



# Communication Planning for CARES

A New Frequency Plan and How to Use It.

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# Objectives

1. Provide an up-to-date list of standardized frequencies for CARES
  - Sometimes referred to as the 'Frequency Plan' throughout the presentation
2. How this list fits into the Incident Command System (ICS)
  1. What is ICS?
  2. How the frequency plan is organized
  3. How to use it
3. The communications plan
  1. How to operate
  2. Programming radios
4. Next Steps

# Why a New Plan?

1. Things change
2. Consistency is a good thing
3. Planning is part of ICS

# Why a new CARES frequency plan?

- The old one needed some dusting off
  - Deleted irrelevant frequencies/Repurpose some frequencies
  - Minimized inter-county conflicts
  - Repeater offsets and squelch settings checked and confirmed
  - Added additional digital message channels
- Provide a consistent and easy way to select a specific channel
  - The naming/numbering scheme allows us to all speak the same language
  - One go-to master document for all incidents and events
- Incident Command System integration
  - Align with this nationally instituted emergency management system
  - Documented and shared as an ICS 217A form

# Frequency Planning

- Planning is necessary prior to incidents or events
- Planning assures that everyone is on the same page
  - Gather all the Amateur Radio/GMRS frequencies assigned or in use in Clackamas county
  - Determine and document their typical use
  - Assign a unique channel name or alias and a unique channel number
  - Distribute to the CARES membership and insure adoption
  - Gather feedback and revise as necessary

# Integration with the Incident Command System

1. Quick ICS review
2. ICS-217A form
3. ICS-205 form

# Incident Command System (ICS) Review

- Part of the National Incident Management System (NIMS)
- Standardized Command, Control and Coordination for Emergency Response by Multiple Agencies
- ICS provides:
  - Common Terminology
  - Communication Methods and Media
  - Planning
  - Unified Command Structure
  - Coordinated Resource management



Today's Focus

# ICS tool for managing comms resources

## ICS-217A: Communication Resource Availability Worksheet

- List of all the known amateur radio frequency “resources” available in the County
- ALL use it during operations — *Belongs in your car, by your home radio, and in your Go Bag!*

Communications Resource Availability Worksheet				2 M & 440 band VHF/UHF Analog and Digital Frequencies				Active Date: Pending	Denotes Changes
ICS-217A				Clackamas County ARES				Released 5-4-21 Brown	Denotes Non-Standard Frequency
Channel	Area	50 Freq.	TX Freq.	Offset	Mode	TX Tone	RN Tone	Accession	
1	CLAC-1	147.1200	147.7200	0.6	FM	100.0		CLAC ARES RPTX Clackamas Primary Repeater (CEM Monitored)	
2	CLAC-2	147.1400	147.7400	0.6	FM	107.2		CLAC ARES RPTX Clackamas Secondary Repeater	
3	CLAC-3	146.4200	146.4200	--	FM	--		CLAC ARES SIMP Clackamas Primary Simplex	
4	CLAC-4	146.9000	146.9000	-0.6	FM	127.3		CLAC ARES RPTX Clackamas Tertiary Repeater (WTOFV)	
5	CLAC-5	444.2250	444.2250	5	FM	100.0		CLAC ARES RPTX Clackamas Secondary Repeater - Mt. Hood-K20FT	
6	CLAC-6	446.2500	446.2500	5	FM	127.3	127.3	CLAC ARES RPTX Clackamas Tertiary Repeater (WTOFV)	
7	CLAC-7	441.9000	448.9000	5	FM	103.5	103.5	CLAC ARES RPTX Repeater Highland Butte	
8	CLAD-1	440.9875	440.9875		FM			CLAC ARES WinLink RMS Gateway 1	
9	CLAD-2	441.0375	441.0375		FM			CLAC ARES WinLink RMS Gateway 2	
10	CLAD-3	441.0875	441.0875		FM			CLAC ARES WinLink RMS Gateway 3	
11	CLAD-4	441.5250	441.5250		FM			CLAC ARES WinLink RMS Gateway 4	
12	CLAD-5	145.7700	145.7700	--	FM	--		CLAC ARES DIGT - WinLink RMS Packet	
13	CLAD-6	145.5700	145.5700	--	FM	--		CLAC ARES DIGT - RMS - G71W KD2ZOO-R2 packet gateway / Clackamas Co. EOC. kd7zoo@winlink.org	
14	CLAD-7	145.5200	145.5200		FM			CLAC ARES DIGT - Clackamas Co. KD2ZOO-2 WinLink P.S.P.	
15	CDT1-1	147.4200	147.4200	--	FM	--		CLAC CERT SIMP - CERT OFD 1	
16	CDT1-2	431.6500	431.6500	--	FM	--		CLAC CERT SIMP-OFD 1 CERT Secondary	
17	CLG1-1	431.6500	431.6500	--	FM	--		CLAC ARES SIMP - CARES Logistics 1	
18	CLG1-2	431.6750	431.6750	--	FM	--		CLAC ARES SIMP - CARES Logistics 2	
19	DNM1-1	146.4000	146.4000		FM			CLAC NORT SIMP Damascus Simplex	
20	EAST-1	146.5400	146.5400		FM			CLAC EAST SIMP Clackamas East County ARES Simplex	
21	EAST-3	145.7100	145.7100		FM			CLAC EAST DIGT OC East Digital/Tertiary	
22	EVENT1	440.2750	440.2750	5	FM	103.5	103.5	CLAC ARES Portable Event Repeater	
23	GLAD-1	146.4000	146.4000	--	FM	--		CLAC NORT SIMP Gladstone Simplex	
24	LD-1	444.3000	444.3000	5	FM	82.5	82.5	CLAC LD-1R-RPTX Lake Oswego ARES Primary (EchoLink enabled)	
25	LD-1S	444.3000	444.3000	5	FM	82.5		CLAC LD-1S-Simplex (no repeater output channel)	
26	LD-3	146.5000	146.5000	--	FM	--		CLAC LD-3-SIMP Lake Oswego ARES Simplex Secondary	
27	LD-3	146.6000	146.6000	--	FM	--		CLAC LD-3-DIGT Digital/Tertiary	
28	LD-4	431.9000	431.9000	--	FM	--		CLAC LD-4-SIMP_Lake Oswego Logistics	

