

Disaster Communications Plan

East Thurston County (ETC)

Amateur Radio Emergency Service (ARES)

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1. Introduction

This document introduces the East Thurston County (ETC) Amateur Radio Emergency Service (ARES) Team, shares the team's vision and mission statements, describes the team's capabilities, and explains how the ETC ARES Team plans to operate with each of our served areas during a disaster exercise or an actual disaster event. An overview of the equipment configurations used by the team is also included. This document will be updated as the team and our served area changes. The latest revision can be found at the following internet web site: <https://n7ekb.net/etc-ares/>.

The all-volunteer ETC ARES Team was established by The Amateur Radio Relay League (ARRL) Northwestern Section leadership to serve the communities of Yelm, Rainier, Tenino, and the surrounding areas of East Thurston County, Washington. The ETC ARES Team is led by an Emergency Coordinator (EC) who is appointed by the ARRL. The EC may designate Assistant Emergency Coordinators (AEC's) to provide backup for the EC and to fill additional, delegated leadership roles within the ETC ARES Team. ARRL is the national association for Amateur Radio in the US. Details about the ARRL and Amateur Radio can be found on the ARRL web site at: <http://www.arrl.org>.

Each ETC ARES Team member holds a valid Amateur Radio license granted by the Federal Communications Commission (FCC). Some ETC ARES Team members also hold a valid General Mobile Radio Service (GMRS) license granted by the FCC. The radio and computer equipment used by the ETC ARES Team is configured to operate with emergency power for several days or even indefinitely without commercial power.

ETC ARES Team members routinely practice communications via voice and Winlink (radio-based e-mail) with each other and with other ARES teams in Thurston, Lewis, and Pierce County, and the Washington State EOC at Camp Murray. Some ETC ARES Team members also engage in emergency radio communications within their immediate neighborhood using GMRS radios on a GMRS channel designated for their neighborhood.

This plan places an emphasis on ETC ARES Team members having the capability to "deploy in place", primarily at their place of residence, since mobility will likely be severely restricted by a major disaster in our covered areas.

2. Our Vision

The ETC ARES Team's vision is *to increase public safety and reduce the uncertainty and chaos in our communities in the aftermath of a disaster event by facilitating efficient and effective radio communication between our neighbors, local organizations, and government officials.*

3. Our Mission

The primary mission of the ETC ARES Team during a disaster event is to provide alternative communications links between our served areas and emergency management officials at the county and state government levels when normal telephone, radio and internet communications are severely overloaded or unavailable.

4. Our Capabilities

The ETC ARES Team has the following general capabilities that help us in the execution of our mission:

- A) We can communicate via Amateur Radio with the Thurston County ARES (TCARES) team which services the Thurston County Emergency Coordination Center (ECC) at 9521 Tilley Rd SW, the headquarters of Thurston County Emergency Management.
- B) We can communicate via Amateur Radio with the Washington State Emergency Operations Center (EOC) at Camp Murray, WA. The Washington State EOC represents Emergency Management at the state government level.
- C) We can access Winlink.org e-mail accounts on behalf of our served areas via Amateur Radio when internet connectivity is unavailable. Winlink is described on the winlink.org web site as:

...a worldwide radio email service that uses radio pathways where the internet is not present, and is capable of operating completely without the internet--automatically--using smart-network radio relays. Winlink provides its users email, position reporting, weather and information bulletins, and is well-known for its role in emergency and disaster relief communications. Licensed Winlink operators/stations use both amateur radio and government radio frequencies worldwide.

- D) We can operate as directed within the Incident Command System (ICS). Our members have completed Federal Emergency Management Agency (FEMA) training on ICS and the National Incident Management System (NIMS).
- E) By permission only, we can communicate on Land Mobile Radio Service (LMRS) radio channels used by our served organizations.
- F) We can communicate via General Mobile Radio Service (GMRS) radio with “Map your Neighborhood” radio nets.
- G) We can communicate via Family Radio Service (FRS) radio with “National SOS” radio protocol users. (See: <https://NationalSOS.com> for more information).

5. Our Served Areas

The ETC ARES Team serves the communities of Yelm, Rainier, Tenino, and the surrounding areas of East Thurston County, Washington. This section briefly describes each area and then documents how our team plans to operate within the named area. The areas are listed in alphabetical order by their name.

