

**OHIO EMERGENCY OPERATIONS PLAN
EMERGENCY SUPPORT FUNCTION # 2**

COMMUNICATIONS AND INFORMATION TECHNOLOGY

COORDINATING

AGENCY: Ohio Emergency Management Agency (Ohio EMA)

PRIMARY AGENCY: Ohio Emergency Management Agency (Ohio EMA)

SUPPORT AGENCIES: Adjutant General’s Department, Ohio National Guard (ONG)
Ohio Department of Administrative Services (DAS)
Office of Information Technology (OIT)
Multi-Agency Radio Communications Trunking System (MARCS)
Ohio Department of Health (ODH)
Ohio Department of Natural Resources (ODNR)
Ohio Department of Rehabilitation and Correction (ODRC)
Ohio Department of Transportation (ODOT)
Public Utilities Commission of Ohio (PUCO)
Radio Amateur Civil Emergency Services (RACES)
Ohio State Highway Patrol (OSHP)

I. INTRODUCTION

A. Purpose

1. Emergency Support Function #2 supports the provision of communications and information technology resources and support to state and local-level response to emergencies and disasters.
2. ESF-2 details the coordination of activities and communications assets available from state agencies, voluntary groups, the communications industry, county agencies and the federal government.

II. SITUATION

- A. Disasters can affect the ability of responders and citizens to communicate by damaging and overloading systems and equipment, overwhelming staff, and creating conditions that prevent the expedient repair of existing communications systems and/or the transport of new equipment into impacted areas. State-level communications support is vital to protecting life and property, and to restoring impacted areas.

B. Overview of Primary State-Level Communications Support Capabilities

1. The Ohio Emergency Operations Center (State EOC) and the Joint Dispatch Facility (JDF) will coordinate their activities closely during emergency and disaster responses. Communication and Information Technology needs and activities are coordinated through designated communications personnel from Primary and Support Agencies to support the security and integrity of State-level emergency communications systems.

C. Land-line/Non-wireless Capabilities

1. Ohio EMA maintains redundant telephonic capabilities within the State EOC to support 24-hour State EOC operations.

D. Wireless Capabilities

1. The MARCS (Multi-Agency Radio Communication System) radio system is the primary wireless multi-functional communication system used in the State of Ohio by State agencies for disaster response and interoperability. The system is currently in use in all of Ohio's 88 counties and is deployed within State agencies and non-State Agency single-point users, including: County EMAs; County Sheriffs' Offices; Local Health Departments; Emergency Medical Services; Hospitals; Local Fire Departments; and Local Police Departments.
2. Ohio EMA maintains interactive resources for mapping stationary MARCS towers, towers on wheels, sites on wheels, and cellular communication support resources on wheels.
3. Mobile Communication Resources
 - a. Public safety communications support to re-establish communications systems, will be provided to federal, state and local responding agencies through a variety of means.
 - b. The Ohio Emergency Management Agency maintains mobile satellite trailers that provide infrastructure free data backhaul. Each Satellite trailer has both wireless and wired data capabilities.
 - c. The Buckeye State Sheriffs' Association (BSSA) Regional Interoperability Vehicles (11) are available to any Incident Commander. These vehicles provide command level interoperability.
 - d. The Ohio Department of Natural Resources Special Response Vehicle and Trailer is available to provide port security and command level interoperability resources to any first responders.
4. Wireless or radio capabilities in the Ohio EOC include multiple two-way radio systems, which include both encrypted and clear-voice capabilities, linking local, state, federal and volunteer organizations.

5. Satellite communications systems and satellite links for two-way communications to field-deployed satellite systems, the receipt of video, weather radar and forecast information are also available.
6. Communications capabilities to support state, federal, and local personnel in the field and at the site of the emergency include radio caches and mobile radio tower that can provide 800MHz, VHF and UHF radio repeater capabilities, and other communications equipment. These capabilities are documented in a Resource Manual that is maintained by Ohio EMA.

E. Data

1. Facility data communications include dedicated OC3 and T1 lines to the Ohio Data Network, ODNR, statewide law enforcement organizations through the Law Enforcement Automated Data System (LEADS), the National Weather Service (Cleveland and Wilmington offices), Ohio EMA, ODOT, FEMA, ODPS and SOCC.
2. Internal data service is provided through multiple servers on a secured switched network that provides for the routing and distribution of information for day-to-day and emergency activities. This includes the capability for state agencies to access their servers from the Ohio EOC during emergencies. The server software allows for automated management of emergencies, routing of electronic mail, electronic mapping and modeling.
3. WebEOC, a web-based software system, is used to organize and facilitate State EOC operations. The system is used to coordinate the sending of messages; requests for assistance and resources; mission development, assignment and tracking; and the deployment of state-level emergency and disaster response resources.
4. A Secure Communications Room that is capable of providing secure voice communication is maintained within the State EOC through the OSHP HUB.
5. Other State EOC communications capabilities include: a public address system, electronic mail, voice mail, the State of Ohio Rain/Snow Monitoring System (STORMS), information collection and distribution procedures and warning dissemination including Emergency Alert System (EAS) activation.
6. When feasible, State-level resources will be employed to provide physical access to private- and public-sector communications sites.
7. The State of Ohio will assist and will receive assistance from the National Coordination Center to provide services related to the prioritized restoration of power to critical resources.
8. Private sector communications system repair and replacement resources will be self-deployed and will not be subject to control by public-sector resources.

