

Amateur Radio Services

Emergency Communications Components

The Washington State Public Alert and Warning System (WA-PAWS): mil.wa.gov/wa-paws

MISSION:

Providing coordinated, prompt, reliable, and actionable information to the whole community through clear, consistent, accessible, and culturally and linguistically appropriate methods to effectively relay information regarding any threat or hazard is a core emergency management capability. Best practices suggest that public warnings be disseminated using multiple systems to effectively reach the population at risk.¹

IPAWS, EAS, WEA, and NWEM, along with other public warning systems, are critical tools to warn the citizens of Washington about imminent threats to life safety, property, and the environment.¹

Key organizational components of Amateur Radio include:

- I. Emergency Management Agency (EMA)
- II. Electronic Media
 - A. Radio Stations
 - (1) Terrestrial
 - (2) Satellite
 - B. Television Stations
 - C. Cable Systems
- III. Amateur Radio Services (ARS) Alternate Communications
 - A. Amateur Radio Emergency Service® (ARES®)
 - (1) American Radio Relay League® (ARRL®)
 - B. Auxiliary Communications Systems
 - (1) Umbrella names for consolidated Emergency Communications (EMCOMM) that is managed and supervised by an EMA
 - C. Radio Amateur Civil Emergency Service (RACES)
 - (1) Managed and supervised by an EMA
 - (2) Operates under the authority of 47 CFR 97.407

Key operational components of WA-PAWS include:

- I. Amateur Radio Service Emergency Communications (EMCOMM) is comprised of Formal and Informal message traffic.
 - A. Formal Message traffic
 - (1) Guidance for amateur radio message preparation and processing is provided by
 - a. Radio Relay International (RRI): radiorelay.org/about/
 - b. ARRL National Traffic System (NTS): arrl.org/nts
 - (2) Formal message traffic is prepared one of two formats
 - a. FEMA ICS-213 General Message format
 - b. National Traffic System (NTS) format
 - (3) Precedence for Formal Message traffic is
 - a. Routine (R)
 - b. Welfare (W)

- c. Priority (P)
- d. EMERGENCY (Spelled out in full)

(4) Emergency Management Agencies and media facilities will benefit by using amateur radio messaging when the LRN or SRN have been overly affected or rendered inoperable. During large emergencies or disasters, every EMA needs to create an audit trail and the formal message will provide the vital documentation that may be needed later. If the emergency manager decides the situation is critical and time is of essence, they can opt to use informal/tactical messaging. It will be necessary for the EMCOMM team to accurately log the transmissions in a communications log, such as the ICS 309 form.

B. Informal or Tactical Message Traffic is passed at the local level.

(1) Informal/Tactical Message Traffic is recorded on the form decided upon by the EMA Director or Deputy Director.

C. Auxiliary Communications Systems

(1) High-Speed wide bandwidth data communications: Amateur Radio Emergency Data Network (AREDN): arednmesh.org/about-us

To provide the Amateur Radio Community with a quality solution for supporting the needs of high-speed data in the Amateur Radio and Emergency Communications field.

(2) Not all ARS EMCOMM teams are using AREDN, but may use HamWAN: hamwan.org *A non-profit organization (501c3) developing best practices for high speed amateur radio data networks. HamWAN also runs the Puget Sound Data Ring, which is a real-world network implementation of the proposed designs.*

(3) And not all ARS EMCOMM teams use HamWAN. They use other frequencies.

a. Frequencies commonly used

- (i) 3.5 MHz – 4.0 MHz/80 Meters Band
- (ii) 7.0 MHz – 7.3 MHz/40 Meters Band
- (iii) 14.0 MHz – 14.35 MHz/20 Meters Band
- (iv) 144.0 MHz – 148.0 MHz/2 Meters Band
- (v) 420.0 MHz – 450.0 MHz/70 centimeters Band

b. MODES

- (i) Data
- (ii) Image
- (iii) Single Side Band (SSB) Phone

II. Emergency Alert System (EAS)²

The Emergency Alert System (EAS) is the primary means for providing the public with critical alert information about an emergency or disaster. Under EAS requirements, radio, TV and cable TV stations must participate at the National level or specifically request a waiver from the Federal Communications Commission (FCC). Further, they are encouraged to voluntarily participate in state and local EAS plans.

III. SHARed RESources (SHARES) High Frequency HF Radio Program

National security and emergency preparedness (NS/EP) personnel need to transmit critical messages to coordinate emergency operations even when traditional means of communicating via landlines and cellphones are damaged or destroyed. The SHARed RESources (SHARES) High Frequency (HF) Radio Program, administered by the Department of Homeland Security's (DHS) National Coordinating Center for Communications (NCC), provides an additional means for users with a NS/EP mission to communicate when landline and cellular communications are unavailable. <https://www.cisa.gov/resources-tools/programs/shared-resources-shares-high-frequency-hf-radio-program>

SHARES members use existing HF radio resources of government, critical infrastructure, and disaster response organizations to coordinate and transmit emergency messages. SHARES users rely on HF radio communications to perform critical functions, including those areas related to leadership, safety, maintenance of law and order, finance, and public health. This program also provides the emergency response community with a single interagency emergency message handling and frequency sharing system. SHARES promotes interoperability between HF radio systems and promotes awareness of applicable regulatory, procedural, and technical issues.

