

Annex 2 to Florence County EOP  
ESF 2  
Communications

PRIMARY: Florence County Communications Department

SECONDARY: Florence County Central Dispatch  
Florence County MIS Dept.

I. Introduction

Communications within the context of this annex includes telephone, teletype, radio, pager, TDD, computer and internet forms of transmitting messages and request. Written forms of communications fall under the responsibility of the PIO (see ESF-15, External Affairs).

II. Concept of Operations

The primary mission of ESF-2 is to maintain the continued operation of all communications systems necessary for the direction and control of any emergency situation within Florence County. ESF-2 will be responsible for development of written plans and procedures to ensure continued operations of the county E911 center, Central Dispatch facility and the county 800 MHz radio system. ESF-2 will also oversee coordination of county pager and cell phone service with private vendors.

III. Specific Responsibilities

A. Florence County Communications Department.

1. The county Communications Manager will ensure this annex, as well as the warning paragraph of the Basic Plan (page 9, Section V.), is accurate and up to date.
2. Be prepared to deploy and operate the Mobile Communications and Command Trailer to any incident scene upon the request of the IC and /or direction of the EM Director. Provide communications support in the form of advice and extra equipment to the IC as needed.
3. Coordinate with AT&T, Frontier and FTC (Farmers Telephone Coop.) to develop, test and maintain a disaster recovery plan to ensure continued operation of the county E911 system.
4. Manage (and coordinate the restoration of, if necessary) the county's emergency radio communications system, to include 800 MHz and VHF.

5. Coordinate with area cell phone and paging companies to acquire and distribute additional wireless communications devices as needed.
6. Coordinate computer support for disaster operations (EOC and field sites).
7. Maintain a presence in the EOC when activated.
8. Provide warning and notification to all First Responders in accordance with Central Dispatch SOG.

B. Florence County Central Dispatch.

Provide personnel to staff Mobile Communications and Command Trailer and/or alternate EOC and Dispatch Center.

C. Florence County MIS Department.

Assist in computer operations and support of the EOC and Central Dispatch, as well as, the Mobile Communications and Command Trailer.

IV. State Interface

This annex is supported by ESF-2 (Communications) at the state and federal level. County ESF-2 is authorized direct contact with the state ESF-2 for the purpose of coordination and information exchange. Primary point of contact for state ESF-2 is Budget and Control Board, Chief Information Officer (B&CB, CIO). National Communications System is the lead agency for federal ESF-2.

Appendixes:

- A – Communications Plan
- B – E-911 Disaster Recovery Plan
- C – Reach SC, Reverse 911 Plan

Appendix A (Communications Plan)  
To  
Annex 2 (Communications)  
To  
Florence County EOP

I. Introduction

For the purpose of communicating with private businesses, local, county, state and federal government during emergency and disaster situations, Florence County Emergency Management (FCEMD) may utilize any or all of the following communications networks:

Florence County 800 MHz radio system; Palmetto 800 MHz radio system, Lo Band LGR network, satellite radio-telephone, public utility landline telephone networks, public cellular telephone networks, Civil Air Patrol VHF radio network, Federal Bureau of Investigations VHF network, National Alert Warning System (NAWAS), IPAWS (Integrated Public Alert and Warning System), other public and privately owned VHF and UHF networks as well as local amateur (Ham) operator's VHF and UHF networks.

II. Purpose

This plan explains the various communications systems used by Florence County government and gives a brief explanation of the various redundant systems in place to ensure continuous operations during disasters.

III. Concept of Operations

1. E-911 Public Safety Answering Point

All Florence County public safety agencies are dispatched by the Florence County Central Communications Center (Central) located at 6719 Friendfield Road in Effingham, South Carolina. Central serves as a consolidated Public Safety Answering Point (PSAP) and receives all 911 calls placed anywhere within the 805 square miles of Florence County or any of the county's nine municipalities. Central dispatches all emergency service agencies within the county. Central dispatches twelve (12) fire departments operating from 36 stations, nine (9) municipal police departments, three (3) rescue squads, county EMS and the county Sheriff's Office.