9. Descriptive information on Ohio EMA's and the State EOC's communications support resources and capabilities is documented in a Resource Manual by Ohio EMA.
10. Ohio Department of Health (ODH)
 - a. ODH maintains caches of communications equipment that are intended to respond to both day-to-day operations and emergency response situations, including a rapid and reliable means of providing communications support to emergency operations conducted through the State EOC in the form of data, voice and video, the communication of information and reports, and surveillance of threats to public health.
 - b. ODH's Office of Health Preparedness (OHP), is responsible for maintaining the Ohio Public Health Communication System (OPHCS) alerting system, the Ohio Responds Emergency System for Advanced Registration of Volunteer Health Professionals (ESAR-VHP) system, and the Multi-Agency Radio Communications (MARCS) radios for contacting the local health departments (LHDs) and hospitals during an emergency. ODH has communication equipment caches on-hand and ready to deploy in emergency situations.

III. ASSUMPTIONS

- A. When activated, ESF-2 will assist local emergency organizations and responders with setting up and operating temporary emergency communications capabilities, as needed.
- B. The State EOC will be operational and will be able to support statewide communications operations with the cooperation and assistance of federal, state, and local organizations.
- C. State and Local governments, in coordination with the communications industry, will accomplish the restoration and reconstruction of communications facilities as conditions permit.

IV. CONCEPT OF OPERATIONS

- A. Overview of the ESF-2 Response
 1. Ohio EMA, through the State EOC, is responsible for activating and notifying ESF-2 Support Agencies that there could be a need for them to support communications system provision and/or restoration missions.
 2. ESF-2 Support Agencies that will receive initial notification that there could be a need for them to provide communications support include OSHP, DAS, OIT, ODNR, ODH, ODRC, ONG, PUCO and ODOT. Other support agencies will be notified and activated for ESF-2 depending on the nature and extent of the emergency.
 3. Upon activation, ESF-2 staff will engage in the following response actions:

- a. Submit entries into the State EOC's WebEOC operations management software's Position Log.
 - b. Maintain contact with the MARCS system Help Desk regarding the status of MARCS system communication, MARCS towers, T1 lines, generators, and other communications system resources.
 - c. Coordinate with the MARCS system regarding the establishment and maintenance of reserved eComm channels for use in incident response.
 - d. Maintain contact with Buckeye State Sheriffs Association regarding the deployment and use of their Regional Communication Vehicles for incident response support.
 - e. Establish contact with and determine communications resources that are available from partner agencies.
4. Create a list of State EOC video inputs/outputs and conference bridge schedules.
- a. Engage ESF-2 Partner Agencies and prepare briefing questions and mission-related information for daily status briefings.
 - b. Through the Communications Group Leader, formulate an Incident Radio Communications Plan (ICS 205) to provide information on radio frequency and/or trunked radio system talkgroup assignments for each operational period for use by incident responders.
5. Cyber System Failure/Attack Response
- a. The Ohio Department of Administrative Services coordinates the state's cyber-response plan. Additionally, the Department of Public Safety, Division of Homeland Security and the Ohio National Guard provide subject matter expertise and support to cyber-response.
 - b. A wide variety of systems and infrastructure points in Ohio could be vulnerable to cyber system failures, infiltration and/or attack that could threaten, disrupt, and/or interrupt their operations and damage the infrastructure.
 - c. These systems operate in a manner that create, store, and transmit data and information or control the operations of critical infrastructure, including power generation, water purification and delivery, control of dams, transportation systems and traffic control, emergency responder dispatch, etc.
 - d. State EOC-response to a cyber-related attack will be focused on information sharing/coordination between state agencies and responding entities as well as responding to the consequences and cascading effects of the event including utility and power interruptions.

V. RELATIONSHIPS BETWEEN LEVELS OF GOVERNMENT

A. Federal

1. Federal support addressed in ESF-2 in the National Response Plan provides national security and emergency preparedness support to federal, state, and local disaster response elements. This support includes government-furnished communications, commercially-leased communications and expedited communications services provided under the Telecommunications Service Priority System (TSP). These capabilities can be accessed by mission requests from the state.
2. The following organizations compose the federal ESF-2 Team and will work with Ohio's ESF-2 Team during emergencies from the Regional Operations Center (ROC), the Joint Field Office (JFO) and the site of the emergency:
 - a. ESF Coordinator
 - b. US Department of Homeland Security/National Protection and Programs/Cybersecurity and Communications/National Communications System
 - c. Primary Agencies
 - i. US Department of Homeland Security/National Protection and Programs/Cybersecurity and Communications/National Communications System
 - ii. US Department of Homeland Security/Federal Emergency Management Agency
 - d. Support Agencies
 - i. US Department of Agriculture
 - ii. US Department of Commerce
 - iii. US Department of Defense
 - iv. US Department of Homeland Security
 - v. US Department of the Interior
 - vi. Federal Communications Commission
 - vii. General Services Administration

B. State

1. In accordance with the Ohio Revised Code 5502, the Ohio Emergency Management Agency is in charge of coordinating state-level emergency communications support between the agencies of state, federal and local government from activation of the EOC to recovery.
2. Coordination may be internal within the ESF-2 Team member organizations and/or it may include coordination with governmental and private organizations external to the team.