For help, suggestions, or updates, please contact:  
techcomm@clackamasares.org

# ICS-217A form (cont.)

## ICS-217A: Communication Resource Availability Worksheet

- Typically used to program radios with as part of the overall common plan and as a reference to determine the use of a specific frequency
- Used to generate a specific incident/event ICS-205 Communications Plan

Communications Resource Availability Worksheet				2 M & 440 band VHF/UHF Analog and Digital Frequencies				Active Date: Pending	Denotes Changes
ICS-217A				Clackamas County ARES				Released 5-4-21 Brown	Denotes Non-Standard Frequency
Channel	Plan	50 Freq.	Dig Freq.	Offset	Mode	Dig Tone	RN Tone	Accession	
1	CLAC 1	147.120	147.720	0.6	FM	100.0		CLAC ARES RPTX Clackamas Primary Repeater (DEM Monitored)	
2	CLAC 2	147.140	147.740	0.6	FM	107.2		CLAC ARES RPTX Clackamas Secondary Repeater	
3	CLAC 3	146.420	146.420	--	FM	--		CLAC ARES SIMP Clackamas Primary Complex	
4	CLAC 4	146.900	146.900	-0.6	FM	127.3		CLAC ARES RPTX Clackamas Tertiary Repeater (WTOFV)	
5	CLAC 5	444.250	444.250	5	FM	100.0		CLAC ARES RPTX Clackamas Secondary Repeater-1M Repeat-ADDFP	
6	CLAC 6	446.250	446.250	5	FM	127.3	127.3	CLAC ARES RPTX Clackamas Tertiary Repeater (WTOFV)	
7	CLAC 7	441.900	448.900	5	FM	103.5	103.5	CLAC ARES RPTX Repeater Highland Butte	
8	CLAD 1	440.969	440.969		FM			CLAC ARES WinLink RMS Gateway 1	
9	CLAD 2	441.039	441.039		FM			CLAC ARES WinLink RMS Gateway 2	
10	CLAD 3	441.069	441.069		FM			CLAC ARES WinLink RMS Gateway 3	
11	CLAD 4	441.520	441.520		FM			CLAC ARES WinLink RMS Gateway 4	
12	CLAD 5	145.770	145.770	--	FM	--		CLAC ARES DIGT -Winlink RMS Packet	
13	CLAD 6	145.570	145.570	--	FM	--		CLAC ARES DIGT -RMS -OTWV KDZD00-02 packet gateway / Clackamas Co. EOC. kdztos@winlink.org	
14	CLAD 7	145.520	145.520		FM			CLAC ARES DIGT -Clackamas Co. KDZD00-2 Winlink P.S.P.	
15	CDT 1	147.420	147.420	--	FM	--		CLAC CERT SIMP - CERT OFD 1	
16	CDT 2	431.650	431.650	--	FM	--		CLAC CERT SIMP-OFD 1 CERT Secondary	
17	CLG 1	431.650	431.650	--	FM	--		CLAC ARES SIMP - CARES Logistics 1	
18	CLG 2	431.675	431.675	--	FM	--		CLAC ARES SIMP - CARES Logistics 2	
19	DNM 1	146.400	146.400		FM			CLAC NORT SIMP Damascus Simplex	
20	EAST 1	146.540	146.540		FM			CLAC EAST SIMP Clackamas East County ARES Simplex	
21	EAST 3	145.710	145.710		FM			CLAC EAST DIGT OC East Digital/Tertiary	
22	EVENT 1	445.275	445.275	5	FM	103.5	103.5	CLAC ARES Portable Event Repeater	
23	GLAD 1	146.400	146.400	--	FM	--		CLAC NORT SIMP Gladstone Simplex	
24	LD 1	444.300	444.300	5	FM	82.5	82.5	CLAC LD-1R-RPTX Lake Oswego ARES Primary (EchoLink enabled)	
25	LD 1S	444.300	444.300		FM	82.5		CLAC LD-1S-Simplex (no repeater output channel)	
26	LO 3	146.500	146.500	--	FM	--		CLAC LD-3-SIMP Lake Oswego ARES Simplex Secondary	
27	LO 3	146.600	146.600		FM			CLAC LD-3-DIGT Digital/Tertiary	
28	LO 4	431.900	431.900	--	FM	--		CLAC LD-4-SIMP_Lake Oswego Logistics	

