Arkansas
Emergency Communications Annex
to the Region 6 Emergency Communications Plan

December 2021
Version 3.0

FEMA

Disaster Emergency Communications (DEC) Division

Document History

Version	Revision Date	Description
1.0	February 2008	Original annex
2.0	December 2015	Streamlined format, updated data and information, added analytic models
3.0	December 2021	Updated GIS data and Arkansas communications information; added analytics, Emergency Communications Landscape (ECL) model, Primary, Alternate, Contingency, and Emergency (PACE) communications models, and State Interoperability Model (SIM)

Executive Summary

The Arkansas Emergency Communications Annex (Communications Annex) contains information regarding emergency communications organization, capabilities, requirements, and mitigation strategies for the State of Arkansas. It serves as a planning guide for the Federal Emergency Management Agency (FEMA) Disaster Emergency Communications Division (DECD) and FEMA Region 6. The purpose of the Communications Annex is to articulate a comprehensive understanding of Arkansas' disaster emergency communications environment to:

- Strengthen FEMA's response to emergency communications needs through detailed depiction of the State's disaster emergency communication capabilities and needs
- Support response and recovery by coordinating emergency communications solutions and mitigation strategies to restore and/or augment communications to the Whole Community[1] of responders

Following a disaster declaration, FEMA will use information in this annex to aid in planning disaster emergency communications support to State authorities. The annex was developed in coordination with statewide stakeholders and includes information about major communications systems, equipment, and infrastructure; points of contact; and risk analysis based on anticipated hazards in the state. Should a regional incident or event occur, FEMA will use this annex in conjunction with other communications annexes to the Region 6 Emergency Communications Plan to plan support disaster emergency communications from a regional perspective.

Key Findings:

As a result of the Arkansas Communications Annex development process, the DECD identified the following key findings for emergency communications in the State:

As a result of the Arkansas Communications Annex update process in 2021, the DECD identified the following key findings for emergency communications in the State:

- The State's statewide 700/800-megahertz (MHz) land mobile radio (LMR) public safety radio system, Arkansas Wireless Information Network (AWIN), provides many State and local agencies with primary, secondary, and backup interoperable communications. If Federal support is needed, a limited number of portable radios are available to distribute to incoming responders. In the event cache radios are depleted, State leadership requests that interoperability be achieved through the following:

  - National Public Safety Planning Advisory Committee direct channels
  - Incident Commander (IC) designated talk groups
  - Use of AWIN mutual aid (MA) interoperable talk groups.

- Cellular and radio communications are limited in many rural areas of Arkansas. For a large event, Federal responders may be requested to provide tactical voice communications capabilities to deployed first responders when operating in these remote areas, away from commercial infrastructure.

- In a large-scale event, fuel and the ability to deliver it to critical communications infrastructure is a concern for the State. Agencies maintain only enough fuel for basic

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[1] More information about the FEMA Whole Community approach can be found at:
https://www.fema.gov/glossary/whole-community

operations. Facilities would not have sufficient reserves to refuel generators for infrastructure, such as tower sites, if they run on backup generators for more than 48 hours. Also, all-terrain vehicles or helicopters may be needed to reach more remote locations to bring them back online.

- State and local agencies primarily operate on the AWIN system's interoperability channels to communicate during day-to-day and response operations. Emergency personnel may need to operate in areas that have no 700/800-MHz system capability and/or limited coverage from other LMR systems. To enhance coverage to maintain command and control and situational awareness, Federal support in all LMR bands may be requested by the State Emergency Operations Center (SEOC) and Emergency Support Function 2 (ESF-2).

- Most of the deployable communications resources the State has available for disaster response are located in the vicinity of Little Rock. The State may require assistance in deploying those resources, or need help in identifying other assets, to support requirements in outlying parts of the State if there is significant damage to major transportation infrastructure.

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1 State Overview

This section provides information regarding Arkansas response and recovery operations and describes how communications support primary response and recovery functions. Primary responsibility for incident response and recovery rests with local governments. As these localities' resources are overwhelmed and their capabilities exceeded, they can request mutual aid from neighboring communities. If mutual aid is not available, local entities can request assistance from the state.

1.1 Response Structure

All disaster response begins at the local level and will be coordinated through the local EOC, if one exists. If not, then response is controlled by local fire and police departments until that jurisdiction requests assistance from the state. Arkansas Division of Emergency Management (ADEM) is the primary command and control (C2) agency for Arkansas, and all requests are to and coordinated through the State Emergency Operations Center (SEOC). All response activities at an incident site are coordinated under Incident Command System (ICS)/National Incident Management System (NIMS) procedures.

Arkansas Division of Emergency Management (ADEM) has the responsibility for statewide coordination of operations and resource requests within the State. Other State agencies, the State's Volunteer Organizations Active in Disaster (VOAD), and non-governmental organizations (NGO) provides liaison officers to the SEOC, depending on the incident requirements.

The primary method for transmitting local requests for assistance is via request to the SEOC, which is in Little Rock. ADEM staff and partner agencies use the WebEOC information management system to coordinate and document all emergency responses and requests for assistance within the State. The State organizes response by ESF, which provides the structure for coordinating the resources of many State agencies as they respond to an incident. All resource requests are entered into WebEOC and transferred to the appropriate ESF unit for prioritization and fulfillment. This allows ADEM not only to streamline support to local jurisdictions by increasing situational awareness within each function, but also to work seamlessly between the functions represented in the SEOC. The State is also organized to allow for a shift in primary responsibilities when a specific incident requires certain expertise. For example, during most incidents, ADEM takes the lead in dissemination of public information. However, in a nuclear/radiological incident, the Arkansas Department of Health (ADH) leads that function because the health implications from such an event are unique to that type of incident, and ADH has the necessary subject matter expertise to address those issues.

To facilitate communications with its five regional offices, as well as with many other State agencies, cities, and towns across Arkansas, ADEM uses the State of Arkansas Wireless Information Network (AWIN). AWIN is a statewide, multiple-site, digital, 700/800 MHz trunked communications system.

As seen in **Figure 1**, Arkansas is broken into five emergency management and homeland security regions. Each of the five regions have an Area Coordinator and contact information can be found in **7Appendix E:**.
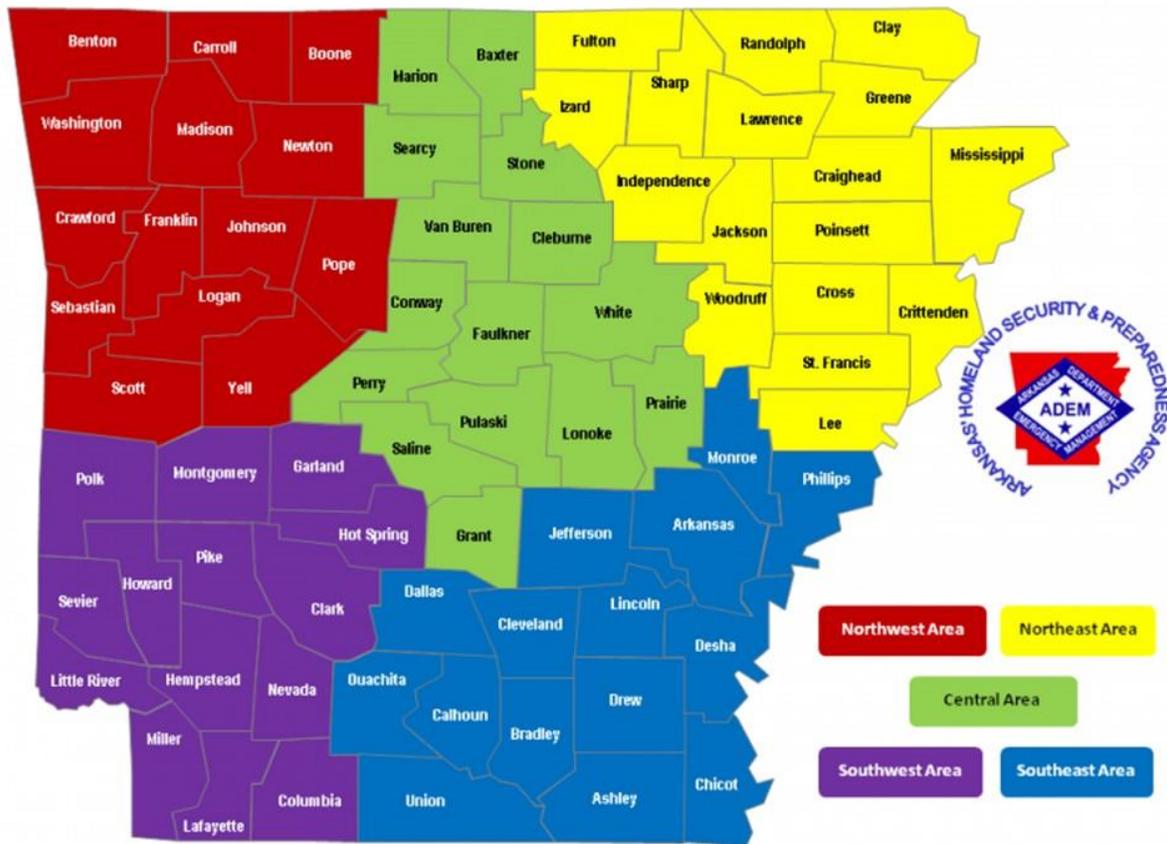
Figure 1: Arkansas Emergency Management / Homeland Security Regions

ADEM is the lead State agency for coordinating C2 operations in Arkansas. It works closely with State agencies and other partners to execute its functional activities, which include planning, resource prioritization, communications, logistics, and public information. The Arkansas Division of Information Systems (DIS), along with ADEM, the Arkansas State Police (ASP), and the Arkansas Interoperable Communications Committee supports and maintains the statewide 700/800 MHz LMR network, which is the primary method of communications supporting statewide tactical emergency response in Arkansas. ADEM hosts the AWIN master site at its office. The State also uses resources such as telephone over the Public Switched Telephone Network (PSTN), cellular telephones, Internet, and satellite voice and data communications to execute its mission. Amateur radio and the statewide satellite radio system provide backup communications if the AWIN system fails or becomes degraded.

Table 1 below lists contact information for ADEM's Director and Statewide Interoperability Coordinator (SWIC) and communications capabilities for the Arkansas Response & Coordination Center (ARCC) and SEOC.

Table 1: Command and Control Communications

Arkansas Emergency Management Agency	
Name	Penny Rubow
Title	Director, Arkansas Wireless Information Network (AWIN), SWIC
Agency	ADEM
Address	Bldg. 9501 Camp Joseph T. Robinson North Little Rock, AR 72199
Office Phone	501-683-1798 (AWIN 24x7 support line)
Cell Phone	501-837-9623
Fax	501-683-7890
Email	penny.rubow@adem.arkansas.gov
ARCC and SEOC	
Primary 24/7 Phone	501-683-6700
Alternate 24/7 Phone	501-683-6705
Satellite Phone Number	Talkgroup AR ALL; Satellite to Satellite 500-180-4072; Toll-Free 877-821-8656; 703 number 703885315; Direct Number 1366. the Toll-free number may be reached by any telephone device. 877-283-3842
Satellite/MSAT Talk Groups	Arkansas-1 (all PS agencies; send request to AWIN.Operations@arkansas.gov); CUSEC-1 (Central United States Earthquake Consortium partners; send request to CUSEC-1@cusec.org); SE-SMART (AR, AL, FL, GA, KY, LA, MS, NC, SC, TN, VA, and WV; send requests to SESMART@fairfaxcounty.gov); J-SMART (law enforcement focus; send request to SMART@usdoj.gov)
Cellular Phone	To be determined (TBD)
Radio—HF	Ops SECURE frequencies: 2.32740, 2.41540, 2.80540, 5.14140, 7.47840, 7.80640
Radio—Amateur Bands/Modes	Call sign KE5VRO and KB5LZK **VOICE**: 80 meters primary: 3987.5 kHz; 40 meters primary: 7260 kHz; 40 meters secondary: 7285 kHz & 7235 kHz; VHF Local 2-meter Repeaters; VHF Simplex Primary: 146.520 MHz **DIGITAL**: 147.495 MHz packet; 145.010 MHz packet; 145.590 MHz packet; 80 meters WinLink: 3626.9 kHz; 40 meters Winlink: 7068.9 kHz; 40 meters Winlink: 7101.2 kHz Pactor 3; 30 Meters WinLink 10146.2 kHz; APRS: 144.390 MHz
Radio—VHF Low	N/A
Radio—VHF High	N/A
Radio—UHF	UCALL, UTAC
Radio—700 MHz	AWIN
Radio—800 MHz	AWIN
NAWAS	Circuit ID PLLJ.008228.068 for state internal; National NAWAS PLLJ.008227.067
FNARS	Call Sign WGY966; ALE Address AR6FEM; Denton RRN
WinLink	Yes
WebEOC	Yes
HSIN	Yes

Arkansas Emergency Management Agency	
Video teleconference (VTC)	No
STE Phone	Yes
Fax	501-683-7890

The State Interoperability Model (SIM), seen in **Figure 2**, is a depiction of the major lines of communications used by the State for Command and Control (C2) broken out by medium (LMR, data, satellite, HF, etc.). The SIM is designed to give incoming responders and supporters a clear and concise picture of the emergency communications landscape to help them understand how the state will communicate while conducting C2 during response and recovery operations.
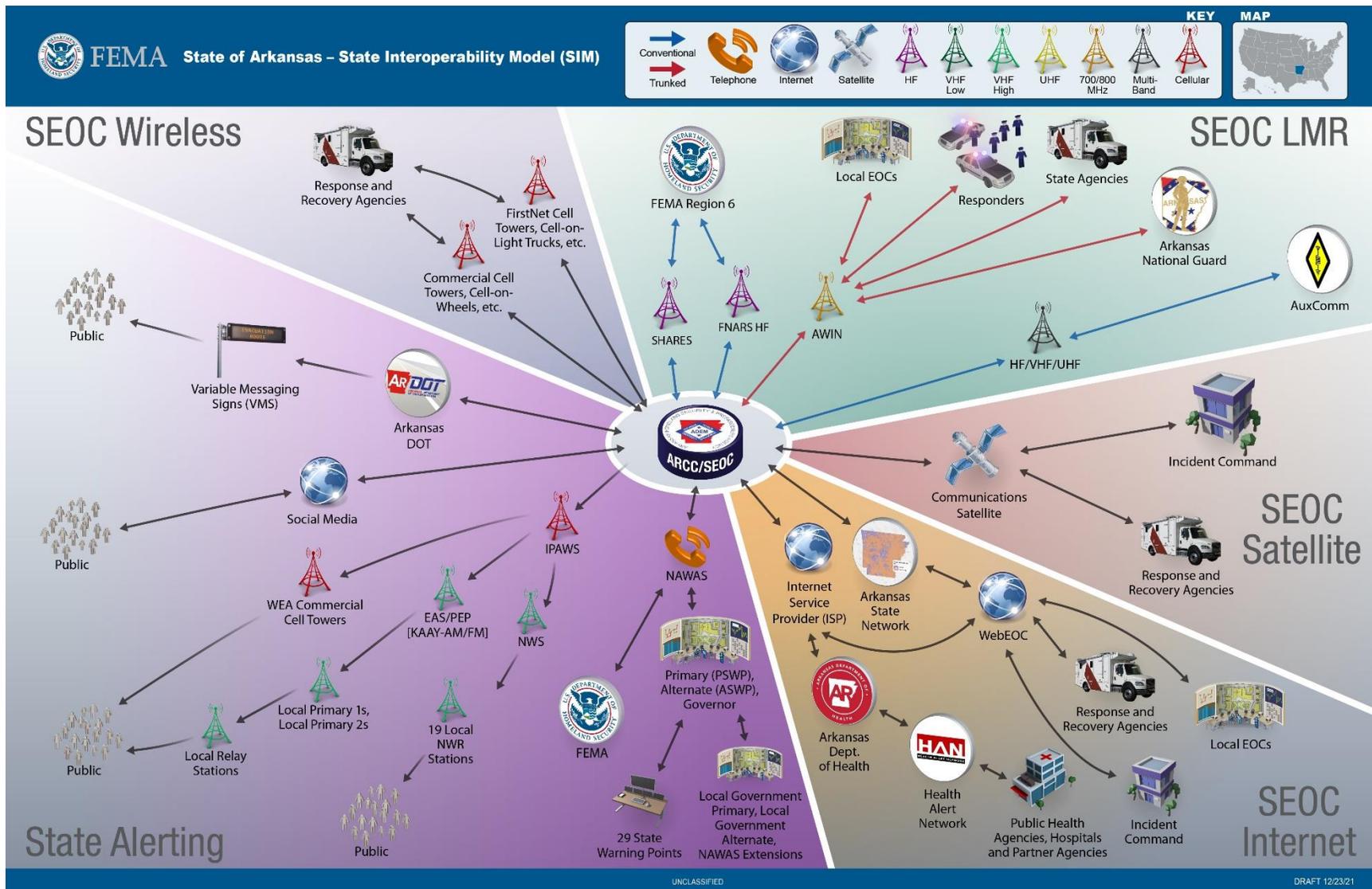
Figure 2: Arkansas SIM

1.2 Emergency Communications Landscape Model

The Arkansas Emergency Communications Landscape (ECL) model is a graphical depiction that provides an overview of how Arkansas is organized operationally, and the capabilities used to facilitate interoperable communications when responding to an event. This model illustrates Arkansas' primary lead and support agencies and whole community partners while executing missions during response and recovery operations following a catastrophic incident. The ECL also visually depicts the major hazards facing Arkansas as declared in its mitigation plan.

Stakeholders may be listed in multiple phases within the model, as some agencies are relied upon in command and control, response, and/or recovery phases. Agencies/organization with a lead responsibility are identified by a yellow band around the puck symbol in each phase. The ECL model consists of six components:

- High-Impact Hazards
- Command and Control
- Response
- Recovery
- Whole Community
- Critical Infrastructure/Capabilities

This model will help FEMA quickly and efficiently support Arkansas in federally declared disasters. The Arkansas ECL Model can be seen in **Figure 3**.

Figure 3: Arkansas ECL Model

1.3 State Hazard Profile

Arkansas is comprised of 53,179 square miles and 3,011,524 people with major population centers in Fort Smith, Fayetteville, and Springdale and the state capital located in Little Rock. Arkansas borders Missouri, Tennessee, Mississippi, Louisiana, Texas, and Oklahoma. Since 1979, Arkansas had 50 major disaster declarations that have required federal support and assistance to its citizens. The most common disasters include floods, landslides, severe storms, severe winter storms, and tornados. The following sections provide brief synopses of each hazard and their impacts to Arkansas.

1.3.1 Critical Infrastructure Failure

Technology's role in public safety has increased significantly. As a result, many States have become more integrated and dependent on technology and supporting infrastructure. Arkansas organizes its critical infrastructure (CI) into 16 sectors (shown in **Table 2**) that together provide essential functions and services supporting various aspects of the State government, economy, and society. One of the threats that Arkansas faces is a large-scale technology or infrastructure failure. Arkansas' DIS provides the State's data network through two data centers. The primary State data center is located at Number One Capital Mall in Little Rock, AR. Failure of both data centers would adversely affect the State's ability to conduct business and respond to disaster. While this scenario is unlikely, the State of Arkansas views it as a significant threat that would impair the State's ability to respond to the needs of its citizens.

Table 2: Critical Infrastructure Sectors and Sector Specific Agencies

Sector	Sector Specific Agency (SSA)
Agriculture and Food	Arkansas Department of Agriculture Arkansas Department of Health (ADH)
Defense Industrial Base	Arkansas National Guard
Energy	Arkansas Energy Office Arkansas Public Service Commission (APSC)
Healthcare and Public Health	Arkansas Department of Health (ADH)
Banking and Finance	Arkansas Department of Finance and Administration (DFA) Arkansas Banking Department
Water and Wastewater	Arkansas Division of Environmental Quality (DEQ) Arkansas Department of Health (ADH)
Chemical	Arkansas Division of Environmental Quality (DEQ)
Commercial Facilities	Arkansas National Guard
Critical Manufacturing	Arkansas Economic Development Commission
Dams	Arkansas National Guard
Emergency Services	Arkansas Division of Emergency Management (ADEM)

Sector	Sector Specific Agency (SSA)
Nuclear Reactors, Materials, and Waste	Arkansas Department of Health (ADH)
	Arkansas Division of Environmental Quality (DEQ)
Information Technology	Arkansas Division of Information Systems (DIS)
Communications	Arkansas Division of Emergency Management (ADEM)
Transportation Systems	Arkansas State Highway and Transportation (ARDOT)
Government Facilities	DFA, Division of Building Authority

1.3.2 Floods

In Arkansas, major flooding often occurs among the major drainage basins and river regions throughout the state. However, localized flooding can occur due to dam failures, flash floods, debris flows, and landslides. In the past 40 years, there have been 11 major disaster declarations including flooding.[2] A floodplain likely exists in all counties in the state but not all counties were analyzed in the NFHL. 100-year and 500-year floodplains are FEMA-designated areas where there is a one percent or 0.02 percent probability of a flood event occurring in any given year. These floodplains exist throughout Arkansas and provide a hazard to the public safety of its citizens as well as to some critical infrastructure in the State. **Figure 4**: Arkansas Flooding Hazard depicts the 100-year and 500-year floodplains throughout Arkansas, as well as the unknown counties that were not included in FEMAs floodplain.

