



Integrating GMRS and Ham for Emergency Comms

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Ham: K7TY

GMRS: WQSK740

Agenda

- The History
- The Area
- The Organization
- The Radio
- The Training
- The Practice

History

- 3 coastal isolated small communities
- Winter storms, wildfires, landslides, CSZ, tornadoes
- 2007 winter storm

A week without power or comm

EOC staffed by fire chief alone

Limited (but effective) Ham activity

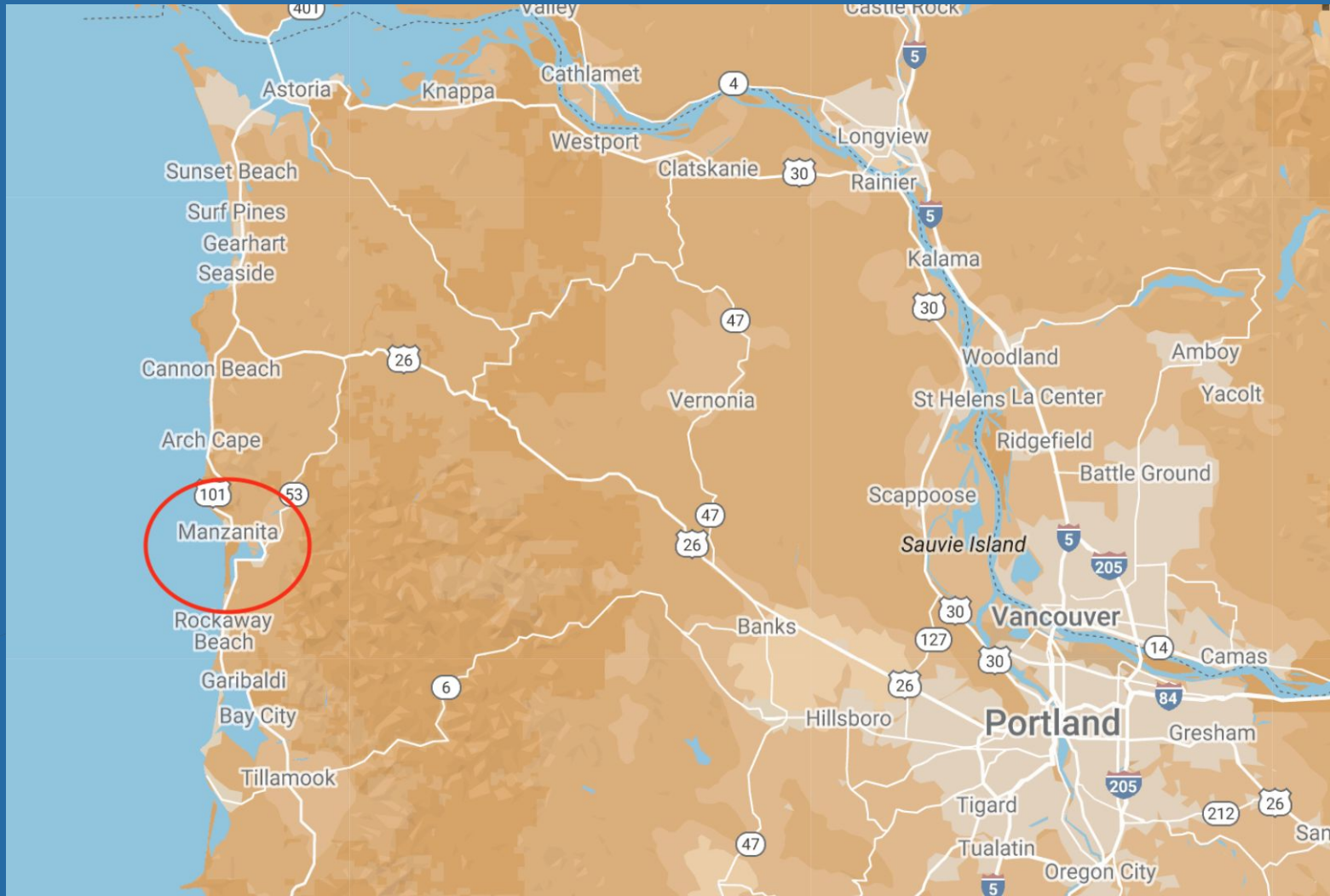
Today

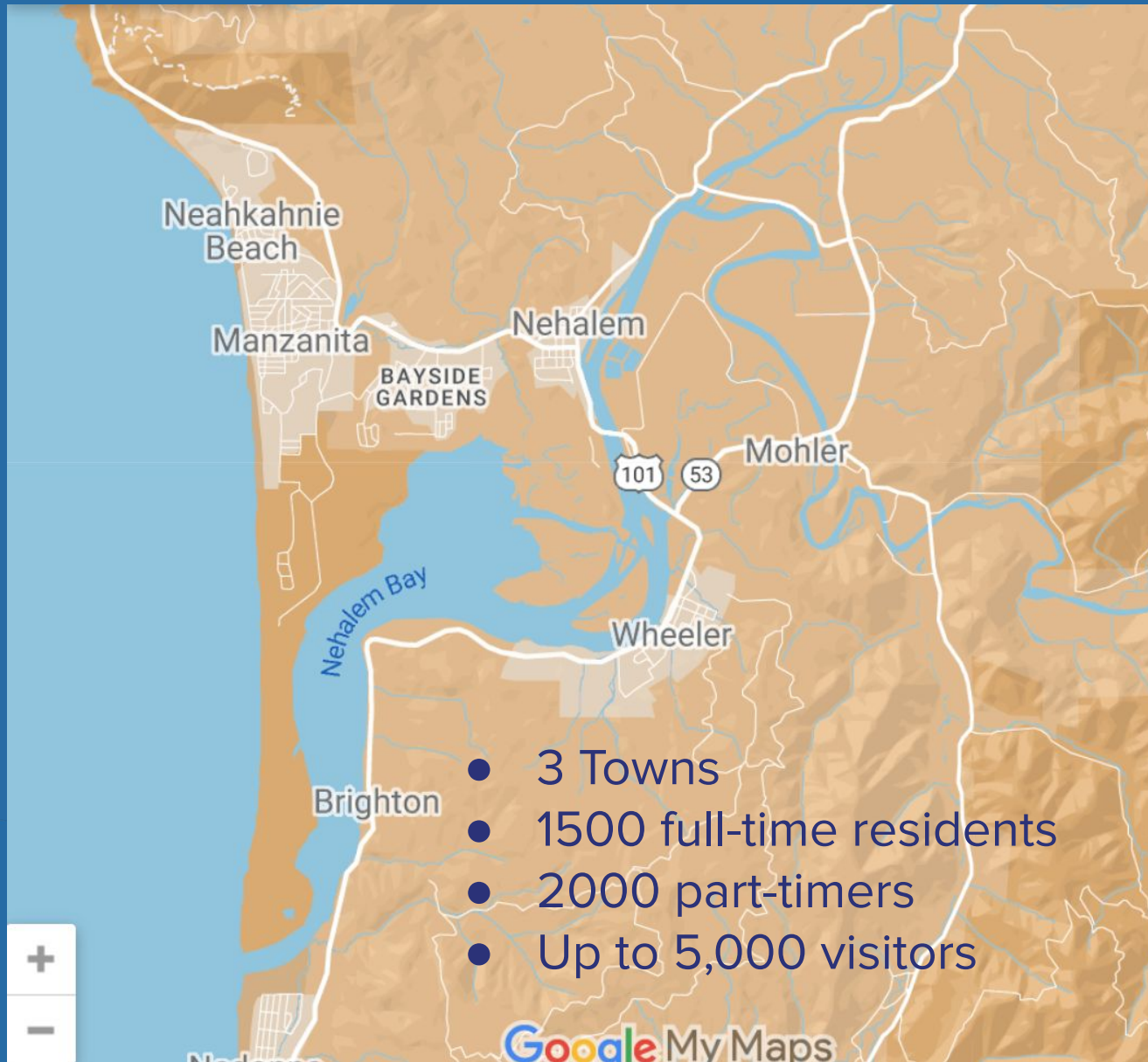
- Almost 300 trained GMRS users
- 60 Hams
- 2 ham, 2 GMRS repeaters
- Emergency FM broadcast
- Weekly “joint” nets
- 2-4 joint exercises yearly

GMRS Success Factors

- Preparedness culture reinforces importance of communication
- Standardization on a radio
- Required 2-hour training session
- Full integration with hams
- Weekly coordinated GMRS/Ham Nets
- Joint exercises with Hams