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# What form is used for an actual incident or event?

## ICS-205: Incident Radio Communications Plan

- The communication plan for an actual incident or event
  - Lays out the selected subset of channels from ICS-217A
  - Per ICS, form is usually created by the Comms Unit Leader
    - This can be the EC, AEC, or anyone who is taking an Event/Incident Command leadership role.
    - If the ICS-205 has not been defined, use the ICS-217A
  - Radio communications details such as:
    - Channel name/alias, exact frequency, CTCSS information and channel number if available.

INCIDENT RADIO COMMUNICATIONS PLAN										Incident Name Clark County SET, Lake Oswego Sub-Unit	Incident Proposed Thurs., April 14, 2021 1800 Hrs.	Operational Period/End Time Saturday, April 17, 2021 0800 to 1300 Hrs.
ID #	Function	Channel Name/Channel Radio System Tag/Group	Assignment	Alt. Freq.	Use W	RTT (sec/MHz)	1st Freq.	Use W	1st Channel #	Mode A, D or W	Remarks	
1	Clark Co Primary	CL-JAC 1		147.1200			147.7200	100.0	A	Clark Primary SET Net		
2	Clark Co Sec	CL-JAC 2		147.1400			147.7400	100.0	A	Clark Secondary SET Net		
3	Lake O Primary	LO-1		444.3000			449.3000	82.5	A	LO Primary SET Net		
4	Lake O Sec	LO-02		146.5000			146.5000		A	LO Secondary SET Net		
5	Lake O Tertiary	LO-03		145.6500			145.6500		A	LO Tertiary SET Net		
6	Lake O CERT	QMR1TR		467.6000			467.6000	123.0	A	CERT/Thighband SET Net		
7	CARES Net	CHIF 1		52.3100			52.3100		A	CARES Net Net FM or USB		
8	CARES Net	CHIF 2		28.4100			28.4100		A	CARES SET Net Net or USB		
9	Cl-City Net			52.3100			52.3100		A	Oregon City Set Net FM or USB		
10	Cl-City Net			28.4300			28.4300		A	Oregon City Set Net FM or USB		
11	CC-East Net			52.3700			52.3700		A	Clark Co-East Set Net FM or USB		
12	CC-East Net			29.6000			29.6000		A	Clark Co-East Set Net FM or USB		
13	Lake O Net			52.4000			52.4000		A	Lake Oswego Set Net FM Only		
14	Lake O Net			28.3850			28.3850		A	Lake Oswego Set Net FM Only		
15	CC-West Net			52.3500			52.3500		A	Clark Co-West Set Net FM or USB		
16	CC-West Net			28.3500			28.3500		A	Clark Co-West Set Net FM or USB		
17												
18												
19												
20	Prepared By (Communications Unit)						Incident Location County	State	Clark/Clatsop County, Oregon		#	

The convention calls for frequency lists to show four digits after the decimal place, followed by either an "M" or a "K", depending on whether the frequency is narrow or wide band. Mode refers to either "A" or "D" indicating analog or digital (e.g. P14.3) or "FM" indicating narrow mode. All channels are shown as if programmed in a control system, mobile or portable radio. Repetitive and base stations must be programmed with the R, and T, modes.  
ICS 205 Exam - DMR 03/07 IFFES 1330

# ICS-205: Incident Radio Communications Plan

## The ICS-205:

- Sources “resources” from the ICS-217a
- Includes other frequencies are added as needed
- Has a specific time period or can be established as an initial or standard communications plan
- This was the plan for Lake Oswego during the recent SET