The ETC ARES Team is relatively new and has not yet engaged all of the communities in our coverage area. If you are associated with one of the areas below and can help us in our engagement and our disaster planning for that area, please contact Ed Braaten, the ETC ARES Emergency Coordinator (EC):

Ed Braaten (N7EKB / WQZY269)
PO Box 317
Rainier, WA 98576

Phone/Text: +1 (360) 951-3445
E-mail: ed@n7ekb.net

5.1 Bucoda

The Town of Bucoda has a population of approximately 560 and covers an area of .59 square miles.

5.1.1 Disaster Comms Overview

We have not established a relationship with the Town of Bucoda at this time, and do not currently know what their plans are in the event of a disaster in their area.

5.1.2 Winlink Mailbox

The ETC ARES Team has reserved a Winlink mailbox (BUCODA@winlink.org) for the Town of Bucoda.

5.2 Clearwood

The Clearwood Community Association is a residential community located on Bald Hill Road, 10 miles southeast of Yelm, Washington. This is a gated community, set in 900 forested acres against a backdrop of rolling hills including Bald Hill and Mount Rainier. The community has an organized Patrol and Emergency Services group chaired by Brian Gerrish.

5.2.1 Disaster Comms Overview

We have not established a relationship with the Clearwood Community at this time, and do not currently know what their plans are in the event of a disaster in their area. A licensed amateur radio operator living in Clearwood is a non-credentialed member of our ETC ARES Team.

5.2.2 Winlink Mailbox

The ETC ARES Team has reserved a Winlink mailbox (CLEARWOOD@winlink.org) for the Clearwood Community.

5.3 Lake Lawrence

Lake Lawrence is a community surrounding the 330 acre Lake Lawrence near Yelm, Washington in East Thurston County. The community has an organized Community Club at 15735 Topaz Drive SE.

5.3.1 Disaster Comms Overview

We have not established a relationship with the Lake Lawrence Community at this time, and do not currently know what their plans are in the event of a disaster in their area.

5.3.2 Winlink Mailbox

The ETC ARES Team has not reserved a Winlink mailbox for the Lake Lawrence Community.

5.4 Nisqually Indian Community

Formed in 1854, after the signing of the Treaty of Medicine Creek, the Nisqually Indian Community has a population of approximately 575 and covers an area of 2.7 square miles.

5.4.1 Disaster Comms Overview

We have not established a relationship with the Nisqually Indian Community at this time, and do not currently know what their plans are in the event of a disaster in their area.

5.4.2 Winlink Mailbox

The ETC ARES Team has not reserved a Winlink mailbox for the Nisqually Indian Community.

5.5 Rainier

The City of Rainier has a population of approximately 2,000 and covers an area of 1.73 square miles. The city is led by Mayor Robert Shaw and a five-member City Council. Our primary contact for the City of Rainier Emergency Management is Tom Arnbrister, City Council Position #3.

5.5.1 Disaster Comms Overview

In the event of a disaster exercise or an actual disaster that affects the City of Rainier, the City of Rainier's Emergency Management team will activate their Emergency Operations Center (EOC) at Rainier City Hall. As part of their EOC operations they will run a radio net (***Rainier EOC Net***) established for the purpose of maintaining radio communication with various official organizations in the community. The ETC ARES Team is a participant of the ***Rainier EOC Net*** and provides relay services as needed between the Rainier EOC and the Thurston County ECC, the State EOC, or elsewhere.

The City of Rainier is encouraging neighborhood groups in Rainier to organize themselves for disaster response around the "Map Your Neighborhood" concept. For communications, these neighborhood groups are expected to establish their own internal radio communications net using short distance radios in the Family Radio Service (FRS) or General Mobile Radio Service (GMRS). As these neighborhood groups form, they'll be asked to designate a person from their group to represent their neighborhood on the ***Rainier EOC Net***.

The City of Rainier EOC has a special Winlink e-mail account, "RAINIER-EOC@winlink.org". This account provides internet e-mail connectivity for the City of Rainier even if the internet is unavailable locally.

5.5.2 Rainier EOC Net

This radio net, run by the City of Rainier EOC, operates on the City of Rainier's Emergency Management public safety channel "City-1" (453.3625 MHz) whenever the EOC is activated. A member of the ETC ARES Team will operate on this net (using FCC authorized Part 90 radio equipment) with the tactical call sign "*East Thurston ARES*". The City of Rainier EOC will be able to utilize *East Thurston ARES* to relay messages that are destined for outside of the area to the county ECC, State EOC, or elsewhere.

Other members of this radio net (and their current status in the net) are Rainier Chapel (active), Valley Heart Church (active), Rainier School District (in planning), and the Rainier Senior Center (in planning).