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[2] http://www.fema.gov/disasters/
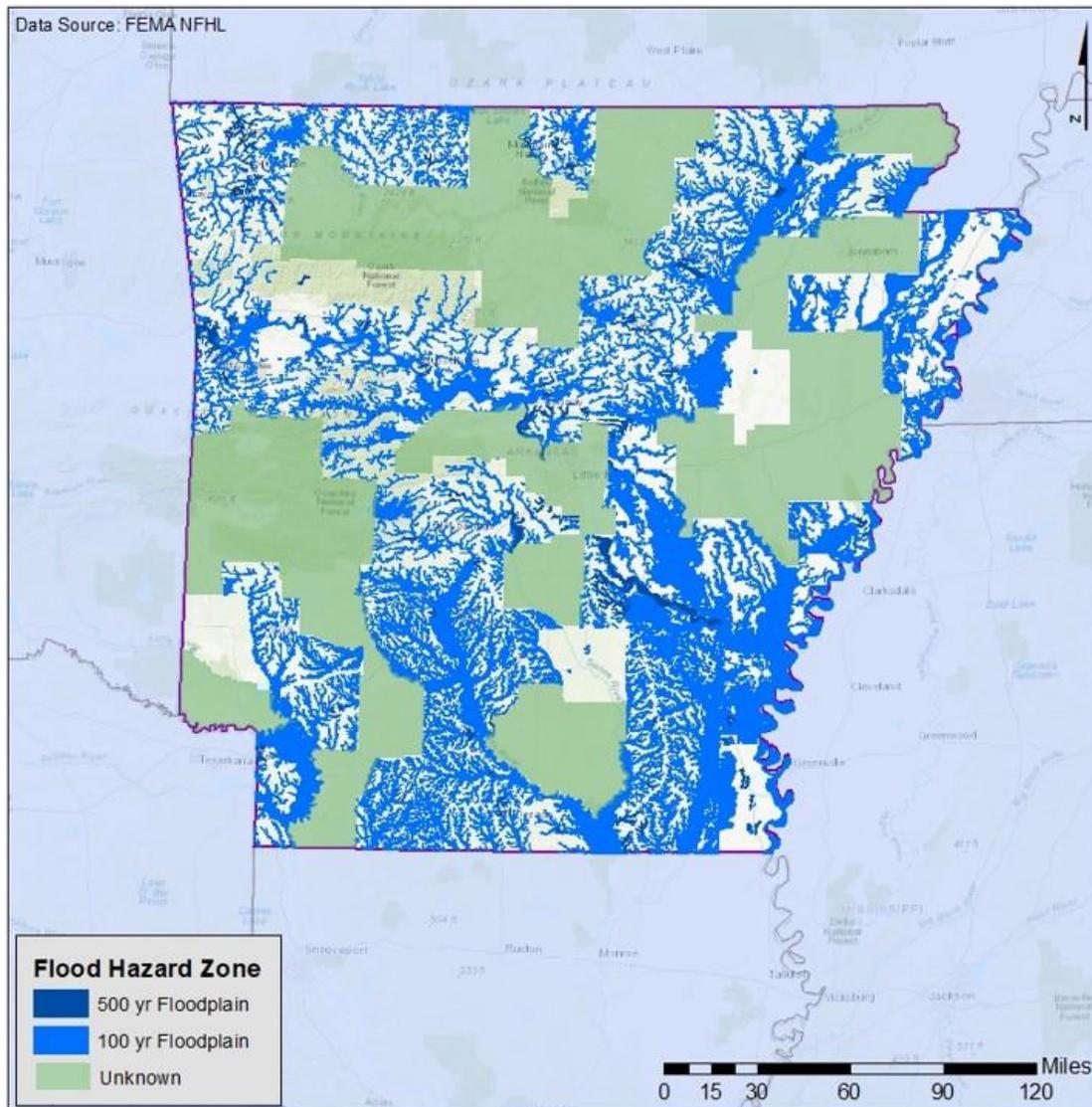
Figure 4: Arkansas Flooding Hazard

1.3.3   Landslides

Although all counties in the State may be affected, two thirds of the counties in Arkansas identify landslides as a hazard to which they are susceptible. Most landslide events are restricted to a specific geologic formation. The primary factors are topography, geology, seismic activity, rainfall/snowmelt, and ground cover.[3] Damage associated with landslides includes property damage, infrastructure damage, and change in topography. Landslide susceptibility is estimated based on rock strength, terrain slope, and rainfall.[4] The greatest risk of landslide events occurs along riverbanks and steep unvegetated slopes due to saturated and unstable soil. While landslides occur throughout Arkansas, they are most prevalent in the central eastern portion of the State and are responsible for one Disaster Declaration since 1979.[5] The Ozark-Ouachita Mountains, mostly

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[3] Arkansas State Hazard Mitigation Plan

[4] Geologic Survey of Arkansas

[5] http://www.fema.gov/disasters/

located in Scott, Montgomery, and Garland counties, have been identified as particularly susceptible to landslides. Sebastian County has been identified as most vulnerable for building and infrastructure damage. **Figure 5** displays the counties that have the greatest potential for landslides as outlined by the Arkansas Hazard Mitigation Plan (HMP). The majority of these events occur along the northwestern portion of the state.
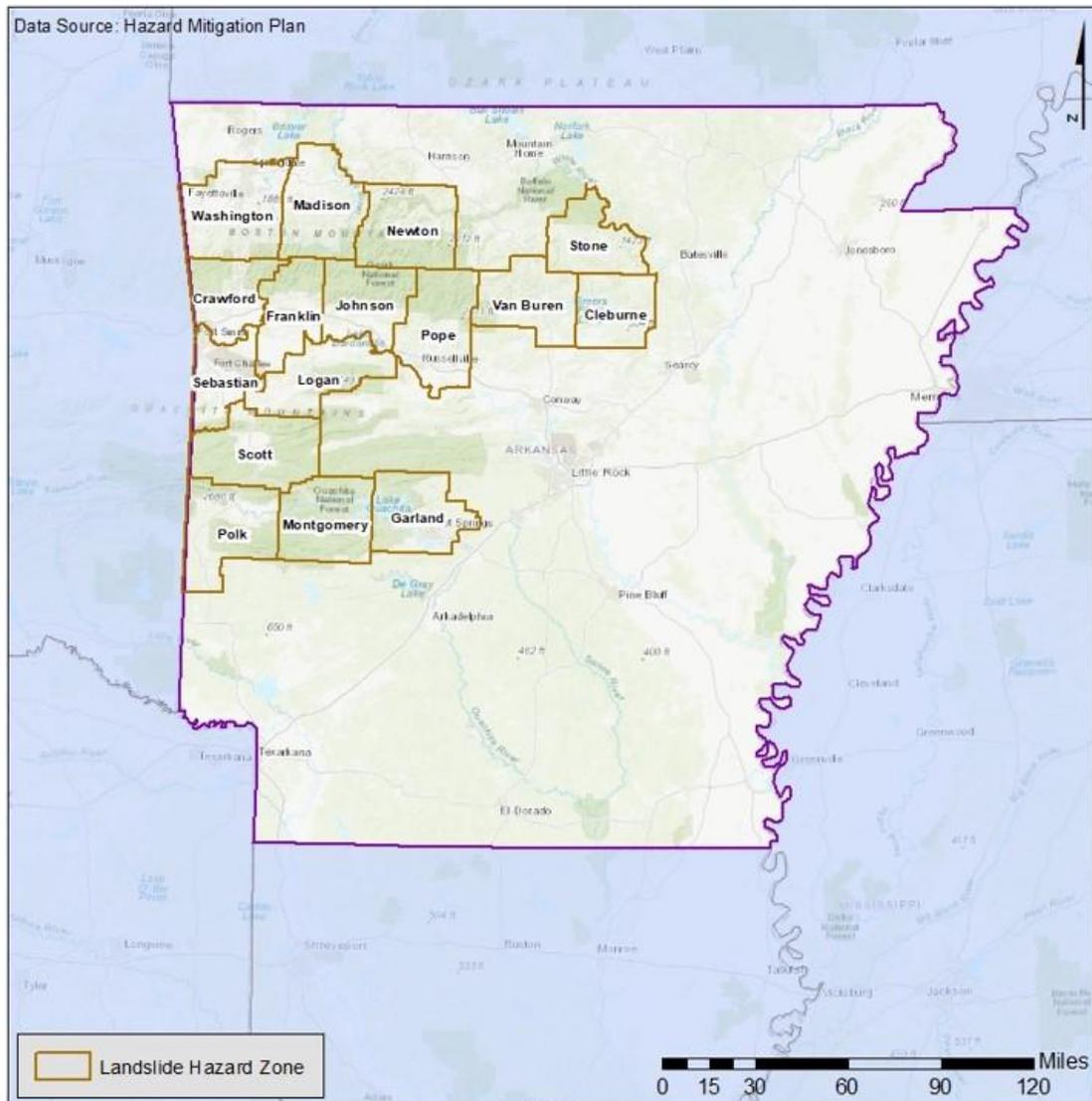
Figure 5: Arkansas Landslide Hazard

1.3.4 Severe Storms

In the past 40 years, 48 of the major disaster declarations in Arkansas have been related to severe storm activity. Severe storms occur throughout the entire State of Arkansas and are most likely to occur in spring and early summer. Severe storms can include high wind, lightning, hail, heavy rain, extreme heat, etc. and affect electric power transmission and damage infrastructure, which can affect the availability and operations of telecommunications infrastructure. The National Oceanic and Atmospheric Administration (NOAA) National Climatic Data Center's recorded the counties of Benton, Crawford, Faulkner, Garland, Lonoke, Pulaski, Saline, Sebastian, Washington, and White as having experienced the most severe storm activity in the past 40 years. **Figure 6** depicts the counties that experience the most severe storms as shown in Arkansas' HMP.
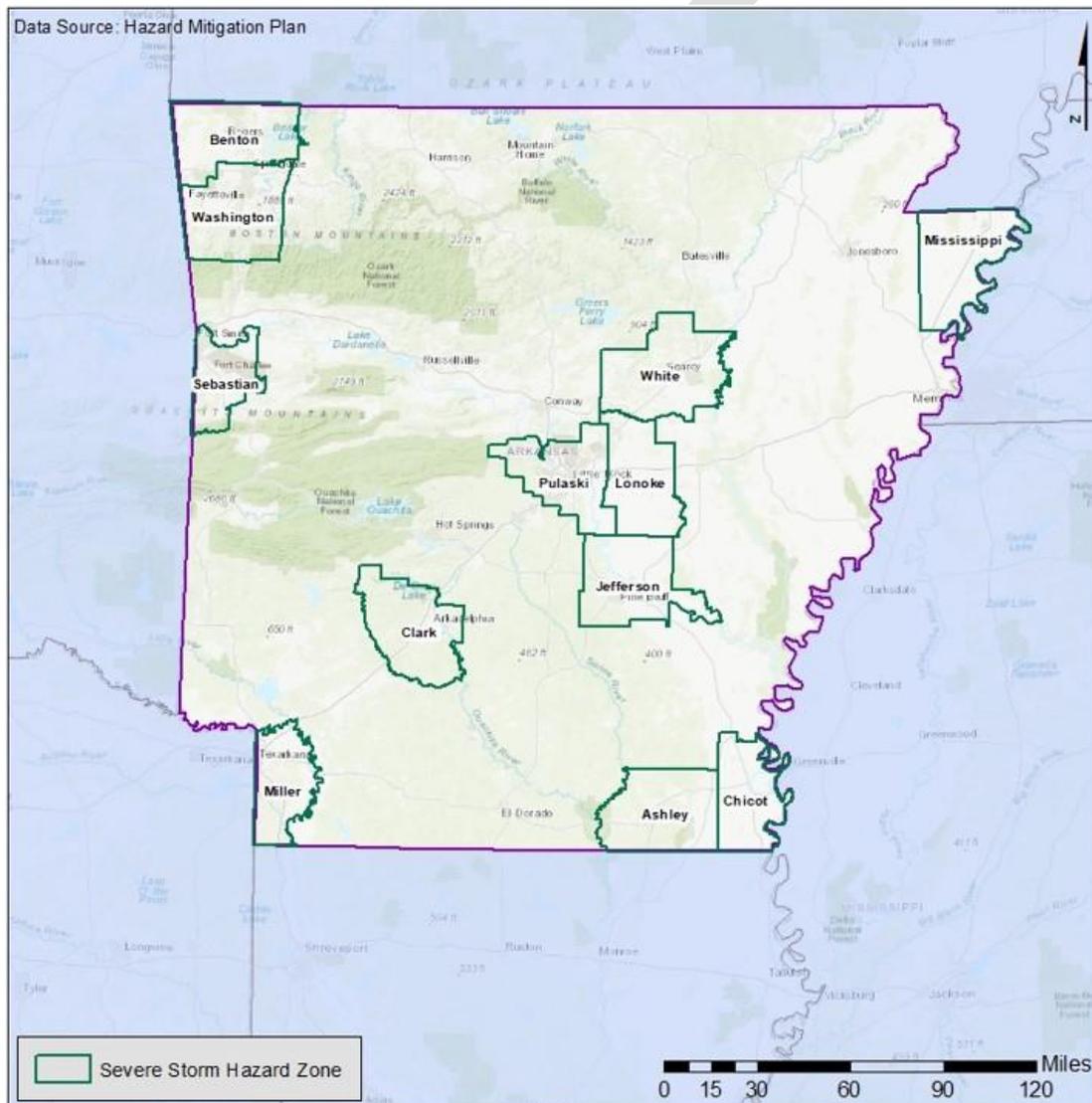
Figure 6: Arkansas Severe Storms Hazard

1.3.5 Severe Winter Storm

In the past 40 years, there have been six Major Disaster Declarations in Arkansas related to severe winter weather; this includes snowfall, sleet, ice, winter storms, blizzards, and extreme cold. The northern portion of the State experiences the bulk of the State's severe winter weather; however, severe winter weather has been shown to dramatically affect infrastructure statewide. Boone, Marion, Baxter, Newton, Searcy, and Sharp counties have been identified as the counties most likely to encounter recurring winter weather. Severe winter storms can affect electric power transmission, which can affect the availability and operations of telecommunications infrastructure. Because severe winter storms are not as common as other disasters in the State, they often cause the most disruption to transportation and commerce due to citizens' being unaccustomed to them. Winter storms are a common occurrence in Arkansas. Winter storms may include extreme low temperatures, heavy snowfall, ice, etc. **Figure 7** shows the counties that experience the most frequent storms and subsequent damage as stated in the Arkansas HMP. Winter storms can also have a major impact on communications in the State of Arkansas for many reasons. When snow and ice cause power outages, communications towers must revert to backup generators that need to be refueled. In rural mountainous areas, this is especially difficult, and fire crews must hike fuel into the areas to keep the generators running. Some AWIN sites may require air lift or winterized rough terrain vehicles to gain access for generator maintenance, fuel delivery, or repairs. In addition, winter storms pose a risk for microwave links because the loss of even one link during a significant winter storm or other disaster may require days to access for repair.
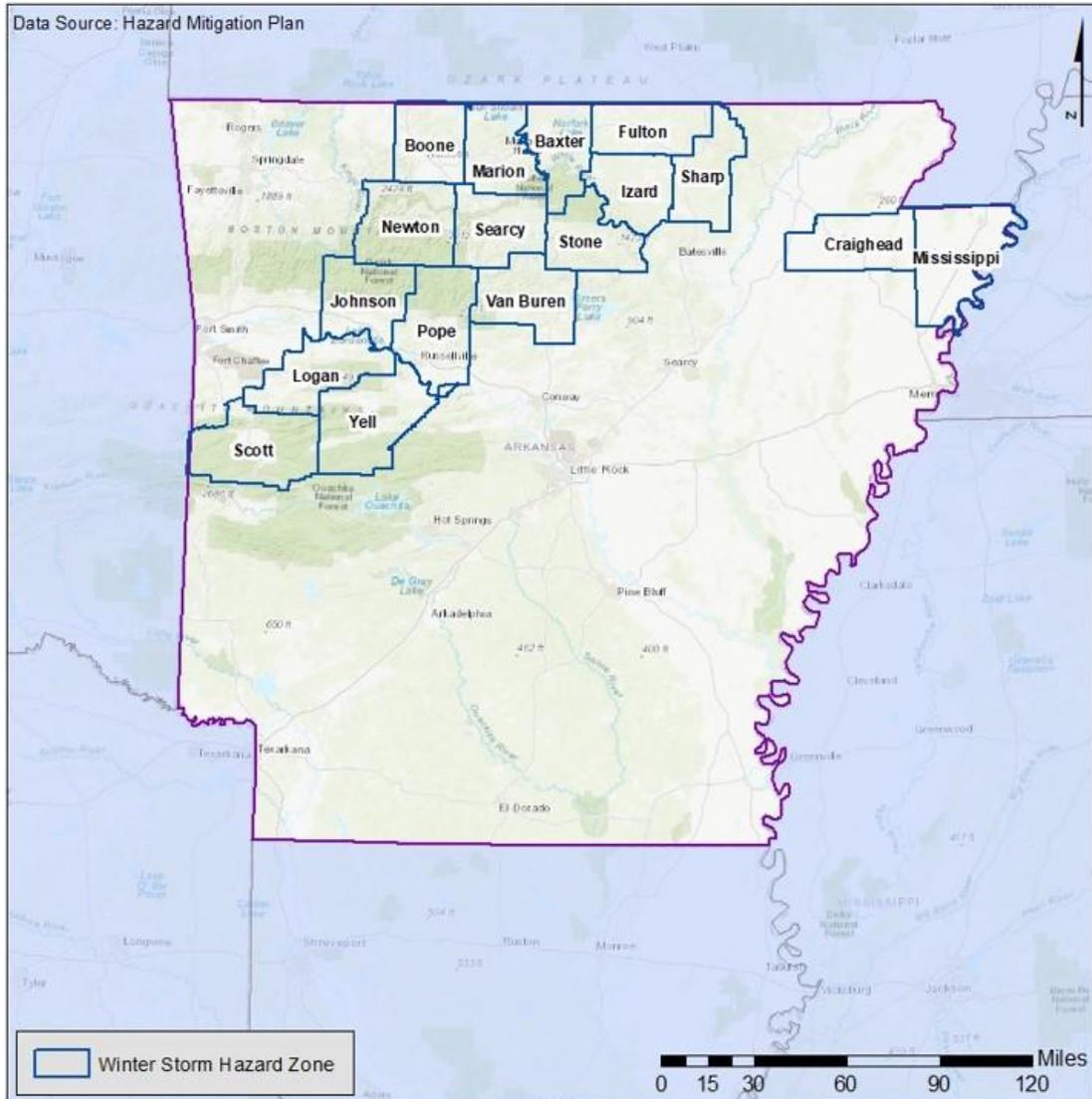
Figure 7: Arkansas Severe Winter Storm Hazard

1.3.6   Tornados

Tornados are a common occurrence in Arkansas. Tornadoes may occur at any time of the year but most often occur between the months of March and June. The central portion of the state experiences the highest density of tornado events. **Figure 8** depicts historic tornado tracks with density analysis to display where tornadoes may be most likely to occur. Data used from The National Oceanic and Atmospheric Administration (NOAA) National Climatic Data Center (NCDC). Arkansas is located centrally in FEMA Wind Zone 4. This is the highest zone and is home to the country's most vicious and largest tornadoes and windstorms. In Arkansas, all 75 counties have recorded tornadoes. Scott County has reported the fewest with 7 tornadoes in the past 30 years, and Pulaski County has reported the most with 84 tornadoes in the same time period. Tornadoes are most common in the area stretching from Garland County to Mississippi County. Since 1979, tornadoes have been related to 28 Disaster Declarations in the State.
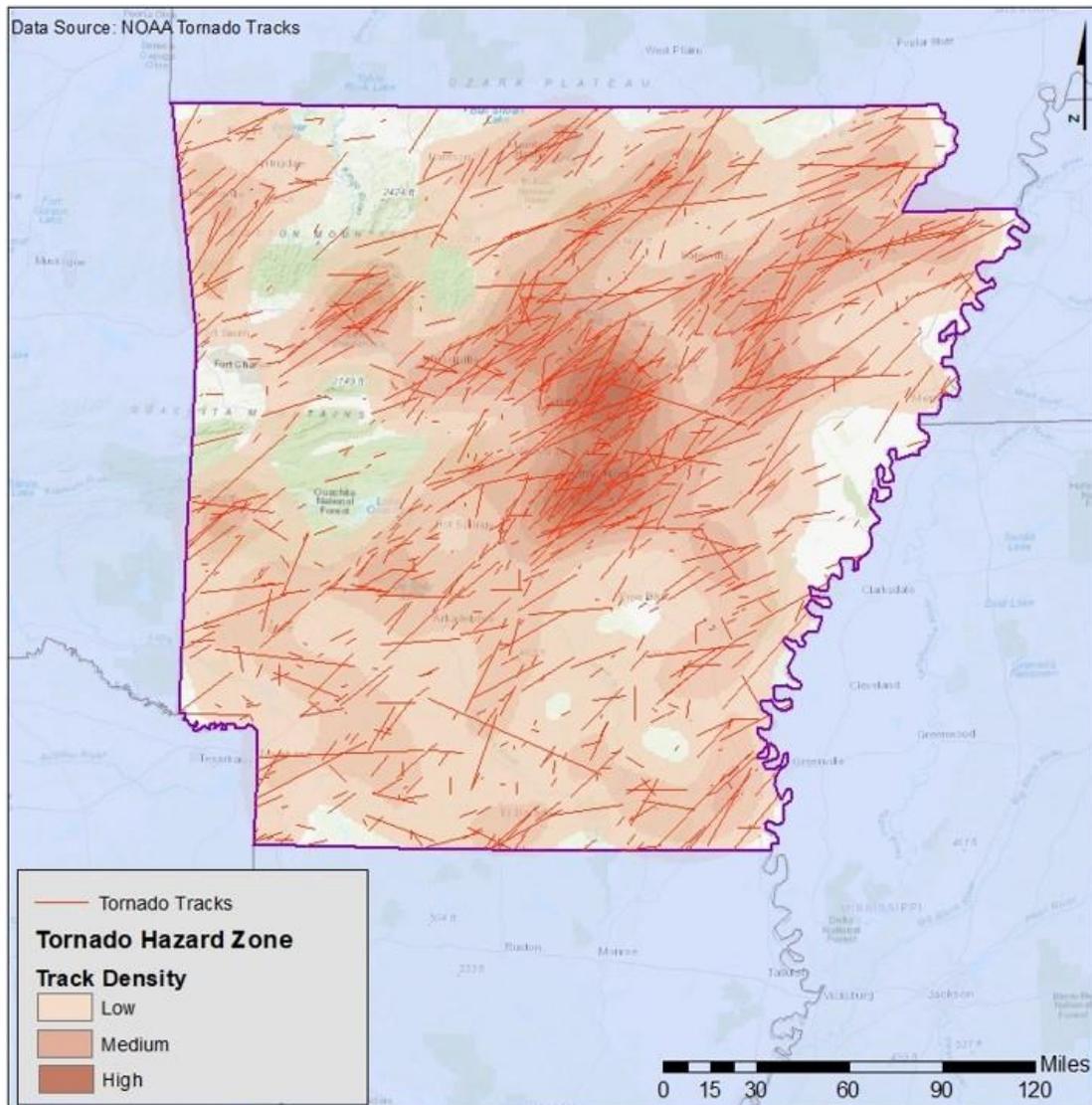
Figure 8: Arkansas Tornado Hazard

1.3.7   Nuclear Accidents

There is one nuclear facility located in the State of Arkansas: Arkansas Nuclear One. It produces enough energy to completely supply the entire city of Little Rock during peak energy consumption times. If an incident occurred at this nuclear facility, many of the counties in the State would be vulnerable to atmospheric radioactivity. While these radiation effects may not cause immediate physical damage to emergency-support infrastructure, they may affect human operational capabilities (maintaining or repairing equipment) in radiological fallout zones because of contamination concerns and the need to evacuate the affected area. Food and water sources can become contaminated in a nuclear incident as well. The loss of this nuclear power plant could cause significant power outages over a large area that would affect citizens and hinder response operations. **Figure 9** below shows the location of the Nuclear One site and additional information on the emergency planning zones, reception centers and evacuation information can be found in **7Appendix G:**.
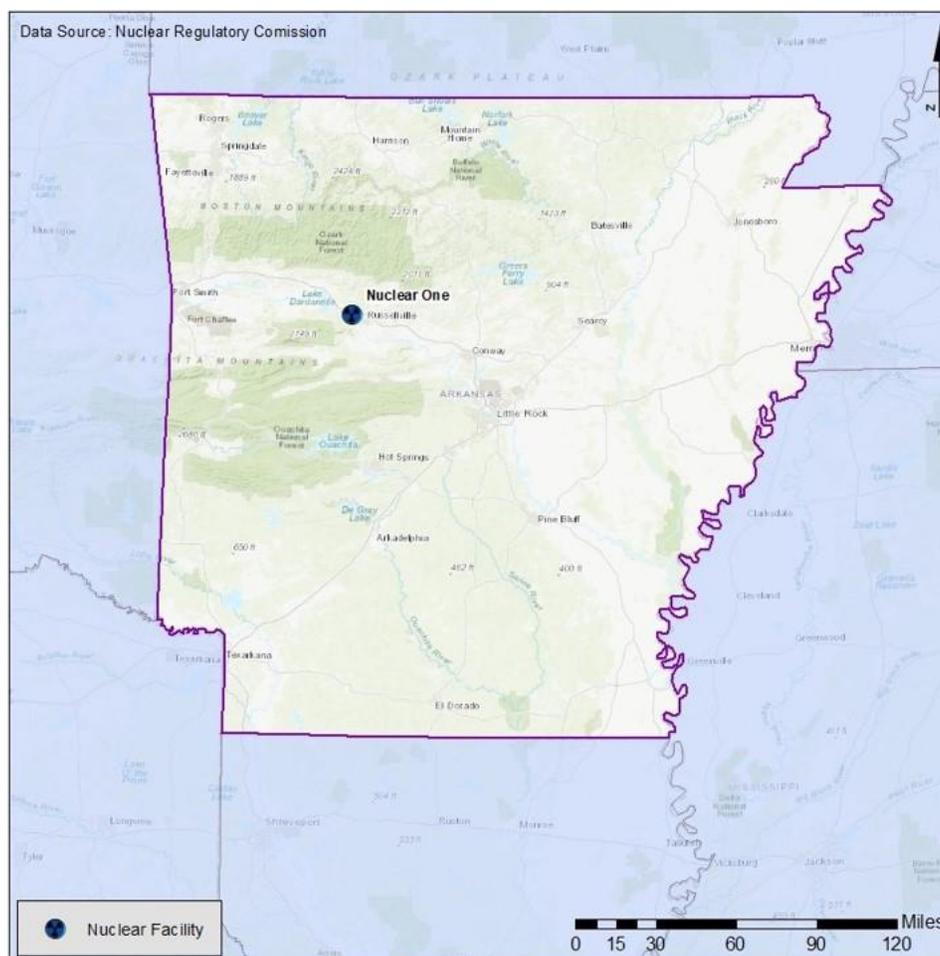
Figure 9: Nuclear Power Plants in Arkansas

1.3.8 National Special Security Event/Manmade/Terrorism

A National Special Security Event (NSSE) is a significant domestic or international event, which, by virtue of its profile or status, represents a significant target, and warrants additional preparation, planning, and mitigation efforts. An NSSE is an Incident of National Significance as defined by the National Response Plan. When an NSSE is declared, the U.S. Secret Service (USSS) assumes the lead of implementing the operational security plan, and they coordinate with federal, state, and local law enforcement. The USSS has coordinated 63 NSSEs since 1998. Common events that qualify as an NSSE include State of the Union Addresses, Presidential Inaugurations, North Atlantic Treaty Organization (NATO) or United Nations meetings, international economic summits (e.g., the G8 or G20), and national conventions by political parties. Arkansas has not held any NSSEs.