INCIDENT RADIO COMMUNICATIONS PLAN		Incident Name Clack County SET, Lake Oswego Sub-Unit	Date/Time Prepared Thurs., April 14, 2021 1400 Hrs.	Operational Period Date/Time Saturday, April 17, 2021 0800 to 1300 Hrs.					
Ch. #	Function	Channel Name/Trunked Radio System/Reference	Assignment	Rx Freq. N or W	Rx Tone/AC	Tx Freq. N or W	Tx Tone/AC	Mode A, D, F, J	Remarks
1	Clack Co Primary	CLAC 1	1	147.1200		147.7200	100.0	A	Clack Primary SET Net
2	Clack Co Sec	CLAC 2	2	147.1400		147.7400	107.2	A	Clack Secondary SET Net
3	Lake O Primary	LO 1	24	444.3000		449.3000	82.5	A	LO Primary SET Net
4	Lake O Sec	LO 02	26	146.5000		146.5000		A	LO Secondary SET Net
5	Lake O Tertiary	LO 03	27	145.6500		145.6500		A	LO Tertiary SET Net
6	Lake O CERT	GMR17R	800	462.6000		467.6000	123.0	A	CERT/Neighborhood SET Net
7	CARES Net	CEM 1	800	52.3100		52.3100		A	CARES Set Net FM or USB
8	CARES Net	CHF 2	800	28.4100		28.4100		A	CARES SET Net FM or USB
9	Ox City Net		800	52.3100		52.3100		A	Oregon City Set Net FM or USB
10	Ox City Net		800	28.4300		28.4300		A	Oregon City Set Net FM & USB
11	CC East Net		800	52.3700		52.3700		A	Clack Co East Set Net FM or USB
12	CC East Net		800	29.6000		29.6000		A	Clack Co East Set Net FM or USB
13	Lake O Net		800	52.4000		52.4000		A	Lake Oswego Set Net FM Only
14	Lake O Net		800	28.3880		28.3880		A	Lake Oswego Set Net FM Only
15	CC West Net		800	52.3500		52.3500		A	Clack Co West Set Net FM or USB
16	CC West Net		800	28.3500		28.3500		A	Clack Co West Set Net FM or USB
17									
18									
19									
20									
Prepared By/Communications Unit			Incident Location		Clackamas County, Oregon				
			County		State Latitude N Longitude W				

The convention calls for frequency lists to show four digits after the decimal place, followed by either an "N" or a "W", depending on whether the frequency is narrow or wide band. Mode refers to either "A" or "D" indicating analog or digital (e.g. Project 25) or "FM" indicating mixed mode. All channels are shown as if programmed in a control station, mobile or portable radio. Repeater and base stations must be programmed with the Rx and Tx reversed.

ICS 205 Excel - Draft 031207

NFES 1330

# The CARES Frequency List

1. What the plan looks like
2. Critical channel information
3. Version Control

# The new CARES Frequency List

- Consists of the following:
  - 2 meter and 440 MHz frequencies \*
  - 220 MHz frequencies
  - 6 meter frequencies
  - HF frequencies

\* As our primary focus is 2 M and 440 bands, typically, many members will only program their dual band radios with the plan

# What the frequency plan looks like?

- It's a multipage document, organized by band, with specific details of each frequency and a comment on that frequency's use
- 58 channels in use

Communications Resource Availability Worksheet		2 M & 400 band VHF/UHF Analog and Digital Frequencies					Active Date: Pending	Repeats: Changes
ICS-217A		Clackamas County ARES					Released 5-4-21	Brown
Channel	Avail	IC-Free	TR-Freq	Offset	Mod	TR-Time	RS-Time	Description
1	CLAC-1	147,020	147,720	0.0	FM	100.0		CLAC ARES RPTX Clackamas Primary Repeater (DEM Monitor)
2	CLAC-2	147,140	147,840	0.0	FM	107.2		CLAC ARES RPTX Clackamas Secondary Repeater
3	CLAC-3	148,420	148,420	--	FM	--	--	CLAC ARES SIMP Clackamas Primary Simplex
4	CLAC-4	148,900	148,900	0.0	FM	107.3		CLAC ARES RPTX Clackamas Teritary Repeater (W/O/T)
5	CLAC-5	444,250	445,250	5	FM	100.0		CLAC ARES DIGT-RMS Clackamas Secondary Repeater (W/ Headset)
6	CLAC-6	440,200	445,200	5	FM	107.3	107.3	CLAC ARES RPTX Clackamas Teritary Repeater (W/O/T)
7	CLAC-7	441,900	440,900	5	FM	103.5	103.5	CLAC ARES RPTX Repeater Highland Butte
8	CLAD-1	440,967.5	440,967.5	--	FM	--	--	CLAC ARES Wx/In-RMS Gateway 1
9	CLAD-2	441,035	441,035	--	FM	--	--	CLAC ARES Wx/In-RMS Gateway 2
10	CLAD-3	441,062.5	441,062.5	--	FM	--	--	CLAC ARES Wx/In-RMS Gateway 3
11	CLAD-4	441,525	441,525	--	FM	--	--	CLAC ARES Wx/In-RMS Gateway 4
12	CLAD-5	145,770	145,770	--	FM	--	--	CLAC ARES DIGT-Wx/In-RMS Packet
13	CLAD-6	145,570	145,570	--	FM	--	--	CLAC ARES DIGT-RMS-GTWAY KOTZDD-10 (w/Headset) Clackamas Co. EOC: 44734@wink.org
14	CLAD-7	145,530	145,530	--	FM	--	--	CLAC ARES DIGT-Clackamas Co. KOTZDD-5 (w/Headset)
15	CFD-1	147,420	147,420	--	FM	--	--	CLAC CERT SIMP- CERT CFD-1
16	CFD-2	431,800	431,800	--	FM	--	--	CLAC CERT SIMP- CFD-1 CERT Secondary
17	CLC-1	431,825	431,825	--	FM	--	--	CLAC ARES SIMP- CARES Logistics 1
18	CLC-2	431,850	431,850	--	FM	--	--	CLAC ARES SIMP- CARES Logistics 2
19	DAMA-1	146,400	146,400	--	FM	--	--	CLAC NORT SIMP-Damasus Simplex
20	EAST-1	146,540	146,540	--	FM	--	--	CLAC EAST SIMP-Clackamas East County ARES Simplex
21	EAST-3	145,700	145,700	--	FM	--	--	CLAC EAST DIGT-CC East Digital/Teritary
22	EVENT-1	440,275	445,275	5	FM	103.5	103.5	CLAC ARES Portable Event Repeater
23	GLR-1	146,400	146,400	--	FM	--	--	CLAC NORT SIMP-Glaxione Simplex
24	LO-1	444,300	445,300	5	FM	62.5	62.5	CLAC LO-10-RPTX Lake Oswego ARES Primary (Clackamas Band)
25	LO-6	444,300	444,300	--	FM	62.5	--	CLAC LO-10-Simplex (per repeater output sharing)
26	LO-2	146,900	146,900	--	FM	--	--	CLAC LO-3-SIMP Lake Oswego ARES Simplex Secondary
27	LO-3	145,950	145,950	--	FM	--	--	CLAC LO-3-DIGT Digital/Teritary
28	LO-4	431,900	431,900	--	FM	--	--	CLAC LO-4-SIMP Lake Oswego Logistics