Central has eight (8) radio dispatch / call taking positions and one call taker position. There are eight (8) 911 trunk lines, four (4) seven digit lines, six (6) cellular backup lines, and six (6) in-house extensions that have outside line access. These extension lines are used primarily for dialing out of Central. The 911 lines, seven digit lines and cellular lines are structured in a hunting and rollover group. In the event of a failure of the 911 trunks, in-coming emergency calls are automatically routed to the 7-digit emergency lines. If the 7-digit emergency lines fail or if the wire line service to Central is interrupted, then, all emergency calls are automatically routed to the cellular (wireless) network. Wireless access is provided by Verizon Wireless and FTC/AT&T. Two cellular carriers are used to provide diversity and additional redundancy in our wireless network.

Central does not accept automatic telephone dialing equipment alarms.

All telephone and primary dispatch radio traffic in Central is recorded on a Verint Digital Recorder, Audio Log Max Pro with Network Storage capability. Archives are kept for a minimum of sixty (60) days in accordance with South Carolina state law. Each dispatch console has the capability of immediate playback of all telephone calls and radio dispatch traffic via dual channel digital recorder system that is interfaced with the Motorola dispatch consoles.

Telecommunicators work twelve (12) hour shifts and are not allowed to sleep while on duty. Shifts change at 7am and 7pm. There are a total of eight (8) telecommunicators assigned to each shift; six (6) telecommunicators, a shift supervisor, and an assistant shift supervisor. Central employs thirty five (35) full time and eight (8) part-time telecommunicators. Additional personnel are scheduled to supplement the shifts as needs for special events and peak traffic times. Each working shift is supported by at least one designated on-call person. Additional dispatch personnel are assigned to support the county EOC at any time during activation.

While consoles are identified for dispatching of specific emergency services (Fire, EMS, Law) all consoles in Central have the same ability for communicating on all dispatch talkgroups. Central has 800 MHz desktop control stations and 800 MHz portables assigned to each dispatch position to serve as a backup in the event of a console failure. Central also has two VHF control station with tone encoding ability that can be used in the event of a failure that affects our 800 dispatch ability. The VHF back up radio can access the repeater channel or the direct mode for activating the VHF pager system for alerting.

Central's electrical service is connected through a "best" 10KVA UPS system. Auxiliary power is provided by an automatic starting 267KW generator that is tested weekly under load. The electrical service and lightening protection equipment serving Central was upgraded in November 2003. (The county EOC, which is co-located in the same facility, is protected by similar lightening protection and UPS systems). In the event of a failure of the commercial electrical service, UPS back-up system and/or the onsite generator, Central and EOC have the ability to quick connect to the county's mobile mounted 50KW Onan diesel powered generator through a transfer switch and quick connect plug.

## 2. Radio System

Florence County owns and operates a four site, 11 channel Motorola 800 MHz Smartnet radio system for all primary public safety radio communications. This network provides mobile and portable coverage throughout Florence County with towers located in Florence, Effingham, Lake City and Pamplico.

For back up to the primary communications network and mutual aid operations, Florence County maintains eleven fixed mounted 800 MHz conventional repeaters and one mobile 800 MHz conventional repeater. Eight of these repeaters are set up on the National and State conventional mutual aid frequencies and the other four are frequencies assigned to Florence County.

Florence County maintains interoperability agreements with Motorola-Palmetto 800 MHz system for access to the state-wide PAL 800 network. This agreement ensures back up communications for the county system as well as communications with state and other county agencies operating on the PAL 800 network.

FCEMD will utilize the assigned talkgroups on the Florence County 800 MHz radio system to communicate with all Florence County and municipal emergency agencies.