Manmade incidents or terrorism events are rare in Arkansas. Cyber terrorism does not follow geographical or political boundaries, and thus far the state has not suffered significant cyber or other kinds of high impact terrorist events. However, the Arkansas State website, several local public safety law enforcement agencies, local governments offices and a couple of medical and

educational institutions have been targeted.[6] Arkansas has not yet experienced any catastrophic level, manmade disasters.

2 Interoperability of Major Communications Systems

Arkansas' agencies use several disparate systems for voice and data communications. The following sections detail the various communications tools that are leveraged by first responders and public safety officials in Arkansas. These tools are focused on the larger systems that are available statewide and do not include the multitude of capabilities that exist at the local level within Arkansas.

Figure 10 illustrates the state's PACE methods of communication. Note that communications capabilities can appear under multiple conditions as the state can use the capability that is most effective given the operational environment. PACE graphics also appear in Section 4 to help to illustrate how communications pathways vary depending on the operational mission.

Figure 10: Statewide Interoperability PACE Communications

2.1 Disaster Emergency Communications Voice Systems

Arkansas has one major statewide voice system to support communications, AWIN, which is a P25 digital 700/800 MHz trunked system. ARDOT maintains a statewide VHF non-trunking system with 46 tower sites. It is not widely used across the State by law enforcement agencies, but primary used for DOT and highway maintenance operations. However, in times of emergency, it may be leverage by some State agencies that still have VHF capabilities. **Table 3**: State Voice Systems Details below provides additional details on these two LMR systems.

Table 3: State Voice Systems Details

System Name	System Details	Conventional/Trunked	Infrastructure Details	Coverage Area	Supported Agencies/Users
AWIN 700/800 MHz System	• Digital • Multi-task • P25 common air interface • 93-percent mobile radio coverage; 50-percent street coverage	Trunked	• 132 sites (including dispatch sites) • 36,000 radios currently on the system	Statewide	• ADEM • ASP • ARDOT • Other State and local partner agencies across the State

[6] https://www.seculore.com/resources/cyber-attack-archive/arkansas

System Name	System Details	Conventional/Trunked	Infrastructure Details	Coverage Area	Supported Agencies/Users
	▪ 16 mutual aid talk groups				
ARDOT Statewide VHF System	▪ VHF High-Band	Conventional	▪ 46 sites ▪ 1,200 users	Statewide	▪ ARDOT ▪ Highway maintenance operations

2.1.1 Arkansas Wireless Information Network (AWIN)

The major communications system in the State as mentioned previously is the AWIN system. This system is composed of towers using 700/800 MHz frequency bands within a network capable of providing statewide talk groups. AWIN is an advanced digital radio communications system built to the Association of Public Safety Communications Officials (APCO) P25 digital radio standards. The system was developed in 2004 leveraging the assets of the ASP. Older backup systems such as Arkansas Game & Fish Commission (AGFC) have been deactivated. Local legacy systems still may still exist but were not disclosed for this annex update.

The ADEM has the main responsibility for administering and maintaining the network, and it serves as the ASP's primary form of voice communications. There are 36,000 subscribers on AWIN, and every radio is programmed with the National Interoperability Field Operations Guide (NIFOG) and MA channels. AWIN consists of the following major components:

- Radio communications sites (towers, equipment shelters, generators, mobile sites, and site security)

- Master sites located diversely across the State

- Subscriber Units, including mobile radios, handheld (portable) radios, and control stations

The AWIN radio system is built for 93-percent mobile radio reliability over 80 percent of the State. **Figure 11** shows the location of all 114 AWIN tower sites.
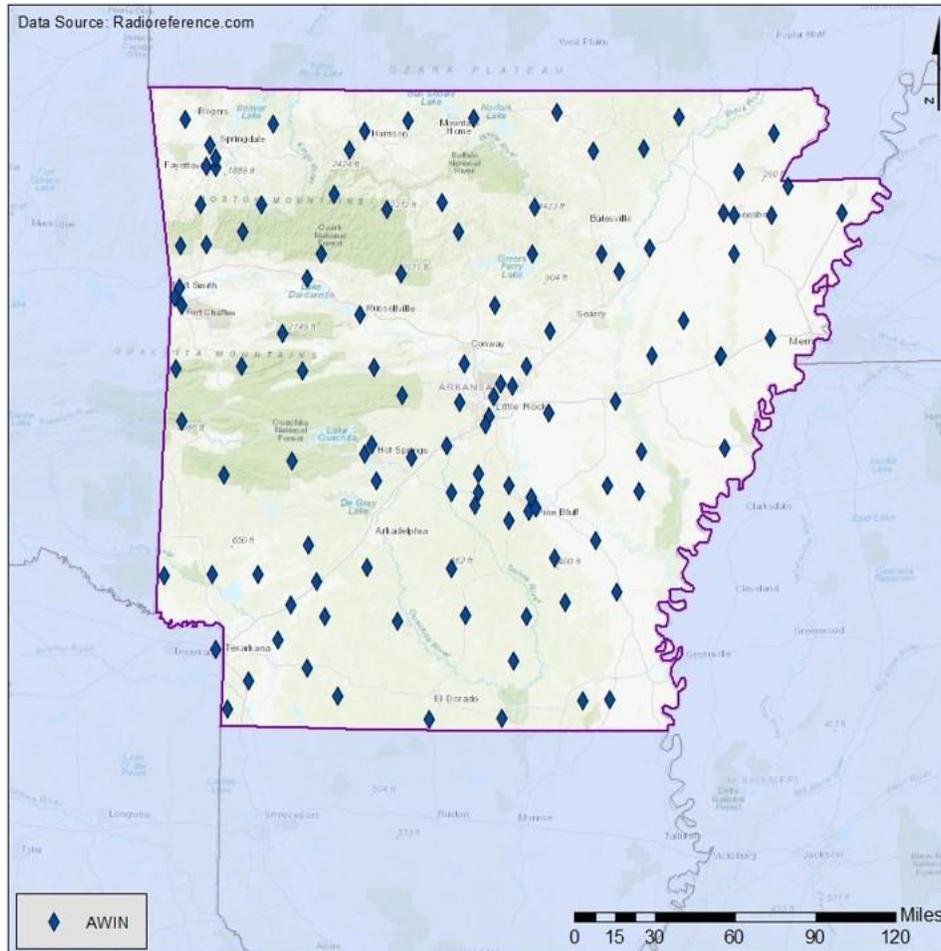
Figure 11: AWIN Sites

2.2 Disaster Emergency Communication Data Networks

Arkansas' Department of Transformation and Shared Services, Division of Information Systems (DIS) is the information technology solutions provider for the State of Arkansas, providing service and support for all State departments and agencies. The data network, which has an AT&T backbone, is managed by the Information Technology Division at two network operations centers (NOC); a primary in the capital complex and a secondary in Fayetteville. Point of presence servers are located on site, and access to the facilities is limited. If these sites were to experience simultaneous, catastrophic failures, it would disrupt service to public safety organizations, government agencies at various levels, schools, and healthcare facilities. Most State agencies that support the SEOC use WebEOC as an information-sharing platform during disaster response operations. Access to the WebEOC servers through the state data network is critical to sharing situational awareness.

2.3 Continuity Communications Alert and Warning

Public alerts and warnings are defined as a core capability across the five emergency management mission areas. The capability is defined as the ability to "deliver coordinated, prompt, reliable, and actionable information to the whole community through the use of clear, consistent, accessible,

and culturally and linguistically appropriate methods to effectively relay information regarding any threat or hazard and, as appropriate, the actions being taken, and the assistance being made available."[7]

In the Response mission area, the National Preparedness goal presents target objectives for Public Information and Warning as:

- Inform all affected segments of society by all means necessary, including accessible tools, of critical lifesaving and life-sustaining information to expedite the delivery of emergency services and aid the public to take protective actions.

- Deliver credible messages to inform ongoing emergency services and the public about protective measures and other life-sustaining actions and facilitate the transition to recovery.

The new wireless emergency alerts (WEA) capability was deployed in partnership with the cellular industry across the country since 2012. WEAs provide the ability for local public safety officials to send a short emergency message through the cellular networks to all cellular telephones in a specified area. State and local officials can access the WEA capability through the FEMA IPAWS. The FEMA IPAWS also provides a capability conduit to activate EAS and send messages to NWR stations and continues to add other public messaging capabilities such as emerging Internet communications services.

The communications systems available in each State and local community for public alert and warning and emergency information delivery are wide and varied. Systems in Arkansas used by public safety officials range from word of mouth, scanners for monitoring local PS radio nets, temporary electronic signboards, to comprehensive systems for automated local telephone dialing and subscription-based notifications, as well as websites and social media messaging.

2.3.1   Emergency Alert and Warning Systems

The EAS is maintained by radio, television (TV), cable, and satellite broadcasters as part of their licensing agreements with the Federal Communications Commission (FCC). Each licensed station or broadcast system is required by the FCC to have equipment and procedures for receiving and relaying emergency alerts from designated government authorities. A State EAS Plan, typically maintained by the State broadcast association in partnership with State EM officials, describes who is authorized to activate the EAS and defines how particular stations or a network of multiple radio and TV stations will be activated to broadcast emergency alerts and warnings and urgent PS information.

The EAS can automatically relay and broadcast audio and text emergency alert messages from station to station, ensuring those messages reach the maximum number of citizens in a broad area. Broadcast of State and local and weather alerts and information is a voluntary decision for each station. Coordination with individual stations or via the State broadcast association by the State and local PS officials is required to ensure continued participation of local broadcast station in public safety communications plans. Arkansas has one Legacy Primary Entry Point (PEP) station,

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[7] National Preparedness Goal, First Edition, September 2011: http://www.fema.gov/media-library-data/20130726-1828-25045-9470/national_preparedness_goal_2011.pdf

located in Wrightsville, which receives the EAS notifications and then pushes them out to the other EAS stations in the State.

Pre-incident warnings may include activation of the EAS, which can interrupt radio and TV programing to deliver audio and visual (on TV) warnings about weather, civil and law enforcement emergencies, and urgent public safety messages (e.g., boil water or 9-1-1 service outages). Following a disaster, broadcast radio and TV are relied on to deliver messaging to survivors from public information officers about response and recovery plans and efforts.

Activation of Arkansas' EAS/IPAWS system can be done at the request of the Governor, or a designated representative at the SEOC. The Arkansas Broadcasters Association oversees and manages Arkansas' Emergency Alert System (EAS) Plan. The most current EAS Plan version was released in 1997. The Arkansas Broadcasters Association is in the process of updating their EAS Plan and is anticipated to be completed by July 2022. Arkansas' EAS plan can be found at: https://www.fcc.gov/files/ar-eas-planpdf.

2.3.2   Integrated Public Alert and Warning System (IPAWS)

IPAWS is a modernization and integration of the nation's alert and warning infrastructure that allows local, tribal, state, and federal public safety entities to alert their communities via multiple communications channels, including mobile devices, television, radio, internet, NWS dissemination channels, and emerging distribution technologies. Authorized alerting officials use the Common Alerting Protocol (CAP) standard language to create an alert message with specific geographic parameters for the alert area. The message is then submitted to FEMA IPAWS, an alert aggregator gateway that forwards the alert to multiple public alert-and-warning systems, including:

- Radio and television stations via EAS
- Cell phones as text messages via WEA
- NOAA All Hazards Weather Radio via NOAA's HazCollect
- Internet applications and websites via the IPAWS Public Feed

WEA is a critical component of IPAWS that allows federal, state, local, and tribal governments to distribute geographically targeted text-like messages to customers who own certain wireless phone models and other enabled mobile devices to alert them of imminent threats to safety in their area. The system uses broadcast technology which ensures alerts will not get stuck in highly congested areas, which can happen with standard mobile voice and texting services. The alerts are geographically targeted to cell towers in the location of an emergency; cell phones using the cell towers in the alert zone will receive a WEA.

There are four IPAWS alerting authorities in Arkansas including ADEM and three local emergency management entities including Benton County Office of Emergency Communications, City of North Little Rock, and Washington County. If these entities do not have internet capabilities, the IPAWS system would not work, so have connectivity is key to the programs usability.

2.3.3   FEMA National Radio System (FNARS)

The SEOC is equipped with FNARS and participates in the Federal Regional Center (FRC) Denton FNARS Regional Radio Network (RRN). RRNs are dedicated to facilitating communications between state/territorial emergency management agencies and FEMA to coordinate disaster

response and recovery activities during degraded or destroyed communications environments. Arkansas' FNARS radio is monitored at the ARCC, as well as when the SEOC is activated. Its FNARS call sign is WGY966 and automatic link establishment (ALE) address is AR6FEM. FNARS has voice, phone patching, and text capabilities.

2.3.4 Non-English Broadcast (NEB) Stations

In Arkansas, only about 7.5% of the residents speak a language other than English at home.[8] The most common foreign language spoken in Arkansas is Spanish. The identification of non-English speaking broadcast (NEB) stations helps local, state, and federal public safety organizations save lives and protect property. NEB stations are vital to reaching the public who are not fluent in English. There are 11 NEB stations in Arkansas, which are shown in **Figure 12**: Non-English Broadcast Stations.

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[8] https://www.census.gov/quickfacts/fact/table/AR,US/POP815219
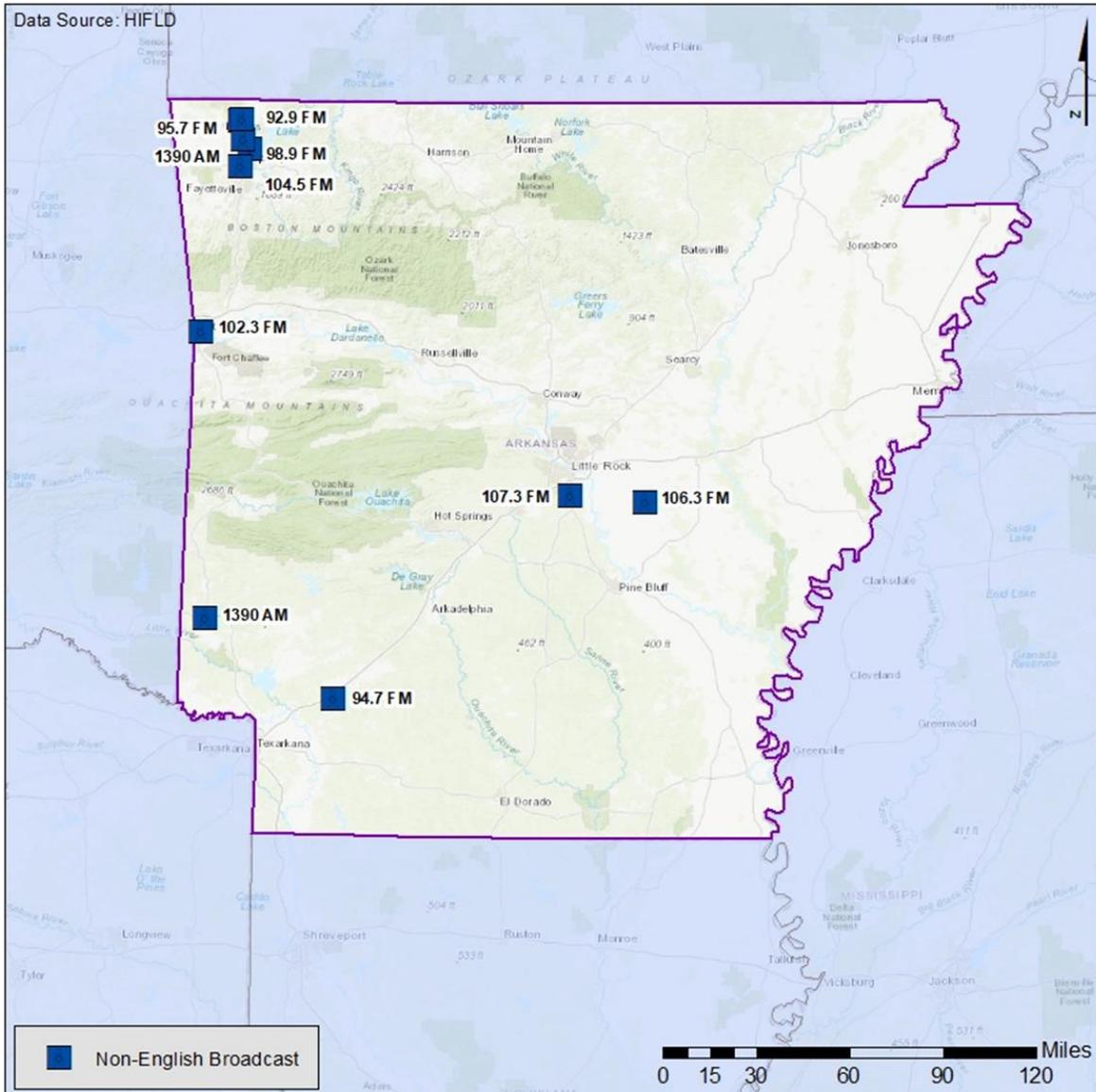
Figure 12: Non-English Broadcast Stations

2.3.5   NOAA Weather Radio (NWR) and other Continuity Communications

Arkansas has 19 NWR stations, shown in **Figure 13,** that are part of nationwide network of radio stations broadcasting continuous weather information directly from a nearby NWS office. Combined with EAS, NWR is an "all-hazards" radio network, making it a single source for comprehensive weather and emergency information. NWR frequencies are programmed into the VHF radios provided by ADEM. In conjunction with Federal, State, and local emergency managers and other public officials, NWR also broadcasts warning and post-event information for all types of hazards, including natural, environmental, and public safety (such as AMBER alerts or 9-1-1 telephone outages).

Figure 13: National Weather Radio Stations

2.3.6 Other Continuity Communications

2.3.6.1 Health Alert Network (HAN)

The Health Alert Network (HAN) is a secure emergency preparedness information sharing system available to State and local officials by subscription. HAN provides users with alerts to registered devices, a collaboration and document sharing site, and an online directory of key personnel defined by role.

2.3.6.2   National Warning System (NAWAS)

The National Warning System (NAWAS) is an automated telephone system used to convey warnings to federal, state, and local governments. Arkansas monitors state and federal NAWAS circuit PLLJ008227.067 from the ARCC. There are 29 NAWAS terminals at various locations throughout the state.

2.3.6.3   Nuclear One Emergency Siren System

The Nuclear One site located west of Russellville in Pope County, AR could encounter a situation to render it unsafe. When this occurs, Entergy Operations may activate the emergency siren system. There are four classes of emergencies at a nuclear power plant:

- Notification of Unusual Event – this is the least serious emergency class and people in the area should not have to take any action
- Alert – this is where plant safety could become a problem, but the general public should not have to take any action
- Site Area Emergency – this means the public might be affected and state and local officials will take action to protect those living in the area
- General Emergency – this is the most serious emergency where State and local officials will take action to protect the people in the area.

For the last two classes of emergencies at Arkansas Nuclear One, Entergy Operations, Inc. must notify state officials within 15 minutes. Then, State officials can then notify the public of an emergency within 15 minutes by use of the EAS.

Entergy Operations will also notify persons within ten miles of Arkansas Nuclear One of an emergency by siren and Tone Alert radio. The system is operated in cooperation with the NWS and can also be activated during severe weather incidents. Emergency information concerning Arkansas Nuclear One and severe weather information for the River Valley area will be broadcast from the Mt. Nebo transmitter on frequency 162.525 Mhz.[9] Additional information can be found in the Emergency Instructions for Arkansas Nuclear One Booklet at https://healthy.arkansas.gov/images/uploads/pdf/2021_English_EIB_reduced.pdf.

2.4   Amateur Radio Capabilities

The State of Arkansas has a well-organized and dynamic amateur radio presence. Most amateur radio operators enrolled in a local amateur radio group are also registered as Radio Amateur Civil Emergency Service (RACES) volunteers. These organizations are actively engaged during emergencies and are activated via an informal fan-out process that originates at the county level. Arkansas has one American Radio Relay League (ARRL) section with six RACES districts that encompass all of Arkansas's 75 counties. Emergency Coordinators oversee their county's RACES organization and collaborate with their District Emergency Coordinator to establish Memorandum of Understandings (MOUs) with public safety and NGOs. RACES volunteers also operate at the county level but are under direct control of the county emergency management director. There are 31 local amateur clubs[10] located throughout the State. Information on each of these clubs are listed

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[9] https://www.entergy-nuclear.com/ep/anoalert/
[10] https://ararrl.net/arrl-affiliated-clubs

in **Table 4** and county repeaters can be found at https://www.repeaterbook.com/repeaters/index.php?state_id=05.

Table 4: POCs for Amateur Radio/Auxiliary Communications

Name/Location	Affiliation	Contact	Links
Degray ARC, Arkadelphia	ARRL	Kd5arc@gmail.com	www.qrz.com/db/kd5arc
Batesville Area RC, Batesville	ARRL	K5brc@k5brc.club	www.k5brc.club
Benton County Radio Operators, Bentonville	ARRL	Kd5dmt@arrl.net	www.bentoncoradiooperators.org
Small Town ARS, Cabot	ARRL	W5str@arrl.net	www.w5str.org
Faulkner County ARC, Inc., Conway	ARRL	Arkieham@hotmail.com	www.w5auu.org
Southwest Arkansas RC, De Queen	ARRL	Swarc.club@gmail.com	www.qsl.net/swarc
The Noise Blankers Radio Group, Springdale	ARRL	Noiseblankers@gmail.com	www.noiseblankers.com
ARC University of AR, Fayetteville	ARRL	W5ym@uark.edu	www.rso.uark.edu/w5ym/
AR Klub of the Arkansas NW, Fayetteville	ARRL	Information@arkanhams.org	www.arkanhams.org
Ft. Smith Area ARC, Fort Smith	ARRL	W5anr@arrl.net	www.fsaarc.org
Hot Springs Village ARC, Hot Springs Village	ARRL	W5anr@arrl.net	www.w5hsv.weebly.com
Northeast Arkansas Radio Club, Jonesboro	ARRL	Tmw3116@hotmail.com	www.nea-rc.org
Central Arkansas Radio Emergency Net, Little Rock	ARRL	Mbarnhard@aristotle.net	www.carenclub.com
Ozark ARC, Mountain Home	ARRL	Ajdaugherty@att.net	www.k5ozk.net
Randy Griffin Memorial RC, Morrilton	ARRL	Ars.w5ami@gmail.com	www.k5boc.com
CAUHF Group, Little Rock	ARRL	Info@cauhf.org	www.cauhf.org
Pine Bluff ARC, Pine Bluff	ARRL	Glenn@arwolfpack.com	www.pbarc.net
Spa ARCSpa ARC, Hot Springs	ARRL	President@wb5spa.org	www.wb5spa.org
Arkansas River Valley AR Foundation, Russellville	ARRL	K5pxp@arrl.net	www.sites.google.com/view/arvarf
North Central Arkansas ARS, Searcy	ARRL	Ab5er@ncaars.org	www.ncaars.org
Four States ARC Inc., Texarkana	ARRL	N5txk@arrl.net	www.4sarc.org
Lawrence County ARC; Inc., Walnut Ridge	ARRL	W5wra@w5wra.org	www.w5wra.org
Arkansas DX Association, Statewide	ARRL	Egwolfjr@email.com	www.adxa.org
Bella Vista Radio Club, Bella Vista	ARRL	Info@bellavistaradioclub.org	www.bellavistaradioclub.org

At the State level, ADEM appoints a RACES Coordinator to oversee the organization of RACES teams throughout the State. The RACES Coordinator works under the direction of the DIS Division Manager in the SEOC and collaborates on amateur radio activities with the Arkansas Section Emergency Coordinator. The Arkansas RACES Officer operates out of the SEOC's RACES workstation and serves as a liaison between State RACES groups and ADEM. In addition, the Arkansas RACES Officer assists in the development of the RACES organization in the State,

recruits members, and maintains situational awareness of all RACES activities, progress, and needs during response and recovery activities. The Arkansas Section Amateur Radio Emergency Service (ARES)/RACES Emergency Operations plan can be found at http://www.nwahams.com/AR_ARES-RACES_Plan.pdf.