For help, suggestions, or updates, please contact:  
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29	NR-11	145,930	146,430	--	FM	--	--	CLAC NORT SIMP-Melrose Simplex
30	NOLA-1	440,700	445,700	5	FM	77.0	77.0	CLAC CERT SIMP-Molalla Fire CERT
31	NORD-1	147,500	147,500	--	FM	--	--	CLAC NORT SIMP-Clackamas North County ARES Simplex
32	NORD-3	146,870	146,870	--	FM	--	--	CLAC NORT DIGT-CC North Digital/Teritary
33	OC-1	442,075	442,075	5	FM	103.5		CLAC OC-RPTX Oregon City ARES Repeater
34	OC-2	146,900	146,900	--	FM	--	--	CLAC OC-SIMP Oregon City ARES Simplex
35	OC-3	146,800	146,800	--	FM	--	--	CLAC OC-DIGT Digital/Teritary
36	OC-4	431,925	431,925	--	FM	--	--	CLAC OC-SIMP_Logistics
37	OR-1	146,400	144,900	-0.5	FM	107.3		CLAC SOUT RPTX Sandy Repeater (2/1)
38	SAND-2	146,400	146,400	--	FM	--	--	CLAC SOUT SIMP Sandy Simplex
39	SND-1	146,900	146,900	-0.0	FM	107.3		CLAC SOUT RPTX Clackamas South County ARES Repeater
40	SND-2	146,900	146,900	--	FM	--	--	CLAC SOUT SIMP-Clackamas South County ARES Simplex
41	SOD-3	145,900	145,900	--	FM	--	--	CLAC SOUT DIGT-CC South Digital/Teritary
42	WEST-1	147,530	147,530	--	FM	--	--	CLAC WEST SIMP-Clackamas West County ARES Simplex
43	WEST-3	146,700	146,700	--	FM	--	--	CLAC WEST DIGT-CC West Digital/Teritary
44	WIL-1	146,400	146,400	--	FM	--	--	CLAC SOUT SIMP-Wilsonville Simplex
45	WLN-1	146,400	146,400	--	FM	--	--	CLAC WEST SIMP- West Linn Simplex
46	WUJAL	440,000	440,000	--	FM	--	--	National LHF Calling Simplex Frequency
47	WVNLK	145,530	145,530	--	FM	--	--	National VHF Calling Simplex Frequency
48	D1-1	147,500	147,500	0.0		100		D1 Primary Net Repeater (DEM Monitor)
49	D1-2	148,840	148,240	-0.6		--		D1 Secondary / Multnomah Co. ARES Primary Repeater
50	DEM-1	145,300	144,700	-0.6		196.2		DEM Oregon Emergency Management (State)
51	RED-01	146,900	146,900	-0.0		0023		Red Cross Repeater (Portland)
52	RED-02	147,400						Red Cross Simplex
53	HEAT-1	145,200	144,000	-0.6		--		HEART Net Primary Repeater
54	HEAT-2	442,700	442,700	5.0		100		HEART Net Secondary Repeater
55	HPT-1	146,900						HEART Simplex
56	VEN-1	147,000	147,000	0.0		196.2		Oregon Emergency Management (DEM Subnet)
57	VEN-1	144,900						RMS Wx/In Packet W/O/DN-10 / OEM EOC (2/1)@rednet.org
58	NOLA-2	145,920						Wild Emergency Amateur Radio Service (WEARS)