C. Local

1. The ESF-2 Team will coordinate and facilitate communications-related emergency response activities with impacted areas' local EOCs.
2. Specific issues related to communications in a local area may be addressed directly between the ESF-2 Team and local responders at incident sites.

The chart, below, shows the relationship between federal, state and local communications organizations.

Comparison Chart - ESF-2 Organizations by Level of Government		
State Organizations	Federal Organizations	Local Organizations
Ohio EMA (with respect to federal and local organizations listed in this row)	Department of Homeland Security, Information Analysis and Infrastructure Federal Communications Commission U.S. Department of Commerce	Local EMAs
Ohio State Highway Patrol	*	*
Department of Administrative Services	General Services Administration	*
Ohio Department of Commerce, Division of State Fire Marshal	*	*
Adjutant General's Department, Ohio National Guard	U.S. Department of Defense	*
Ohio Department of Natural Resources	U.S. Department of the Interior	*
Ohio Department of Health	U.S. Department of Health and Human Services	Local Health Departments & Hospitals
Public Utilities Commission of Ohio	*	*
Ohio Department of Rehabilitation and Correction	*	*

Ohio Department of Transportation	*	*
Civil Air Patrol	Civil Air Patrol	*
Ohio RACES	National RACES	Local RACES
Office of Information Technology	*	*

* There is no comparable designated organization at this level of government.

VI. ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITY

A. Organization

1. The Ohio Emergency Management Agency is the Coordinating Agency for ESF-2, and will be responsible for working with this ESF's Support Agencies to ensure that there is a seamless integration of, and transition between preparedness, response, and recovery activities. The Coordinating Agency's primary responsibility will be to focus on engaging Support Agencies in pre-incident planning and coordination opportunities.
2. The Ohio emergency management Agency is the Primary Agency for ESF-2, and will take the lead in coordinating and reporting on ESF-2-related missions and operations.
3. ESF-2 agencies will be activated through the State EOC for assessment, response, and recovery operations based on the needs of the emergency. Primary and Support Agencies will coordinate with one another to ensure the most effective use of personnel and equipment, to avoid redundant activities, and to cooperate on emergency response missions.
4. All agency-based resources will be provided as they are needed, as they are available, and as agencies are able to provide them.
5. Internal management and supervisory practices of the agencies that make up ESF-2 are maintained throughout emergency operations.
6. The Ohio EMA administers briefings in the Ohio EOC for ESF-2 Team operations.

B. Assignments of Responsibility

1. Ohio Emergency Management Agency (Primary)
 - a. Responsible for the coordination of emergency communications.
 - b. Manage communications capabilities within the Ohio EOC.

- c. Provide state mobile communications as needed during emergencies.
 - d. Assess communications infrastructure following a disaster.
 - e. Prioritize assistance based on assessments.
 - f. Maintain Ohio EMA's access to the GETS (Government Emergency Telecommunications Service) system to enable the state to have contact with federal, state, local, and tribal government, industry, and non-governmental organization (NGO) personnel in performing their National Security and Emergency Preparedness (NS/EP) missions.
 - g. Evaluate, define and assign emergency missions to team members and other organizations as required.
 - h. Provide technical assistance and advice to local, state, and federal organizations.
 - i. Establish and maintain the automated computer system needed for Ohio EOC operations.
 - j. Establish data communication links for state agency computers as needed in the Ohio EOC during emergencies.
 - k. Deploy mobile communications assets.
 - l. Provide ongoing maintenance and restoration of Ohio EMA owned systems.
 - m. Deploy and install transportable communications systems to include radio base stations, satellite links and portable communications equipment.
 - n. Establish video conferencing links as needed.
 - o. Obtain remote video images or remote TV broadcasts as needed from the disaster.
2. Adjutant General's Department, Ohio National Guard
- a. If needed, a Governor's declaration allows Ohio National Guard response and/or resources including: communications capabilities and technical support.
 - b. Provide technical support for ESF-2 operations, set up, and operation of emergency communications equipment, satellite systems and portable telephone systems.
3. Ohio Department of Administrative Services
- a. Assist in the procurement of needed communication goods and services from private contractors by identifying and contacting sources both on and off state term contract.

- b. Provide listings of technical support staff across the State of Ohio who may be used to supplement response efforts.
 - c. Provide information technology resources and support to ensure the cyber security and physical integrity of state emergency communications systems, including geographic information systems (GIS).
 - d. Maintain and support the Multi-Agency Radio Communications System (MARCS) infrastructure.
4. Ohio Department of Natural Resources
- a. Maintain a 24-hour dispatch capability.
 - b. Deploy the ODNR Mobile Command Center in coordination with Ohio EMA
 - c. Maintain ongoing communications with field forces.
 - d. Provide radio equipment to supplement communications.
 - e. Provide technical assistance for the restoration of communications systems.
 - f. Provide technical support for ESF-2 as needed.
5. Ohio Department of Health
- a. As needed, provide access to a cache of communications equipment to assist in providing communications support to emergency operations conducted through the State EOC.
 - b. Assist in facilitating connectivity between State EOC-based operations and field-based response operations through the distribution and application of ODH-maintained communications equipment and systems.
 - c. Maintain and support the MARCS infrastructure with local health departments (LHDs) and Hospitals.
 - d. Through data communications, disseminate information impacting public health to LHDs and Hospitals during emergencies.
 - e. Provide technical support for ESF-2 as needed.
6. Ohio Department of Rehabilitation and Correction
- a. Maintain communications systems within all prisons throughout Ohio.
 - b. Deploy communications equipment to supplement emergency needs as required.