In the ARCC, two positions are for auxiliary communications (AuxComm) where SHARES and FNARS are monitored. Outside of the ARCC, ADEM has a dedicated RACES building where all other amateur frequencies are monitored. WebEOC is utilized to move messages from the AuxComm shelter to the ARCC. The State is working on broadening their Communications Unit (COMU) program but has held a couple of AuxComm courses with two candidates completing their AuxComm taskbooks for credentialing. There are six preidentified, badged AuxComm operators that are assigned to the SEOC with WebEOC access and training. To maintain contact with ADEM, four AWIN radios, programmed with the standard interoperability zones and the twelve state dispatch stations, have been distributed to key AuxComm individuals to utilize during disasters. If AWIN and all other modes of communications are down, the RACES coordinator would report to the SEOC for tasking needs.

2.5 Social Media

Social media are a key component in keeping in contact with the community before, during, and after an emergency event. They allow public safety organizations the opportunity to engage in effective communication with the public, at a time when information and situational awareness are critical. The State of Arkansas uses a number of social media applications to actively involve and communicate with the Whole Community. State agencies leverage social media in a variety of ways, including distributing weather alerts, travel advisories, road closures, Amber alerts, and shelter locations and information. For Twitter names and Facebook page addresses, please refer to **A-1**.

2.6 Tribal Communications

There are no federally recognized Tribal Nations in Arkansas. Information on Tribes in the region, can be found in the Region 6 Tribal Annex.

2.7 Interoperability of Command-and-Control Communications Systems

Command-and-Control (C2) focuses on providing capabilities to support C2 operations and dispatch. PSAPs and other dispatch centers are responsible for answering initial 9-1-1 calls for police, fire, and EMS. City and county EOCs, as well as the SEOC, are activated to meet C2 requirements during an incident, which include the direction and control of units engaged in emergency operations; the exchange of information between units of government as well as private-sector and public-sector partners; and the prioritization and provision of resources as needed. Almost every major C2 agency utilizes the AWIN either for routine operations or backup communications. This allows most lead agencies to communicate with the SEOC and field staff. However, a few state agencies still rely on conventional communications and would need long-haul communications assets provided by ADEM or FEMA if the state resources were depleted. C2 communications for operations centers is outlined in section **3.1 Primary Operation and Coordination Centers.**

2.7.1 Statewide

The majority of state agencies utilize AWIN with other agencies utilizing local legacy LMR systems for backup communications; some regional localities use disparate systems for voice and data communications. Information for these systems and how they connect with ADEM is outlined in section **2.1 Disaster Emergency Communications Voice Systems**.

3 Key Facilities

The following subsections are focused on the key facilities that public safety officials rely on in order to execute their missions during an incident. Analysis is also provided to determine which of these facilities are vulnerable to hazards in Arkansas.

3.1 Primary Operation and Coordination Centers

When an incident exceeds local capabilities, they must turn to the State to supplement their response efforts. In addition to Arkansas's SEOC, there are six other State facilities that may provide critical support in the time of a disaster. Those include the Arkansas Fusion Center, DIS Data Center, ADHS Internal Coordination Center, AR NG Joint Forces Headquarters, and ADH EOC/Emergency Communications Center (ECC). All six facilities are in the Little Rock area and received the same threat score of 60. Seismic, severe storms, tornadoes, and hazardous material (HAZMAT) incidents are all hazards affecting the cluster of State facilities.

In addition to Arkansas's six State facilities, there is one nuclear facility located in the State that has been included due to the possibility of a secondary disaster following a major event. This facility, as well as the six State facilities, are displayed and identified in **Figure 14**: Primary Center Locations and **Figure 15.** Furthermore, the communications capabilities of these facilities are detailed in **Table 5.**

Data Source: Stakeholder Interviews
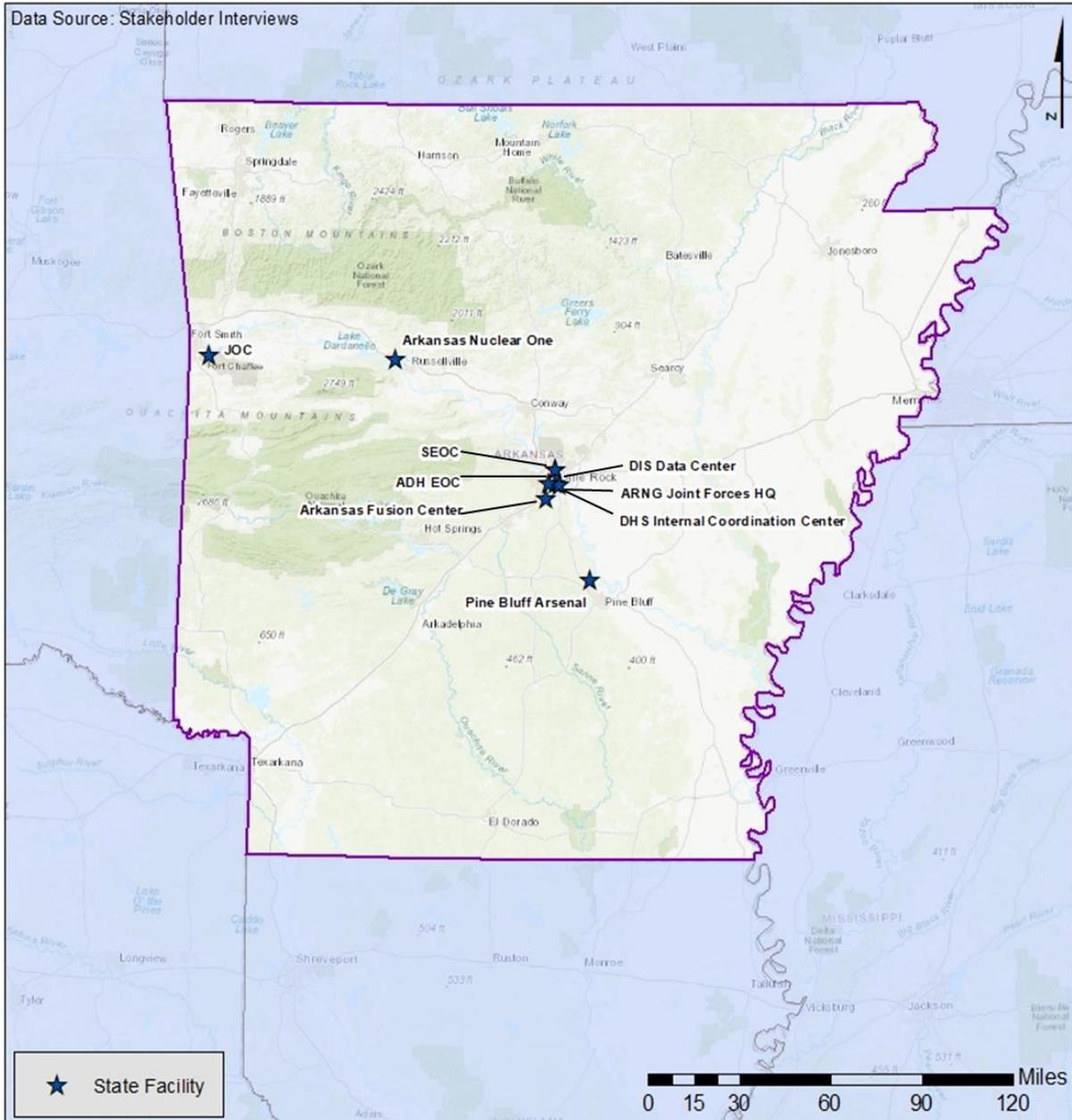
Figure 14: Primary Center Locations

Table 5: Primary Center Details

Name/Location	Commercial Service Provider / Contracts	Capabilities and Facility Details	Power Requirements
SEOC 9501 Camp Joseph T. Robinson North Little Rock, AR 72199	▪ Verizon ▪ Comcast	▪ Telephones, internal fiber to PSTN (125 lines) ▪ Fax on PSTN ▪ Internet via DIS (OC3) ▪ AWIN 700/800 MHz system ▪ VHF/UHF (Dispatch Center)	250-kW generators with 30-day fuel supply

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Name/Location	Commercial Service Provider / Contracts	Capabilities and Facility Details	Power Requirements
		- FNARS radio with data - Landline telephone - HHAN - IPAWS - WebEOC - PSTN - National Warning System (NAWAS) - Secure fax—direct line point-to-point Nuclear Regulatory Commission system - Arkansas Crime Information	
ADH **EOC** 4815 West Markham Street Little Rock, AR 72205 501-280-4020	- Verizon - Comcast	- Telephone on PSTN (Centrex system with1,200 lines) - Fax on PSTN - Internet connectivity through DIS (server at headquarters with tape backup) 2 Motorola Gold Elite base stations - Tandberg video teleconferencing (VTC)—IP-based point-to-point circuit to local health offices and local hospitals (OC3) - HF SHAred RESources (SHARES)/NHPHRN radio 2 VHF-UHF amateur radios 3 HF amateur radios (includes Winlink for email traffic) Iridium satellite telephone private branch exchange (PBX) system providing 3 lines in EOC	TBD
Arkansas State Fusion Center 1 State Police Plaza Drive. Little Rock, AR 72209	TBD	- Telephone on PSTN (16 lines) - Fax on PSTN - Internet connectivity through DIS 2 Motorola Gold Elite base stations	2 - 7.5 kW diesel generators for ASP headquarters

Name/Location	Commercial Service Provider / Contracts	Capabilities and Facility Details	Power Requirements
		▪ 1 VHF-UHF amateur radio (includes Winlink for email traffic) ▪ Iridium satellite telephone PBX system providing 2 lines ▪ 16 AWIN portable radios ▪ NAWAS ▪ NOAA WEA ▪ 2 consoles in communications room for patching ▪ VHF and 800 MHz National Public Safety Planning Advisory Committee (NPSPAC) Calling and Tactical Channels—(ICALL/ITAC/VCALL/VTAC) ▪ AWIN ▪ Government Emergency Telecommunications Service (GETS)	
Joint Forces HQ Camp Robinson. North Little Rock, AR	▪ AT&T ▪ Singular	▪ Telephone on PSTN to Nortel PBX ▪ Secure telephone—Secure Telephone Equipment (STE) on PSTN ▪ Fax on PSTN ▪ Secure Fax—STE on PSTN ▪ Internet connectivity via the Non-secure Internet Protocol Router Network (NIPRNet) (1 Mbps–3 Mbps) ▪ Secure Internet connectivity via Secure Internet Protocol Router Network (SIPRNet) (1 Mbps–3 Mbps) ▪ MERIS via NIPRNet ▪ VTC—Internet Protocol (IP) based ▪ Secure VTC—STE ▪ Friendly Force Tracker—Global Positioning System (GPS) and messaging capability ▪ Movement Tracking System (MTS)	10 kW diesel powered generator

Name/Location	Commercial Service Provider / Contracts	Capabilities and Facility Details	Power Requirements
		- BlackBerry devices and cellular telephones - NAWAS on dedicated PSTN "party line" - VHF and 800 MHz NPSPAC Calling and Tactical Channels—(ICALL/ITAC/VCALL/VTAC) - ACU-1000/Joint Incident Site Communications Capability (JISCC) - GETS	

3.1.1 State Emergency Operations Center (SEOC)

The SEOC is located at ADEM in Camp Joseph T. Robinson, North Little Rock, AR 72199. The SEOC is equipped with the State 700/800 MHz AWIN system for interoperable voice communications during an emergency event. Requests for assistance to local municipalities primarily come via telephone and data services, including email and WebEOC. If terrestrial communications are degraded or unavailable, the 700/800 MHz LMR system is used. This facility can also use the FNARS HF radio, as well as amateur radio if needed. Verizon provides commercial telephone and data services to the SEOC, while Comcast is the backup source. The site has two bidirectional amplifiers for cellular and radio service. It has two separate feeds for redundant electrical power load, and if there is a disruption of electrical power at the SEOC site, backup power is provided by three on-site 250-kilowatt (kW) generators with a 30-day fuel supply. If the SEOC site or facility becomes untenable, a similarly equipped backup EOC and data center is available in Agawam. Additional information on the SEOC in **Table 1**.

DIS provides the data services to the SEOC via underground cabling. If there is a disruption of electrical power at the SEOC site, backup power is provided by three on-site 250-kW generators with a 30-day fuel supply. If the SEOC site or facility becomes untenable, a backup EOC and data center is available. If traditional communications fail at the SEOC, voice communications can be established with the Network Innovations mobile satellite telephones that all counties and ESF primary agencies have. The ARCC monitors the AR ALL talk group 24 hours a day. The satellite telephone numbers to the ARCC are satellite-to-satellite 500-180-4072, toll free 877-821-8656, 703 number 703885315, and direct number 1366; the toll-free number may be reached by any telephone device.
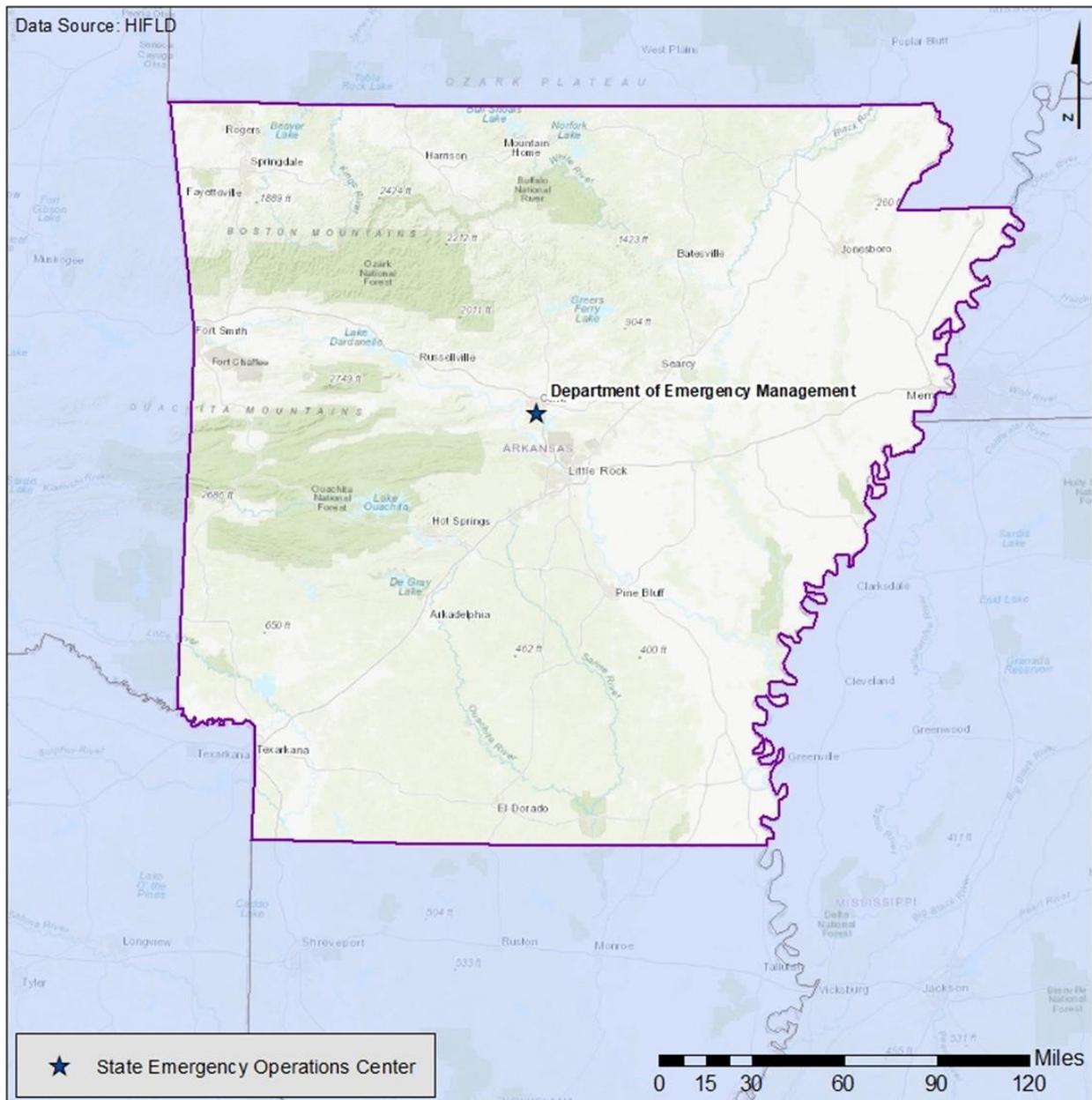
Figure 15: State Emergency Operations Center

3.1.2   Joint Operations Center

The Joint Forces Headquarters (JOC) is located on Camp Robinson in North Little Rock. When activated, the JOC establishes and maintains communications with designated local, State, and Federal agencies. The JOC coordinates and facilitates the application of military resources (personnel and equipment) to support State or Federal activation. The JOC also maintains unit readiness information, supports the preparation of operations orders and plans, and supports disaster relief operations as directed.

3.1.3 Traffic Management Center

ARDOT does have a Traffic Management Center, but no additional details were found during the Annex update process.

3.1.4 ADH, EOC, and Emergency Communications Coordination

The ADH, EOC, and ECC are collocated in Little Rock. The ECC provides a point of emergency contact for the ADH for anything affecting the health and welfare of Arkansas citizens. The ECC has six full-time Emergency Communications Specialists and provides 24-hour-per-day, 7-day-per-week coverage. The EOC is used to integrate regional, State, and national public health assets for manmade and natural disasters and other public health emergencies. Coordination is completed using telephone, email, and WebEOC when coordinating with ADEM.

3.1.5 Arkansas State Fusion Center

The Arkansas State Fusion Center (ASFC) provides a secure multidiscipline, information sharing network to collect, analyze, and disseminate information regarding criminal and terrorist activity to stakeholders to protect the citizens and the critical infrastructure of Arkansas. The ASFC is located at 1 State Police Plaza Drive in Little Rock and can be reached via telephone: 501-618-8001, toll-free: 866-787-2332, or at arfusioncenter@asp.arkansas.gov.

3.1.6 Local EOCs

The collective function of all EOCs is to support the IC by gathering and analyzing data to make decisions that protect life and property and disseminate those decisions to all affected agencies and individuals. There are 98 local EOCs in Arkansas, which are displayed in **Figure 16**Error! Reference source not found.**.**
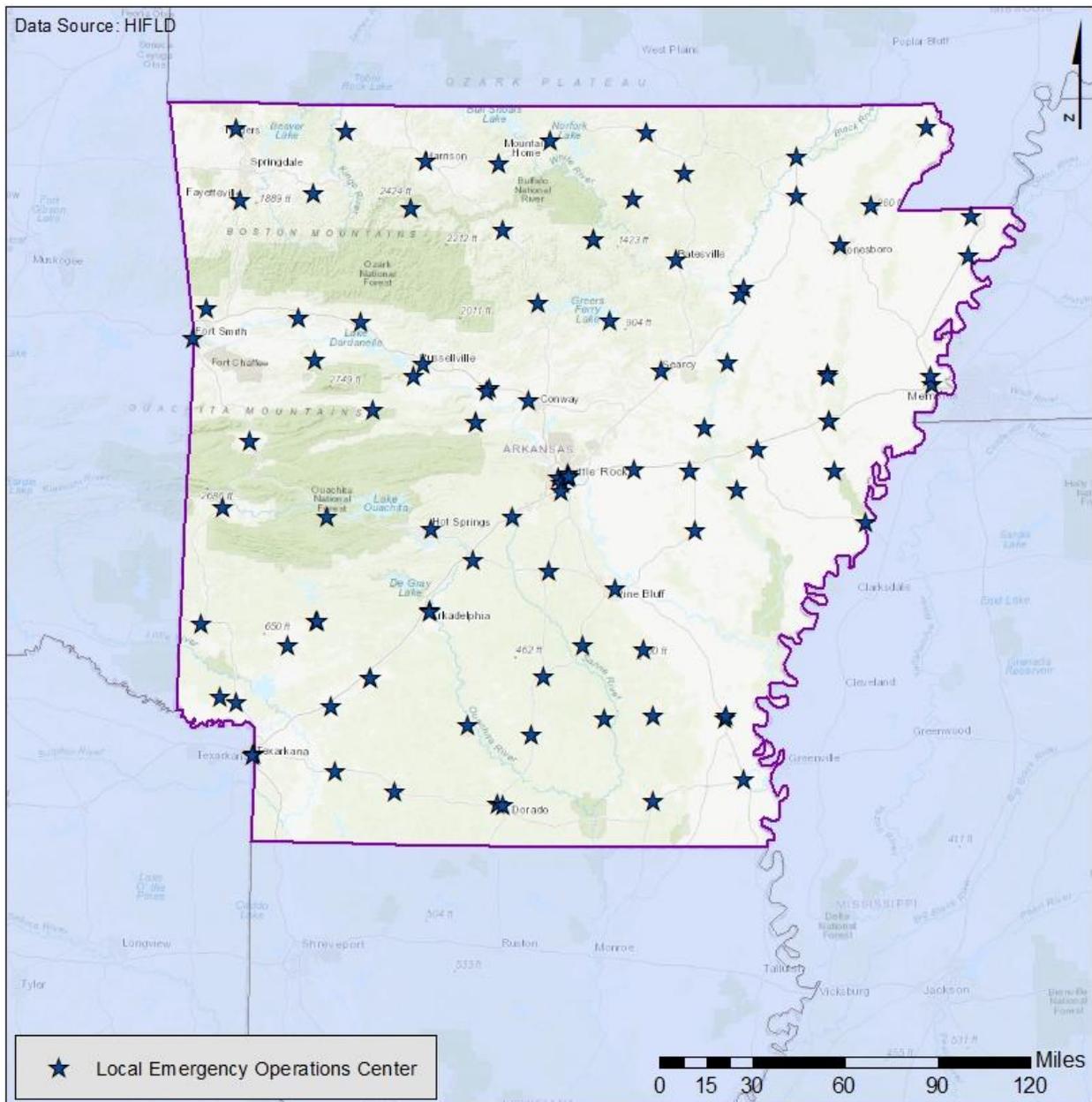
Figure 16: Local Emergency Operations Centers in Arkansas

3.2 PSAPs/Dispatch Centers

PSAPs, according to the National Emergency Number Association (NENA), are facilities equipped and staffed to receive 9-1-1 calls. The service area of a PSAP is the geographic area within which a 9-1-1 call placed using a landline is answered at the associated PSAP. Two-hundred sixty-three of these areas currently exist in Arkansas. PSAPs are responsible for answering the initial 9-1-1 service calls for police, fire, and EMS, and are critical to the delivery of emergency services. Primary PSAPs receive calls directly, whereas secondary PSAPs receive calls that have been transferred by a primary PSAP. Backup PSAPs provide service in cases where another PSAP is inoperable. PSAPs were identified through the HSIP Gold data set. This dataset only includes

primary PSAPs. Secondary and backup PSAPs have been excluded from this dataset and analysis. There are 105 PSAP areas in Arkansas, and each primary PSAP has at least 1 designated alternate PSAP to answer calls in the event of 9-1-1 failure. These are depicted in **Figure 17**: PSAP Locations below.