For help, suggestions, or updates, please contact:  
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# Let's zoom in a bit

Communications Resource Availability Worksheet				2 M & 440 band VHF/UHF Analog and Digital Frequencies				Active Date: Pending	Denotes Changes
ICS-217A				Clackamas County ARES				Released 5-4-21 Brown	Denotes Non-Standard Frequency
Channel	Alias	RX Freq	TX Freq	Offset	Mode	TX Tone	RX Tone	Description	
1	CLAC 1	147.1200	147.7200	0.6	FM	100.0		CLAC ARES RPTR Clackamas Primary Repeater [OEM Monitored]	
2	CLAC 2	147.1400	147.7400	0.6	FM	107.2		CLAC ARES RPTR Clackamas Secondary Repeater	
3	CLAC 3	146.4200	146.4200	--	FM	--		CLAC ARES SIMP Clackamas Primary Simplex	
4	CLAC 4	146.9600	146.3600	-0.6	FM	127.3		CLAC ARES RPTR Clackamas Tertiary Repeater (W7OTV)	
5	CLAC 5	444.2250	449.2250	5	FM	100.0		CLAC ARES RPTR Clackamas Secondary Repeater--Mt. Hood--K7RPT	
6	CLAC 6	440.2500	445.2500	5	FM	127.3	127.3	CLAC ARES RPTR Clackamas Tertiary Repeater (W7OTV)	
7	CLAC 7	441.9000	446.9000	5	FM	103.5	103.5	CLAC ARES RPTR Repeater Highland Butte	

# Version Control

- We control versions with two simple methods
  - 1—Color code and date
  - 2—Date code will be listed as name on Channel 0 or 128 depending on radio manufacturer.

Communications Resource Availability Worksheet				2 M & 440 band VHF/UHF Analog and Digital Frequencies				Active Date: Pending	Denotes Changes
ICS-217A				Clackamas County ARES				Released 5-4-21 Brown	Denotes Non-Standard Frequency
Channel	Alias	RX Freq	TX Freq	Offset	Mode	TX Tone	RX Tone	Description	
1	CLAC 1	147.1200	147.7200	0.6	FM	100.0		CLAC ARES RPTR Clackamas Primary Repeater (OEM Monitored)	
2	CLAC 2	147.1400	147.7400	0.6	FM	107.2		CLAC ARES RPTR Clackamas Secondary Repeater	
3	CLAC 3	146.4200	146.4200	--	FM	--		CLAC ARES SIMP Clackamas Primary Simplex	
4	CLAC 4	146.9600	146.3600	-0.6	FM	127.3		CLAC ARES RPTR Clackamas Tertiary Repeater (WOTV)	
5	CLAC 5	444.2250	449.2250	5	FM	100.0		CLAC ARES RPTR Clackamas Secondary Repeater—Mt. Hood—KTRPT	
6	CLAC 6	440.2500	445.2500	5	FM	127.3	127.3	CLAC ARES RPTR Clackamas Tertiary Repeater (WOTV)	
7	CLAC 7	441.9000	446.9000	5	FM	103.5	103.5	CLAC ARES RPTR Repeater Highland Butte	