- c. Provide technical support for ESF-2 as needed.
- 7. Ohio Department of Transportation
 - a. Maintain 24-hour staffing of the Ohio EOC during emergencies.
 - b. Through data communications, provide information on road conditions during emergencies.
 - c. Provide technical assistance for the restoration of communications systems.
 - d. Provide radio equipment to supplement communications.
 - e. Provide technical support for ESF-2 as needed.
- 8. Public Utilities Commission of Ohio
 - a. Act as an information link with phone companies.
 - b. Provide technical support for ESF-2 as needed.
- 9. Radio Amateur Civil Emergency Services
 - a. Provide a parallel communications network operated by qualified and licensed radio amateurs.
 - b. Provide radio communications between localities within the state, with adjacent states and the Ohio EOC.
- 10. Ohio State Highway Patrol
 - a. Provide Communications infrastructure assessments from the site.
 - b. Maintain data communications to all law enforcement agencies through the use of Ohio's Law Enforcement Automated Data System (LEADS).
 - c. Deploy the OSHP Mobile Command Center in coordination with Ohio EMA.
 - d. Provide technical support for system restorations.
 - e. Provide supplemental radio units to state and local agencies.

VI. ESF-2 COMMUNICATIONS RESOURCE REQUIREMENTS

- A. Resource requirements and Standard Operating Procedure information for state communications that do not appear in ESF-2 can be found in resource listings and SOPs maintained on file in the Technical Services Branch of Ohio EMA.

**OHIO EMERGENCY OPERATIONS PLAN
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COMMUNICATIONS AND INFORMATION TECHNOLOGY

TAB A - WARNING PLAN

I. PURPOSE

- A. The purpose of this plan is to describe the process for the dissemination of warning information throughout the State of Ohio and to define and outline the responsibilities of the Federal Emergency Management Agency (FEMA), the Ohio Emergency Management Agency (EMA), the Ohio State Highway Patrol and the applicable National Oceanic and Atmospheric Administration (NOAA) Weather Service Offices, relating to the operation and utilization of the existing Ohio warning systems.
- B. In this Plan, special attention is given to the use of the National Warning System (NAWAS); NOAA Weather Radio; Ohio EMA's Weather Paging System; the Ohio Emergency Alert System (EAS); the State of Ohio's Rain/Snow Monitoring System (STORMS); the Weather Emergency Notification System; the Law Enforcement Automated Data System (LEADS); the County Notification System; and the Ohio Department of Health's Ohio Public Health Communication System (OPHCS) for the dissemination of information of impending disaster, man-made or natural.

II. SITUATION

- A. There are two NAWAS warning points in Ohio; one is at the State of Ohio Emergency Operations Center in Columbus, Ohio (State EOC) and the other is at the Ohio State Highway Patrol Post in Cambridge, Ohio.
- B. National level warnings will be received from the Federal Emergency Management Agency (FEMA), over the NAWAS system, or other federal notification systems.
- C. National Weather Service weather watches and warnings are automatically relayed to Ohio EMA and transmitted over weather radio.
- D. The Ohio warning network is comprised of NAWAS, LEADS, NOAA Weather Radio, STORMS, County Notification System, EAS, and OPHCS. Each of these systems is designed to operate on a 24-hour basis.
- E. Operational telephone, radio and data communications systems are used to assist in the dissemination of warnings to the general public.
- F. LEADS terminals are in place in all County Sheriff's Offices.
- G. County warning plans outline the dissemination of warnings from the County Sheriff to the general public and all county agencies.

- H. Local print and broadcast media are used to assist in the dissemination of warnings to the general public.

III. ASSUMPTIONS

- A. The use of NAWAS, LEADS, NOAA Weather Radio, Emergency Alert System (EAS), OPHCS and other supplemental warning networks will be required to rapidly disseminate warning information.
- B. County warning systems and procedures exist for the dissemination of warnings throughout individual counties once a County Sheriff has been notified.
- C. Warnings will be disseminated prior to equipment failure directly resulting from the effects of a disaster.

IV. CONCEPT OF OPERATIONS

A. General

- 1. An effective warning system must provide for the receipt and dissemination of warnings on a 24-hour/day basis.
- 2. In addition to this Plan, Ohio EMA's Technical Support Division maintains a list of NOAA Weather Radio Stations' locations and frequencies in a separate plan.

