ESF 2 — Communication

Purpose

Emergency Support Function (ESF) 2 coordinates governmental and non-governmental organizations that provide the communications and information technology capabilities necessary to support response efforts, facilitate the delivery of information to emergency management decision makers, and stabilize systems following natural and human-caused incidents.

Coordinating Agencies

PRIMARY AGENCY: Technology Services (TS)
SUPPORTING AGENCY: Clackamas County Communications (CCOM), Clackamas County Disaster Management (CCDM), Clackamas 800 Radio Group (C800)

Scope

Activities within the scope of ESF 2 include:

Communications Systems

- Establish and maintain an effective communications system, including County-owned and commercially leased systems, for use in a disaster.
- Coordinate the provision of redundant and temporary communications as required. Impacts to cellular services, external internet connectivity, local phone services, etc. are dependent upon the vendor services the County utilizes.
- Monitor and report on the overall status of the County's communications infrastructure during a disaster.
- Maintain the County's critical information technology infrastructure, including, but not limited to, the provision of cybersecurity measures.
- Coordinate County support to local and tribal communications systems as requested.

Response

Response activities take place **during** an emergency and include actions taken to save lives and prevent further property damage in an emergency situation.

Response roles and responsibilities for ESF 2 include:

All Tasked Agencies

- ❑ Provide situational updates to the City and County EOC as required to maintain situational awareness and establish a common operating picture.
- ❑ Provide a representative to the County EOC, when requested, to support ESF 2 activities.
- ❑ Use established common response communications language (i.e., plain English) to ensure that information dissemination is timely, clear, acknowledged, and understood by all receivers.
- ❑ Monitor status of the County's communication infrastructure during or following any disaster.
- ❑ Coordinate and assign resources necessary to respond to an incident that impacts the communications infrastructure.

Response

- ❑ Establish or confirm communications methods.
- ❑ When necessary, coordinate provision of a temporary or interim communications capability as required.

CCOM

- ❑ Support tactical communications needs of emergency responders.
- ❑ Coordinate with EOC staff and other Public Service Answering Points to link with on-scene personnel.
- ❑ Ensure the delivery of emergency call-taking/ dispatch services.
- ❑ Coordinate technical support for operation of 911 emergency/non-emergency call-taking and computer-aided dispatch.
- ❑ May activate the Clackamas County Everbridge System (this may be deferred to the EOC in large-scale incidents).

CCDM

- ❑ Activate the EOC.
- ❑ Activate and implement alert, warning, and notification systems as required to effectively notify appropriate stakeholders, including first responders.
- ❑ Establish communications with local response partners.
- ❑ Coordinate the following core EOC activities:
  - o Compile and submit situational intelligence information regarding the operational status of the County's communications infrastructure and then utilize the findings to prepare operational status and situation reports for stakeholders to foster a common operational picture. See *ESF 5- Information and Planning* for more information.
  - o Facilitate the resource requesting process (i.e., compiling resource requests; filling resource requests locally or through existing agreements; forwarding unmet resource requests to the Oregon ECC; and coordinating the staging and distribution of assets as they arrive). *See ESF 7- Resource Support for more information.*
- ❑ Coordinate with the EOC Planning Section to identify unmet needs.
- ❑ Establish a Communications Branch in the County EOC if needed.
- ❑ Track the use of communication equipment and resources through the EOC Finance Section.
- ❑ Provide space for the Public Information Center.
- ❑ Be a point of contact for CARES.

Technology Services (TS)

- ❑ Support, monitor, coordinate and troubleshoot any/all technical problems as required to support incident operations.
- ❑ Coordinate with the EOC on resource availability, prioritization, and communication plans.
- ❑ Set up EOC voice and data equipment systems; provide technical and networking support.
- ❑ Provide staffing for the EOC Communications Unit, as appropriate.

Public and Government Affairs

- ❑ Provide employees, the public, and media with accurate and timely incident information.
- ❑ Ensure that individuals with access and functional needs receive alert and warning messages and emergency public information in a format they can use.
- ❑ Activate and staff the Joint Information Center (JIC) and operate the Joint Information System (JIS).
- ❑ Coordinate public information with other agencies/jurisdictions.