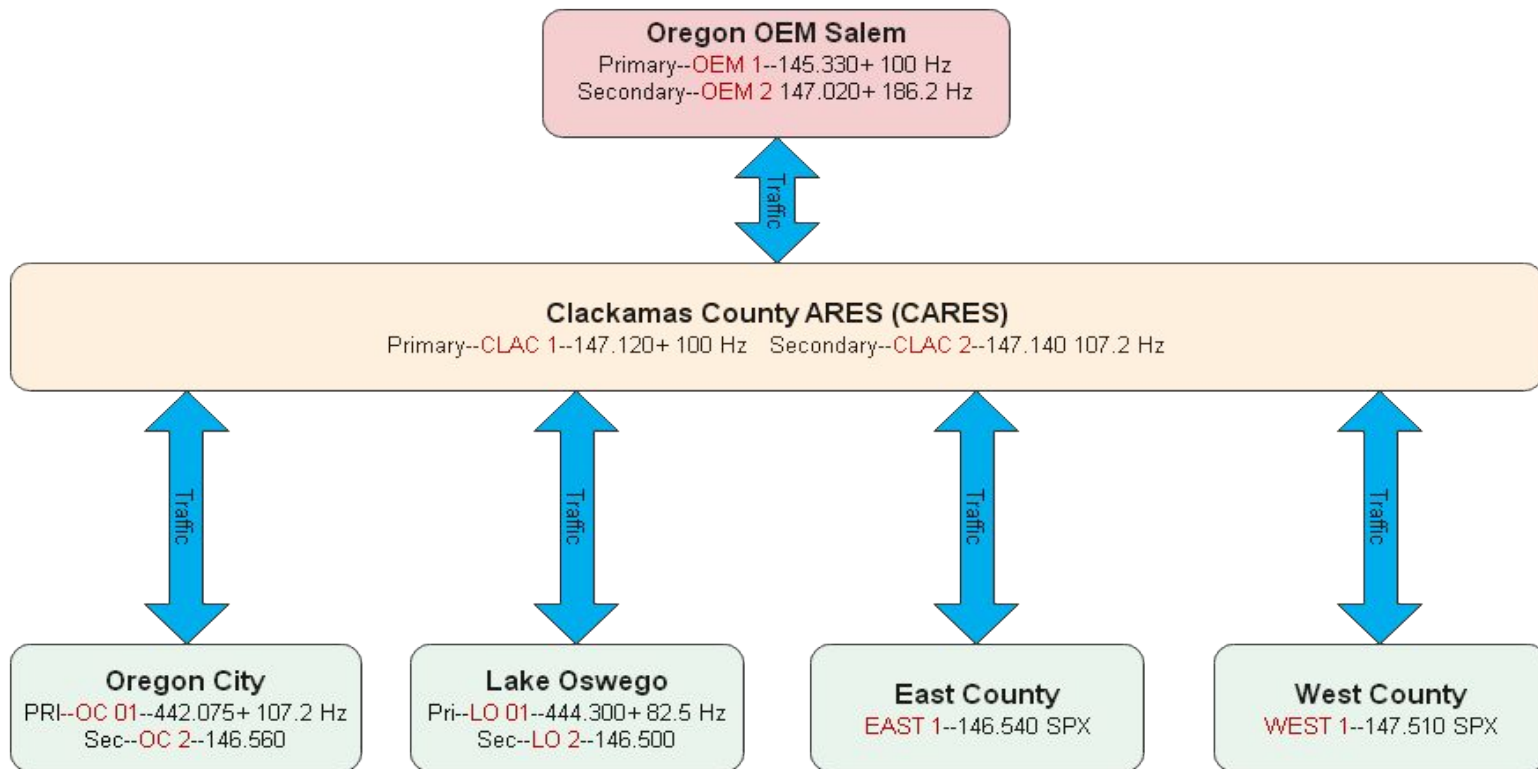
# The CARES Frequency Plan

1. Operating with the new plan
2. Updates to the plan
3. Obtaining the new plan
4. Programming your radio

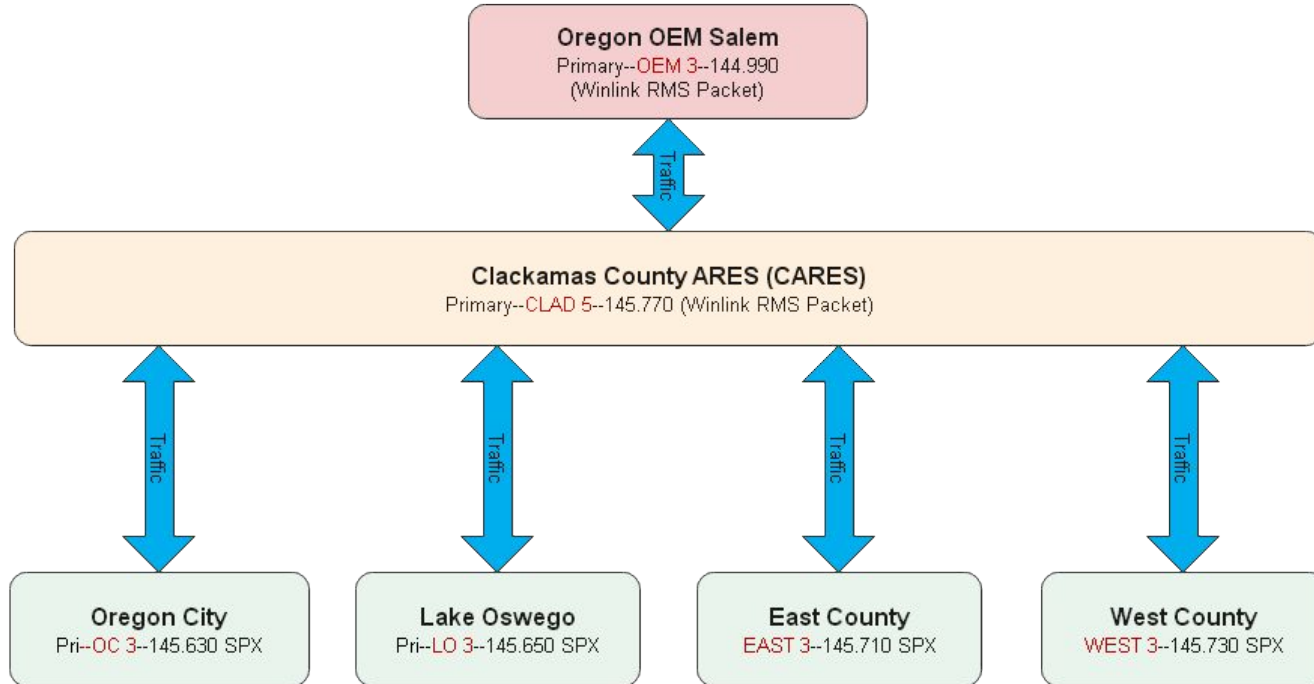
# OK, we have a plan, how do we use it?