B. Direction and Control

1. National Warning System

- a. The national warning center is located in a combat operations center at the North American Air Defense (NORAD) command headquarters at Colorado Springs, Colorado. National warnings originate from this facility.
- b. An alternate national warning center is located in Maryland and can assume the functions of the national warning center when necessary.
- c. Sources of Warning Information
 - i. The National Weather Services (NWS) of the U.S. Department of Commerce, NOAA is the government agency responsible for the declaration and dissemination of "Severe Weather Watches and Warnings." Weather warning information is distributed direct from the National Weather Service over the NOAA weather radio and weather wire. An agreement between FEMA and NOAA provides for the utilization of NAWAS by weather service offices for the dissemination of severe weather watches and warnings.

- ii. The National Earthquake Information Center, U.S. Geological Survey, Department of the Interior provides earthquake information.
 - iii. An agreement between the National Weather Service of the U.S. Department of Commerce and the Ohio EMA provide the state EMA and county EMA the ability to disseminate non-weather related warning messages over the NOAA weather radio system.
 - iv. Non-weather related warnings for the state of Ohio can originate at the state level or counties.
- d. Types of Warnings
- i. Warnings of a disaster or emergency, such as a tornado, storm, flood, high-water, wind-driven water, earthquake, landslide, mudslide, snow storm, fire, explosion, peacetime nuclear incident, aircraft crash or other potential hazards to the public's health, safety and property will follow a specific area message encoder format.
 - ii. Warning titles will follow those outlined for use by the National Weather Service and EAS, specified in the Federal Communications Commission (FCC) EAS Rules and Regulations. These warning codes can be found in the State of Ohio's EAS Plan.
- e. Warnings will be disseminated simultaneously by the national warning center to all warning points on the National Warning System (NAWAS) or when required by the alternate national warning center.
- f. The State of Ohio's primary warning point is located at the State Emergency Operations Center/Joint Dispatch Facility (EOC/JDF), Ohio State Highway Patrol Dispatch Center, 2855 West Dublin Granville Road, Columbus, Ohio 43235-2206, telephone 614 466-2660.
- g. The Alternate Warning Point in the State of Ohio is located at the Ohio State Highway Patrol, Cambridge District Headquarters, 7051 Glenn Highway Road, Cambridge, Ohio 43725, telephone 614 439-1388.
- h. Receipt and Dissemination of National Warnings
- i. Peacetime Disaster Messages, National Warnings or Special Emergency Information. The national warning system may be used for national warnings, peacetime disaster messages or for the relay of special emergency information or announcements. All messages must be short, but give all essential information. In most instances, the usage would involve only state and local portions of the system. This information may originate either above or below a warning point.
 - ii. Peacetime disaster warnings in Ohio are usually the result of severe winds, rain, snow, thunderstorms, floods, earthquakes, tornadoes, peacetime nuclear incidents, and air craft crashes, chemical spills, all of which are threats to the public's health, safety and property.

- iii. After determining that a national warning or peacetime disaster message should be issued, the national warning center will disseminate the warning simultaneously to all warning points on NAWAS.
 - iv. As soon as the Ohio warning point receives a warning, the State warning point operator will immediately disseminate the warning over LEADS and call the role of the warning points within the state to announce the warning.
 - v. The Ohio EMA duty officer will be immediately notified of any warnings received over NAWAS.
- i. Use of NAWAS by the National Oceanic and Atmospheric Administration (NOAA)
 - j. When necessary, the Weather Service Forecast Offices (WSFO) in Cleveland, Wilmington, Pittsburgh PA or Charleston WV, may determine that a weather warning should be transmitted over NAWAS.
 - k. Termination of NAWAS Warnings
 - i. As soon as the Ohio warning point receives a NAWAS warning termination announcement, the state warning point operator will immediately call the roll of the warning points within the state and announce the warning termination. Dissemination of the termination will also be made over LEADS.
2. NOAA Weather Radio
- a. Ohio has partnered with the National Weather Service to create statewide National Oceanic and Atmospheric Administration (NOAA) weather radio coverage. NOAA weather radio provides continuous 24-hour/day weather forecasts and warnings to listeners. The Ohio NOAA weather radio program serves Ohio through 23 transmitters, and the service is available to more than 99% of Ohio's population. These transmitters are maintained by Ohio EMA through a contract with the National Weather Service. Transmitters are operated by the National Weather Service Offices serving Ohio.
 - b. The State and local EMAs may activate NOAA weather radios for non-weather related emergencies through an agreement between Ohio EMA and the National Weather Service.
 - c. Warnings are transmitted using specific area message encoding to allow for the activation of muted receivers. Ohio radio and television stations, as part of their EAS monitoring assignments, monitor NOAA weather radio and re-transmit severe weather warnings.
 - d. NOAA weather radio is also used for the transmission of non-weather related emergency information. An agreement between Ohio EMA and the National Weather Service allows the state and county EMAs to request system activation.

