Skamania County ARES®

Communication Plan

October 31, 2019

Table of Contents

Table of Revisions

Version Number	Date	Author	Description of Change
1.0	2/28/2018	KE7IN	Initial document release.
1.1	3/21/2018	KE7IN	Changes from 3/20/2018 TTX
1.2	9/11/2018	KE7IN	Phone outage response added
1.3	10/31/2019	KE7IN	Appendix D modified to meet ARRL ARES® Emergency Communicator Individual Task Book, changes to add the Augspurger Mt repeater to nets when available.

1   Purpose

The purpose of this document is to present a comprehensive and concise emergency communications plan to be used by all Amateur Radio Emergency Service (ARES®) operators functioning in Skamania County. To the extent possible, the procedures and policies developed within this plan complement the Western Washington ARRL Section, and Skamania County's Comprehensive Emergency Management Plan (CEMP).

2   Scope

The policies and procedures contained within this document apply to all radio amateurs operating within Skamania County and providing services under the auspices of Skamania County ARES® regardless of other organizational affiliations.

3   Background

Skamania County is located in southwest Washington and encompasses 1,683 mi^2 with a population of 11,339 (2015). Most of the county's population lives within 10 miles of the southern border along the Columbia River. Approximately 95 percent of the county is in Federal and state ownership. Landline communication is concentrated in installations along the southern border and is lacking north of those points. Cell phone coverage is similarly limited and further constrained because of dissected mountainous topography.

Skamania County has the potential to experience a wide variety of natural and manmade emergencies and disasters that can disrupt communications:

Natural emergencies/disasters:
- Coronal Mass Ejections
- Earthquakes
- Flooding
- Landslides
- Pandemics
- Volcano eruptions and lahars
- Wildfires
- Winter storms

Man-made emergencies/disasters:
- Bridge failure
- Electromagnetic Pulse
- Extended power failure
- Hazardous material spills
- Infrastructure cyber attack
- Phone (landlines and cellular) service disruption
- Road failure

The determination of whether a damaging event is classified as an emergency or disaster is based on scale as related to the county's ability to respond. An emergency is usually capable of being handled by personnel, equipment and funding resources within the county. A disaster is an event, which exceeds the county's response capabilities.

The initial event may trigger a series of cascading events. These can expand emergencies into disasters and increase the scale of ongoing disasters. For example, a major earthquake will likely trigger landslides and damage infrastructure. A major earthquake during fire season may initiate fires and restrict response.

4   Organization

The Amateur Radio Emergency Service (ARES®) and Radio Amateur Civil Emergency Service (RACES) are membership organizations charged with the responsibilities of providing back-up and auxiliary communications during times of emergency. ARES® is sponsored and organized under the auspices of the American Radio Relay League (ARRL). The RACES program is sponsored and organized by the local emergency management agency. In Skamania County, ARES® members and EOC volunteers holding amateur radio licenses are automatically RACES members, however not all EOC volunteers with amateur radio licenses are ARES® members.

Skamania County ARES® is led by an Emergency Coordinator. Skamania County RACES is led by a RACES Radio Officer. For more information regarding RACES, refer to the Skamania County RACES plan.

Skamania County ARES® serves the Skamania County Department of Emergency Management (DEM). The DEM Director is Sheriff Dave Brown. The DEM Coordinator is John Carlson.

5   ARES® Leadership Responsibilities

5.1   Emergency Coordinator (EC)

Current EC: Kevin Widener, KE7IN
Qualifications and Responsibilities:
- Must be an ARRL member
- Overall manager of the ARES® program
- Develops relationships with served agencies
- Pursues memorandums of understanding and other agreements when in the best interest of ARES®
- Handles and/or delegates media requests
- Seeks training opportunities for the organization
- Locally promotes amateur radio and especially emergency communications
- Provides regular updates, and communicates with the ARRL Western Washington State Section Manager, Section Emergency Coordinator, and local emergency management officials

5.2   Assistant Emergency Coordinator – Operations (AEC-OPS)

Current AEC Operations: John Prescott, K7JPX
Responsibilities:
- Skamania County ARES® Net Manager
- Schedules Net Control Station (NCS) for Skamania County ARES® Nets
- Schedules operator for CEMNET/Region IV Nets
- Maintains Skamania County ARES® ICS-205 Incident Radio Communications Plan

5.3   Assistant Emergency Coordinator (AEC–Training)
Current AEC Training: Jon Arp KJ7ARP
Responsibilities:
- Maintains training records on ARES® members
- Establishes qualifications for Radio Operator I and II certification
- Schedules technical training for monthly meetings

6   Operations

6.1   Scenarios

Three activation scenarios exist for emergency communications support; 1) Disaster, 2) Emergency and 3) Non-emergency.   If normal communication services (land line, cellular telephone, text and email) are available, the DEM Emergency Coordinator activates Skamania County ARES. When these forms of communication are inoperable, Skamania County ARES® self-activates. Our guiding philosophy is that if we are prepared and trained for the worst types of disasters, we are ready to respond to lesser events.