Area Fire Districts/Departments

- ❑ Maintain and operate the 800 megahertz radio system.

CARES

- ❑ Augment County communications capabilities through use of amateur radio operators and systems.
- ❑ Develop and maintain an Emergency Communications Plan with support from the Department of Technology Services.
- ❑ Provide trained personnel and equipment.
- ❑ Establish and maintain emergency communications with the State Emergency Coordination Center and key agencies in the County and the region.
- ❑ Coordinate with other amateur radio emergency groups in the County, i.e., groups that are specific to a city or geographical area.

EOC Operations

When communication-related activities are staffed in the EOC, the communication representative will be responsible for the following:

- Provide a primary entry point for situational information related to communication.
- Develop the Communications Plan for the incident, identifying the phone numbers for key incident participants, 24/7 support numbers for vendors who are supporting the communication technologies and identifying the radio channel(s) being used for the event(s).
- Serve as a liaison with supporting agencies and community partners, including Amateur Radio Groups.
- Check in with emergency communication partners, as listed in this annex, to determine any communication-based needs and concerns
- Ensure that any communications-related needs are submitted to EOC Logistics and share estimated times for resolution or acquisition with communication partners.
- Provide a primary entry point for situational information related to communication.
- Collect situation status updates related to communication functionality and stability to inform development of Situation Reports.
- Serve as the EOC communication liaison to the SWIC and SIEC, sharing needs and coordinating support as requested by communication partners.
- Participate in and provide communication-specific reports for EOC briefings.
- Assist in development and communication of communication-related actions to tasked agencies.
- Monitor ongoing communication-related actions.
- Share communication-related information with the Public Information Officer to ensure consistent public messaging.
- Coordinate communication-related staffing to ensure the function can be staffed across operational periods.

Coordinating with Other ESFs

The following ESFs support communication-related activities:

- **All ESFs.** Support interoperable and redundant communications systems to ensure responding agencies can communicate with each other and the EOC.

Preparedness

Preparedness activities take place **before** an emergency occurs and include plans or preparations made to save lives and to help response and recovery operations.

Preparedness roles and responsibilities for ESF 2 include:

All Tasked Agencies

- ❑ Develop operational plans for ESF 2 activities, as appropriate
- ❑ Participate in ESF 2 related trainings and exercises as appropriate.
- ❑ Maintain interoperable and redundant communications equipment.

CCOM

- ❑ Serve as the 24/7 County Warning Point in conjunction with CCDM.
- ❑ Provide dispatch services for the County before, during, and after an emergency.
- ❑ Maintain contact lists for employees, service vendors.

CCDM

- ❑ In conjunction with CCOM, maintain the Everbridge System.
- ❑ Maintain and operate emergency public alert and notification systems for the County.
- ❑ Coordinate regular review and update of the ESF 2 annex with supporting agencies.
- ❑ Facilitate collaborative planning to ensure County capability to support ESF2 activities.
- ❑ Coordinate with TS to develop robust plans for the following communications sub-capabilities:
  - o *Alert and Warning*
    - Manage and coordinate all incident notifications to County staff, elected officials, and other outside agencies as appropriate (e.g., during transition to continuity facilities or succession notification)
    - Engage in routine intelligence gathering and situational awareness activities.
  - o *Communications Systems*
    - Establish and maintain emergency communications systems with support from TS.
    - Coordinate the use of all public and private communication systems necessary during emergencies.
    - Manage and coordinate all emergency communications within the Emergency Operations Center (EOC), once activated.
    - Maintain operational capacity of the County EOC to support communications activities.
    - Ensure that staff are identified and adequately trained to fulfill their delegated function within the County EOC to include the use of specialized and alternate communications technology and any associated equipment, software, etc.

Technology Services (TS)

- ❑ Ensure availability of telephone, computer, computer networks, and geographic information systems (GIS).
- ❑ Coordinate with CCDM to develop and maintain a Tactical Interoperable Communication Plan for the County.
- ❑ Coordinate with telephone service providers.
- ❑ Serve as the radio frequency coordination point.
- ❑ Evaluate and recommend improvements to EOC communications capability.