FCEMD will utilize the assigned talkgroups on the Motorola- Palmetto 800 MHz radio system to communicate with state agencies operating on the PAL 800 system. Those state agencies not utilizing radio communications will be contacted via public telephone network or cellular network.

Florence County is a member of the local government communications association and maintains general interoperability agreements with all county owned 800 MHz trunked systems. Florence County has specific mutual aid agreements with Horry, Marion and Sumter counties. These agreements allow for mutual aid communications among these counties during times of emergency or disaster. All communications with Horry, Marion and Sumter counties will be conducted by telephone or by mutual aid 800 MHz talkgroups using one of the private systems as determined by the need of the operation at that time.

FCEMD will communicate with the other Pee Dee counties by public telephone network, the Palmetto 800 Region 5 or PD-EMD talkgroup, LGR Network or by satellite radio/phone.

The redundancy, which is automatic and built into our 4-site 11-channel trunked system, includes Failsoft operation (see Failsoft section for detail explanation), UPS systems, generator power, parallel electrical panels, dual system controllers (A and B) and dual transmit antenna networks.

All radio tower sites are powered by “Best” UPS systems and auto starting generators. Generators at the radio tower sites are tested weekly under load exercised and quarterly for a period of three to five days under load to test the ability to run for extended periods of time. Refueling of these generators is the primary responsibility of Florence County Public Works, but FCEMD does have the ability for our communications technician to transport a maximum of fifty gallons of fuel with his vehicle. Agreements for purchasing commercial fuel are in place if necessary.

All radio tower sites have the ability to quick connect a mobile mounted 50KW Onan diesel powered generator by using a transfer switch and quick connect plug. This will ensure continued power in the event of a failure of the commercial power service, UPS and fixed mounted generator.

### 3. Fire Department Communications

Central communicates with the fire departments via the 800 MHz trunked radio system for all primary radio traffic. The alarm is broadcast over a dedicated channel for each department. Some departments use a multi-channel configuration that allows alerting and dispatch traffic on one talkgroup and tactical operations on a separate talkgroup. Once on scene, the fire ground commander communicates with Central via a dedicated “command” channel.

The following Florence County talk groups are for specific fire department use:

| <u>Talkgroup</u>       | <u>Use</u>   |
|------------------------|--|
| <b>FD ALERT</b>        | The dispatcher tones all calls with directions and information on this talkgroup, no other radio traffic is allowed on this talkgroup.   |
| <b>FD DISPATCH</b>     | After the call is alerted, trucks and officers sign on and conduct all necessary radio traffic while enroute to call.  |
| <b>FIRE TAC 1-5</b>    | While on the fire scene, the fire commander has access to five system talkgroups for tactical operations.  |
| <b>FIRE GROUND 1-5</b> | While on the fire scene, the fire commander has access to five conventional, direct mode only, fire ground channels.   |
| <b>FIRE COMMAND</b>    | This talkgroup is dedicated for the fire ground commander to communicate with the dispatch center without any interference.  |
| <b>FIRE CALL</b>       | This talkgroup is dedicated for “call in” traffic to Central. For example: A fire unit, under normal daily activities, driving up on a motor vehicle accident would use this talkgroup to report the accident. |
| <b>DEPT. ADMIN.</b>    | Each fire department has an administrative talkgroup assigned for daily, in department, work activities. This talkgroup is not monitored in Central.   |

All fire alerts are simulcast over each department’s VHF/Lo Band system and the department’s 800 trunked talkgroup. Fire department members are issued pagers for receiving the alert tone and voice transmissions.

Central has the ability to send immediate faxes of the 911/CAD call screen to the fire department if they request this feature. The same information can also be seamlessly sent to alpha pagers if requested or as a text message to a cellular device if requested.

#### 4. Law Enforcement Communications

Central communicates with all municipal and county law enforcement agencies via the 800 MHz trunked radio system for all primary radio traffic. State and Federal law enforcement agencies operating within the county can also communicate via the PAL 800 system.