- Typically, we adhere to a basic communication structure that allows for message traffic to be sent to and from the State, County, and sub-units
- This is intended to mirror how our County and sub-units would operate during an emergency
- Sample message flow--
  - Lake Oswego needs a bulldozer because it does not have one
  - Lake Oswego contacts the County and asks for a bulldozer
  - The County does not have one to spare, so the County reaches out to the State to find one

# CARES Voice Communications Flow



# CARES Digital Communications Flow\*



\* Digital is defined as digital message traffic via VARA FM and PACKET Winlink

# Comm Plan Updates

- Redistributed to AECs when channels are added or changed
- AECs pass the new Comm Plan to you
- If the frequency list changes, you need to program your radio
  - Either using radio programming software:
    - e.g. CHIRP (free), RT-Systems, Manufacturer's software
  - Some radios may require manual programming
- These frequencies should be the primary radio numbers in your radio, so we all use the same channel numbers
- Please at least program in all of the 2 M & 440 channels into your radios

# Radio Programming

- Plan will be distributed through your sub-unit and the CARES website
- .CSV (Comma Separated Values) files available as the master created from the ICS-217A
  - This is a format that most radio programming software can import
  - Depending on your software, may require some editing – contact your AEC or a technical contact if you are having difficulty
  - Additional frequencies that are unique to your sub-unit operation such as GMRS, FRS, etc., can be added to the list at the sub-unit level as appropriate, and distributed by your AEC
- Will also distribute in RT Systems and CHIRP formats

# Operating with the Comm Plan

- How do we use the plan?
  - Incident Command may create an ICS-205 as a subset of the ICS-217A
  - Use channel numbers as a shortcut to refer to specific frequencies
  - Each new version is labelled by a color code (Today's version is BROWN)
  - Updates to the ICS-217A will be announced, and an implementation date given (e.g. We will switch to the RED version on this date)

# Operating using the Comm Plan

*(check this recommendation with AECs)*

- What channels do I use if we have an event?
  - Check the Primary Repeater frequency for your sub-unit. If that is not active, check the secondary frequency for your sub-unit.
  - Monitor the CARES Primary Frequency called CLAC 1 (Channel 1)
- Where to I go if those channels are busy, or repeaters are weak or down?
  - If you cannot get frequency coordination information from the CARES Primary Frequency or your Sub-Unit's Primary Frequency, check your subunit's secondary frequencies.
- What are the plans for long range comms?
  - There are nets listed on the HF Tab of the Plan. See if those are active.
- What if there is no net control on the assigned frequency?
  - If you are capable, and you are sure there is no net (e.g. you have a good antenna/radio and are centrally located) then you should assume the position of net control.

# Next Steps

- Presentation and document package will be sent out after this meeting
- Members with the technical knowhow will be creating import files for known radios
  - Check with your AEC or our the technical committee if you need help
  - [techcomm@clackamasares.org](mailto:techcomm@clackamasares.org)
- Check the CARES web page for copies of the plan, .csv, and CHIRP files
- Please get your radios updated to the new plan by July 1, 2021

# In Conclusion

1. The Frequency Plan will be sent to all members after the presentation
  2. The website will have a downloadable copies of the plan and any radio specific programs that have been created
  3. Check with our AEC for additional programming information for your sub-unit
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# Credits

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# Additional Resources

- Links
- Glossary of terms

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# Emergency management resources:

- FEMA Training Courses: <https://training.fema.gov/nims/>
    - For ICS 100, 200, 700 & 800, plus other online courses
  - Oregon OEM:  
<https://www.oregon.gov/OEM/Pages/default.aspx>
    - The department which oversees ARES for the State
  - Oregon ARES: <https://www.oregonaresraces.org/>
    - State Level ARES
  - Benton County ARES: <http://www.bcaries.org/>
  - The most current frequency plan will be on our Website:  
<http://www.clackamasares.org>
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# Glossary of Terms

- Alias—Unique name given to a specific channel as another identifier
- CTCSS—Continuous Tone Carrier Squelch System (aka—PL tone)
- DCS—Digital Coded Squelch. A digital version of CTCSS.
- VARA—A software modem that uses Orthogonal Frequency Division Multiplex over amateur radio
- Winlink—A global radio Email system that can be used with amateur radio