6.1.1   Disaster

This is the most likely scenario for self-activation due to a loss of normal communication methods. As soon as individual members are able and safe to do so, they shall come up on 146.58 MHz simplex. One of the radio operators on the air shall take on the duties of Net Control Station (NCS) operator until an operator comes online at the EOC and assumes NCS duties. If the Augspurger Mt repeater (440.325 MHz, tone 100) is online, the net may be moved to this frequency at the discretion of the NCS. See Appendix B for a Disaster Activation checklist.

Activation Notification: 146.58 MHz
Equipment required: Personal radio equipment
Identification: ARES® name badge on high visibility vest

6.1.2   Emergency

This type of activation occurs when the Skamania County DEM EC requests assistance to respond to a current or imminent emergency situation. In the event that normal communication methods are down (i.e. cell phone, land lines, text, email), individual members will monitor 146.58 MHz simplex for activation instructions. If the Augspurger Mt repeater (440.325 MHz, tone 100) is online, the net may be moved to this frequency at the discretion of the NCS.

Activation Notification: Telephone, text, or email, 146.58 MHz simplex
Equipment required: County radios or personal radio equipment
Identification: ARES® name badge on high visibility vest

6.1.3   Communications Support – non-emergency

This type of activation occurs when the Skamania County DEM EC requests assistance for the Skamania County Emergency Operations Center (EOC) and/or an Incident Commander (IC) during routine operations.

Activation Notification: Normal communication
Equipment required: County radios or personal radio equipment
Identification: ARES® name badge on high visibility vest

6.2 Cross-band Repeat Operations

ARES® radio operators are encouraged to use the cross-band repeat function on their mobile radios to allow them to maintain communication with the ARES® net without being tied to their station. UHF frequencies for cross-band repeat operation are given in the ICS-205 (Appendix L). Coordination of UHF cross-band repeat frequencies is necessary to prevent interference between operators.

6.3 EOC Operations

ARES® members who are asked to deploy to the Skamania County EOC, 200 Vancouver Avenue, Stevenson, WA, shall be under the direction of the Communications Unit Leader (COML).

6.4 Alternate EOC Operations

In the event the EOC is unusable for any reason, ARES® members shall set up radio operations in Stevenson at the Hegewald Community Center, 712 Rock Creek Drive, Stevenson, WA.

6.5 Deployed Operations

During emergencies ARES® members may be deployed to remote sites such as:

- Evacuee centers
- Health Department
- Public Works Department road crews
- Animal Evacuation Shelters
- Incident Command Posts (ICPs)
- "Access 911" radio stations
- Washington Department of Transportation vehicles

ARES® members should have a Travel Kit with them at all times in the event of an emergency or disaster occurring when away from home (Appendix E). ARES® members should have their own Go Kit ready to deploy (Appendix F).

6.6 Home Operations

Emergencies and disasters may prevent ARES® members from deploying due to weather, road closures, landslides and other physical damage. In such situations, ARES® members can significantly assist county emergency management by reporting local conditions.

Because household electrical power may not be available, ARES® members should have a source of emergency power for up to one week. Sources of emergency power include:
- Solar panel(s) charging deep cycle batteries
- Backup generators, gasoline or propane powered
- Batteries from automobiles

6.7 Continuity of Operations

In the absence of the ARES® EC, the following is the order of succession:

- AEC – OPS
- AEC – Training

In the event the AECs are not available, the DEM EC may fill the position on an interim basis.

7   Appendix A – Acronyms

- AEC – Assistant Emergency Coordinator
- ARES® – Amateur Radio Emergency Service
- ARRL – American Radio Relay League
- CERT – Community Emergency Response Team
- CME – Coronal Mass Ejection
- COML – Communications Unit Leader
- CSV – Comma Separated Values (files)
- CSZ – Cascadia Subduction Zone
- DEM – Department of Emergency Management
- DMM – Digital multimeter
- EC – Emergency Coordinator (ARES)
- EMP – Electromagnetic Pulse
- EOC – Emergency Operations Center
- FRS – Family Radio Service
- GRIB – Gridded Information in Binary form
- GMRS – General Mobile Radio Service
- IC – Incident Commander
- ICP – Incident Command Post
- ICS – Incident Command System
- ISNAP – Incident Snapshot
- NCS – Net Control Station
- NIMS – National Incident Management System
- NOAA – National Oceanic and Atmospheric Administration
- NTS – National Traffic System
- NWR – NOAA Weather Radio
- PC – Personal computer
- P2P – Peer-to-Peer (Winlink connection)
- RACES – Radio Amateur Civil Emergency Service
- RNA – Rapid Needs Assessment
- RO – Radio Officer (RACES)
- SAME – Specific Area Message Encoding (NOAA Weather Radio)
- SCSO – Skamania County Sheriff's Office
- TNC – Terminal Node Controller

8   Appendix B - Disaster Activation

Unless otherwise directed, the first priority after the establishment of the net will be to quickly survey as much of the local damage and injuries as possible using the Rapid Needs Assessment (RNA) form (see Appendix M). To initiate the RNA process each ARES® member shall:

1) Go mobile on the ARES® Net if possible, otherwise check out of the Net while recruiting someone to perform the RNA(s).
2) Recruiting RNA volunteers by the following priorities:
    a.   CERT members
    b.   Citizen volunteers
    c.   ARES® member
3) Quickly instruct volunteer on filling out RNA form.
4) Coordinate FRS/GMRS radio channels, if used. For amateur radio, select a simplex frequency on either 2 meters or 70 cm that is not being used.
5) Strive to return the RNA time to ARES® radio operator within 30 minutes from the start of the assessment.
6) Expand the assessment area as RNA forms are turned in to the radio operator.
7) Allow CERT to perform rescue and triage. ARES® radio operator shall respond to only life-threatening situations.