Recovery

Recovery activities take place **after** an emergency occurs and include actions to return to a normal or an even safer situation following an emergency.

Recovery roles and responsibilities for ESF 2 include:

All Tasked Agencies

- ❑ Demobilize response activities.
- ❑ Maintain incident documentation to support public and individual assistance processes.
- ❑ Participate in all after-action activities and implement corrective actions as appropriate.
- ❑ Prepare to support recovery operations by identifying community needs.

CCDM

- ❑ Compile and keep all documentation collected relating to the management of communication equipment and software.
- ❑ Coordinate all after-action activities and implement corrective actions as appropriate. All after-action activities and implement corrective

Mitigation

Mitigation activities take place **before and after** an emergency occurs and includes activities that prevent an emergency, reduce the chance of an emergency happening, or reduce the damaging effects of unavoidable emergencies.

Mitigation roles and responsibilities for ESF 2 include:

All Tasked Agencies

- ❑ Participate in the hazard mitigation planning process for the County.
- ❑ Provide agency and incident data to inform development of mitigation projects to reduce hazard vulnerability.

ESF 2 – Communication

THIS PAGE LEFT BLANK INTENTIONALLY

Table of Contents

THIS PAGE LEFT BLANK INTENTIONALLY

ESF 2 Tasked Agencies	
Primary County Agency	Technology Services (TS)
Supporting County Agency	Clackamas County Communications (CCOM) Clackamas County Disaster Management (CCDM) Clackamas 800 Radio Group (C800)
Community Partners	Clackamas County Amateur Radio Emergency Services (CARES) Lake Oswego Communications (LOCOM) Washington County Consolidated Communications Agency (WCCCA)
State Agency	State Interoperability Executive Council (SIEC) Statewide Interoperability Coordinator (SWIC)
Federal Agency	Department of Homeland Security (DHS) Cybersecurity and Infrastructure Security Agency (CISA)

1 Introduction

1.1 Purpose

Emergency Support Function (ESF) 2 coordinates governmental and non-governmental organizations that provide the communications and information technology capabilities necessary to support response efforts, facilitate the delivery of information to emergency management decision makers, and stabilize systems following natural and human-caused incidents.

1.2 Scope

Activities encompassed within the scope of ESF 2 include:

Communications Systems

- Establish and maintain an effective communications system, including County-owned and commercially leased systems, for use in a disaster.
- Coordinate the provision of redundant and temporary communications as required. Impacts to cellular services, external internet connectivity, local phone services, etc. are dependent upon the vendor services the County utilizes.
- Monitor and report on the overall status of the County's communications infrastructure during a disaster.
- Maintain the County's critical information technology infrastructure, including, but not limited to, the provision of cybersecurity measures.
- Maintain the County's emergency notification system software and authorities, including system proficiency testing to maintain the County's IPAWS certificate.
- Coordinate County support to local and tribal communications systems as requested.
- Design and develop resilient and fault tolerant systems to maintain communications, in the event of an incident.

2 Situation and Assumptions

2.1 Situation

The County faces a number of hazards that may require communications support. Considerations to take into account when planning for and implementing ESF 2 activities, including the following:

- For the purposes of this document "communication" is defined as the transference of information, and may involve the representation, transfer, interpretation, and processing of data among persons, places, and machines. The term may also refer to the transmission, emission, or reception of signs, signals, writing, images, and sounds or intelligence of any nature by wire, radio, optical, or other electromagnetic system.
- An emergency can disrupt or even destroy communications systems by damaging antennas, repeaters, power supplies, or other components. During hazard conditions, access to, and functionality of, communications equipment and infrastructure may be limited and prevent the timely restoration of services.
- The distribution of accurate and timely information is a critical component of any effective emergency response.
- A large-scale incident may result in a surge of user requests for utilization access to the local communications infrastructure (e.g., jammed cell and landline phone switches, high-speed internet bandwidth degradation, etc.).
- During emergencies, heavy demand for communication services can quickly exceed the capacity of existing systems, limiting user access or shutting them down entirely.
- Response agencies, from state and federal agencies or mutual aid jurisdictions, often maintain and operate their own radio systems and may use different frequencies, potentially hindering timely and effective response/coordination unless interoperable communication systems are in place.
- Protection/restoration of emergency communications is one of the highest priorities in an emergency. Priority communications include emergency 9-1-1 calls and dispatch; interoperable communications among responders and supporting agencies; Emergency Operations Center (EOC) contact with field units, cities, and special districts; local, regional, and state EOC nets; and communications with the public and media.
- CCOM, in conjunction with Clackamas County Disaster Management (CCDM), provides emergency communications for Clackamas County 24/7/365 and may initiate alerts & warnings in Clackamas County.
- TS monitors status and availability of all communications, and assists in supporting and resolving communications issues. Depending upon the incident, TS identifies the impact of communications issues, determines resource allocations, and determines prioritization strategies in coordination with CCDM and Command Staff in the Emergency Operations Center.