While PSAPs within three counties are served by CenturyLink as the primary local exchange carrier (LEC), the remaining PSAPs in all other counties are served by AT&T. 9-1-1 call delivery for all PSAPs, regardless of primary LEC, is handled by AT&T through their five (5) selective routers in the State:

- Little Rock Franklin
- Fayetteville Hillcrest
- Ft Smith Sunset
- Jonesboro Main
- Pine Bluff Jefferson[11]

ADEM's 911 Coordinator's office serves as a liaison between local PSAPs and the state government. This position also works to improve the state's system which is in preparation stages to transition to Next Generation 911 (NG911). As of this annex, 18 cities and counties have adopted NG911 or components across the state.[12]

Along with PSAPs, Arkansas has 12 ASP dispatch centers across the state. They all have AWIN consoles with the ability to patch talkgroups and push out alerts to radio subscribers. Recently five locations have new buildings that are storm shelter grade. There is a re-route plan in place in case a center loses communications capabilities. Two centers, Little Rock and Hot Springs, have Reverse 9-1-1 capabilities. They all have fiber backup with some locations adding cellular backup for their networks. In the event of an AWIN failure, each center has local LMR capabilities with their surrounding jurisdictions. All dispatch centers have diesel backup generators with maintenance plan and fuel agreement.

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[11] https://www.dps.arkansas.gov/wp-content/uploads/2020/05/Statewide-NG911-Plan.pdf
[12] https://www.dps.arkansas.gov/emergency-management/adem/plan-prepare/911-2/
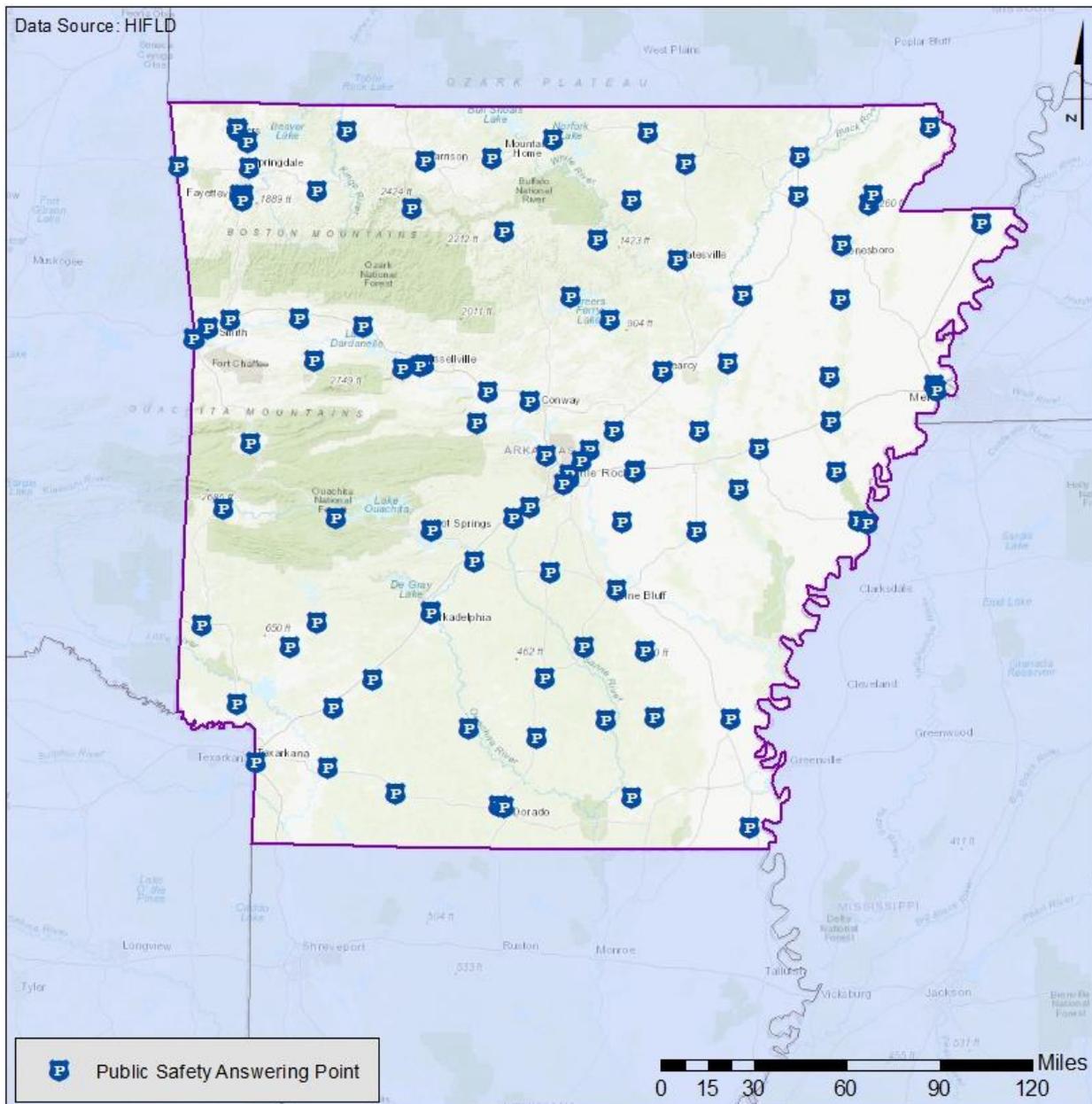
Figure 17: PSAP Locations

3.3 Serving Wire Centers

The proper operation of dispatch centers, PSAPs, and other command and infrastructure relies on LEC, which provide access to the PSTN to successfully route Enhanced 9-1-1 calls. Each LEC within Arkansas supports telecommunications services within a uniquely defined geographic area, called a serving wire center (SWC). Within each SWC, the LECs typically operate from a single facility, which houses multiple switches. There are 393 SWCs in the State of Arkansas. AT&T is the dominant carrier, operating 139 SWCs that service the State. Windstream Communications is the second largest carrier. All SWC locations in Arkansas are depicted in **Figure 18**: Serving Wire below.
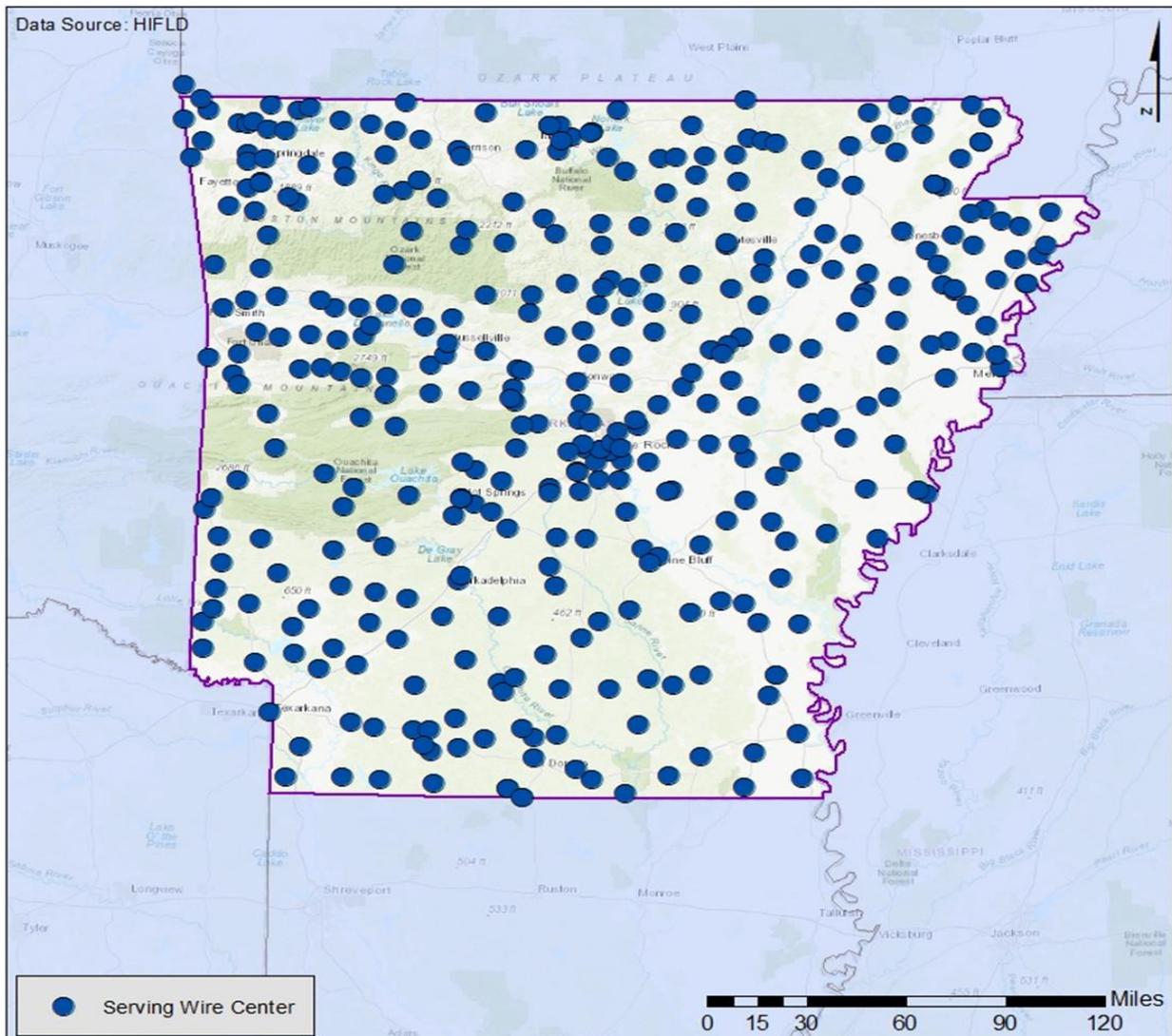
Figure 18: Serving Wire Centers

3.4   Critical Medical Facilities

During a catastrophic disaster event, medical care is provided at multiple levels by a variety of jurisdictions and agencies. Local and commercial EMS agencies and other first responders provide initial scene medical care and transport to available definitive care facilities, such as hospitals and clinics outside the disaster zone if possible. The ADH is the primary State department responsible for ESF #8, Public Health and Medical Services. This includes coordinating and providing initial medical treatment, and emergency medical and primary hospital services. The ADH has a main office in Little Rock and 94 local health units around the State's 75 counties. ADH deploys a liaison officer to the SEOC during a major incident requiring EMS. ADH uses email, telephone, WebEOC, and the ADH communications system if needed in an emergency for backup for the ADEM communications system.

Sixty-eight hospitals in the State have been designated as trauma centers within the Arkansas Trauma System. There are 6 Level I trauma centers, 6 Level II trauma centers, and 56 that are

either Level III or Level IV trauma centers. The Trauma Section of ADH provided funding to purchase a new data management solution that will aid in reporting EMS needs. The ImageTrend software was chosen by Arkansas because of its record of success in 32 other States. This software allows the EMS personnel to obtain high-quality EMS data that is compliant with the National EMS Information System. The "hospital hub" module allows EMS services to upload an electronic patient care record (ePCR) into the State's EMS repository, which hospitals may then access to view and print the ePCR.

4 Interoperable Communications during Response/Recovery Operations

ADEM is the lead State agency responsible for coordination of multijurisdictional operations in response to large-scale emergencies or disasters affecting the State. ADEM relies on a variety of tools and methods to execute their mission. The following sections describe how interoperability is achieved while executing many of their necessary missions. Included in mission area sections is a PACE graphic which illustrates communications methods that may be employed during specific response operations. Note that communications capabilities can be employed under multiple circumstances (i.e., primary, alternate, contingency, and emergency) as the state can use the capability that is most effective given the operational environment.

4.1 Evacuation

Currently, primary responsibility for ordering, controlling, and coordinating evacuations rests with local governments. However, in circumstances that exceed the capabilities of local entities, ADEM's Department of Public Safety (ADPS) has primary responsibility for coordinating state assets during mass evacuation events. Along with ADPS, numerous state agencies support evacuation efforts including Arkansas' Department of Education, Department of Agriculture, Game and Fish Commission, Department of Parks, Department of Corrections, Department of Homeland Security, and Department of Human Services (ADHS).

When State evacuation is required, ADPS's main responsibility is to communicate the needs of the local jurisdiction to entities capable of assisting. Coordination is mainly done in the SEOC using face-to-face communications, WebEOC, and data and telephone when needed. To communicate with personnel in the field, ADEM can use AWIN radios if traditional methods of communication are not available.

At the Arkansas SEOC, ARDOT is the primary agency for ESF #1 (Transportation) responsible for traffic management across the State and coordinating resources needed to restore and maintain transportation routes necessary for evacuation during a disaster. The Arkansas Department of Aeronautics (ADA) is responsible for the coordination of air transportation activities. ADA will provide a liaison to the state Air Coordination Group, where state air assets will be coordinated for evacuation operations, as well as airport and runway conditions.[13]

Primary communications for evacuation field operations is the AWIN system. There is not a statewide backup LMR system in the event of an AWIN system failure. ASP could utilize county systems for localized interoperability that vary from UHF, VHF, analog, to Motorola digital radio format (MOTOTRBO) systems. ARDOT operates and maintains a 46 site VHF system to

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[13] https://www.dps.arkansas.gov/wp-content/uploads/2020/05/ARCEMP-14Mar2020-Final.pdf

communicate with regional and district offices and vehicles for highway maintenance, but it is not utilized for law enforcement or multi-agency evacuation coordination purposes. However, they are beginning to migrate to the AWIN system, which will provide Arkansas Highway Patrol (AHP) interoperability with other State agencies during evacuation operations. ARDOT utilizes digital variable message signs (VMS) that can be programed to release evacuation information and direct evacuees. Local and county EOCs may utilize social media platforms to also push out evacuation messaging to the public. PACE communications for evacuation operations in that State of Arkansas is shown in **Figure 19**.
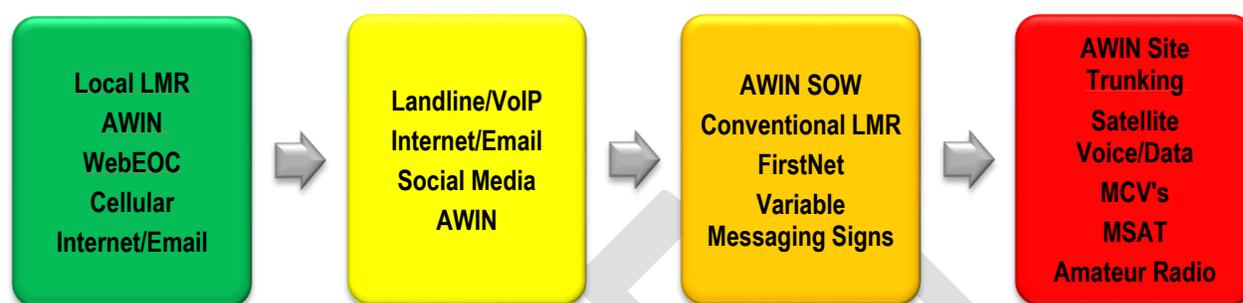
Figure 19: Evacuation PACE Communications

4.2 Sheltering

Sheltering in Arkansas falls under ESF #6 (Mass Care, Emergency Assistance, Temporary Housing, and Human Services) with the Arkansas Department of Human Services (ADHS) designated as the primary State agency. ADHS, in the role of ESF #6 lead agency, coordinates closely with supporting agencies and ADEM to assist and augment local governments' resources and abilities for sheltering and other mass care functions. For the purpose of planning, emergency shelter includes the use of pre-identified shelter sites in existing structures within the affected area, creation of temporary facilities or the temporary construction of shelters, and the use of similar facilities outside the incident area, should evacuation be necessary. Shelter sites are selected to maximize accessibility for individuals with disabilities and will meet the standards of the Americans with Disabilities Act (ADA) whenever possible. In coordination with ADHS, several VOADs, such as the American Red Cross (ARC) and Salvation Army, support ESF #6. They provide sheltering, supplies, counseling services, and other needed support services to disaster survivors. In addition, some provide specialized services to individuals with disabilities, and some provide mental health services to help survivors overcome the trauma associated with a life-changing or life-threatening event. ADHS also coordinates activities with local and county governments, Arkansas VOAD, faith-based organizations, and the private sector.

ADHS uses telephone, email, and WebEOC for communications, and has a liaison officer assigned to the SEOC during incidents. Requests are normally received from a local jurisdiction by an event manager in the EOC. In addition, ADHS uses the National Shelter System (NSS), a web-based database that provides information on shelters during disasters and emergencies. The system creates reports that detail the location and capacities of shelters (evacuation, general population, ADA compliant, pet friendly, medical, etc.) open, on stand-by, or closed. Information in the NSS is submitted by local, county, NGO, and/or VOAD entities operating the shelters.

One major partner for sheltering in Arkansas is the ARC, which coordinates with ADHS, ADEM, and local agencies to coordinate the establishment and operations of shelters when needed. The ARC has a liaison in the SEOC and uses telephone, email, and WebEOC to coordinate requests and resources. The ARC has agreements in place with Amateur Radio Emergency Services (ARES)/Radio Amateur Civil Emergency Services (RACES) amateur radio groups around the State to provide emergency communications support when needed. The ARC maintains an internal list of pre-identified shelter locations that can be opened if not directly affected by the event. Most sites have landline telephones, and roughly half have Internet access already established. For sites without Internet access, if the infrastructure is intact, air cards are used for data needs. Error! Reference source not found. illustrates PACE communications for sheltering operations in Arkansas.
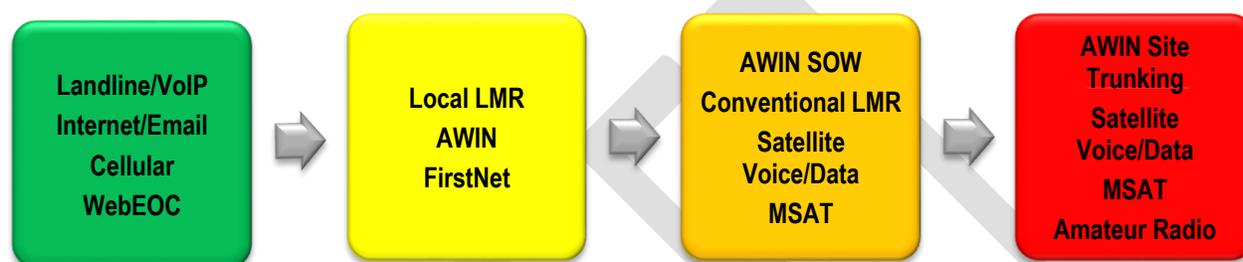
Figure 20: Sheltering PACE Communications

4.3 Hospital / EMS

During a catastrophic disaster event, medical care is provided at multiple levels by a variety of jurisdictions and agencies. Local and commercial EMS agencies and other first responders provide initial scene medical care and transport to available definitive care facilities, such as hospitals and clinics outside the disaster zone if possible. The ADH is the primary State department responsible for ESF #8, Public Health and Medical Services. This includes coordinating and providing initial medical treatment, and emergency medical and primary hospital services. The ADH has a main office in Little Rock and 94 local health units around the State's 75 counties. The ADH deploys a liaison officer to the SEOC during a major incident requiring EMS. The ADH uses email, telephone, WebEOC, and the ADH communications system if needed in an emergency for backup for the ADEM communications system.

Sixty-four hospitals in the State are designated as trauma centers within the Arkansas Trauma System. There are 6 Level I trauma centers, 4 Level II trauma centers, and 54 that are either Level III or Level IV trauma centers.[14] The Trauma Section of ADH provided funding to purchase a new data management solution that will aid in reporting EMS needs. The ImageTrend software was chosen by Arkansas because of its record of success in 32 other States. This new software allows the EMS personnel to obtain high-quality EMS data that is compliant with the National EMS Information System. The "hospital hub" module allows EMS services to upload an electronic patient care record (ePCR) into the State's EMS repository, which hospitals may access to view and print the ePCR. Medical PACE communications are displayed in **Figure** .

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[14] https://www.healthy.arkansas.gov/programs-services/topics/designated-trauma-centers
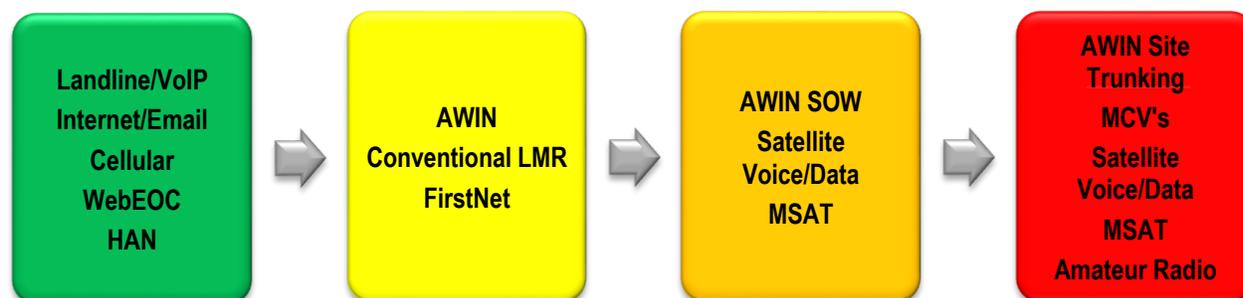
Figure 21: Medical PACE Communications

4.4 Search and Rescue

The primary responsibility for search and rescue (SAR) operations rests with local entities that provide capabilities in coordination with local police, fire, and EMS agencies. When local entities have exhausted their capabilities or when it is apparent that they will not have sufficient local resources or capabilities, they may request assistance from the State. ESF #9 performs search and rescue and coordinates the use of resources from outside the ESF #9 Coordinating and Support Agencies. ESF #9 utilizes established emergency service and search and rescue organizations, processes, and procedures. ESF #9 will be notified of activation by ADEM. The AGFC is primarily responsible for nontechnical SAR and coordinates with supporting agencies in tasking SAR missions based on local requests. The ADPS-ASP/State Fire Marshal office (FMO) supplements AGFC with a 30-person search and rescue team. Situation assessment and determination of resource needs will be communicated by the local IC, who is coordinating with the SEOC.[15]

Arkansas' Air National Guard and Civil Air Patrol (CAP) provide personnel and various aircrafts to assist in SAR operations.

Arkansas Task Force 1 (AR-TF1) is the lead State agency responsible for coordination of technical SAR and urban search and rescue (US&R) activities in Arkansas. AR-TF1 is not a FEMA-certified US&R team but comprises two regional teams. Central AR-TF1 is located with Pulaski County EMA in Little Rock, and Northwest AR-TF1 is based out of Washington County in Fayetteville. AR-TF1 has its own organic communications systems, including all spectrum multiband interoperable radios, satellite voice, and data, and the ability to establish tactical on-scene LMR networks. This US&R team can be mobilized as a state resource should the need for tactical SAR arise.[16]

Primary communications for SAR operations are landline and cellular telephone and the AWIN system. Additional interoperability is achieved using regional LMR systems and satellite telephones. PACE communications for SAR operations are illustrated in **Figure** .