Upon receiving RNAs from volunteers, the ARES® radio operator shall relay these to the NCS.

Once a local CERT has activated, the ARES® radio operator shall establish liaison with the CERT leader to pass pertinent traffic to the EOC.

After the initial disaster response and as time allows, the ARES® radio operator may pass Health & Welfare traffic via Winlink email or the National Traffic System (NTS) as the situation allows.

Activation Notification: 146.58 MHz
Equipment required: Personal radio equipment
Identification: Name badge on high visibility vest

9 Appendix C - Emergency Alert Activation Message

This message is to be announced on all Skamania County Primary and Secondary VHF frequencies along with the Augspurger Mt repeater if it is operational.

QST QST QST

This is *<your call sign>* All stations stand by for priority traffic. Break.
Attention all stations. Skamania County Emergency Management has issued an emergency activation alert. All available amateur stations are requested to change frequencies to the 146.58 MHz and stand by for net control.

Break.

I say again: Attention all stations. Skamania County Emergency Management has issued an emergency activation alert. All available amateur stations are requested to change frequencies to 146.58 MHz simplex and stand by for net control.

End of priority traffic.

This is *<your call sign>*, clear.

Note:
The designated Emergency Management Net Control Station will establish the Emergency Management Net on 146.58 MHz simplex.

Net control will request stations representing individual organizations to establish separate task specific nets to manage communications based on current conditions. Each organization shall designate a net liaison station that will relay traffic between the organization's net and the County's Emergency Management Net.

10 Appendix D - Radio Operator Qualification Requirements

All Skamania County ARES® members must meet the requirements in the ARRL ARES® Emergency Communicator Individual Task Book Level 1 qualifications to be qualified as a Level 1 Emergency Communicator in addition to the following:

- Valid amateur radio license
- Satisfactory background check
- Completion of FEMA on-line courses ICS-100, 200, & 700
- Regular attendance at Skamania County ARES/RACES meetings
- Own portable and/or mobile VHF or UHF voice radio equipment
- Regular participation in Skamania County ARES/RACES nets
- Participation in at least one statewide exercise annually
- Have a basic SCARES travel kit and GO Kit
- Manually enter simplex and repeater frequencies into their radio
- Ability to use basic Winlink software with EOC VHF/UHF radio
- Tune to NOAA Weather Radio station and record (in writing) the appropriate weather forecast for Skamania County

The Level 1 Emergency Communicators are highly recommended to also complete:
- FEMA on-line courses ICS-120 & ICS-242
- ARRL Introduction to Emergency Communications
- Basic First Aid/CPR/AED certification

Skamania County ARES® members must meet the requirements in the ARRL ARES® Emergency Communicator Individual Task Book Level 2 qualifications to be qualified as a Level 2 Emergency Communicator in addition to the following:

- General, Advanced, or Amateur Extra class license
- Completion of FEMA on-line courses ICS-120 & ICS-242
- Completion of ARRL Introduction to Emergency Communications
- Basic First Aid/CPR/AED certification
- Own basic electronic maintenance/repair tool kit
- Demonstrate basic soldering ability
- Ability to use CHIRP or alternate software to program multiple types of radios:
  a. VX-7 radio
  b. Yaesu FT-8800R radio
  c. Baofeng handheld radios
  d. Personal HT and mobile radios
- Ability to use Winlink software
  a. Install Winlink software on a computer
  b. Operate different modes:

       i.   VHF/UHF (Packet)
      ii.   HF (Winmor, ARDOP, and VARA)
     iii.   Telnet
   c.   Use FEMA and WSEN templates

- Ability to use FLDIGI software
    a. Select appropriate frequency for the band used
    b. Establish connection
    c. Transfer file
- Demonstrate use of a RF power meter
    a. Measure transmit power into an appropriate dummy load
    b. Measure reflected power from an antenna
- Install a PL259 connector on coaxial cable
- Install Powerpole connector on wire for DC power
- Demonstrate operation of a Digital Multimeter (DMM)
    a. Measure DC voltage
    b. Measure AC voltage
    c. Measure resistance
    d. Check for continuity
    e. Measure DC current
- Demonstrate use of a magnetic compass
- Demonstrate field setup of HF system
    a. Antenna
    b. Transceiver
    c. Safety considerations

11 Appendix E - ARES® Travel Kit

One can never know when a disaster can occur therefore it is prudent to have a minimal level of preparation at all times. Below is a list of items each Skamania County ARES® member should have available at all times.