5.5.3 Map Your Neighborhood Radio Nets

During a disaster, local neighborhoods that have organized themselves around the "Map Your Neighborhood" concept are expected to activate a local radio net for their neighborhood on an agreed upon channel/frequency in the FRS or GMRS radio bands. These radio nets will help the neighbors to check on the status of each other from the safety of their homes. The East Thurston ARES team can provide basic training and advice on radio communications and equipment for these neighborhood radio nets.

The "Map Your Neighborhood" groups are encouraged to designate someone from their neighborhood to join the Rainier EOC Net as a radio relay station for their local neighborhood. This neighborhood communications representative will receive training from the ***Rainier EOC Net*** and will be capable of relaying information and requests to and from the Rainier EOC on behalf of their neighborhood.

5.5.4 National SOS Protocol

Rainier residents not participating in a Map Your Neighborhood group are encouraged to observe the National SOS Radio Net protocol as it is explained on the following web site: <https://NationalSOS.com>. Rainier area ETC ARES Team members will be monitoring FRS channel one for any radio traffic from neighbors that might be asking for help in this way during a disaster event.

5.5.5 Winlink Mailbox

The ETC ARES Team operates a Winlink mailbox (RAINIER-EOC@winlink.org) for the City of Rainier's EOC. This special e-mail account can be accessed via radio by the ETC ARES Team in order to send/receive e-mail in the event there is no local or regional internet connectivity. This amateur radio-based e-mail network is used to link Emergency Operations Centers (EOC's) in cities and counties throughout the State of Washington. In addition to e-mail communication with other EOC's, the City of Rainier will be able to communicate via this special e-mail account with anyone on the internet whose internet connectivity has not been impacted by the local disaster. One possible use of this capability would be to send short health and welfare messages on behalf of Rainier residents to their friends and relatives outside of the disaster area who still have internet connectivity.

5.6 Tenino

The City of Tenino has a population of approximately 1,750 and covers an area of 1.44 square miles. The city is led by Mayor Wayne Fournier and a five-member City Council.

5.6.1 Disaster Comms Overview

We have not established a working relationship with the City of Tenino at this time, and do not currently know what their plans are in the event of a disaster in their area. Initial contact was made in early 2018 with Donald Moody, who was Tenino Chief of Police at the time. Moody is no longer in this role and our engagement with the City of Tenino needs to be restarted.

5.6.2 Winlink Mailbox

The ETC ARES Team has reserved a Winlink mailbox (TENINO-EOC@winlink.org) for the City of Tenino's EOC.

5.7 Yelm

The City of Yelm has a population of approximately 8,400 and covers an area of 5.69 square miles. The city is led by Mayor JW Foster and a seven-member City Council. Todd Stancil, Yelm Chief of Police is appointed as the Emergency Management Director for the City of Yelm.

5.7.1 Disaster Comms Overview

Members of the Yelm Amateur Radio Group and the ETC ARES Team have done several past demonstrations of emergency-powered Amateur Radio operations in the City of Yelm. These demonstrations were focused on Amateur Radio however, and we have not established a role for the ETC ARES Team within the City of Yelm's disaster response plans.

In the event of a disaster exercise or actual disaster that affects the City of Yelm, we expect the City of Yelm to activate their Emergency Operations Center (EOC) at the Public Safety Building on 206 McKenzie Street SE in Yelm.

The ETC ARES Team hopes to participate in a future Yelm EOC activation exercise to learn how the Yelm EOC operates.

5.7.2 Winlink Mailbox

The ETC ARES Team has reserved a Winlink mailbox (YELM-EOC@winlink.org) for the City of Yelm's EOC.

6. Our Equipment

This section describes three suggested equipment configurations that enable our team to execute our primary mission. Implemented properly, these configurations will enable smooth communications between the various members of our ETC ARES team, our served communities, and our county, state, and federal emergency management organizations.

A reliable ARES station has to have a source of power that allows the station to remain operational indefinitely without commercial power. Recent disaster experiences (i.e. Puerto Rico) show that emergency generators can provide good short-term backup power (if they survive the disaster itself). However, operating generators in a disaster area beyond a few days usually causes significant problems related to noise, fuel supply, and fuel costs. Please take this into account when building your station.

All three station configurations should include a documentation package containing pertinent paper copies of radio manuals, equipment manuals, operating tips/guides, this team disaster communications plan, the team's current ICS-205, blank ICS message and log forms, etc.

