centers that support the RICCS system in the three jurisdictional locations. These courses could include but are not limited to, the:

1. RICCS protocol;
2. RICCS standard operating procedures;
3. RICCS equipment and operating system awareness training; and
4. Regional Emergency Coordination Plan awareness training.

### **C. Exercises**

In order for the RECP to be effective, a series of communication simulations/exercises are conducted on a regularly scheduled basis. The exercises should provide emergency simulations that promote preparedness; improve the coordination capability of individuals and organizations; validate plans, policies, procedures, and systems; and determine the effectiveness of the system. Specifically these exercises will consist of scenarios involving incidents relevant to communications infrastructure, such as events in which communication systems are disabled. Examples of emergency exercises include:

1. Tabletop exercises, which are designed to elicit constructive discussion as participants examine and resolve problems based on existing plans.
2. Drills, which are designed to provide training with new equipment, to develop new policies and procedures, or to practice and maintain current skills.
3. Functional exercises, which are used to validate the capability of a system and focuses on policies, procedures, roles and responsibilities during and after any emergency.
4. Full-scale exercises, which are designed to evaluate the operational capability of a system when some or all the jurisdictions are involved and participating. This type of exercise would be carried out during a concurrently scheduled regional exercise, to get the best results and not impact upon the jurisdictions normal operations.

#### **D. Evaluation**

In order to ensure continuous improvement in the communications function and in the RECP, the plans, policies, and procedures that support operational proficiency are evaluated through real-world experience and exercises.

#### **E. Corrective Action**

Lessons learned from exercises and real world experiences will be captured in a corrective action system and the issues tracked to ensure that they are resolved and incorporated into plan revisions as appropriate.

**Attachment 2-1—Regional Communication and Coordination Technologies**

**Capital Wireless Integrated Network (CapWIN)**—A project managed by the University of Maryland, Engineering Center for Advanced Transportation Technology, demonstrating interoperability related to data sharing among public safety agencies in the District of Columbia, Maryland, and Virginia.

**Project Agile (Interoperability Strategies for Public Safety)**—Suite of communications and data interoperability projects funded by the National Institute of Justice, specifically the Alexandria Police Department ACU-1000 project.

**National Warning System (NAWAS)**—A dedicated telephone circuit connecting federal, state, and county emergency operations centers (EOCs) and emergency communications centers (ECCs).

**Washington Area Warning System (WAWAS)**—Local region version of NAWAS including telephones at most federal agencies, local 911 centers, and EOCs.

**Cell on Wheels (COW)**—Mobile, self-contained cell site to add extra capacity to a cellular carrier's system in a given area.

**Cell on Light Truck (COLT)**—Self-contained cell site mounted on a small truck.

**COG Channels, COGMARS Channels, Washington RINS Channels**—Three different names for the same set of six additional 821 Mhz NPAPAC frequencies set aside by Region 20 for interoperability among COG agencies.

**E-Team**—An online incident management tracking system software with the capability to provide real-time incident information, and updates during a regional emergency. This system is currently being pilot tested.

**Police Mutual Aid Radio System (PMARS)**—A primary regional communications system that is a dedicated 800 Mhz radio channel, that provides a voice circuit among area government/agency police departments.

**Fire Mutual Aid Radio System (FMARS)**—Dedicated VHF radio channel that provides a voice circuit among COG jurisdictions' fire departments.

**Hospital and Mutual Aid Radio System (HMARS)**—A system designed to maintain connectivity to healthcare facilities during times of emergencies. The network includes all acute care hospitals and some others (but at this time not psychiatric hospitals) in DC as well as Fairfax Hospital, The Navy Medical Center in Bethesda, and some DC government agencies.

**Lo-Band, VHF, UHF, UHF-T Band, 800 Mhz, 821 Mhz NPSPAC**—Frequency ranges assigned to different federal, state, and local government public safety agencies.

**800 Mhz Trunked Radio System**—Type of radio system operated by a number of COG jurisdictions that allows many users to share a limited number of radio channels yet operate as if they have a dedicated channel for their own use.

**National Public Safety Advisory Committee (NPSAC)**—FCC-sponsored group of volunteers that assisted with the assignment process for a separate band of public safety frequencies authorized after the Air Florida disaster.

**Region 20 (MD, VA, DC)**—One regional volunteer committee of 55 regional committees established by the FCC to assist in the orderly assignment of public safety channels from the 821 Mhz NPSAC frequency pool.

**I-CALL, I-TAC1, I-TAC2, I-TAC3, I-TAC4**—821 Mhz NPSPAC channels set aside nationally and internationally to permit mutual aid operations on common channels by all agencies that have 800 Mhz portable and mobiles.

**ACU-1000**—Manufacturer's trade name for an audio patching device that is used to connect separate radios, telephones, and/or cell phones together to permit seamless voice communications between users of different radios.

**Public Safety Wireless Network (PSWN)**—Joint Department of Justice and Department of Treasury program that promotes federal and local government communications interoperability and sponsors innovative pilot projects.

**Instant Messenger**—Software that once downloaded on to a computer, PDA, or cell phone allows the user to communicate with other users through instantaneous text messaging.

**Web hosting**—A host website developed by the COG Communications Infrastructure Work Group with an internet service provider, and in an emergency, is willing to be called upon to help shift and direct traffic so that websites can handle extra user load.

**Service Keyword**—An internet service provider is willing to add a keyword or post a specific area on their internet service under the Government guide section that will connect users to regional emergency information.

**Satellite-based Technology**—Communications systems that are not prone to the same outages as terrestrially based systems.