- ☐ Handheld and/or mobile radio
- ☐ Radio manual
- ☐ Mobile antenna (mag mount)
- ☐ DC adapter for handheld
- ☐ Spare batteries for handheld
- ☐ RF adapters for handheld to mobile antenna
- ☐ SCARES Communication Plan (latest version)
- ☐ SCARES ICS-205 (latest version)
- ☐ SCARES Phone List
- ☐ RNA forms (latest version, preferably laser printed on Rite-In-the-Rain paper)
- ☐ Pens/pencils/paper
- ☐ Skamania County map
- ☐ High visibility vest with name tag
- ☐ Identification (DEM card and driver's license)
- ☐ County magnetic access card (if you have one)

In addition to the above, it is highly recommended that you always have the following available in your vehicle at a minimum:

- ☐ Clothing appropriate for the season
- ☐ Drinking water (1 liter)
- ☐ Emergency whistle
- ☐ First aid kit
- ☐ Flashlight
- ☐ Knife
- ☐ Leather gloves
- ☐ Snacks (candy, energy bars, jerky, etc.)
- ☐ Spare batteries for flashlight

12 Appendix F - ARES® Go Kit Check Lists

What is a "Go Kit"?

Skamania ARES® team members are expected to maintain a "Go Kit" in order to operate self-sustained for various period of time. What should be in the Go Kit? Ultimately, the purpose of the Go Kit is self-sufficiency. Its contents depend on the location and length of time of your deployment. Below are suggestions for a short-term (less than 24 hours), mid-term (24-48 hours), and long-term (greater than 48 hours) deployments.

24 Hour Check List

- ☐ Identification (DEM card and driver's license)
- ☐ Mobile radio with antenna
- ☐ Handheld radio (optional but desired)
- ☐ Power supply (AC and/or DC)
- ☐ Field operation manual
- ☐ Water and drinks (hot/cold depending on season)
- ☐ Food/snacks
- ☐ Prescription drugs
- ☐ First aid kit including OTC medication for pain and digestive distress
- ☐ Ability to receive NOAA Weather Radio (NWR) broadcasts
- ☐ Appropriate clothing for current and expected weather conditions
- ☐ Rain gear
- ☐ Adequate footwear
- ☐ Assorted RF connectors and adapters
- ☐ Assorted RF coax cables
- ☐ SWR meter (optional but desired)
- ☐ Toolbox (see following for recommended contents)
- ☐ Admin supplies (pens, pencils, paper, etc.)
- ☐ Batteries
- ☐ Knife
- ☐ Flashlight
- ☐ Leather gloves
- ☐ Hard hat/helmet
- ☐ High Visibility Vest

48 Hour Check List - All of the items in the 24-Hour Go Kit plus:

- ☐ More food, water, drinks
- ☐ Sleeping bag
- ☐ Shelter (tent, tarp, etc.)
- ☐ Change of clothes

72 Hour Check List - All of the items in the 48-Hour Go Kit plus:

- ☐ Another change of clothes
- ☐ More food, water, drinks

Toolbox (recommended contents)

- ☐ Digital multimeter
- ☐ Screw drivers: flat, Phillips, and Torx
- ☐ Adjustable wrench
- ☐ Adjustable pliers
- ☐ Adjustable locking pliers (Vice grips)
- ☐ Soldering iron
- ☐ Solder
- ☐ Sand paper (for cleaning parts)
- ☐ Assortment of hex wrench's
- ☐ Electrical tape
- ☐ Duct tape
- ☐ Hammer
- ☐ Tape measure
- ☐ Assortment of small screws, nuts, bolts & washers

13 Appendix G - Locations of County Owned Amateur Radio Equipment

Skamania County EOC
- Yaesu FT-991 HF/VHF/UHF Transceiver – Voice/Digital
- iCom 10-80m HF Transceiver - Voice
- 45.36 MHz CEMNET Transceiver - Voice
- Kenwood TM-D700 2m/70cm Transceiver – Voice/Digital
- Jetstream JT220M 1.25 m Transceiver – Voice
- Yaesu VX-7R 2m/1.25m/70cm handheld transceivers

Hegewald Center (near Health Department), Stevenson
- Yaesu FT-8800R VHF/UHF Transceiver - Voice

Underwood Community Center (Underwood)
- Yaesu FT-8800R VHF/UHF Transceiver - Voice

Fire District 4 (Washougal)
- Yaesu FT-8800R VHF/UHF Transceiver - Voice

Fire District 5 (Skamania)
- Yaesu FT-8800R VHF/UHF Transceiver - Voice

Mill-A School (Mill-A)
- Yaesu FT-8800R VHF/UHF Transceiver - Voice

14 Appendix H – EOC Radio Room Startup

Upon activation, the first member that reports to the EOC shall be responsible for making the EOC radio center operational.

- Sign the EOC check in sheet
- Retrieve the EOC Communications Notebook
- Start an ICS-214 Activity Log
- Start an ICS-309 Communications Log
- Check that the CEMNET transceiver is on and volume at mid-level.
- Turn on the 1.25m (220 MHz) Jetstream transceiver
    - Set the frequency to Region IV EOC-EOC Net (see ICS-205)
    - Announce presence on the Region IV EOC-EOC Net
- Turn on the VHF/UHF Kenwood transceiver
    - If the Skamania County ARES® net has not been activated, activate it now. See **Appendix C Emergency Alert Activation Message**
    - If the Skamania County ARES® net is active, announce presence.
- If operational, turn on the HF transceiver
    - Set frequency to the WSEN net (see ICS-205)
    - Announce presence on the WSEN Net
- Log on to the EOC Radio Computer:
    - User: *eocradio*
    - Password: *<located on the bottom of the monitor>*
    - Check for Internet connectivity
    - Check email for *eocradio* account
- Report EOC Radio Room status to EOC management
- Begin operations by requesting permission from the current NCS to transfer NCS to the EOC if it makes sense to do so.
- If there is a lot of radio traffic, request a scribe from EOC management.