3. State of Ohio Rain/Snow Monitoring System

- a. The State of Ohio Rain/Snow Monitoring System (STORMS) was developed to improve the ability to forecast flash-flooding throughout Ohio. The primary mission of the STORMS is to provide the National Weather Service with real-time precipitation data for use in flood forecasting. The secondary mission is to provide data to other federal, state and local users. STORMS installation was prioritized to serve the areas at greatest risk for flash-flooding. Drainage basins with a slope of 45' per mile and eight square miles or greater were targeted with STORMS. STORMS gauges appear in 63 of Ohio's 88 counties.
- b. The STORMS is made up of 241 rain gauges as well as 64 river gauges which report real-time rainfall information to Ohio EMA, the National Weather Service and other users. Rain gauge systems from the Corps of Engineers, U.S. Geological Survey, Miami Conservancy District and city systems are also linked to STORMS, bringing the total number of reporting gauges to 345.
- c. The primary user of the STORMS is the National Weather Service, which uses STORMS data to formulate flood and flash-flood warnings. STORMS software provides text, tabular and alarm information through a graphics display. Alarms based on rainfall in comparison to flash-flood guidance are automatically generated. System maintenance is performed by Ohio EMA.
- d. STORMS gauges report to remote tower sites, which are directly linked to the State EOC. STORMS data is then forwarded to the National Weather Service Office in Cleveland.
- e. STORMS servers are located at the State Emergency Operations Center/Joint Dispatch Facility (EOC/JDF), the Cleveland National Weather Service and the Wilmington National Service Office. These servers receive raw rain gauge data and convert that data to tabular and graphic formats for use by the National Weather Service and other STORMS users. Redundancy is provided through these units and dual servers at the state EOC/JDF.
- f. In addition to providing rainfall data, the STORMS alarms when 80% or 100% of flash-flood guidance is exceeded. A gauge yellow condition exists at 80% and a red condition exists at 100%.

4. Weather Paging System

- a. The Ohio EMA weather paging system provides subscribers with weather warnings to wireless devices as well as e-mail notification. The system was developed in coordination with the National Weather Service to provide Ohio government leaders and first responders with real-time weather warnings.
- b. The weather paging system is designed to allow users to self-subscribe over an internet accessible application. Subscribers can register devices to receive notification and select the types of warnings to be received.

5. Ohio Emergency Alert System (EAS)

- a. The Ohio EAS is designed around twelve Operational Areas. Each of these areas has an assigned Primary and Alternate radio station called a Local Primary 1 and Local Primary 2 station. These stations serve as entry points into the EAS for the Operational Area. All other radio stations in the Operational Area monitor these Local Primary stations. A statewide EAS backbone provides for the statewide relay of information to all Local Primary stations for statewide activations.
- b. The EAS can be activated by authorized notifiers. Ohio authorized notifiers include; the Governor, State Emergency Management Agency, Ohio State Highway Patrol, County Emergency Management Agency Directors and County Sheriffs. Activation is accomplished through the use of EAS encoders at county and state activation points.
- c. The use of the Ohio EAS is governed through the State and Twelve Operational Area EAS Plans.

6. County Notification System

- a. The Ohio EMA county notification system provides county EMA directors with the immediate notification of important information. Notification is sent by facsimile, e-mail and telephone. Telephone notification includes; home, office, wireless device and dispatch centers.

7. Public Safety Emergency Notification System

- a. During times of severe weather or other events that can impede the travel of state employees to and from work or close state government offices, the Governor, through the Director of Public Safety, may order non-essential state employees to stay home from the work place. The weather Emergency Notification System is used in disseminating information related to the requirements of these employees to report to work.
- b. When triggered, the Weather Emergency Notification System provides notification to contacts in each department, agency, and boards and commissions of the declaration. Notification is made by e-mail, facsimile and by the telephone to multiple devices. Information is posted on a state website for employee access and on an employee call-in number. The notification is also sent to radio and television stations for public broadcast.

8. Law Enforcement Automated Data System (LEADS)

- a. The LEADS is a state of Ohio data system used by all Ohio law enforcement agencies for the sharing of law enforcement information and communications. The LEADS is managed by the Ohio State Highway Patrol through the guidance of a steering committee.

- b. The LEADS is used as an information sharing system for the dissemination of warnings to all Ohio law enforcement agencies. Software linking of the LEADS to the NOAA weather wire automatically forwards weather warnings to all law enforcement agencies with LEADS terminals.
9. Receipt and Dissemination of Warnings over the Ohio NAWAS
- a. As soon as the Ohio warning point has received a national level warning, the state operator will immediately call the roll of the warning points in the state. Each warning point not answering the roll call will be contacted by telephone or radio immediately after roll call, repeating the warning message.
 - b. In addition to disseminating the national warnings over NAWAS, the state warning point will disseminate national warnings and other emergency information over LEADS to Ohio law enforcement agencies.
 - c. The state warning point will be responsible for verifying the dissemination of weather service announcements over LEADS and if necessary disseminating the message over NAWAS to district warning points for further dissemination by district warning points to affected County Sheriffs. Tornado warnings received by the state warning point will be transmitted over LEADS and receipt verified by the district warning points.
 - d. If LEADS and NAWAS are inoperable, the state warning point will contact by alternate means of communications any warning point that did not receive the weather warning.
 - e. When the above procedures have been established, the state (Ohio) is, essentially, in a status of “watching--readiness.” Warning points should begin the reverse process of relaying “sightings” and weather intelligence to the National Weather Service (NWS) in a coordinated manner so that this information can be used by the NWS offices in formulating further announcements and forecasts.