More than 3,290 HF radio stations—representing over 590 federal, state, and industry organizations located in all 50 states, the District of Columbia, and several locations overseas—are resource contributors to the SHARES HF Radio Program. Nearly 500 emergency planning and response personnel participate in SHARES. Approximately 200 HF radio channels are available for use by SHARES members.

Membership in the SHARES program is voluntary. SHARES is available on a 24-hour basis and requires no prior coordination or activation to transmit messages. Members consult the SHARES Handbook to find stations, frequencies and/or Automatic Link Establishment (ALE) addresses of participating organizations they need to communicate/coordinate with. Participating SHARES HF radio stations accept and relay messages until a receiving station is able to deliver the message to the intended recipient.

For additional information, reference the SHARES publications library:

<https://www.cisa.gov/resources-tools/resources/shares-documents>

Frequencies used by the SHARES system are allocated and controlled by the National Telecommunications and Information Administration rather than the Federal Communications Commission. Users of SHARES may use sideband voice communications, high speed data terminations and encrypted communications.

Currently, SHARES is a source for county EOCs to communicate with the WA EMD State EOC.

IV. Local Emergency Communications Committee (LECC)³

LECCs oversee the EAS in their respective Operational Areas. As part of that oversight, LECCs recommend best practices for determining when and how to originate and disseminate local public alert and warning messaging utilizing EAS, Wireless Emergency Alerts (WEAs) and other related warning systems. It is important for LECCs to remember that these warning systems are the tools whose purposes are (1) to ensure public safety and (2) preserve life and property when an emergency occurs.

An important duty of LECCs is to create, maintain and periodically update the Operational Area's Local Alert and Warning Plan, or simply Local Area Plan, and to routinely discuss policies and procedures that govern its use along with the warning systems that are described within the plan.

LECC Membership includes staff from the local EMA and electronic media. It is beneficial to include volunteers from the local amateur radio EMCOMM in the LECC.

V. Local Relay Network (LRN)⁴

The LRN consists of the local EMA and electronic media facilities in the city, county, tribal reservation, or region.

Local EOCs will be able to activate their local area plan through a Local Relay Network (LRN) that allows the local broadcast media to receive and disseminate the message if they so choose.

VI. State Emergency Communications Committee (SECC)⁵

The SECC is a volunteer non-governmental organization, the Washington SECC is an independent body, that reports to the Director of the Washington Military Department's Emergency Management Division (EMD).

State Emergency Communications Committees, or SECCs, are volunteer non-governmental organizations that develop plans for administering the Emergency Alert System in each state. The Federal Communications Commission (FCC) encourages the chief executive of each State to establish a State Emergency Communications Committees (SECC) to review the composition and governance of the SECC. Though defined in federal statute, the Code of Federal Regulations does not give SECCs any explicit authority.

VII. State Relay Network (SRN)⁶

Washington's SRN is a network of regional broadcast stations with the hub at Washington Emergency Management Division's (WA EMD) Emergency Operations Center (EOC) at Camp Murray, Pierce County, WA.

The network diagram can be found at the Washington Integrated Public Alert & Warning System (WA PAWS) website, Tab C4, State Relay Network.

Keeping the public and partners informed

The mission of EMA professionals, electronic media professionals and Amateur Radio EMCOMM support volunteers is to keep the public informed when they need accurate information the most.

“In the absence of data, we will always make up stories”⁷ is something that emergency communications providers and broadcasters must keep in mind in the effort to keep the people of Washington State better informed during emergencies and disasters. Social Media and others who are NOT involved in emergencies and disasters may create rumors and spread misinformation. This only compounds the emergency or disaster. Sometimes the community may never recover from inaccurate information that often takes on a life of its own.

Key elements of keeping people informed:

1. All team members having situational understanding
2. Collaboration
3. Coordination
4. Communications

It is the EMA that collects, analyzes, develops situational understanding, and disseminates or shares information with their partner in the electronic media. EMAs share information through the State Relay Network (SRN), the Local Relay Network (LRN) or by amateur radio EMCOMM volunteers when the SRN or LRN are overwhelmed or not functioning. Amateur radio communication can take place in real time without overloading traditional methods of information sharing.

Sharing critical or time perishable information during an emergency or disaster requires teamwork, trust, and mutual respect. It is through collaboration that we can insure accurate and timely information is provided to the public.

Coordination with the responsible EMA ensures that we're all focused on the proper goals and objectives.

Communications is the key to providing quality services to our partners and the public. Don't sacrifice brevity and conciseness for quickness in preparing your documents.

In the realm of emergencies and disasters, drilling and exercising is important. As we train, drill, and exercise we need to remember a great saying from Vince Lombardi:

“Practice does not make perfect. Only perfect practice makes perfect.”

Thank you for being a member of the WA-PAWS team and providing vital information to those who are relying upon us for timely and accurate information.

References:

¹ WA-PAWS Letter of Promulgation

² WA EMD Emergency Alert System (EAS) Web Site

³ WA-PAWS – Tab D1

⁴ WA EMD Emergency Alert System (EAS), WA EMD Web Site

⁵ WA-PAWS – Tab B4, SECC Governance

⁶ WA-PAWS – Tab C4, State Relay Network

⁷ Brown, Brené. [Rising Strong. The Rumble. The Revolution.](#), August 25, 2015