15 Appendix I – Winlink Peer-to-Peer Procedure

Amateur radio operators can send email messages over the air by connecting with Winlink nodes by utilizing Winlink software running on a Windows PC. Most often this happens on HF. This allows email traffic to be transferred outside a disaster area when all other Internet connections are inoperative.

Winlink also has the capability to facilitate message transfer between two amateur radio stations using its Peer-to-Peer (P2P) mode. Attachments are allowed and templates for most ICS forms are included in the core software installation. Spreadsheets (i.e. RNA forms) can be efficiently sent as CSV files. Even low-resolution digital images can be sent. This allows quick, error-free transfer of data from SCARES members to the EOC.

Required Equipment
- VHF transceiver
- Windows PC with Winlink Express software installed
- Digital interface between Windows PC and VHF transceiver
  - Built into transceiver (Figure I-1)
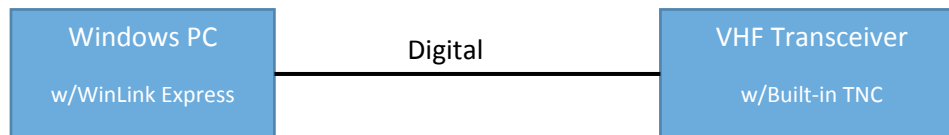 - Signalink, Rigblaster, etc. (Figure I-2)

Figure I-1. Interface when using VHF Transceiver with built-in TNC
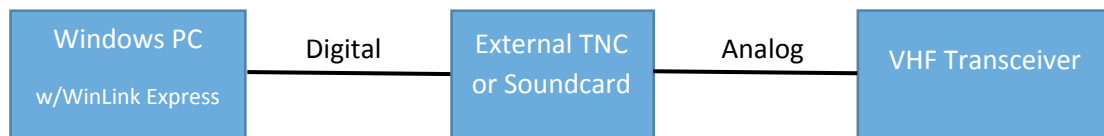

Figure I-2. Interfaces when using External TNC

Recommended Equipment
It is often advantageous for both amateur radio stations to be able to communicate via voice to coordinate data transfer. Having two transceivers/antennas allows

digital information transfer on one frequency while coordinating the transfer via another frequency.

Winlink P2P Procedure
1. Generate Winlink messages
   a. Open Winlink Express on the PC
   b. Select "New Message" under the Message drop down menu
   c. Under "Send as:" pull-down menu, select "Peer-to-Peer Message"
   d. Address the message in "To:" to the receiving party, e.g. KE7BUI
   e. Enter a subject in "Subject:"
   f. Compose the message
      i. Select template if using (be sure to press "Select")
      ii. Attach file (i.e. RNA) if sending. Make sure the file is as small as possible. Do not send spreadsheet files but convert to CSV files.

      iii. Enter message text.
   g. Select "Post to Outbox"
   h. Repeat (a) – (e) until all messages are posted to Outbox
2. Refer to the SCARES ICS-205 to get the Winlink P2P frequency. If using a secondary transceiver for voice coordination, get that frequency from the ICS-205.

3. On Winlink Express software main window, under "Open Session" pull-down menu, select "Packet P2P"
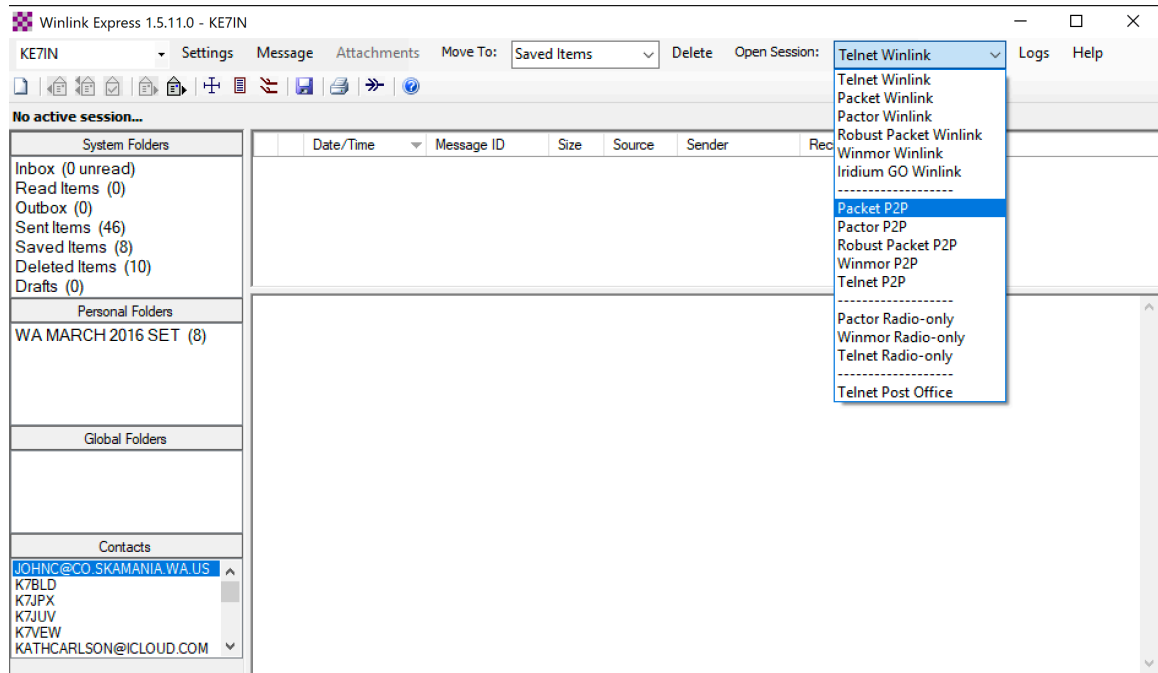
4. Click on "Open Session" and a "Packet Peer-to-Peer Session (<call sign>)" window will open
   a. Connection type: Direct
   b. Enter call sign: receiving station (i.e. KE7BUI) in blank box
5. May need to "Select Channel" at this point
   a. Select receiving station call sign in the Channel Selection pop up menu
6. Click on "Start"
7. You should see the following in the dialog box:
   a. "Calling KE7BUI"
   b. "Connected at <date/time stamp"
   c. Messages being sent and received
   d. "Disconnected at <date/time stamp"
8. Confirm messages have been received by receiving station via voice communications