10. Weather Observations

- a. Weather observations may be requested by a WSO. The state warning point will coordinate obtaining such information from Highway Patrol mobile units, other warning points, Sheriff’s Offices, etc., for “on-site” reports to supplement radar observations during the development period of adverse weather.
- b. Any warning point desiring updated information regarding weather affecting their area may call the WSO direct using the NAWAS circuit.
- c. If the county (local) EMA director, Sheriff, or other authorized official issues a “warning” for his/her county (area), the sighting and action taken must be immediately reported to the WSO responsible for that area.

11. Ohio Public Health Communications System (OPHCS)

- a. OPHCS is a state of Ohio data system managed by ODH for the rapid sharing of public health and medical services information and communications.
- b. OPHCS provides local health jurisdictions, hospitals and other healthcare providers with immediate messaging of important information. Messages can be sent to recipients by email, telephone, and SMS text. Telephone notification includes home, office, and wireless device(s) numbers.
- c. Warnings of a disaster or emergency, such as a tornado, severe weather, flood, earthquake, fire, explosion, nuclear incident, or other potential hazard(s) to the public's health and safety may be sent out statewide, regionally, or to pre-defined organizations (e.g. hospitals and public health jurisdictions).

V. ADMINISTRATION and LOGISTICS

A. The National Warning System (NAWAS)

1. The Federal Emergency Management Agency (FEMA) has the responsibility for disseminating national warnings. NAWAS is a FEMA dedicated, nationwide, telephone system operated on a 24-hour basis. It has two national warning centers, manned continuously by warning officers. Its special-purpose telephone circuits connect the national warning centers to FEMA Headquarters, 9 FEMA Regional Offices, 346 other federal agency and military installations in the Continental United States, and approximately 2,300 city and county warning points.

B. Emergency Alert System (EAS)

1. The national level Emergency Alert System (EAS) provides the President a readily available and reliable emergency communications with the American people. It affords a communications capability in grave emergencies when national communications resources may have been damaged and the survival of the Nation is threatened. Presidential broadcasts over EAS would be made to reassure and give direction to the public regarding survival and recovery of the Nation. The national level EAS is activated only upon the order of the President.
2. The EAS has also been designed to provide operational capability to the state, and local governments. It uses facilities and personnel of non-government communications industry on a voluntary basis, and is operated by the industry under appropriate government regulations in a controlled manner consistent with national security requirements during a national emergency. It consists of broadcast stations licensed by the Federal Communications Commission (FCC) and participating in the EAS.
3. The state EAS and local EAS may be used to broadcast information on peacetime disasters or emergencies. Such use is encouraged, especially for announcing tornado watches and warnings and other natural or man-made disaster information. It also may

be used at state or local government option to disseminate new weather related information to the public in their areas of responsibility.

4. Procedures for the use of EAS throughout the State of Ohio are outlined in the State of Ohio Emergency Alert System Plan.

C. NOAA Weather Radio System

1. The operations of the NOAA weather radio system are the responsibility of the National Weather Service (NWS). System maintenance is performed by Ohio EMA in accordance with a contract with the NWS. Use of the system and non-weather related emergencies is triggered by state and local EMAs.
2. NOAA weather radio stations provide continuous around-the-clock broadcasts of the latest weather information directly from WSO. Recorded weather messages are repeated every 4 to 6 minutes and routinely revised every 2 to 3 hours or more frequently if needed.
3. NOAA weather radio is designated the government-operated radio system to provide direct warnings into private homes for both natural disaster and nuclear attack. This capability supplements warnings by sirens and by commercial radio, television and cable television.
4. Twenty-three NOAA weather radio stations are currently providing broadcasts to Ohio. Broadcasts are made on all 7 high-band FM frequencies. A list of locations of stations to include appropriate programming and broadcasting WSO is maintained by Ohio EMA's Technical Support Division.
5. During severe weather, weather service forecasters will interrupt their routine weather broadcasts and substitute special warning messages. Forecasters will also activate specially designed warning receivers. These receivers either sound an alarm indicating that an emergency exists, alerting the listener to turn the receiver up to an audible volume; or, when operated in a muted mode, are automatically turned on so that the warning message is heard. Warning alarm receivers are especially valuable for schools, hospital, public-safety agencies, and news media offices.
6. Ohio EMA and County EMAs are permitted, after coordinating with the appropriate programming and broadcasting WSO, to preempt selected NOAA weather transmissions during or after any disaster, man-made or natural, when such disaster could result in loss of life or property and there is a need for the rapid dissemination of pertinent information to the affected area.
7. In the event of an incident at a nuclear power plant, the NOAA weather radio system, along with EAS and other warning systems will be used to provide rapid public notification of plant status and emergency actions to be taken. The access of the NOAA weather radio system for notification of a nuclear power plant incident is outlined in the Ohio plan for response to radiological emergencies at licensed nuclear facilities.