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[15] Arkansas Comprehensive Emergency Management Plan - https://www.dps.arkansas.gov/wp-content/uploads/2020/05/ARCEMP-14Mar2020-Final.pdf

[16] Arkansas Task Force 1 - https://www.facebook.com/ArkansasTaskForce1/
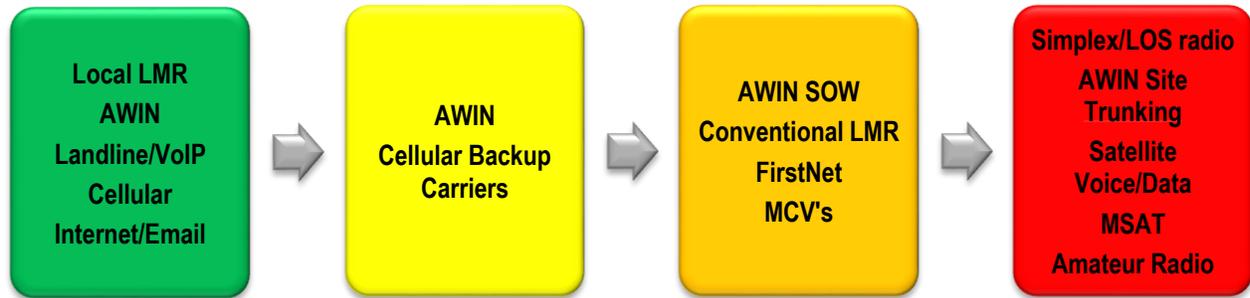
Figure 22: SAR PACE Communications

4.5   Incident Staging

Incident staging areas are used to position all available resources before they are assigned. Use of a staging area prevents freelance use of equipment and assists with the check-in of personnel and resources when they arrive at an incident. This helps the on-scene IC keep track of assets that are unassigned and plan for contingencies using the resources available. At the state level, ADEM is the primary agency for managing communications at the incident staging areas and may be supported by multiple other agencies. PACE communications for this mission area are shown below in **Figure 21**.
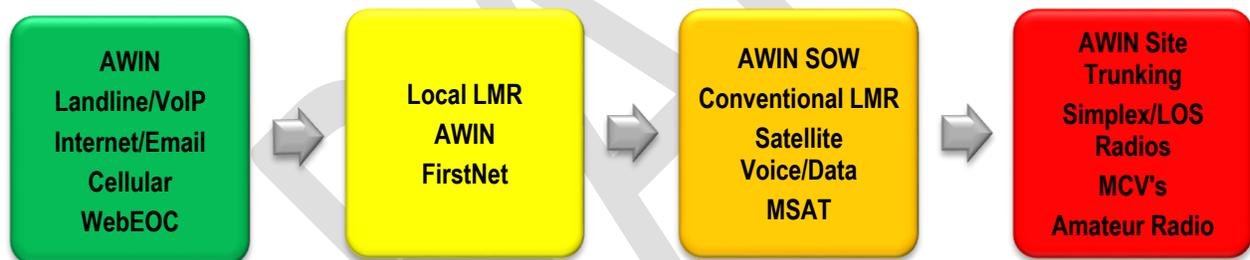
Figure 21: Incident Staging PACE Communications

4.6   Disaster Recovery Centers

Disaster Recovery Centers (DRC) are locations where affected citizens register for FEMA individual assistance following a Presidential disaster or Individual Assistance declaration. These facilities are temporary in nature, and their location is based on where the affected population resides. In Arkansas, FEMA coordinates with local governments within the affected area in the determination of these facilities. The State preference is to use available buildings for this purpose, and mobile units are only considered as a last resort when building space is unavailable. Availability of communications is an important factor that is considered when available facilities are assessed for potential use as a DRC. Effort is made to place DRCs in locations where commercial communications are readily available rather than placing them in an area where considerable effort is required to secure communications.

4.7   Whole Community

The Whole Community approach is integral to emergency preparedness, as it engages the full capacity of nonprofit sectors, including faith-based and disability organizations, and the public, in

conjunction with the participation of local, and tribal, state, territorial, and federal government partners. Arkansas has a robust Whole Community partnership group, including volunteer organizations, CERT, amateur radio groups, telecommunications carriers, NGOs, and other state and local groups, companies, and organizations. Most NGOs deploy with their own emergency communications equipment; however, this equipment is generally limited to commercial cellular service, amateur radio equipment, and a limited number of portable radios. NGO volunteers are assigned to shelters, reception centers, staging areas, or distribution centers, and may require supplemental communications equipment, depending on the incident.

4.7.1 Volunteer Organizations Active in Disaster (VOAD)

Arkansas VOAD (ARVOAD) is a statewide association of independent, voluntary, 501(c)3 nonprofit, nonpartisan organizations who are active in disaster response. The membership of ARVOAD consists of both locally based organizations and local representatives of national organizations. ARVOAD may be activated by ADEM, county emergency managers, the ARVOAD Chairperson or majority of Board of Directors. There are 30 active voluntary organizations in the ARVOAD, consisting of the American Red Cross, local disaster teams, faith-based organizations, and foodbanks.

Through SERV Arkansas, a pre-registry and credentialing system, ADH is able to utilize volunteers to assist in statewide emergency response activities.[17]

4.7.2 Community Emergency Response Teams (CERT)

The goal of the CERT program is to provide private citizens with the basic skills needed to respond to their community's immediate needs in the aftermath of a disaster when emergency services are not immediately available. CERT Teams in Arkansas are organized at the local level, usually within fire districts across the state. The CERT teams respond within their local communities only, without county or state level communications. Most teams operate with handheld communications, with the CERT team leader communicating with their sponsoring organization (usually the fire department) with a handheld AWIN radio issued by the sponsoring agency.

4.8 Operational Communications Planning

4.8.1 Access Control and Credentialing

The Arkansas Department of Emergency Management uses AAMSCO, a state licensed, full-service identification and security solution provider, for establishing a credentialing and accountability standard for employees. This allows for pre-credentialing of key staff, associated staff, liaisons, vendors, VOADs, and other personnel that may be required during SEOC operations. It also allows for temporary IDs to be made with temporary access to the SEOC or an incident area. In the field, access can be granted for specific areas as well as specific times of day on specific days of the week.

If vendors or liaisons are requested by operations staff to report to the Arkansas SEOC, they will be pre-approved and provided a badge. If not, or if the person is ESF related, then ADEM would need to determine and approve SEOC access and badging.

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[17] https://www.healthy.arkansas.gov/programs-services/topics/serv-and-MRC-volunteer-programs

Currently, Arkansas does not have structured procedures for a statewide access control program for private vendors and workers to access an incident area to perform restoration activities, such as infrastructure repair or refueling. Local Police Departments and Sheriff's Offices are primarily responsible for managing access control for communities affected by disasters. Arkansas State Police, Arkansas Highway Police, Arkansas National Guard, Arkansas Department of Parks Heritage and Tourism, and Arkansas Department of Agriculture - Forestry Division provide secondary support for Access Control functions.[18]

All approved access letters or vehicle placards, whether issued by the IC, a local jurisdiction, ADEM, NCC, CISA, FEMA, etc. will be provided to ADEM and copied into WebEOC at the SEOC. Responders and/or outside resources deploying to the state for disaster response and recovery operations should check in with the SEOC to determine where to check in and ensure any newly established check-in/access procedures are followed.

4.8.2 Cyber Security

In Arkansas Cybersecurity, or ESF #16, is coordinated by the DIS within ATSS. The DIS is also the focal point for cyber information on the state's network, which provides internet and network connectivity to state agencies, institutions of higher education, public schools, and some county and city governments. DIS' responsibilities include:

- Providing indications and warnings of potential threats, attacks, and incidents

- Reporting cyber incidents to ADEM

- Reporting cyber incidents from Arkansas Multi Agency Trust Fund (AMAIT) participating agencies to the Arkansas multi-agency cyber insurance program

- Information-sharing both inside and outside the government, including best practices, investigative information, coordination of incident response, and incident mitigation

- Analyzing cyber-attacks

- Providing technical assistance

- Assisting law enforcement with cyber related investigations, forensics analysis, and prosecution

- Attributing the source of cyber-attack

- Direct and assist agencies in removing known sources of attack from within the state network

Personnel from the DIS divisions make up the Computer Emergency Response Team (CERT). Upon detection of a threat or significant event on the state network, the DIS CERT meets to determine appropriate action to mitigate damage. Communications can take place by fax, voice, or email depending on availability of infrastructure and the nature of the communication. During a significant incident, the DIS will report information to the Arkansas multi-agency cyber insurance program, ADEM, the Federal Bureau of Investigation (FBI), and the Multi-State

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[18] Arkansas Comprehensive Emergency Management Plan - https://www.dps.arkansas.gov/wp-content/uploads/2020/05/ARCEMP-14Mar2020-Final.pdf

Information Sharing and Analysis Center (MS-ISAC) which can share the information with the United States Computer Emergency Readiness Team (US-CERT) of the DHS. The DIS may also consult with the InfraGard Arkansas Members Alliance chapter, an FBI-sponsored group of public and private organizations sharing information related to cyber and physical security. [19]

4.8.3 Electromagnetic Pulse (EMP) Mitigation

Nationally, policies and procedures to mitigate and prepare for an EMP incident have been limited for both government and industry leaders. Addressing this risk involves numerous public and private actors, making it difficult for a cohesive policy plan to be implemented. As of the date of this document, no statewide plan exists for EMP mitigation, and continuing to implement protections against this type of attack is an ongoing priority.

However, with Entergy's Arkansas Nuclear One (ANO) reactor being located in Russellville, there are many emergency plans in place regarding a nuclear incident. ADH has created a Radiological Emergency Response Team (RERT), which is responsible for responding to potential off-site release of radioactive material from ANO. RERTs coordinate with the Nuclear Planning and Response Program, who also is responsible for emergency planning and response to emergencies involving ANO.[20] Additional emergency planning information for ANO can be found in **7Appendix G:**.

5 Commercial Partnerships

FEMA's Whole Community approach to emergency management realizes the fact that FEMA is only one component of our Nation's emergency management team, and that it is important to leverage all resources and partnerships to effectively prepare for, respond to, and recover from a catastrophic event. Communications rely on private partners in every way. Without power, Internet services and regular communications will fail, or they will rely on generator power which requires refueling until commercial power is restored. Many agencies rely on cellular communications and should those become impacted the restoration of those services are vital to effective response efforts.

5.1 Power Providers / Utilities

Arkansas Public Service Commission (APSC) is the lead agency for ESF #12 (Energy) along with numerous supporting agencies including ADEM, ARDOT, and Arkansas Department of Energy and Environment's Oil and Gas Commission (OGC) and Division of Environmental Quality (DEQ). APSC serves as the ESF #12 liaison at the Arkansas SEOC and/or Joint Field Office (JFO) providing information regarding utility and telecommunications services restoration efforts. APSC is also a supporting agency for ESF #2 where they assist service providers, PSAP operators, and ensure prompt restoration of 9-1-1 services, should an outage occur. For events that require coordination between ESF #2 and ESF #12, APSC will coordinate response and recovery efforts of Arkansas' power and telecommunications providers.[21]

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[19] https://www.dps.arkansas.gov/wp-content/uploads/2020/05/ARCEMP-14Mar2020-Final.pdf

[20] https://www.healthy.arkansas.gov/programs-services/topics/radiological-emergency-response

[21] https://www.dps.arkansas.gov/wp-content/uploads/2020/05/ARCEMP-14Mar2020-Final.pdf

Arkansas has 40 gas and electric utilities: four investor-owned electric utilities, one generation and transmission cooperative utility, and 18 cooperatives that make up the Electric Cooperatives of Arkansas. Arkansas also has four companies that sell natural gas.[22] See **Table 6** for a comprehensive list of power companies in Arkansas and see **7Appendix F:** for their contact information and a list of distribution centers throughout the state.

<div align="center">

Table 6: Power Providers in Arkansas[23]

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Arkansas Electric Cooperative Corporation	Arkansas Valley Electric Cooperative
Augusta Light & Power	Ashley-Chicot Electric Cooperative
Benton Utilities	Bentonville Light & Water System
City of Paris Utilities	City of Siloam Springs
C&L Electric Cooperative	Carroll Electric Cooperative
Clarksville Light & Water Company	Clay County Electric Cooperative
Conway Corporation	Craighead Electric Cooperative
Empire District Electric Company	Entergy Arkansas
Farmers Electric Cooperative	First Electric Cooperative
Hope Water & Light Company	Jonesboro City Water & Light Company
Mississippi County Electric Cooperative	North Arkansas Electric Cooperative
Ozarks Electric Coop Corp (AR)	Paragould Light Water & Cable
Prescott Water & Light Company	Rich Mountain Electric Cooperative
South Central Arkansas Electric Cooperative	Southwest Arkansas Electric Cooperative
Southwestern Electric Power Company	West Memphis Utility Commission
Woodruff Electric Cooperative	

Electric substations transform voltage levels between high transmission voltages and lower distribution voltages. There are 595 substations in Arkansas, which are shown in **Figure 22: Electrical Substations** and **t**he power transmission lines that cross the State are shown in **Figure 23**Error! Reference source not found..

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[22] https://www.adeq.state.ar.us/energy/resources/utilities.aspx

[23] This data was obtained from HIFLD and sourced from the Oak Ridge National Laboratory (last updated December 2021).
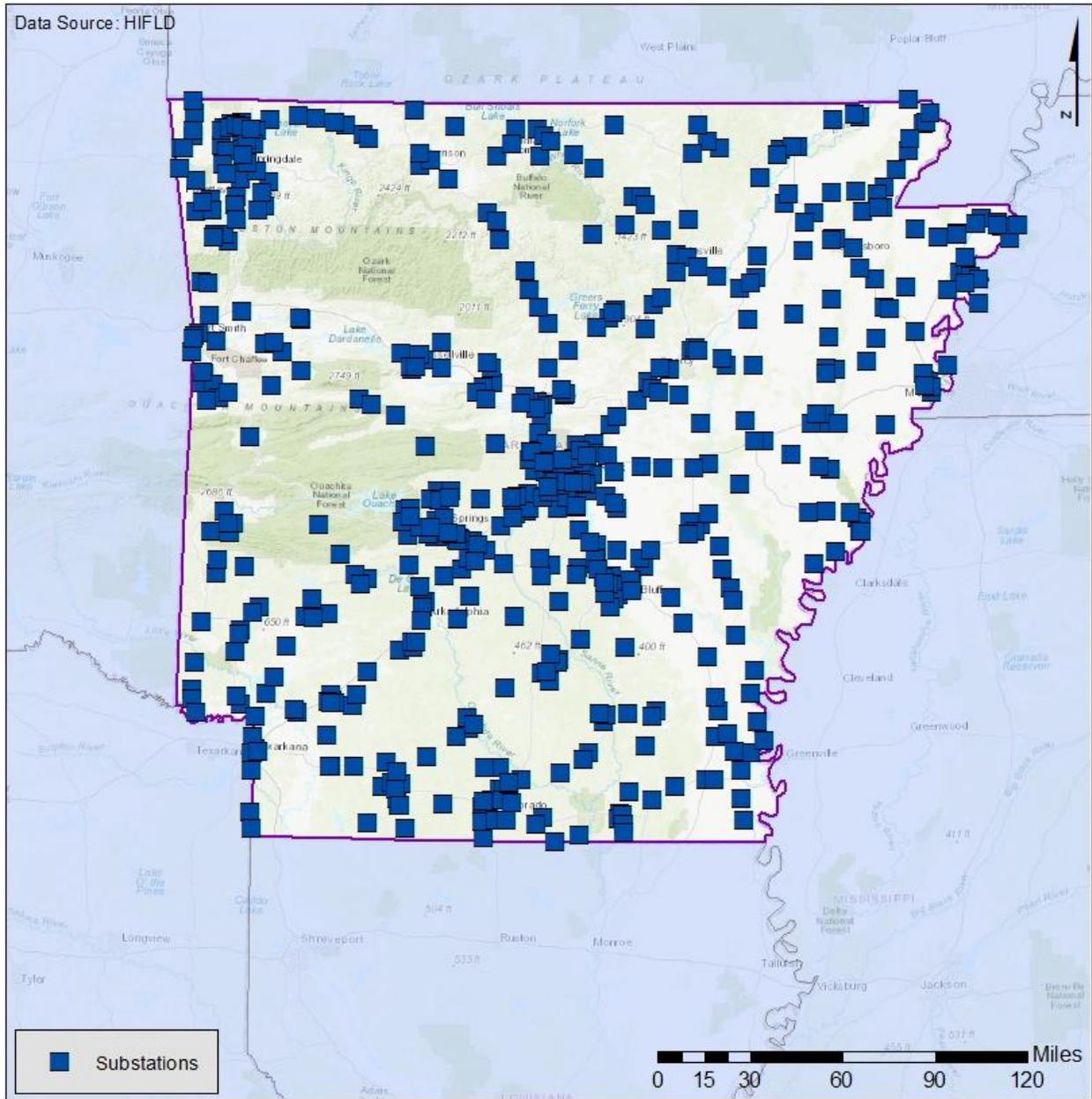
Figure 22: Electrical Substations
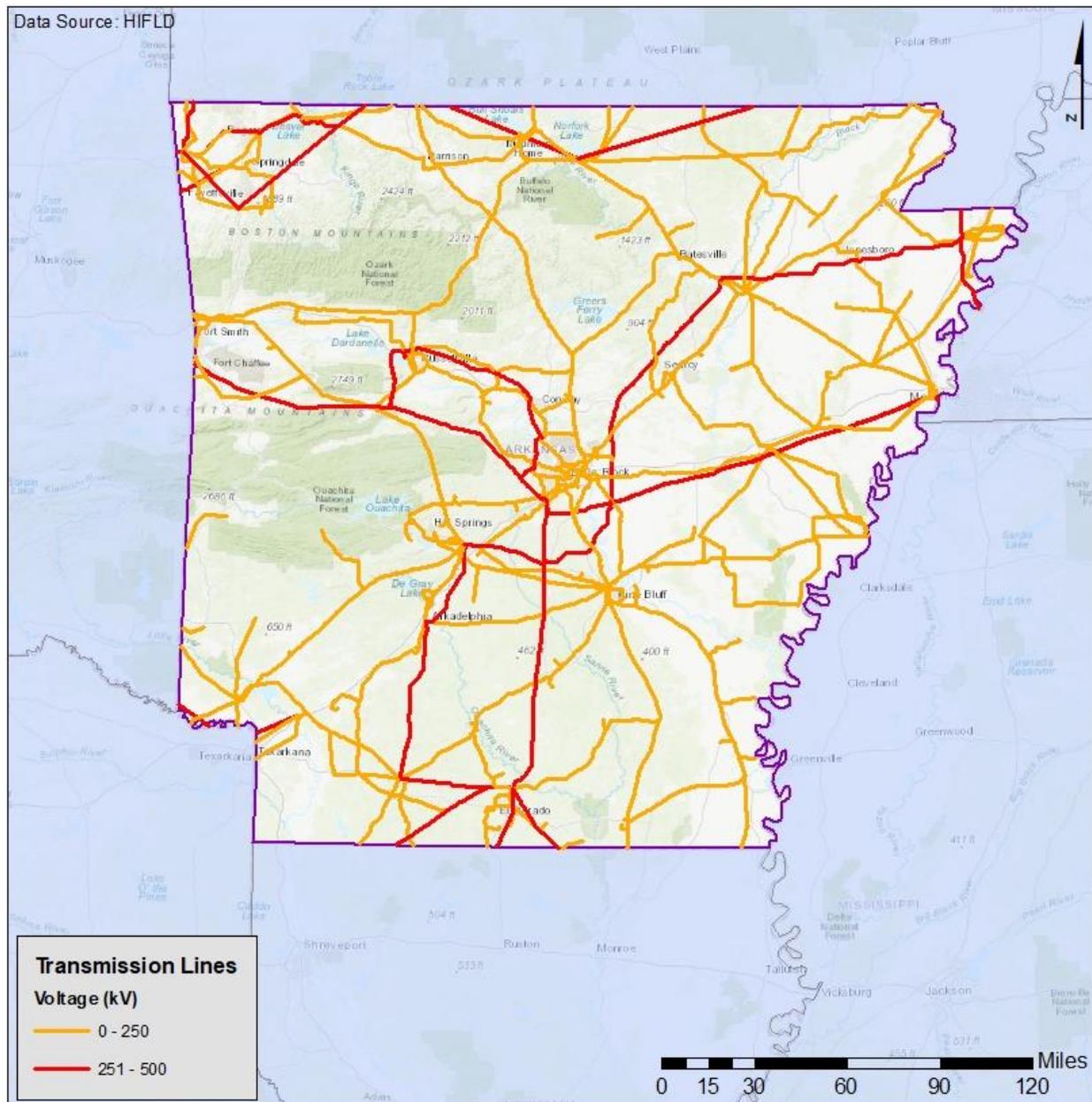
Figure 23: Power Transmission Lines

Entergy Arkansas owns the only energy distribution control facility in the state, which supports substations and communications infrastructure across Arkansas. This facility is shown in **Figure 24**. Energy distribution control facilities are responsible for balancing the electric distribution load within their respective control areas. The proper functioning of these facilities is integral to the stability of Arkansas' electric power grid. These facilities are extremely significant because they are considered part of the bulk power system. If the functionality of a control facility were to be hindered by a disaster, the distribution of power to multiple substations could be impacted. This creates the potential for wide-area blackouts and degradation of communications capabilities over large geographic areas.
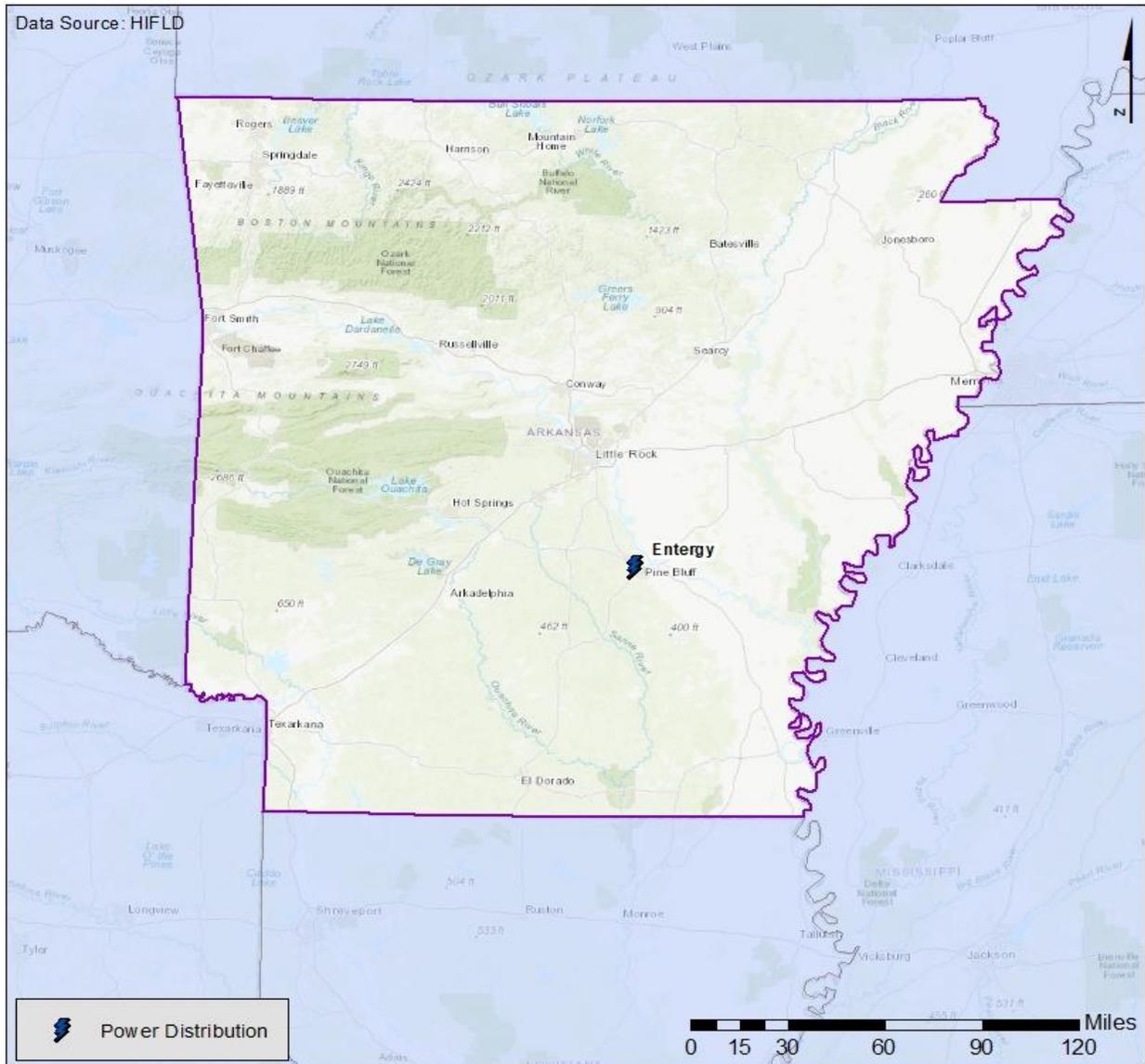
Figure 24: Energy Distribution Control Facility

5.2 Fuel Plan

Communications facilities of all types rely on electric power to operate. In the event of electric power outages, most infrastructure has generators that provide electric power for 24 to 48 hours or longer. During disasters, running longer than 24 hours will require fuel and resupply and oil for the motors to maintain continual operations. The ability to obtain fuel and to access sites running on backup generators will determine how many communications sites remain active. Many of the AWIN sites will need all-terrain vehicles to access, with about 45 sites that will need airlift to access. During winter months, many may not be accessible at all.