Packet Peer-to-Peer Session (KE7IN)   —   □   ✕

Exit   Settings   Switch to Winlink Session   Channel Selection   1200 Baud   **Start**   Stop

Connection type: Direct ▾   KE7BUI   Via [   ] , [   ]

Connection script: [▾]   Edit script   Add script   Remove script

Time to next Autoconnect = Disabled

```
*** Starting peer-to-peer packet session...
*** Initializing KISS over TCP Host 127.0.0.1 Port 8100
*** Initialization complete
*** Opening KISS over TCP Host 127.0.0.1 Port 8100
*** Ready
```

16 Appendix J - Weather Monitoring Operations

During a disaster, normal modes of getting weather information and forecasts may be interrupted. There are many ways ARES® members can monitor HF and VHF radio frequencies controlled by NOAA.   This information can then be relayed to appropriate county agencies through the EOC and to local weather forecasters.

16.1 NOAA Weather Radio (NWR)

NWR (http://www.nws.noaa.gov/nwr/) broadcasts local forecasts for specific areas. NWR broadcasts can be heard on most amateur radio VHF transceivers. Many citizens also listen to NWR through commercially available weather radio receivers. There are two NWR transmitters that cover Skamania County. There frequencies and coverage maps are shown below.

SAME #	NWR Transmitter	Call Sign	Frequency	Channel #	Location
053059	Portland	KIG98	162.550		ALL
053059	The Dalles	WXM34	162.400		South
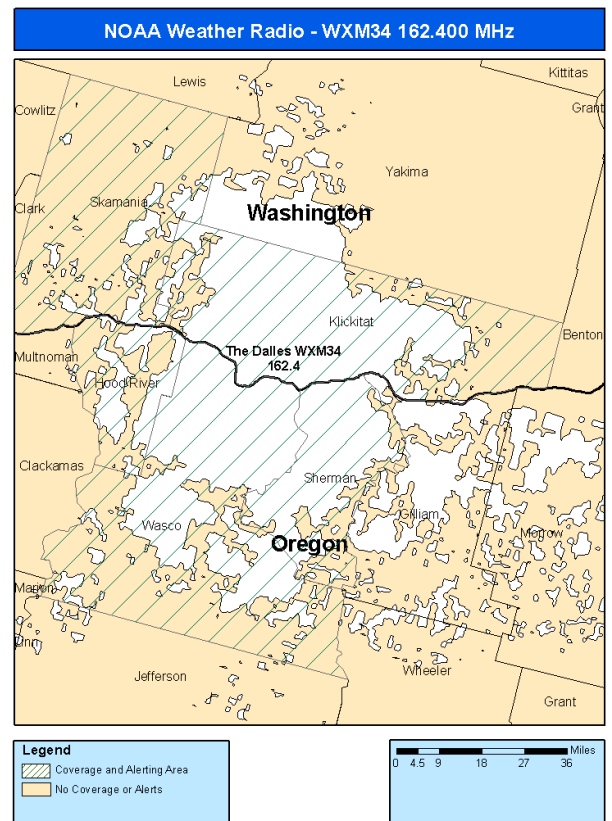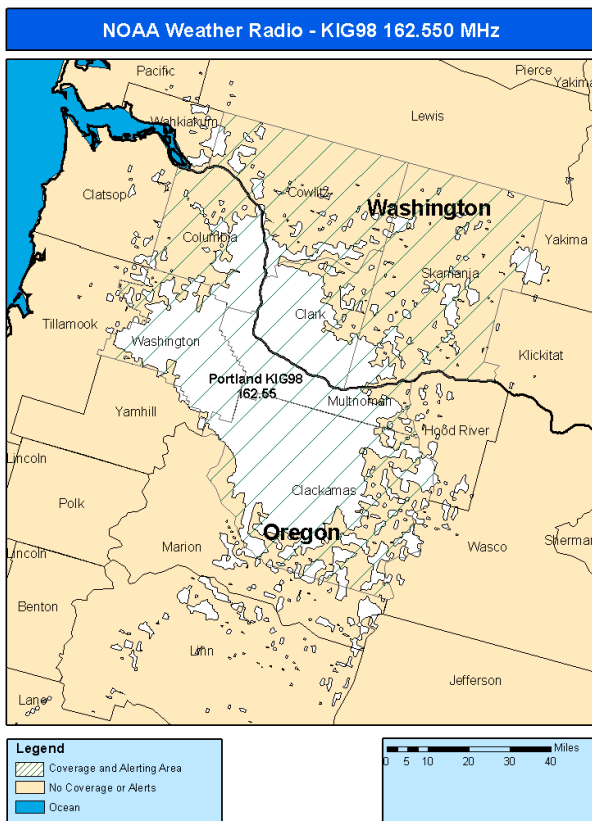
16.2 Winlink Weather Images