D. Weather Radar

1. A weather watch is maintained by the WSO at Cleveland, Ohio, Wilmington, Ohio, Pittsburgh PA, Northwestern, Indiana and Charleston, WV. Weather service specialists operating radar and other monitoring equipment have the capability of tracking severe storms; therefore, are key in the “Weather Watch and Warning System” for the State of Ohio.
2. In line with the foregoing, the radar units function to initiate early action suggestions for counties who come under the jurisdiction of the WSFO. Conversations on NAWAS and the MARCS radio between WSFO can be monitored by NAWAS officials. This system allows everyone on the circuit to follow the progress of radar observed events and automatically alerts warning points of “new events” taking place in their respective areas.
3. EMA and NAWAS officials are asked to solicit local reports on the basis of information gathered from the monitoring of the conversions. These reports should be fed back to the NWS as soon as possible, so they may be added to other information which is being used to make weather status decisions at the forecast office.
4. Direct contact with the warning points by the WSO is encouraged. An exchange of information during a period when severe phenomena is developing can yield immediate and direct benefit while also establishing a high level of confidence and mutual respect between the cooperators.

E. State of Ohio NAWAS

1. Operating that portion of NAWAS within the state is the responsibility of the Director of Public Safety. The Ohio primary warning point is located at the State EOC/JDF, Dispatch room, 2855 West Dublin Granville Road, Columbus, Ohio 43235-2206. Telephone numbers are: Primary 614-466-2660, Alternate 614-889-7150.

F. Ohio EMA Pager System

1. The development of procedures and maintenance of the system is the responsibility of the Ohio EMA.
2. The issuance and supply of the weather watches and warnings to the Ohio EMA Pager System is the responsibility of the NWS offices.
3. The user device information and types of messaging received is the responsibility of the county EMA director and/or their designated representative.

G. Emergency Alert System (EAS)

1. The development of plans and procedures for the system and notifier activation is the responsibility of the Ohio EMA.

2. Individual broadcast stations are responsible for station equipment configuration, station equipment maintenance, the development of station procedures and the airing of EAS messages in accordance with The EAS Plans and the Federal Communications Commission (FCC) Rules and Regulations.
3. Notifier equipment maintenance is the responsibility of the owning agency. Ohio EMA provides technical Assistance on equipment maintenance, equipment software configuration and programming, level settings related to installation and user training is provided by Ohio EMA.

H. State of Ohio Rain/Snow Monitoring System (STORMS)

1. Maintenance of the STORMS is the responsibility of Ohio EMA. This includes the maintenance of remote gauges, the backbone transmission system, and computer hardware and software applications.
2. The NWS is responsible for providing flash-flood guidance data to Ohio EMA, the monitoring of STORMS, and the formulation and issuance of flood and flash-flood warnings.
3. Other STORMS users are responsible for locally used hardware and system monitoring. Client software and technical assistance is provided by Ohio EMA.

I. Weather Emergency Notification System

1. Ohio EMA is responsible for coordinating the decision process for the issuance of a weather emergency.
2. Activation of the system is accomplished by the Ohio State Highway Patrol.
3. Maintenance of the e-mail, facsimile and calling system is the responsibility of Ohio EMA. As part of this maintenance, Ohio EMA has the responsibility to maintain contact information and to conduct training on system use and for message recipients.
4. The Department of Administrative Services (DAS) issues the Policy Directive on the notification of a weather emergency. The 1-800 employee call-in-number is also provided by DAS. Message recording and 1-800 line activation is accomplished by the Ohio State Highway Patrol. Procedure development is the responsibility of Ohio EMA. DAS is responsible to assist Ohio EMA in agency training.
5. Ohio Department of Public Safety and Governor's Office Public Information staff are responsible for the media notification of a weather emergency.
6. Each state agency, and Boards and Commissions is responsible for providing primary and secondary agency contacts, agencies are responsible for developing internal notification procedures, the notification of employees, the handling of employee inquiries and to attend annual training on the notification process.

J. County Notification System

1. The county notification is activated by Ohio EMA.
2. Director telephone number, e-mail and other system updates are accomplished by Ohio EMA.
3. Training and procedure development is accomplished by Ohio EMA.

K. Local Warning Dissemination

1. Sheriffs of each county will receive warnings from the state and district warning posts.
2. The development of procedures for the dissemination of the warnings and emergency information from Sheriffs' Offices to officials of government, industry and to the public is a responsibility of local government. Each county, city and village should establish a system and procedures to insure that warnings are rapidly disseminated. This may necessitate the use of:
 - a. Outdoor and indoor warning devices, i.e., sirens, public address systems, automated calling systems and tone activated radio receivers, etc.
 - b. Commercial radio, television and cable television broadcast through the Emergency Alert System (EAS).

L. Warning and Notification of hearing impaired or non-English speaking persons may be accomplished by door-to-door or mobile public address notification by local emergency service officers.

M. Ohio Public Health Communication System (OPHCS)

1. ODH is responsible for the maintenance and management of the OPHCS system.
2. ODH is responsible for providing information to state agency partners, local health jurisdictions, hospitals, and other healthcare providers for situational awareness and coordination of response operations.

VI. PLAN DEVELOPMENT AND MAINTENANCE

- A. This Warning Plan is maintained by the State of Ohio Emergency Management Agency (EMA) which is responsible for its review and update. Notification of changes to this plan should be submitted to the State of Ohio Emergency Management Agency, 2855 West Dublin Granville Road, Columbus, Ohio 43235-2206.

NOAA Radio Coverage Map