Florence County Sheriff's Office, City of Florence Police Department and the Lake City Police Department each have several agency specific talkgroups for their own specific or specialized use. Due to the high volume of radio traffic for these two departments, the Sheriff's Office and the City of Florence Police Department are operated, under normal conditions, from separate dispatch console in Central.

The other seven municipal police departments (Coward, Scranton, Olanta, Quinby, Pamplico, Timmons ville and Johnsonville) share a separate primary and secondary police dispatch talkgroup. These departments are served from a single dispatch console under normal conditions but can be supplemented by additional consoles if necessary.

All law enforcement agencies on the Florence County 800 system have access to and share the "Law Enforcement Talk" talkgroup for common law enforcement sensitive operations.

#### 5. Emergency Medical Communications

Central communicates with the emergency medical service agencies via the 800 MHz trunked radio system for all primary radio traffic. A single dispatch console in Central, under normal operations, serves all emergency medical service agencies within the county. In the event of a mass causality event or other special circumstance, however, they can be supplemented by additional consoles if necessary.

Florence County EMS operates on an independent dispatch talkgroup and has access to several operational channels for use as assigned by incident commander.

The Timmons ville Rescue Squad operates on a single common dispatch talkgroup for all primary radio traffic. The Pamplico Rescue Squad and the Johnsonville Rescue Squad share a common dispatch talkgroup for all primary radio traffic.



All medical response agencies have access to common medical talkgroups and the “Medical Control” talkgroup that allow direct and independent access to the three hospital emergency rooms within Florence County.

To provide interoperability with outside county agencies that do not use 800 MHz communications equipment, all medical response units (ambulances) are also equipped with a VHF radio with access to the 155.220 and 155.340 frequencies. The use of VHF State EMS frequencies will transition to Palmetto 800 Network in late 2012 due to the Narrow Band deadline of 12/31/2012.

#### 6. Non-emergency Departments

All Florence County non-emergency departments equipped with radios (Public Works, Recreation, Building and Planning, Codes Enforcement, Tax Assessor, Magistrate, Red Cross, Vehicle Maintenance, Environmental Services, etc) also operate on the county’s 800 MHz radio system. This ensures that during a major emergency all county departments could communicate with radio in the event of telephone failure.

#### 7. Mutual Aid (Interoperability)

All radios operating on the Florence County 800 MHz radio system are programmed with three (3) “Mutual Aid” talkgroups and two (2) “Civil Defense” Talkgroups and 12 “FC COMM” talkgroups to ensure interoperate communications and mutual aid between all radio users.

In addition to these seventeen (17) pre-designated, “shared” talkgroups any specific talkgroup can be programmed into any radio operating on the county system based on the specific need or desire of the IC or department director.

#### 8. Failsoft Operations

In the event that both the main and the back-up system controllers (Controllers A and B) are rendered inoperative, an additional level of back up has been incorporated in to the “Smartnet” system. Under such circumstances, the mobile and portable radios automatically revert to pre-assigned “**fail-soft**” channels (system voice channels) where they are capable of conventional operation.

To ensure that units will not operate in the fail-soft mode simply because they go out of range of the central controller (data signal), a sub-audible tone (data hand shake) is activated on each voice channel when the repeaters go into fail soft. This ensures that the radios only enter and remain in fail soft mode as long as they receive this sub-audible indication.

Motorola “Smartnet” system radio users are made aware that the system has gone into fail-soft by the automatic sounding of an audible alert tone (sent by the repeaters) every 10 seconds. Without this indication, the radio operator would not know that the system is operating in a different mode.

Individual radios are programmed to operate on a specific channel while in the fail-soft mode. It is standard but not imperative to assign fail-soft channels by talk-group. Radios with multiple talk-groups have a fail-soft channel for each talk-group. When the radio user changes talk-groups while in the fail-soft mode, the radio automatically changes fail-soft frequencies.