2.2 Assumptions

ESF 2 is based on the following planning assumptions:

- To the extent possible, operational local communication capabilities will be utilized to support response operations even in a diminished capacity.
- Local emergency responders have identified frequencies to be utilized for operational coordination, direction, and control communications.
- The loss of some or all telephone service may reduce or eliminate the effectiveness of the EOC and/or other County offices (including Departmental Operations Centers).

- Large-scale incidents may require extensive coordination of inter- and intra-community communications.
- If electronic emergency information systems are not available, redundant incident management documentation protocols may be required (e.g., paper logs may be used to record events, communications and messages, damage assessments, situation reports, resources utilized, staff hours expended, etc.)
- Adequate communications are vital for effective and efficient warning, response, and recovery operations.

3 Concept of Operations

3.1 General

All communication-related activities will be performed in a manner that is consistent with the National Incident Management System and the Robert T. Stafford Disaster Relief and Emergency Assistance Act.

The County uses a variety of emergency response communications systems:

- Cellular phones, land-line telephones, pagers, voicemail,
- Computer networks, Intranet, Internet, and email.
- Radio voice and data nets (very high frequency [VHF], 800/700 megahertz [MHz], ultra high frequency [UHF], Amateur radio, mobile data communications, and alpha-numeric pagers).
- Satellite phones and amateur radio provide field and EOC communications capabilities.
- Instant messaging/texting
- Building announcement systems
- Web and social media

Clackamas County, through its Technology Services Department, monitors status and availability of communications infrastructure throughout Clackamas County. TS assists in supporting and resolving issues, providing resources as available and determining resource allocations in coordination with the EOC and Clackamas Disaster Management, based on incident specifics, impacts and priorities.

3.2 Warning Systems

3.2.1 National Alert & Warning System (NAWAS)

The National Warning System (NAWAS) is the primary method of communicating alert and warning messages from national authorities to state authorities and between state authorities and local authorities or warning points. NAWAS messages are received through Clackamas County Communications (CCOM).

3.2.2 Disaster Management Notification

As a general protocol, CCOM notifies CCDM when:

- Emergencies affect multiple jurisdictions and may require CCDM resources or coordination.

- A three-alarm or greater fire occurs; CCOM pages the Fire Operations Center, which includes CCDM pagers.
- A major weather event impacts the County (routine warnings are not paged, but approaching or in-process events with potentially severe impact are).
- A large hazardous material incident occurs.
- A terrorist incident is suspected or confirmed.
- On-Scene Command requests such notification.
- The EOC becomes the primary coordination point for incident response, amateur radio, and satellite telephone communications.

3.2.3 Employee Notification

The County can notify employees using:

- Phone-based systems
- Department-based notification technologies & procedures — each department is responsible for establishing and maintaining internal emergency communications.
- Instant messaging/texting
- Websites
- Social media
- AlertUs – TS manages the AlertUs Alert System for County use only. CCOM and CCDM utilize the system to alert County staff through networked equipment and cell phones that have been set up to use AlterUs.