The Arkansas SEOC has a maintenance contract for their generator and fuel is purchased as needed. There are multiple companies that can provide refueling services to backup generators for communications infrastructure. Most generators at Arkansas' state facilities are diesel fueled, although natural gas or propane generators may be used at some sites.

5.3   Landline / Internet Providers

ATSS DIS administers the statewide CISCO VoIP and data networks and manages statewide contracts with landline and Internet providers for all of Arkansas state agencies. During disasters, DIS will be FEMA's first point of contact regarding telecommunications carriers and services. DIS can support responder communications by establishing phone and internet services. There are 48 Internet providers in Arkansas. The top 20 providers are listed in the **Table 7**: Top 20 Internet Providers in Arkansasbelow.

Table 7: Top 20 Internet Providers in Arkansas

Xfinity	AT&T	Cox	Kinetic by Windstream
Suddenlink	EarthLink	CenturyLink	Wisper
Viasat	HughesNet	Sparklight	Fidelity Communications
Hillbilly Wireless	Madison Co Phone Co	Rice Belt	Townes Telecommunications
BPS Telephone Co	Magazine Telephone	PGTelco	SW AR Telephone Coop

5.4   Cellular Providers

State agencies' cellular usage varies across the state and is dependent on the coverage provided by carriers within their respective areas of responsibility. The two primary service providers supporting government contracts in Arkansas are AT&T and Verizon Wireless. There are seven cellular providers with tower licenses in Arkansas, which are:

- ALLTEL Corporation
- AT&T Mobility LLC
- Cellco Partnership
- Holland & Knight LLP
- New Cingular Wireless PCS, LLC
- USCOC of Greater Oklahoma, LLC
- Verizon Wireless[24]

The State of Arkansas has a contract with Verizon for all its state agencies and their employees. Although not part of existing commercial wireless service contracts, a future public–private partnership between the State of Arkansas and a commercial carrier would require a Service Level Agreement (SLA) as a basis of expectation for service quality. It is important to note that there are several areas, especially in western Arkansas, where there is no cellular service.

The ASP and many other public safety agencies use aircards to provide data connectivity from their mobile data terminals to the Law Enforcement Information Network, which is used in the field to support operations. The aircards for most State agencies are on the Verizon Wireless network; however, other agencies leverage AT&T, and local agencies in the State may use other wireless broadband providers. A comprehensive list of providers can be found below in **Table 8.**

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[24] as of October, 2021) based on cell phone towers found in the state. There are approximately 8 unique cellular providers in Arkansas based on the "Licensee" attribute. This data was obtained from HIFLD and sourced from the FCC.

Many state and local agencies in Arkansas have begun adopting FirstNet services as an alternative mobile broadband service utilizing public safety's spectrum band 14. Arkansas' FirstNet points of contact can be found in 7Appendix A:.

Table 8: Broadband and Cellular Providers in Arkansas

Broadband Carriers	
Wireline	**Wireless**
Cable One, Inc.	Aristotle Unified Communications LLC
Comcast Corporation	AT&T Inc.
ViaSat, Inc.	T-Mobile USA, Inc.
Hughes Network Systems, LLC	HillBilly Wireless Internet, Inc.
AT&T Inc.	VSAT Systems, LLC
Southwest Arkansas Telephone Cooperative, Inc.	ViaSat, Inc.
Newroads Telecom/Pinnacle Telecom	FDF Communications Co.
Cox Communication, Inc.	Wisper ISP, Inc.
Arkansas Valley Electric Cooperative Corporation	C&W Enterprises, Inc.
Lumen Technologies, Inc.	
Altice	
Craighead Electric Cooperative Corporation	
E. Ritter Communications Holdings, Inc.	
VSAT Systems, LLC	
Cable One, Inc.	
GCTR	
Windstream Holdings, Inc.	
CableSouth Network Systems, LLC	
Bayou Cable Inc.	

5.5 Satellite Providers

Satellite communications provides backup communications during major incidents, when traditional systems are damaged, destroyed, or experience system overload. Satellite capabilities

can include both voice and data communications. Arkansas used part of its Public Safety Interoperable Communications grant funding to fund a statewide satellite radio system (Project ARSky) that provides backup communications in the event the AWIN system fails and/or cellular networks are down. Arkansas agencies have limited satellite capability, but a few state agencies have both satellite voice and data capabilities with small caches of equipment. Iridium Satellite phones are issued to the Governor, ADEM Director, Deputy Director, and each ADEM area. See **Table 1** for SEOC satellite phone numbers and talkgroup information. ADEM has a small cache of portable satellite telephones and additional satellite capabilities in its mobile command vehicle. ADEM has also deployed one or two satellite telephones to several State agencies as a tertiary line of communications. The ASP's 12 dispatch centers have MSAT capabilities, as well as 16 satellite telephones and satellite capabilities in its three MCVs.

6 Communications Requirements

This section summarizes requirements identified by the State of Arkansas throughout the annex update process. **Table 9** is organized by requirement type.

Table 9: Potential Communications Requirements

Requirement	Details	State / Agency	Date Submitted
Voice			
LMR	Up to 100 state, local, and surge responders may require tactical voice communications in the affected area to provide C2 and operational and responder safety communications.	ADEM	2016; 2021
	VHF tactical communications support (mobile towers, repeaters, radios etc.) may be required for coordinating personnel in areas where AWIN service is degraded or is not available.	ADEM	2016; 2021
	Handheld communications devices to support radio communications to operate up to 25 shelter sites	ADHS	2021
	Up to 100 portable radios may be needed for SAR operations if the AWIN service is degraded or not available	ASP	2021
Satellite	Up to 330 satellite telephones are needed for temporary long-range communications capability	ADEM and 77 State Agencies	2010; 2016; 2021
HF	Need voice for longer range but not extra-long. Example: example within a state or region where a portable HF radio is preferred, (e.g., Wyoming, Alaska)		

Requirement	Details	State / Agency	Date Submitted
Cellular	Up to 25 shelter sites may require temporary voice and data communication capabilities for reporting, requesting resources, and ensuring staff and occupant safety among shelters, local EOCs, VOADs, and facilities	ARC, VOADs	2016; 2021
Data			
Internet Access	Internet access may be required to keep IPAWS operational	SECC	2021
	Shelter sites may require temporary internet access for web-based reporting applications	American Red Cross	2021
	Hospitals in the affected area will require internet access to maintain web-based trauma dashboard	ADH	2021
Backhaul	The AWIN may require temporary backhaul to restore trunking for sections to ensure C2 and tactical voice communications can occur with field and command units.	ADEM, DIS	2016; 2021
Long Haul / Link	Long-range communications for data to reach outside the state/region. Example: C2 for regional effort, reporting to HQ in different state, etc.		
Power			
Generators	Portable generators may be required in a widespread or long-term incident to support shelter operations	ARC	2021
	Portable generators are needed to support the use of ImageTrend for hospitals to maintain information sharing with EMS personnel	ADH	2016; 2021
Fuel	Fuel and the delivery of fuel to critical infrastructure around the state will be needed in areas where commercial power is degraded	ADEM	2016; 2021
	ESF-2 will require that propane and/or natural gas be delivered to AWIN tower sites after 24 hours without electricity	ADEM	2016; 2021
Staffing			

Requirement	Details	State / Agency	Date Submitted
LMR Technicians	LMR technicians may be needed to augment Motorola's personnel for radio programming and/or repair	ASP	2021
Tower Technicians	Tower climbers capable of repair, alignment, and installation of equipment may be needed to restore AWIN sites	ASP	2021
COML/COMT	Certified COMLs and COMTs may be needed to augment COMU personnel across the state if the incident continues for multiple operational periods	ADEM, ASP	2021
Other	FCC Operations & Emergency Management specialist(s) may be needed to assist with bringing LP1, LP2, and critical non-English broadcast stations on air	FCC	2021
Portable / Deployable			
LMR Site-on-Wheels	Portable SOWs with masts ranging in height from 60 to 100 feet and with 700/800 MHz capabilities may be needed to temporarily restore AWIN coverage. Additional SOWs may be needed that operate in VHF bands depending on the incident	ADEM	2016, 2021
	Portable towers ranging in height from 60 to 100 feet may be needed that operate in VHF bands	ADEM, ASP	2021
Cellular Site-on-Wheels	COWs, SOWs, COLTs, etc. may be needed to provide temporary cellular service during commercial outages	ADEM	2021
	ADEM may require portable SAT COLT with FirstNet capabilities to provide temporary backhaul for the AWIN system	ADEM	2021
MCV(s)	List type of communications needed LMR (what band), satellite, WiFi, cable/TV capable, etc.		
Other			
Temporary/Portable Sheltering Structure	Temporary sheltering solution for deployed teams of 8 field personnel and accompanying communications equipment for multiple days. Two temporary shelters including one for	AR NG	2021

Requirement	Details	State / Agency	Date Submitted
	sleeping quarters and one for equipment will be needed per team deployed		
Large office facility with large meeting spaces equipped with voice and data communications	Temporary facility for influx of American Red Cross personnel may be needed depending on the severity of the incident	ARC	2021
Closed-circuit television (CCTV)	Four CCTV units with pan, tilt, and zoom capability are needed for AR DOT with cellular based backhaul	AR DOT, AHP	2010; 2016; 2021
Vehicles	All-terrain capability vehicles may be needed to assist in AWIN site maintenance, refueling, and restoration in up to 45 locations.	ADEM	2021
Airlift support	Airlift may be needed to assist in AWIN site maintenance, refueling, and restoration in up to 45 locations.	ADEM	2021
VMS	ADEM may require additional portable VMS for use to provide routing information to the public during evacuations	ADEM, AR DOT	2016; 2021

7   Communications Recommendations

These are items that have been identified by stakeholders through the data collection process and are goals to increase coordination and interoperability for both FEMA and state agencies. **Table 10** lists the recommendations for internal and external coordination and stakeholder proposed actions for each item identified.

Table 10: Recommendations for Communications Coordination

Recommendations	Stakeholder Proposed Actions	Progress Notes Date Submitted
Utilize TSP/WPS for critical state landline and cellular assets and incorporate the use of GETS/WPS/TSP in SOPs	State agencies need to identify all their critical facilities and assets that would benefit from TSP/WPS and have them registered	
Establish a statewide credentialing or identification system to expedite access during a multi-agency, multi-industry response in regional and local jurisdictions		
Develop and establish an AuxComm plan for VOADs that would operate in the state during a disaster		
Exercise State Agency COOP plans		
Develop, establish, test, and maintain PACE communications for all ESFs and critical State agencies		

Recommendations	Stakeholder Proposed Actions	Progress Notes Date Submitted
Establish, test, and maintain interoperable communications with the neighboring states of OK, KS, MO, MS, LA, and TX		
Identify and establish PACE modes of communication between the ARCC/ADEM and local EOCs/sheriffs for EAS messaging	Establish communications between the ARCC/ADEM/local EOCs and the SECC when there is no power or internet	
Identify and establish a 24/7 redundant Statewide EAS that is consistent across county and local jurisdictions	Analyze the regional and local alerting process across the state and determine a statewide EAS process that would establish a backup or rollover system to ensure the messages get out to the public 24/7	
Update the State EAS plan		
3-digit dialing may need to be set up to work with commercial carriers, especially in the Little Rock area		

Appendix A: Points of Contact

Table 11: Arkansas Points of Contact

Agency	Point(s) of Contact	Title
Arkansas Department of Emergency Management (ADEM) 9501 Camp Robinson N. Little Rock, AR 72199 http://www.adem.arkansas.gov/AEM **Twitter** @AR_Emergencies	David Baker 501-682-1185 David.baker@adem.arkansas.gov	Arkansas Wireless Information Network, Project Manager
	Penny Rubow O: 501-682-5358 M: 501-837-9623 Penny.rubow@adem.arkansas.gov	Program Manager, Arkansas Wireless Information Network, SWIC
	Ray Bennet O: 501-683-6700 ray.bennett@adem.arkansas.gov	Telecommunications Manager
	Justin Vint O: 501-683-6700 justin.vint@adem.arkansas.gov	Deputy Director, Communications & Support
	Barbara Hager O: 501-683-6700 Barbara.hager@adem.arkansas.gov	Arkansas Response and Coordination Center Manager
	Gary Ragen, MS, MEP, ACEM 501-683-6700 gary.ragen@adem.arkansas.gov	Community Preparedness Coordinator, Homeland Security Project
Arkansas State Police (ASP) 1 State Police Plaza Dr Little Rock, AR 72209 www.asp.arkansas.gov	Doug Cash O: 501-618-8000 Doug.cash@asp.arkansas.gov	Technical Operation Station, Corporal
	Brad Lann O: 501-767-8550 Brad.lann@asp.arkansas.gov	Technical Operation Station, Captain
Arkansas Geographic Information Systems (GIS)	Shelby Johnson W: 501-682-2943 shelby.johnson@arkansas.gov	Director, Arkansas GIS Office
Arkansas Department Health (ADH) 4815 W. Markham St Little Rock, AR http://www.healthy.arkansas.gov Twitter @ADHPIO	Greg P. Knight O: 501-661-2136 M: 501-412-2751 Greg.knight@arkansas.gov	Manager, Emergency Communications Center
	Shawn Howell O: 501-661-2249 M: 479-518-4028 Shawn.howell@arkansas.gov	Manager, Planning Program Office of Preparedness and Emergency Response Systems
	501-661-2301	Radiation Control 4815 W. Markham, Slot 30 Little Rock, AR 72205
	479-968-7171 800-422-6630 arkansasnuclearplanning@arkansas.gov	Nuclear Planning & Response PO Box 1749 Slot 58 ANOR Russellville, AR 72811
Arkansas Trauma Communications Center **1121 W 7th St.** **Little Rock, AR 72201**	Jeff Tabor O: 501-301-1434 jtabor@traumacomm.org	Program Manager
	Anita Cleveland	DCSIM Support Branch Manager

Arkansas National Guard (AR NG) Camp Robinson N. Little Rock, AR 72199 http://www.arguard.org/	O: 501-212-5928 M: 501-626-0519 Anita.y.cleveland.civ@army.mil	
	Col Tony Shepherd tshepherd@pods.com	Command, Control, Communications & Computers Directorate (G-6)
	Keith E. Schalk, TSgt, AR ANG Comm: 501-987-8533 DSN: 731-8533 keith.schalk@us.af.mil	Wing Information System Security Manager
	Kelvin Harris Kelvin.a.harris.civ@army.mil	
Arkansas Game & Fish Commission (AGFC) 2 Natural Resources Dr. Little Rock, AR 72205 www.agfc.com	Mark Phillips	AICEC
Arkansas Radio Amateur Civil Emergency Service (RACES) www.arkansas-aresraces.org	J.M. Rowe Jm.rowe@adem.arkansas.gov	ADEM/RACES Coordinator
Arkansas Department of Human Services (ADHS) Main St & E 7th St Little Rock, AR 72201 www.humanservices.arkansas.gov Twitter @ARHumanServices	Deltrise Hall M: 501-398-1736 O: 501-320-6326 Deltrise.hall@dhs.arkansas.gov	Director of Emergency Operations/ State Mass Care Coordinator
Arkansas Department of Transformation and Shared Services, Division of Information Systems (DIS) One Capitol Mall Ste. 3B201 Little Rock, AR 72201	O: 501-682-9990 F: 501-682-4310 dis@arkansas.gov	
American Red Cross (ARC) www.redcross.org/arkansas	Chris Harmon M: 417-839-3548 Chris.harmon@redcross.org	Regional Disaster Officer
	JoAnn Woody M: 918-852-0757 Joann.woody@redcross.org	External Relations Program Manager – MO/AR Region
	Michael Ingram M: 501-553-7524 michael.ingram@redcross.org	Senior Disaster Program Manager
Civil Air Patrol (AR CAP) 6012 Mablevale Pike Little Rock, AR 72203 www.arwingcap.org	Lt Col Marchelle Jones M: 501-730-2003 arwingcap@sbcglobal.net	AR Wing Chief of Staff
FirstNet/Public Safety Broadband Network	Thomas Randall 240-805-7758 thomas.randall@firstnet.gov	FirstNet Authority Senior Public Safety Advisor
	Kelly Gottsponer 14818 Cedar Heights Rd, North Little Rock, AR 72118	FEMA Type 3 Communications Unit Leader FirstNet Public Safety Solutions – Arkansas

	501.258.8013 | Kelly.Gottsponer@att.com	
	To report downed cables or broken poles, call 713-235-7900	Responders, Municipalities, & Utilities reporting line
	FIRSTNET Customer Care 1-800-574-7000	Technical Support available 24/7/365
Arkansas SECC 2024 Arkansas Valley Dr. Suite 403, Little Rock, AR 72212	Chris Daniel 479-234-5428 eas@arkbroadcasters.org	State SECC Chair
	Luke Story 501-227-7564 luke@arkbroadcasters.org	CEO ArkBroadcasters
Arkansas 911 Board PO Box 34075 Little Rock, AR 72203	C.J. Engel 501-375-9911 Ar911board@adem.arkansas.gov	Executive Director
FEMA Region 6 Headquarters Denton, TX Federal Regional Center (FRC) 800 North Loop 288 Denton, TX 76201 940-898-5399	Victor Camacho 940-898-5321 victor.camacho@fema.dhs.gov	Telecommunications Manager; Denton MERS
	Christopher Clark 940-898-5223 Christopher.Clark3@fema.dhs.gov	Program Officer – Emergency Officer; Denton MERS
	Glendon Johnson 940-898-5224 Glendon.Johnson@fema.dhs.gov	Telecommunications Manager; Denton MERS
	Wallon King 940-898-5580 Wallon.King@fema.dhs.gov	IT Specialist; Denton MERS
	Billy Maddison 940-898-5529 Billy.Maddison@fema.dhs.gov	IP Supervisor; Denton MERS
	Kerry Meeker 940-898-5338 Kerry.Meeker@fema.dhs.gov	MERS IT Specialist; Denton MERS
	Ronald Thomas 940-898-5503 Ronald.Thomas@fema.dhs.gov	IT Specialist; Denton MERS

Appendix B: Deployable/Portable Resources

Table 12: Deployable/Portable Assets

Equipment	Details	Agency Owner	Location
Cache Radios			
VHF portables			
AWIN Radio	180 cached at the SEOC, all preprogrammed with National Interoperability Talkgroups, TDMA Phase II	ADEM	SEOC
AWIN Radio	*did we get the exact number of AWIN radios from National Guard* all preprogrammed with National Interoperability Talkgroups, TDMA Phase II	Arkansas National Guard	Little Rock AFB, Jacksonville, AR
Cellular Phones	20 deployable smart phones, Verizon. Inactive.	ADEM	ADEM
Tactical Systems or Repeaters			
UHF tactical site	120 subscribe units, 30-foot mast with UHF antenna, 15 Kw gasoline generator		
Analog Lines	1 ARCC, 1 SEOC, 1 Directors Office	ADEM	ADEM
Mobile Radio Sites or Communications Units			
Portable Tower	45-foot portable tower with VHF mast	ADEM	ADEM
30 Foot Mobile Interoperability Trailer	Cross band UHF, VHF and 800 MHz consoles, ACU 1000 switch, 30 kW diesel generator	State Police	State Police
Mobile Incident Command Center (MICC)—45-ft freight liner	10 workstations, each with laptop monitors and video feeds - VHF and UHF radio for each workstation (6 of the VHF are turbo) - AWIN dispatch console 2 VHF air-to-ground radios - HF radio with Winlink capabilities - ACU-1000 15 portable radios (AWIN) 50-ft tower - Satellite and cellular data feeds 2 dedicated telephone lines, expandable to 8 20-kW diesel generator - GPS locater 2 network printers - Video downlink capabilities from aircraft - Rapid deployable camera system (12 cameras that network themselves)	State Police	Little Rock

Equipment	Details	Agency Owner	Location
	• Travels with 40-ft support trailer with fuel and 2 extra generators (6.5 kW gas and 7 kW diesel) • WinLink • Travel Console		
Mobile Incident Command Trailer (MICT)—30 ft trailer	• 6 workstations, only 1 has radios (VHF air-to-ground, UHF, and VHF) • ACU-M • Satellite and cellular data feeds • 2 voice telephone lines and 1 cellular data line through Verizon • 1 MCAT satellite telephone • Network printers • 15 kW diesel generators	State Police	
Small incident command center TCV Tactical Communications Vehicle	• 4 workstations • ACU-M • VHF, UHF, and 800 MHz radios (AWIN) • Can control deployable cameras • Video link to aircraft • Cellular Data • 1 MCAT Satellite Telephone	State Police	
Mobile Command Vehicle	• 3 LMR consoles in VHF, UHF and 800 MHz, amateur VHF and HF bands, • 15 kW diesel generator • ACU 1000	ADEM	ADEM
AWIN Sites on Wheels	3 Sites on Wheels (SOWS) with diesel generators	ADEM	ADEM
JISCC Block 2E – T57	o Agilis 1231 1.2 m satellite dish on Ku-band (1 Mbps up and 21 Mbps down) o Newtech MDM3310 IP Satellite Modem o Cisco ISR4351 Router o 2 Cisco Switch Catalyst 9300 o Aruba 7010 Wireless Controller o Aruba 360 Series Wireless Access Point o Cradlepoint IBR 900 o Patton SmartNode 4141 VOIP Media Gateway o 2 KW Army Green Diesel Generator o Smart UPS SMT-750 o 2 750-ft fiber optic cable o 6 media converters	Arkansas Army National Guard owned Arkansas Air National Guard (AR ANG) maintained and operated	Little Rock AFB, Jacksonville, AR

Equipment	Details	Agency Owner	Location
	o 20 UHF Motorola XTS 5000 portable radios o 13 Tri-Band Harris XG-100 portable radios o 4 Dell 5414 Laptop computers o 15 Cisco 7821 VOIP telephones o 4 Logitech C920 Pro HD Webcams for VTC o 2 printers: HP LaserJet Pro MFP M227fdw o 2 Cisco ASA Firewall o 1 ACU-1000 o 6 Motorola APX-8500 o 1 Motorola KVL 4000 Encryption Key loader o 1 MICOM 3R HF radio with data modem o BCD996T Bearcat Scanner o 6 Custom Triband antennae o 3 Meter BlueSky Antenna Mast o 10 Meter BlueSky Antenna Mast o Three 7.5 kW generators (diesel) o Two 22,000 BTU MilAir Environmental Control Unit (air conditioning units) o 1 base tent (12 ft x 15 ft) o Uninterruptible power supply units—3000 VA (2), 1500 VA (3)		
• Civil Support Team (CST)	o VHF, UHF, and 800 MHz portable and mobile radios o 2 PRC-117 SINCGARS radios o ACU-2000 o 3 VoIP wireless telephones o 8 laptop computers o Thrane and Thrane TT-3080A International Maritime Satellite (INMARSAT) data terminal o Iridium satellite telephones o 5 diesel generators o Web access, including secure capability	AR NG	Camp Robinson, North Little Rock, AR