## 9. Circuit Integrity

Under normal day-to-day operations, Central has a visual display on the console to identify which trunking controller is in operation, (A or B). If the controller fails, the console MCP (master control panel) will display “fail-soft” and the system will then automatically start sounding an audible alert tone (sent by the repeaters) every 10 seconds, and the repeaters will stay “keyed”. This is the audible alert that notifies every user the system is operating in the “fail-soft” mode. This alert will continue until the error is cleared and the controller resumes normal operation.

The radio system alarm console will group page the appropriate message to the radio service facility and Florence County communications managers. A total of seven people will be paged with this message and this page will start the necessary response.

All 800 MHz radio tower sites are equipped with an alarm system that will page the above listed group with the following alerts:

### **F. C. COMMUNICATIONS ALARM SYSTEM**

- 1 CONTROLLER MAJOR ALARM/CLEAR
- 2 CONTROLLER MINOR ALARM/CLEAR
- 3 UPS INVERTER ON/OFF
- 4 UPS ALARM/CLEAR
- 5 GENERATOR ON/OFF
- 6 TEMPERATURE ALARM/CLEAR
- 7 DOOR ALARM OPEN/CLOSE
- 8 MICROWAVE MAJOR AUDIO ALARM/CLEAR

- 9 MICROWAVE MINOR AUDIO ALARM/CLEAR
- 10 MICROWAVE MAJOR VISUAL ALARM/CLEAR
- 11 MICROWAVE MINOR VISUAL ALARM/CLEAR
- 12 MICROWAVE FUSED INPUT ALARM/CLEAR
- 13 MICROWAVE POWER SUPPLY ALARM/CLEAR
- 14 TIME-BASE ALARM/CLEAR
- 15 MULTI-COUPLER ALARM/CLEAR
- 16 DEHYDRATOR ALARM/CLEAR

All alarms must be acknowledged and reset or they will continue to page indefinitely. This alarm system is also connected to an independent UPS system to ensure that it will have the power to send an alert even if the UPS and power system serving the facility fails. Every 24 hours, the alarm system sends an “alls well” message to notify everyone that the system is functioning properly.

The alarms system also sends out alerts during the weekly exercising of the generators that ensure the generator and UPS system are in proper working order.

Central also has visual indication of a power interruption at the dispatch center as well as automatic paging indicating emergency power in service at the communications center.

#### 10. Conventional Backup Communications

To provide a redundancy to the 800 MHz trunked system Florence County maintains a network of twelve (12) conventional 800 MHz repeaters strategically located around the county. In the event of a total failure of the trunked system, these conventional repeaters would provide the county’s emergency response personnel a means to communicate.

In this phase of disaster recovery each emergency departments has been pre-assigned talkgroups. This talkgroup assignment is based on the geographic location of the department and is outlined in the following Disaster Recovery Communications assignment chart.