3.3 Public Notification

3.3.1 Emergency Alert System

Everbridge is the emergency notification software system, managed on a day-to-day basis by Clackamas County Disaster Management, which enables alerts and warnings to be sent to the public. The system is capable of issuing alerts and warnings via the following technologies:

- Emergency Alert System (EAS). This is a method for communicating alert and warning messages to the public via radio and television broadcast. These alerts are issued in coordination with broadcasters. If issued these alerts will go out to the entire broadcast region.
- Wireless Emergency Alerts (WEA). This is a method for communicating alert and warning messages to the public via cell towers to any WEA-enabled mobile device in a locally targeted area.
- Resident Connect and Opt-in Data Public Alerts. This is a method for communicating alert and warning messages to the public via voice over the phone (landline, cell, and/or Voice Over Internet Protocol (VOIP), text message, email, fax, and TTY/TDD devices.

3.4 Emergency Response Systems

3.4.1 Public Safety Answering Points

Public Safety Answering Points (PSAPs) are also known as Emergency Communication Centers (ECC). Clackamas County has two (2) Public Safety Answering Points, or 9-1-1

centers, that dispatch emergency responders and partners with Washington County as outlined below:

CCOM

- Receives all 9-1-1 calls in the County except for calls made from within the city limits of Lake Oswego, Milwaukie, and West Linn.
- Dispatches fire and law for all of Clackamas County except for the areas noted below that are serviced by Lake Oswego Communications (LOCOM) and WCCCA.

Lake Oswego Communications (LOCOM)

- Receives 9-1-1 calls from Lake Oswego, Milwaukie, and West Linn.
- Dispatches law and fire for Lake Oswego.
- Dispatches law for the Cities of Milwaukie and West Linn.

Washington County Consolidated Communication Agency (WCCCA)

- Dispatches Tualatin Police and Tualatin Valley Fire & Rescue (TVF&R). TVF&R provides fire and emergency medical services to the City of West Linn and Wilsonville.

Wireless 9-1-1 calls are routed by cell tower to the appropriate 9-1-1 center for call handling. If a call is misrouted, due to a busied out tower, it will be transferred to the appropriate 9-1-1 center.

LOCOM and CCOM can transfer call-taking responsibility to each other through a "make-busy switch" which is a programmable feature to allow for seamless call-taking during emergencies, if one center has to evacuate or becomes overloaded. They also serve as back-up centers for each other, as needs arise.

LOCOM, CCOM and WCCCA share the same radio system which means that WCCCA may serve as a backup dispatch center for either LOCOM or CCOM, if the need arises.

CCOM coordinates with local and regional PSAPs, along with C800 to maintain emergency communications infrastructure.

3.4.2 Amateur Radio Emergency Services

HAM radio is a critical element of emergency communications, particularly since other communications systems may be unavailable or overloaded in an emergency. CARES volunteers are federally licensed and registered as Clackamas County emergency service workers and provide emergency voice and data communications.

CARES is led by an Emergency Coordinator working directly with CCDM to identify requirements, capabilities, and protocols for emergency operations. CARES provides a robust, reliable communication network throughout the County until usual communications channels and services can be restored. The CARES incident-specific emergency communications plan becomes an integral part of the EOC Action Plan (EAP).

CARES operations are conducted in accordance with the Oregon State Amateur Radio Communications Plan and the Amateur Radio Emergency Services District 1 Emergency Communications Plan. Additional information on CARES can be found at http://www.clackamasares.org/.

3.4.3 C800 Radio System

The system is comprised of 23 radio sites in Clackamas County, 20 radio sites in Washington County and 1 radio site in the City of Newberg. All towers and shelters are designed and constructed to Oregon OSSC Essential Facilities Category IV requirements, TIA-222H, and Motorola R56 requirements. This insures maximum operational survivability during weather, wind, wildfire, or seismic events.

All sites are equipped with commercial power and emergency generators and 1,000 gallons of propane and 18 hours minimum of 48VDC back up batteries. A power management system allows the sites to continuously operate for up to 4 weeks on emergency power.

The sites are interconnected by a looped digital microwave system which is MPLS routed.

Via ISSI links the WCN system is interoperable with the Clark County, Washington (CRESA) system, City of Portland – Multnomah County system, City of Salem system, and the State of Oregon OSP/ODOT 700/800 MHz system. This allows over 21,000 public safety radios to interoperate.