ARES® radio operators with digital capability can also download forecasts and weather maps through Winlink servers on VHF/UHF (Packet Winlink) or HF (Winmor Winlink, ARDOP, or VARA). There are many different plots that can be downloaded but care must be taken to select the appropriate plots to prevent excessive download times. These data are generally addressing mariner's needs but can be useful for land stations.

To download these data, under Settings, select the source of the data you want. You then post the request to your Winlink outbox. Make a Winlink connection and the request is sent off. Wait 5-10 minutes and make another Winlink connection. The requested data should appear in your Winlink inbox.

Recommended plots and forecasts from Settings/Winlink Catalog Requests:
- WX_US
  - FPUS66.KPQR – Portland NWS text forecast (covers Columbia River Gorge and Oregon)
  - FPUS66.KSEW – Seattle NWS text forecast (covers the rest of Washington)
- GRIB file request
  - Select the area of interest or a spot forecast by selecting the area or spot on the map.
  - GRIB file viewer software is required to view GRIB files.

16.3 HF Weather Images

NOAA broadcasts weather images on a routine schedule out of Pt. Reyes, CA. Software programs such as FLDIGI allow radio operators to save these weather images as they are transmitted. Below is the current schedule of transmission and the frequencies used by NOAA:

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Note:  Highlighted areas cover Skamania County


PT. REYES, CALIFORNIA, U.S.A.

CALL SIGN      FREQUENCIES          TIMES (UTC)        EMISSION      POWER
NMC             4346   kHz      0140-1608               F3C          4 KW
                8682   kHz      ALL BROADCAST TIMES     F3C          4 KW
                12786  kHz      ALL BROADCAST TIMES     F3C          4 KW
                17151.2 kHz     ALL BROADCAST TIMES     F3C          4 KW
                22527  kHz      1840-2356               F3C          4 KW


TRANS        CONTENTS OF TRANSMISSION            RPM/IOC       VALID      MAP
TIME                                                           TIME       AREA

0140/1400    TEST PATTERN                        120/576                  
0143/1403    NE PACIFIC GOES IR SATELLITE IMAGE  120/576       00/12      6
0154/1414    PACIFIC GOES IR SATELLITE IMAGE     120/576       00/12      5
0205/1425    TROPICAL SEA STATE ANALYSIS         120/576       00/12      4
0215/1435    TROPICAL 48HR SURFACE FORECAST      120/576       12/00      4
0225/----    TROPICAL 48HR WIND/WAVE FORECAST    120/576       1200       4
0235/----    TROPICAL 72HR WIND/WAVE FORECAST    120/576       1200       4
0245/1445    500MB ANALYSIS                      120/576       00/12      1
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0255/1455   SEA STATE ANALYSIS, WIND/WAVE ANALYSIS  120/576    00/12     1/8
0305/1505   PRELIM SURFACE ANALYSIS(PART 1 NE PAC)  120/576    00/12       2
0318/1518   PRELIM SURFACE ANALYSIS(PART 2 NW PAC)  120/576    00/12       3
0331/1531   FINAL  SURFACE ANALYSIS(PART 1 NE PAC)  120/576    00/12       2
0344/1544   FINAL  SURFACE ANALYSIS(PART 2 NW PAC)  120/576    00/12       3
0357/1557   CYCLONE DANGER AREA* or HIGH WIND/WAVES 120/576    03/15      10
0408/1608   TROPICAL SURFACE ANALYSIS               120/576    00/12       4
0655/1840   TEST PATTERN
0657/----   2033Z  REBROADCAST (96HR 500MB)         120/576    1200        1
0707/----   2043Z  REBROADCAST (96HR SURFACE)       120/576    1200        1
0717/----   2053Z  REBROADCAST (96HR WIND/WAVE)     120/576    1200        1
0727/----   2103Z  REBROADCAST (96HR WAVE PERIOD)   120/576    1200        1
----/1842   SST ANALYSIS                            120/576    LATEST      9
----/1852   SST ANALYSIS                            120/576    LATEST      6
0737/1902   TROPICAL GOES IR SATELLITE IMAGE        120/576    06/18       7
0748/1913   WIND/WAVE ANALYSIS                      120/576    06/18       8
0758/1923   24HR 500MB FORECAST                     120/576    00/12       1
0808/1933   24HR SURFACE FORECAST                   120/576    00/12       8
0818/1943   24HR WIND/WAVE FORECAST                 120/576    00/12       8
0828/1953   48HR 500MB FORECAST                     120/576    00/12       1
0838/2003   48HR SURFACE FORECAST                   120/576    00/12       1
0848/2013   48HR WIND/WAVE FORECAST                 120/576    00/12       1
0858/2023   48HR WAVE PERIOD/SWELL DIRECTION        120/576    00/12       1
----/2033   96HR 500MB FORECAST                     120/576    1200        1
----/2043   96HR SURFACE FORECAST                   120/576    1200        1
----/2053   96HR WIND/WAVE FORECAST                 120/576    1200        1
----/2103   96HR WAVE PERIOD/SWELL DIRECTION        120/576    1200        1
0908/2113   PACIFIC GOES IR SATELLITE IMAGE         120/576    06/18       5
0919/2124   SURFACE ANALYSIS (PART 1 NE PACIFIC)    120/576    06/18       2
0932/2137   SURFACE ANALYSIS (PART 2 NW PACIFIC)    120/576    06/18       3
0945/2150   TROPICAL SURFACE ANALYSIS               120/576    06/18       4
0959/2204   TROPICAL 24HR WIND/WAVE FORECAST        120/576    00/12       4
1009/2214   CYCLONE DANGER AREA* or HIGH WIND/WAVES 120/576    09/21      10
1120/2320   TEST PATTERN                            120/576
1124/2324   BROADCAST SCHEDULE (PART 1)             120/576
1135/2335   BROADCAST SCHEDULE (PART 2)             120/576
1146/----   REQUEST FOR COMMENTS                    120/576
1157/----   PRODUCT NOTICE BULLETIN                 120/576
1208/----   TROPICAL 48HR WIND/WAVE FORECAST        120/576    0000        4
1218/----   TROPICAL 72HR WIND/WAVE FORECAST        120/576    0000        4
1228/2346   TROPICAL 48HR WAVE PERIOD/SWELL DIR     120/576    00/12       4
----/2356   TROPICAL 72HR WAVE PERIOD/SWELL DIR     120/576    0000        4