6.1 Mobile ETC ARES Station

The **Mobile ETC ARES Station** doesn't support all of our mission requirements, but it's the ideal configuration for an ETC ARES Member's vehicle(s). Missing from this configuration are HF capabilities, GMRS capabilities, and the packet-radio equipment needed for Winlink. This configuration should provide reliable voice communications with "**ETCNet**" the ETC ARES Team's command radio net¹.

An Amateur Radio Technician license is required for operation of the **Mobile ETC ARES Station**. Operation on LMRS frequencies is permitted only by consent and in support of the licensee assigned those frequencies.

The generic "minimum" requirements for a **Mobile ETC ARES Station** are:

- Can transmit/receive in wide-band FM mode on the 2m and 70cm amateur bands with a minimum output power of 25 watts.
- Can transmit/receive in narrow-band FM mode on LMRS frequencies (with a radio which meets FCC Part 90 type acceptance) with a minimum output power of 25 watts.
- Can operate at least 72 hours without commercial power. (Hint: ensure your gas-tank is never below half full.)

¹ ETCNet - see ETC ARES Team's current ICS-205 Incident Radio Communications Plan for details.

6.2 Basic ETC ARES Station

The **Basic ETC ARES Station** is the recommended minimal home station configuration for ETC ARES Team members. This configuration allows a member to perform most of the functions needed to execute our mission. Missing from this configuration are 1.25m band and HF capabilities.

An Amateur Radio Technician license and a GMRS license is required for operation of the **Basic ETC ARES Station**. Operation on LMRS frequencies is permitted only by consent and in support of the licensee assigned those frequencies.

The generic “minimum” requirements for a **Basic ETC ARES Station** are:

- Can transmit/receive in wide-band FM mode on the 2m and 70cm amateur bands with a minimum output power of 25 watts.
- Can exchange email using the RMS Express (Windows program) using the “Telnet Winlink”, “Packet Winlink”, and “Packet PTP” modes. This will require a suitable computer to run RMS Express and a radio able to transmit/receive packet (AFSK 1200 bd) mode on the 2m amateur band with a minimum output power of 10 watts.
- Can transmit/receive in narrow-band FM mode on LMRS frequencies (with a radio which has FCC Part 90 type acceptance) with a minimum output power of 25 watts.
- Can transmit/receive in wide-band FM mode on GMRS frequencies (with a radio which has FCC Part 95 type acceptance) with a minimum power of 5 watts.
- Can operate at least 72 hours, preferably indefinitely, without commercial power.

6.3 Advanced ETC ARES Station

The *Advanced ETC ARES Station* adds HF voice, HF digital packet, and 1.25m FM voice capabilities to the *Basic ETC ARES Station* configuration. Where possible, capabilities should be dedicated to separate radios with separate, non-interfering antennas in order to allow parallel operation.

An Amateur Radio General or Amateur Extra Class license and a GMRS license is required for operation of the *Advanced ETC ARES Station*.

The generic “minimum” requirements for an *Advanced ETC ARES Station* are:

- Can transmit/receive in wide-band FM mode on the 2m and 70cm amateur bands with a minimum output power of 25 watts.
- Can transmit/receive in wide-band FM mode on the 1.25m amateur band with a minimum output power of 25 watts. The 1.25 meter band is typically used as a back-channel while operating on other bands, so it is especially useful if this radio is separate from others in your shack.
- Can transmit/receive in LSB/USB mode on the Amateur 80m, 60m, 40m bands with an NVIS antenna to ensure reliable HF propagation to Camp Murray (State EOC) and to other Amateur Radio stations in Washington, Oregon, and Canada.
- Can exchange email using the RMS Express (Windows program) using the “Telnet Winlink”, “Packet Winlink”, and “Packet PTP” modes. This will require a suitable computer to run RMS Express and a radio able to transmit/receive packet (AFSK 1200 bd) mode on the 2m amateur band with a minimum output power of 10 watts.
- Can exchange email using the RMS Express (Windows program) using either the “Pactor Winlink”, “Winmor Winlink”, or “Ardop Winlink” modes on HF. This will require a suitable computer to run RMS Express and an HF radio able to transmit/receive digital modes with a minimum output power of 25 watts.
- Can transmit/receive in narrow-band FM mode on LMRS frequencies (with a radio which has FCC Part 90 type acceptance) with a minimum output power of 25 watts.
- Can transmit/receive in wide-band FM mode on GMRS frequencies (with a radio which has FCC Part 95 type acceptance) with a minimum power of 5 watts to an external antenna.
- Can operate indefinitely without commercial power.