The following additional agencies are also on the system:

Table ESF 2-1. Participating Agencies in C800 Radio System

City of Boring	Disaster Management	Clackamas Community College	Oregon Department of Forestry
City of Happy Valley	Department of Transportation (DTD)	Dog Services (DTD)	Oregon National Guard
City of Lake Oswego	Medical Examiner	Clackamas River Water	U.S. Coast Guard
City of Milwaukie	Community Corrections	Sunrise Water Districts	Life Flight
City of Wilsonville Public Works	District Attorney	Amtrak	U.S. Forest Service
Wilsonville Transit	Juvenile	Hubbard	Woodburn Fire
Area Hospitals	Environmental Services	Monitor	Silverton

3.5 Interoperability

The core emergency communications system for law enforcement, fire and EMS throughout the County is an 800 MHz P25 digital radio system partnered with adjoining Washington County, and the City of Newberg, with over 7,300 voice radios. The system is known as the WCN system.

Multiple common channels on the shared 800 MHz systems are designated for mutual aid response during emergencies. Further we maintain a cache of over 300 portable radios for emergencies as well as a site on wheels to support emergency needs.

The system includes VHF/UHF/700/800 / national/state/amateur application specific systems with 75 conventional repeaters for interoperability.

All other communication interoperability is dependent upon the technology, security, configuration and compatibility of the systems.

3.6 Coordination with Other ESFs

The following ESFs support communication-related activities:

- **All ESFs**: Support interoperable and redundant communications systems to ensure responding agencies can communicate with each other and the EOC.

4 Communications Infrastructure Coordination

4.1 Cities

If the incident occurs in an incorporated area, the city in which it occurs has jurisdictional authority and primary incident management responsibility. If two or more cities are impacted, the cities share responsibility for incident management and the safety and well-being of their citizens.

City and County officials work to ensure communications capability by collaborating on equipment and systems, authorizing the shared use of emergency frequencies, and providing current emergency contact information for officials in all jurisdictions within the County. CARES includes sub-units that have primary responsibility for serving designated cities in the County.

4.2 County

The County has jurisdictional authority and primary incident management responsibility for incidents that occur in the unincorporated area, and for health emergencies Countywide. If the incident impacts both the unincorporated and an incorporated area, the County and impacted cities share responsibility. The County will respond to city requests for assistance, manage critical resources, and coordinate with outside agencies, adjoining counties, and OEM.

All jurisdictions with incident management responsibility are likely to activate their EOCs and implement their emergency operations plans in a major incident. EOC staff, including the TS coordinator, will coordinate emergency communications and resources in support of field activities, share incident information, conduct multi-agency planning, and operate the JIS.

Public information representatives from all impacted locations and organizations will collaborate to ensure that a common operating picture is established and maintained throughout the impacted area. The Communications Unit Leader in the EOC Logistics Section, in conjunction with the TS coordinator, develops a communications plan to meet incident-specific needs.

4.3 Special Districts

The service areas of special districts may overlap a number of city and County boundaries. County officials collaborate with special districts in coordinating emergency preparedness, response and

recovery operations, and will work with special districts to maintain communications during emergencies.

4.4 Regional

Clackamas County participates in the Inter-County Omnibus Mutual Aid Agreement that provides a framework for counties to request mutual aid from each other in emergencies. Emergency assistance may include communications equipment, supplies, and personnel, or the direct provision of services. A copy of the agreement and current participants is available in the EOC library.

The Intra-State Mutual Assistance Compact provides for non-reimbursable assistance among local governments. To receive reimbursement for resource assistance provided under this statute, participants must agree to a reimbursement request in writing before resources are dispatched.

4.5 State and Federal Assistance

OEM coordinates state support for local incident response and recovery operations. During a major emergency or disaster, one of the first priorities for the County is to establish emergency communications with the State Emergency Coordination Center. The National Guard, Federal Emergency Management Agency, and other federal agencies all have deployable emergency communications capabilities that may be available in a major emergency.

5 ESF Annex Development and Maintenance

The Director of the Department of Technology Services and the Director of CCOM will be responsible for coordinating regular review and maintenance of this annex. Each primary and supporting agency will be responsible for developing plans and procedures that address assigned tasks as well as testing equipment, backup EOC sites, and overall coordination of technical and communication requirements with the EOC and CCOM.