Equipment	Details	Agency Owner	Location
Satellite			
VTAC Terminal	TBD		
Began	TBD		
Active Satellite Phones	3 Phones and 1 Data Terminal. Provider is N-I-Government	ADEM	ADEM
Active Satellite Phones	15 deployable phones. Provider is Preferred Communications	State Police	
Satellite telephone cache	12 satellite telephones. Provider is N-1-Government.	ADEM	ADEM
Generation			
40 kW generator trailer	Diesel generator on 20-foot trailer	State Police	State Police
Generator	Diesel, 10,000-gallon tank, maintenance contract	ADEM	ADEM
Cellular on wheels (COWs)	List carrier		
FirstNet Broadband mobile site	AT&T		
FirstNet Picocells	AT&T		
Other			
TCB Cessna airplane	Can send real-time video to ASP TCV and MICC. AWIN capable.	State Police	Statewide
1 helicopter	AWIN capable	State Police	Statewide
16 drones		State Police	Larger ones are housed in Little Rock

Appendix C: Frequency Information

Refer to the State of Arkansas Interoperable Communications Field Operations Guide (ARFOG) available through ADEM

https://www.dps.arkansas.gov/wp-content/uploads/2020/05/ARFOG-V1.0-20150318.pdf
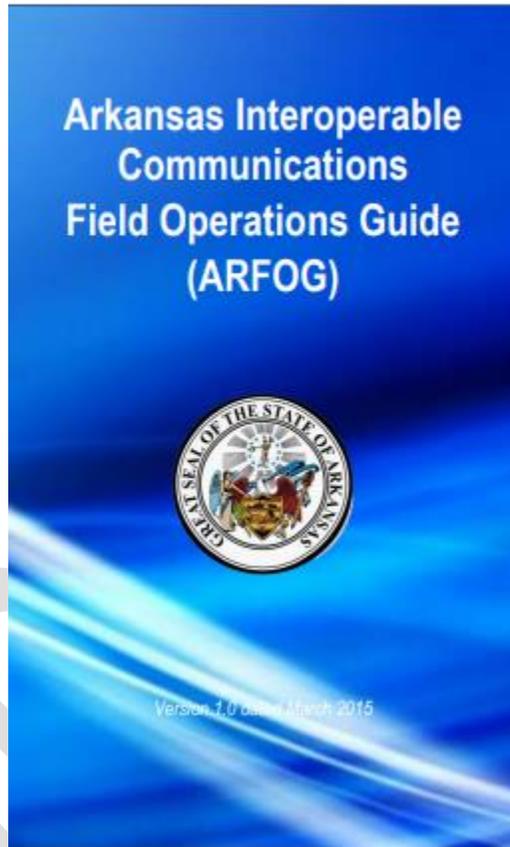
Appendix D: Related Plans and Resources

Arkansas Comprehensive Emergency Management Plan (2020)
https://www.dps.arkansas.gov/wp-content/uploads/2020/05/ARCEMP-14Mar2020-Final.pdf

Arkansas Interoperable Communications Field Operations Guide (2015)
https://www.dps.arkansas.gov/wp-content/uploads/2020/05/ARFOG-V1.0-20150318.pdf

Arkansas EAS Plan (1997)
https://www.fcc.gov/files/ar-eas-planpdf

Arkansas Section ARES Emergency Operations Plan (2011)
http://www.nwahams.com/AR_ARES-RACES_Plan.pdf

Arkansas Statewide Communications Interoperability Plan (2017 – 2020)
https://www.dps.arkansas.gov/wp-content/uploads/2020/05/AR-Enhanced-SCIP-FINAL-20171203.pdf

State of Arkansas All-Hazards Mitigation Plan (2018)
https://www.dps.arkansas.gov/wp-content/uploads/2020/05/2018_Final_State_of_Arkansas_HMP.pdf

Emergency Instructions – Arkansas Nuclear One (2021)
https://www.healthy.arkansas.gov/images/uploads/pdf/2021_English_EIB_reduced.pdf

State of Arkansas All-Hazards Mitigation Plan (2018)
https://www.dps.arkansas.gov/wp-content/uploads/2020/05/2018_Final_State_of_Arkansas_HMP.pdf

State of Arkansas All-Hazards Mitigation Plan (2018)
https://www.dps.arkansas.gov/wp-content/uploads/2020/05/2018_Final_State_of_Arkansas_HMP.pdf

State of Arkansas Statewide NG9-1-1 Plan (2018)
https://www.dps.arkansas.gov/wp-content/uploads/2020/05/Statewide-NG911-Plan.pdf

Table 13: CCI Data Sources

Critical Communications Infrastructure Data Collected for Geo-Portal		
CCI Type	Origination/Source	Date Data Collected
EOCs	HIFLD database	20211115
AINM LMR Towers	RadioReference.com	20211125
Electrical Distribution Control Centers	FCC Data Base	20211115
PEP Stations	DHHS Website	20211115

Critical Communications Infrastructure Data Collected for Geo-Portal		
Potential Shelter Sites	FEMA NCP Data Base	20211212
Serving Wire Centers (SWCs)	HIFLD	20211115
AWIN LMR Towers	RadioReference.com	20211125
Non-English Broadcast Station	HIFLD	20211115
National Weather Radio	HIFLD	20211115
Power Distribution	HIFLD	20211115
Public Safety Answering Point	HIFLD	20211115
Substation	HIFLD	20211115
Transmission Lines	HIFLD	20211115

Appendix E: Arkansas Emergency Management / Homeland Security Regions Area Coordinators

Area Coordinator Supervisor/Central Coordinator

> Clay Bewley
>
> Camp J.T. Robinson
>
> Building 9501
>
> North Little Rock, AR 72199
>
> 501-683-6700

Northwest Coordinator

> Tim Gehring
>
> 291 St. Scholastica Rd.
>
> New Blaine, AR 72851
>
> 501-319-5257

Northeast Coordinator

> Jeff Jones
>
> 511 Union
>
> Room 010
>
> Jonesboro, AR 72401
>
> 501-580-5006

Southeast Coordinator

> LeeAnn Smith
>
> 101 E. Barraque
>
> Pine Bluff, AR 71601
>
> 501-554-0815

Southwest Coordinator

> Teresa Smith
>
> 2500 South Main
>
> Hope, AR 71801
>
> 501-580-5006

Appendix F: Arkansas Electric Cooperative Members and Distribution Facilities

Table 14: Arkansas Cooperative Members

AECC Member Cooperatives	Website	Phone
Arkansas Valley Electric Cooperative	http://www.avecc.com/	479-667-2176
Ashley-Chicot Cooperative	http://www.ashley-chicot.com/	870-853-5212
C&L Electric Cooperative	http://www.clelectric.com/	870-628-4221
Carroll Electric Cooperative	http://www.carrollecc.com/	870-423-2161
Clay County Electric Cooperative	http://www.claycountyelectric.com/	870-857-3521
Craighead Electric Cooperative	http://www.craigheadelectric.coop/	870-932-8301
Farmers Electric Cooperative	http://www.farmersecc.com/	870-523-3691
First Electric Cooperative	http://www.firstelectric.coop/	800-489-7405
Mississippi County Electric Cooperative	http://www.mceci.com/	870-763-4563
North Arkansas Electric Cooperative	http://www.naeci.com/	870-994-2191
Ouachita Electric Cooperative	http://www.oecc.com/	877-252-4538
Ozarks Electric Cooperative	http://www.ozarksecc.com/	800-521-6144
Petit Jean Electric Cooperative	http://www.pjecc.com/	501-745-2493
Rich Mountain Electric Cooperative	http://www.rmec.com/	479-394-4140
South Central Arkansas Electric Cooperative	http://www.scaec.com/	800-814-2931
Southwest Arkansas Electric Cooperative	http://www.swrea.com/	870-772-2743
Woodruff Electric Cooperative	http://www.woodruffelectric.coop/	870-633-2262

Table 15: Arkansas Distribution Centers

Generating Station and Location	Additional Information
Carl E. Bailey Generating Station Augusta, AR	Operation: Unit 1 - 1966 Ownership: AECC owns 100% Fuel: Natural gas and fuel oil Capability: 122 megawatts
Carl S. Whillock Hydroelectric Generating Station Morrilton, AR	Operation: 1993 Ownership: AECC owns 100% Fuel: Arkansas River Capability: 32.4 megawatts
Clyde T. Ellis Hydroelectric Generating Station Barling, AR	Operation: 1988 Ownership: AECC owns 100% Fuel: Arkansas River Capability: 32.4 megawatts
Electric Cooperatives of Arkansas Hydropower Generating Station Dumas, AR	Operation: 1999 Ownership: AECC owns 100% Fuel: Arkansas River Capability: 102.6 megawatts
Elkins Generating Station Elkins, AR	Operation: Ownership: AECC owns 100%

Generating Station and Location	Additional Information
	Fuel: Natural gas Capability: 60 megawatts
Flint Creek Power Plant Gentry, AR	Operation: Unit 1 – July 1978 Ownership: AECC owns 50% Fuel: Low-sulfur coal Capability: 528 megawatts
Fulton CT1 Generating Station Fulton, AR	Operation: May 26, 2001 Ownership: AECC owns 100% Fuel: Natural gas Capability: 153 megawatts
Harry L. Oswald Generating Station at Wrightsville Wrightsville, AR	Operation: July 1, 2003 Ownership: AECC owns 100% Fuel: Natural gas Capability: 548 megawatts
Independence Steam Electric Station Newark, AR	Operation: Unit 1 – Jan 1983/Unit 2 – Dec 1984 Ownership: AECC owns 35% Fuel: Low sulfur Capability: 1,678 megawatts
John McClellan Generating Station Camden, AR	Operation: Unit 1 – 1971 Ownership: AECC owns 100% Fuel: Natural gas and fuel oil Capability: 134 megawatts
John W. Turk, Jr. Power Plant Fulton, AR	Operation: December 2012 Ownership: AECC owns 73 megawatts Fuel: Low sulfur coal Capability: 624 megawatts
Magnet Cove Generating Station Malvern, AR	Operation: 2006 Ownership: AECC owns 100% Fuel: Natural gas Capability: 660 megawatts
Thomas B. Fitzhugh Generating Station Ozark, AR	Operation: Unit 1 – 1963/Unit 2 – 2003 Ownership: AECC owns 100% Fuel: Natural gas and fuel oil Capability: 170.6 megawatts
White Bluff Steam Electric Station Redfield, AR	Operation: Unit 1 – August 1980/Unit 2 – July 1981 Ownership: AECC owns 35% Fuel: Low sulfur coal Capability: 1,659 megawatts

Appendix G: Supporting Infrastructure

Nuclear One Emergency Planning Zones, Reception Centers, Evacuation Information,[25] and Emergency Alert Radio Stations[26]

Figure 25: Nuclear One Emergency Planning Zone

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[25] https://www.healthy.arkansas.gov/images/uploads/pdf/2021_English_EIB_reduced.pdf
[26] https://www.entergy-nuclear.com/ep/anoalert/

ZONES AND RECEPTION CENTERS

NOTE: Personnel will be in place at each reception center host city to direct evacuees to their designated reception centers.

ZONE "G" – The area within approximately two miles of Arkansas Nuclear One. This includes Lake Dardanelle, the ANO peninsula, Mill Creek, 40 Acre Rock and London Communities. **Residents of this zone should proceed to the designated reception center at Hector High School**. Persons living in Zone G should take Highway 64 or Highway 333 to Highway 7, then Highway 7 to Dover, then Highway 27 to Hector.

ZONE "H" – Russellville residents west of Arkansas Avenue and south of I-40. This includes Norristown and the Dardanelle State Park area. **Residents in this zone should proceed to the designated reception center at Morrilton Junior High School**. Persons living in Zone H should take I-40 or Highway 64 east to Morrilton or Highway 247 to Highway 64 then east to Morrilton.

ZONE "I" – Russellville residents south of I-40 and east of Arkansas Avenue. This includes the South New Hope Community. **Residents in this zone should proceed to the designated reception center at Morrilton Junior High School**. Persons living in Zone I should take I-40 or Highway 64 east to Morrilton or Highway 247 to Highway 64 then east to Morrilton.

ZONE "J" – Pope County residents north of I-40, south of Bakers Creek and east of the Illinois Bayou. **Residents in this zone should proceed to the designated reception center at Morrilton Junior High School**. Persons living in Zone J take I-40 or Highway 64 east to Morrilton, or Highway 124 to Highway 326 East to Hwy 105 to Atkins, then east on I-40 or Highway 64 to Morrilton.

ZONE "K" – Pope County residents north of Highway 64, west of the Illinois Bayou, east and south of Highway 333, and south of county road 79(also known as Shinn Mountain Road) and county road 141(also known as Lower Shinn Mountain Road). **Residents in this zone should proceed to the designated reception center at Hector High School**. Persons living in Zone K should take I-40, Highway 333 or Pleasant View Road to Highway 7 then Highway 7 to Dover, then Highway 27 to Hector.

ZONE "L" – Pope County residents east of the Illinois Bayou and north of Bakers Creek. This includes Dover and the Linker Mountain Community. **Residents in this zone should proceed to the designated reception center at Hector High School**. Persons living in Zone L should take Highway 7 to Dover then Highway 27 to Hector, or Highway 164 to Highway 105 then take Highway 27 north to Hector.

ZONE "M" – Pope County residents north of Hickeytown Road, east of Highway 333 and north of county road 79(also known as Shinn Mountain Road) and county road 141(also known as Lower Shinn Mountain Road). This includes the Augsburg, Rushing and North New Hope Communities. **Residents in this zone should proceed to the designated reception center at Hector High School**. Persons living in Zone M should take Highway 333 to Highway 7 to Dover, then Highway 27 to Hector.

ZONE "N" – Pope County residents south of Hickeytown Road, west of Highway 333 and north of Lake Dardanelle. **Residents in this zone should proceed to the designated reception center at Hector High School**. Persons living in Zone N should take Highway 333 to Highway 7 to Dover then Highway 27 to Hector.

ZONE "O" – Johnson County residents east of Highway 359 and south of Flat Rock Creek. **Residents in this zone should proceed to the designated reception center at Clarksville High School**. Persons living in Zone O should take Highway 64, I-40 or take Highway 359 to Highway 64 west to Clarksville.

ZONE "P" – Johnson County residents north of Flat Rock Creek and west of Highway 359. This includes the Piney, Piney Bay, Knoxville and Hickeytown Communities. **Residents in this zone should proceed to the designated reception center at Clarksville High School**. Persons living in Zone P should take Highway 64, I-40 or Highway 359 to Highway 64 west to Clarksville.

ZONE "Q" – Logan County residents residing between Delaware and New Blaine. This includes the New Liberty, West River Mountain and Nichols Lane area. **Residents in this zone should proceed to the designated reception center at Paris High School**. Persons living in Zone Q should take Highway 22 west to Paris.

ZONE "R" – Logan County residents within an area approximately two miles west of the Logan - Yell county line. This includes Wildcat Hollow, Delaware, Delaware Lake Area, River Mountain Road east of Flurry Road and Highway 22 east of Johnson Lane. **Residents in this zone should proceed to the designated reception center at Paris High School**. Persons living in Zone R should take Highway 22 west to Paris.

ZONE "S" – Yell County residents south of Mt. Nebo Road and west of the Dardanelle city limits. This includes the Slo Fork and Sulphur Springs areas. **Residents in this zone should proceed to the designated reception center at Danville High School**. Persons living in Zone S should take Highway 27 to Danville or Highway 7 to Ola, then Highway 10 west to Danville; or Highway 28 to Mt. George, then Highway 154 to Highway 27 to Danville.

ZONE "T" – All residents of the city of Dardanelle. **Residents in this zone should proceed to the designated reception center at Danville High School**. Persons living in Zone T should take Highway 7 south to Ola, then Highway 10 west to Danville.

ZONE "U" – Yell County residents north of Mt. Nebo Road and west of the Dardanelle City limits. This includes Mt. Nebo, Haney Hollow, Wildcat Hollow in Yell County and the Lake Dardanelle State Park area. **Residents in this zone should proceed to the designated reception center at Danville High School**. Persons living in Zone U should take Highway 22 or Highway 155 east to Highway 27, then Highway 27 to Danville.
NOTE: Personnel will be in place at each reception center host city to direct evacuees to their designated reception centers.

Nuclear One Emergency Alert Radio Stations[27]

NOTE: KXRJ is available for emergency messaging 24-hours a day. The other stations will air emergency messages as soon as the stations can be staffed during non-working hours. All stations are available during normal working hours.

Russellville

KARV, AM 610
KWXT, AM 1490
KMTC, FM 91.1
KCJC, FM 102.3
KXRJ, FM 91.9
Tone Alert 162.525

Dardanelle
KCAB, AM 980
KCAB, FM 97.1
KWKK, FM 100.9

Clarksville
KXIO, FM 106.9

Danville
KYEL, FM 105.5

Atkins
KCON, FM 99.3

Ola
KARV, FM 101.3

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[27] https://www.entergy-nuclear.com/ep/anoalert/

Appendix H: Acronyms

ADA	Americans with Disability Act
ADA	Arkansas Division of Aeronautics
ADC	Arkansas Department of Corrections
ADEE	Arkansas Department of Energy and Environment
ADEM	Arkansas Division of Emergency Management
ADFA	Arkansas Department of Finance and Administration
ADH	Arkansas Department of Health
ADHS	Arkansas Department of Human Services
ADPS	Arkansas Department of Public Safety
AGFC	Arkansas Game & Fish Commission
AHP	Arkansas Highway Patrol
ALE	Automatic Link Establishment
AMAIT	Arkansas Multi Agency Trust Fund
AMBER	America's Missing: Broadcast Emergency Response
ANG	Arkansas National Guard
ANO	Arkansas Nuclear One
APCO	Association of Public Safety Communications Officials
APSC	Arkansas Public Service Commission
ARC	American Red Cross
ARCC	Arkansas Response Coordination Center
ARDOT	Arkansas Department of Transportation
ARES	Amateur Radio Emergency Service
ARFOG	Arkansas Interoperable Communications Field Operations Guide

ARRL	American Radio Relay League
ARVOAD	Arkansas Volunteer Organizations Active in Disaster
ASFC	Arkansas State Fusion Center
ASP	Arkansas State Police
ATSS	Arkansas Department of Transformation and Shared Services
AuxComm	Auxiliary Communications
AWIN	Arkansas Wireless Information Network
C2	Command and Control
CAD	Computer-Aided Dispatch
CAP	Civil Air Patrol
CAP	Common Alerting Protocol
CCI	Critical Communications Infrastructure
CCTV	Closed Circuit Television
CERT	Community Emergency Response Team
CERT	Computer Emergency Response Team
CI	Critical Infrastructure
CIO	Chief Information Officer
COAD	Community Organizations Active in Disaster
COLT	Cellular on Light Trailer
COML	Communications Unit Leader
COMT	Communications Technician
COMU	Communications Unit
COOP	Continuity of Operations
COW	Cell-on-Wheels

CST	Civil Support Team
CUSEC	Central United States Earthquake Consortium
DCSNS	Division of Community Service and Nonprofit Support
DEC	Disaster Emergency Communications
DECD	Disaster Emergency Communications Division
DEQ	Division of Environmental Quality
DFA	Department of Finance and Administration
DHS	Department of Homeland Security
DIS	Arkansas Division of Information Systems
DoD	(U.S.) Department of Defense
DOT	Department of Transportation
DPS	Department of Public Safety
DRC	Disaster Recovery Center
EAS	Emergency Alert System
ECC	Emergency Communications Center
ECL	Emergency Communications Landscape (Model)
EM	Emergency Manager
EMA	Emergency Management Agency
EMAC	Emergency Management Assistance Compact
EMP	Electromagnetic Pulse
EMS	Emergency Medical Service
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
ePCR	Electronic Patient Care Record

ESF	Emergency Support Function
ESInet	Emergency Services Internet Protocol Network
ETC	Etcetera
FBI	Federal Bureau of Investigations
FCC	Federal Communications Commission
FCO	Federal Coordinating Officer
FEMA	Federal Emergency Management Agency
FMO	Fire Marshal's Office
FNARS	FEMA National Radio System
FOG	Field Operations Guide
FOUO	For Official Use Only
FRC	Federal Regional Center
GETS	Government Emergency Telecommunications Service
GIS	Geographic Information System
GPS	Global Positioning System
HAN	Health Alert Network
HAZMAT	Hazardous Materials
HF	High Frequency
HMP	Hazard Mitigation Plan
HQ	Headquarters
HSIN	Homeland Security Information Network
IC	Incident Commander
ICS	Incident Command System
IP	Internet Protocol

IPAWS	Integrated Public Alert & Warning System
ISP	Internet Service Provider
IT	Information Technology
JFO	Joint Field Office
JIC	Joint Information Center
JISCC	Joint Incident Site Communications Capability
JOC	Joint Operations Center
kW	Kilowatt
LAN	Local Area Network
LE	Law Enforcement
LEC	Local Exchange Carrier
LMR	Land Mobile Radio
LOS	Line of Sight
LP1	Local Primary 1
LP2	Local Primary 2
MA	Mutual Aid
MARS	Military Auxiliary Radio System
MCV	Mobile Command Vehicle
MEOC	Mobile Emergency Operations Center
MHz	Megahertz
MOTOTRBO	Motorola Digital Radio Format
MOU	Memorandum of Understanding
MSAT	Mobile Satellite
MS-ISAC	Multi-State Information Sharing and Analysis Center

N/A	Non-applicable
NATO	North Atlantic Treaty Organization
NAWAS	National Warning System
NCDC	National Climatic Data Center
NEB	Non-English Broadcast (Station)
NENA	National Emergency Number Association
NG911	Next Generation 911
NGO	Non-governmental Organization
NIFOG	National Interoperability Field Operations Guide
NIMS	National Incident Management System
NIPRNet	Non-classified Internet Protocol Router Network
NOAA	National Oceanic and Atmospheric Administration
NOC	Network Operations Center
NSS	National Shelter System
NSSE	National Special Security Event
NWR	NOAA Weather Radio
NWS	National Weather Service
OGC	Oil and Gas Commission
P25	APCO Project 25
PACE	Primary, Alternate, Contingency, Emergency
PBX	Private Branch Exchange
PEP	Primary Entry Point
PIO	Public Information Officer
POC	Point of Contact

PS	Public Safety
PSAP	Public Safety Answering Point
PSTN	Public Switched Telephone Network
PW	Public Works
RACES	Radio Amateur Civil Emergency Service
RERT	Radiological Emergency Response Team
RF	Radio Frequency
RRN	Regional Radio Network
SAR	Search and Rescue
SAT	Satellite
SEOC	State Emergency Operations Center
SHARES	Shared Resources (Program)
SIM	State Interoperability Model
SIPRNet	Secure Internet Protocol Router Network
SLA	Service Level Agreement
SMART	Satellite Mutual Aid Radio Talkgroup
SOP	Standard Operating Procedures
SOW	Site on Wheels
SSA	Sector Specific Agency
STE	Secure Terminal Equipment
SWC	Serving Wire Center
SWIC	Statewide Interoperability Coordinator
TBD	To be Determined
TDMA	Time-Division Multiple Access

THIRA	Threat and Hazard identification and Risk Assessment
TMC	Traffic Management Center
TSP	Telecommunications Service Priority
TV	Television
UHF	Ultra-High Frequency
UPS	Uninterruptable Power Source
US&R	Urban Search & Rescue
US-CERT	United States Computer Emergency Readiness Team
USSS	United States Secret Service
VHF	Very High Frequency
VMS	Variable Messaging Signs
VOAD	Voluntary Organizations Active in Disaster
VoIP	Voice Over Internet Protocol
VPN	Virtual Private Network
VSAT	Very Small Aperture Terminal
VTC	Video Teleconference
WEA	Wireless Emergency Alert
Wi-Fi	Wireless Fidelity
WPS	Wireless Priority Service