* Tropical Cyclone Danger Area chart replaced by 48HR High Wind/Wave Warning
chart Dec 01 - May 14 Valid times 00z,06z,12z and 18z



MAP AREAS:   1.  20N - 70N,   115W - 135E     2.  20N - 70N,   115W - 175W
             3.  20N - 70N,   175W - 135E     4.  20S - 30N,   EAST OF 145W
             5.  05N - 55N,   EAST OF 180W    6.  23N - 42N,   EAST OF 150W
             7.  05N - 32N,   EAST OF 125W    8.  18N -. 62N,  EAST OF 157W
             9.  40N - 53N,   EAST OF 136W   10.   0N - 40N,    80W - 180W
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16.4 VHF Satellite Images

NOAA satellites also transmit visible and infrared images from polar orbiting satellites. There are currently 3 satellites (GOES 15, 18, and 19) that are in polar orbit around the Earth. These satellites transmit images on frequencies around 137 MHz. Digital equipped radio stations can receive these images and convert them into jpeg images through software such as WXTOIMG (http://www.wxtoimg.com). For more information on hardware and software requirements, please see the tutorial located at https://www.rtl-sdr.com/rtl-sdr-tutorial-receiving-noaa-weather-satellite-images/.

17 Appendix K – 911 Access

In the event of a complete (both landline and cellular) telephone outage in either a portion or all of Skamania County, people need a way of notifying Skamania County 911 dispatch of emergencies. When this happens, ARES® may be activated to set up mobile radio stations to facilitate relaying 911 calls to the EOC and dispatch.

When a telephone outage is noticed, ARES® members shall come up on 146.58 MHz. As the extent of the outage is determined, DEM may request activation of ARES. Based on the number of ARES® volunteers available and the extent of the outage, radio operators will be deployed to strategic locations most likely along State Route 14. Table K-1 shows possible locations for ARES® stations.

Station #	SR-14 Milepost #	Description
1	26	Salmon Falls Road Park-n-Ride Lot
2	28	Skamania Co. Roads Dept. Prindle Shop
3	33	Skamania General Store parking lot
4	35	Beacon Rock
5	39	Bonneville trailhead
6	41.5	Bridge of the Gods
7	44	Stevenson
8	50	Home Valley
9	56	Dog Creek, Cook-Underwood Road West
10	64	Cook-Underwood Road East

Table K- 1 Possible ARES® "911 Access" Stations

Access-911 Deployment Procedure
Before you leave home, make sure to check your Go Kit for completeness and have at least 25 copies of *ARES® 911 Radio Station Operator Forms*. *ARES® 911 Radio Station Operator Forms* are available as separate downloads from the Skamania County ARES® website.
- Pick an appropriate location near your assigned station that is safely away from traffic yet visible from both directions. Consider changing your location as light/weather conditions change to maximize visibility and safety.
- If available, display "911 Access" banners or signs that are visible to traffic from both directions. If not available, make signs, use rotating beacons, etc. to make your station visible.
- Once you are setup, notify the EOC NCS that you are operational.
- Remain at the station until relieved by a replacement, EOC NCS, or Skamania Co. dispatch.

ARES® 911 Radio Station Operator Form are available as separate downloads from the SCARES website.

18 Appendix L - ICS-205

19 Appendix M - Rapid Needs Assessment Form