**DISASTER RECOVERY COMMUNICATIONS ASSIGNMENT PLAN**

| <b><u>DEPARTMENT</u></b> | <b><u>TRNK SYS BCKUP ASSIGNMENT</u></b> |
|--------------------------|---|
| FCSO                     | 8CALL-90                                |
| CORONERS OFF             | 8CALL-90                                |
| FC EMS FLORENCE          | 8TAC-91                                 |
| FC EMS LAKE CITY         | I-TAC 1                                 |
| HOSPITAL TRAFFIC         | 155.340 / 8TAC-91                       |
|                          | 8TAC-91                                 |
| TVILL RES                | 8TAC-92                                 |
| PAMP RES                 | 8TAC-94                                 |
| JVILL RES                | 8TAC-94                                 |
| FLOR PD                  | FLO CITY REP                            |
| FLOR FD                  | FLO CITY REP                            |
| AIRPORT PD               | 8TAC-92                                 |
| LAKE CITY PD             | 8TAC-93                                 |
| SCRANTON PD              | 8TAC-93                                 |
| COWARD PD                | 8TAC-93                                 |
| OLANTA PD                | 8TAC-93                                 |
| TVILL PD                 | 8CALL-90                                |
| PAMP PD                  | I-TAC 4 8TAC-94                         |
| JVILL PD                 | I-TAC 4 8TAC-94                         |
| WEST FLOR FD             | 8TAC-92                                 |
| HOWE SPRINGS FD          | 8TAC-92                                 |
| WINDY HILL FD            | 8TAC-92                                 |
| SOUTH LYNCHES FD         | I-TAC 3 8TAC-93                         |
| TVILL FD                 | 8TAC-92                                 |
| SARDIS TVILL FD          | 8TAC-92                                 |
| PAMP FD                  | 8TAC-94                                 |
| JVILL FD                 | VHF / I-TAC 5                           |
| OLANTA FD                | VHF / 8TAC-94                           |
| HSFF FD                  | VHF / I-TAC 5                           |
| LAKE CITY FD             | LO BAND/8TAC-94                         |
| FC DET CENTER            | FCDC BK UP REP                          |

## 11. Mobile Data System

Florence County is utilizing a Motorola Mobile Data Terminal (MDT) system. This system will provide countywide data coverage for all public safety units. The plan provides for one Motorola ML-900 lap top computer to be installed into each of the “first out” fire engines at the 36 fire stations, each ambulance and selected law enforcement vehicles with Florence County.

These computers will be linked to our CAD (computer aided dispatch) and our GIS mapping network. This will give the responders with the ability to have response information (ANI, ALI, and maps) displayed while enroute to an emergency scene. Departments are also allowed to use these computers for fire-based software to assist in pre-fire plans, HAZMAT reference data and information, accessing NCIC or warrant information, or any feature that will enhance their mission capability.

## 12. Mobile Communications/Command Post

The mobile communications/command post was developed to support all Florence County public safety agencies. This unit has the ability to respond and provide communications support to any emergency operation or serve as a back up location to communications center (E-911 center).

The command post is a 30-foot Haulmark trailer. This unit is capable of being operated entirely by external power, via a shoreline, or being powered by an onboard 10 KW diesel generator that can operate for up to 36 hours without the need to refuel. The command post provides the incident commander with:

- Climate control area for work meetings & planning. (2- HVAC Units)
- On board rest room facilities.
- Nine radio console workstations. (6- 800 MHz, 2- VHF, & 1-UHF) All radio stations are headset equipped.
- On board portable 800 MHz Repeater for local site access.
- Specialty radio access. (FBI, DNR, SLED, State Hwy Pat, & Aircraft)
- Multi unit Chargers for every type of WT in service with the FC Radio System.
- Five-line cellular telephone network, that allows for conference calls to multiple numbers.

- Satellite telephone system connected with the State EOC & the FC EOC.
- Two Computers with on board high speed I-net access, Print, Copy, Scan, Fax.
- Computer Software programs for Chemical Identification & Response, Aerial Maps, Alpha Paging, E-mail access.
- Refrigerated bottle water.
- Roof top observation deck (8ft x 8ft).
- Two 25-foot awnings to provide shelter during rehab situations or briefings.
- Chairs and table for additional work areas.
- Weather station.
- Television for local and national channel access.

Appendix B (AT&T E911 Disaster Recovery Plan)  
to  
Annex 2 (Communications)  
to  
Florence County EOP

I. Purpose.

This SOG establishes guidelines for the restoration of E911 services to the Florence County Public Safety Answering Point (PSAP).

II. Concept of Operations.

This SOG is a stand alone document developed by Florence County and AT&T, the “primary” E911 service provider for Florence County. As such, much of this information is proprietary in nature.

Copies of this document are maintained in the PSAP, the EOC, by the PSAP Operations Manager and by the E911 Director.