The Area

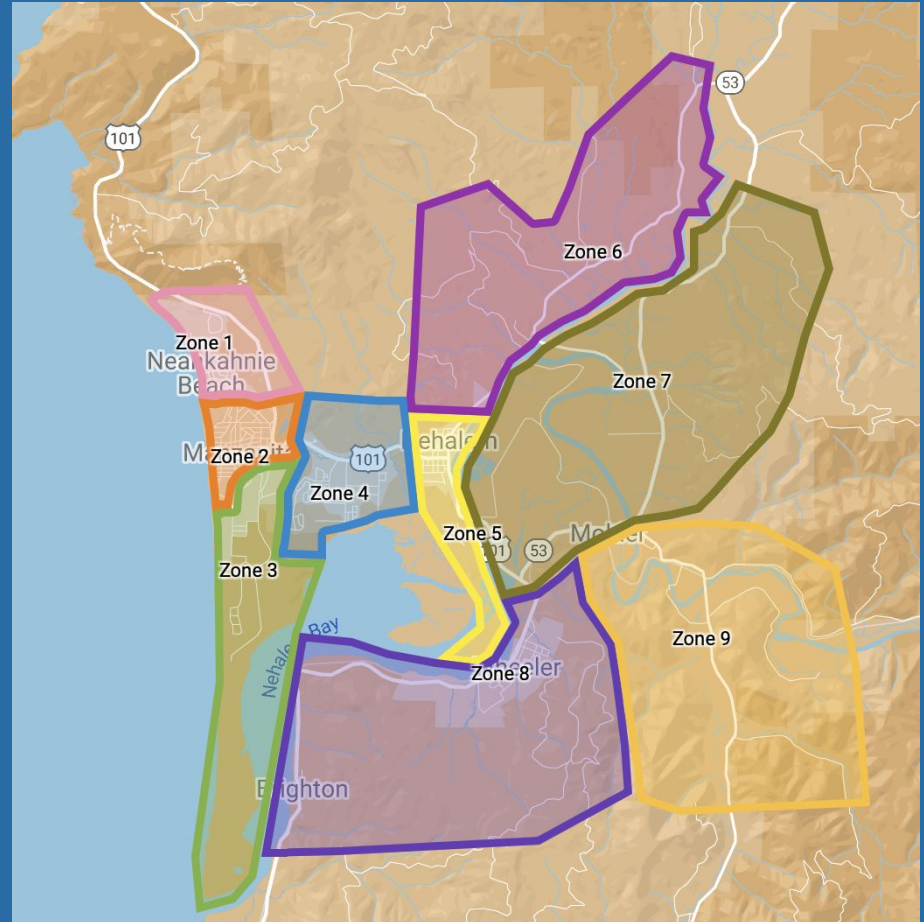




The Organization

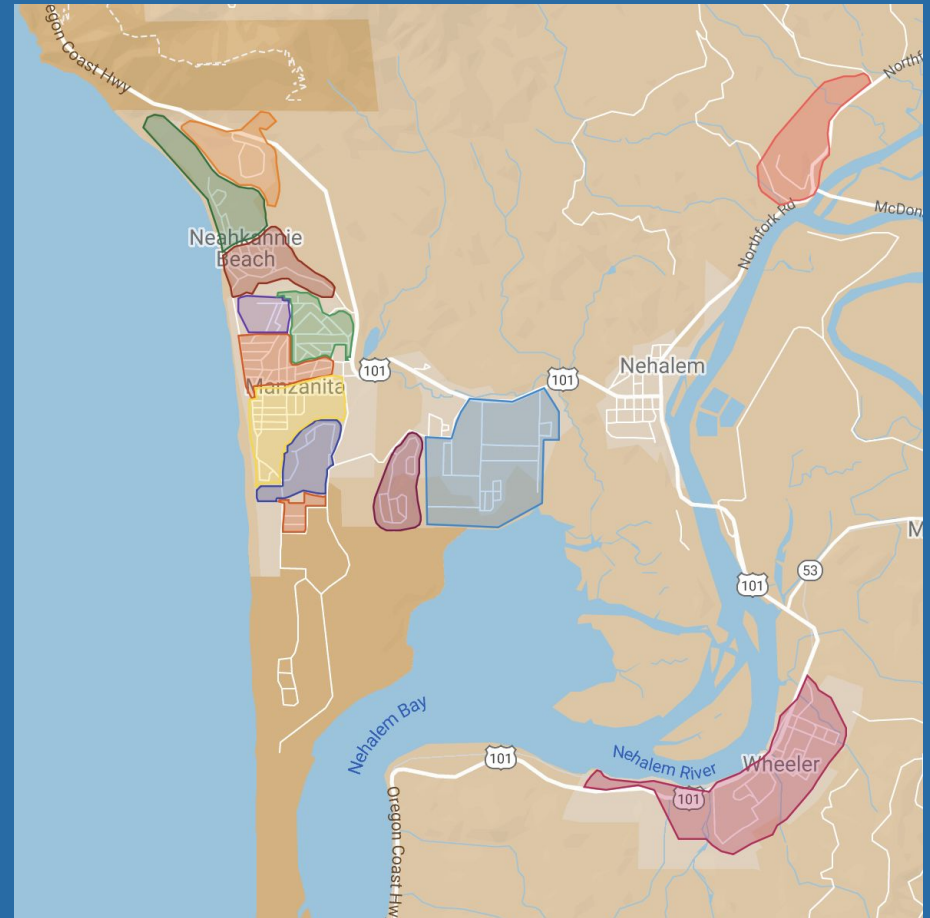
Zones

- Topology/assistance
- GMRS simplex
- Everyone can hear each other
- Dedicated GMRS Zone Channel
- Zone Net Control
- Zone Ham
- At least one Solar Radio Gobox



Clusters - Neighborhoods

- Full/Part time residents
- Small(ish) size
- Established leadership
- Each has a
Neighborhood
Gathering Site NGS
 - Unsigned
 - Out of tsunami area
 - Supply cache
 - GMRS leader



Other Issues

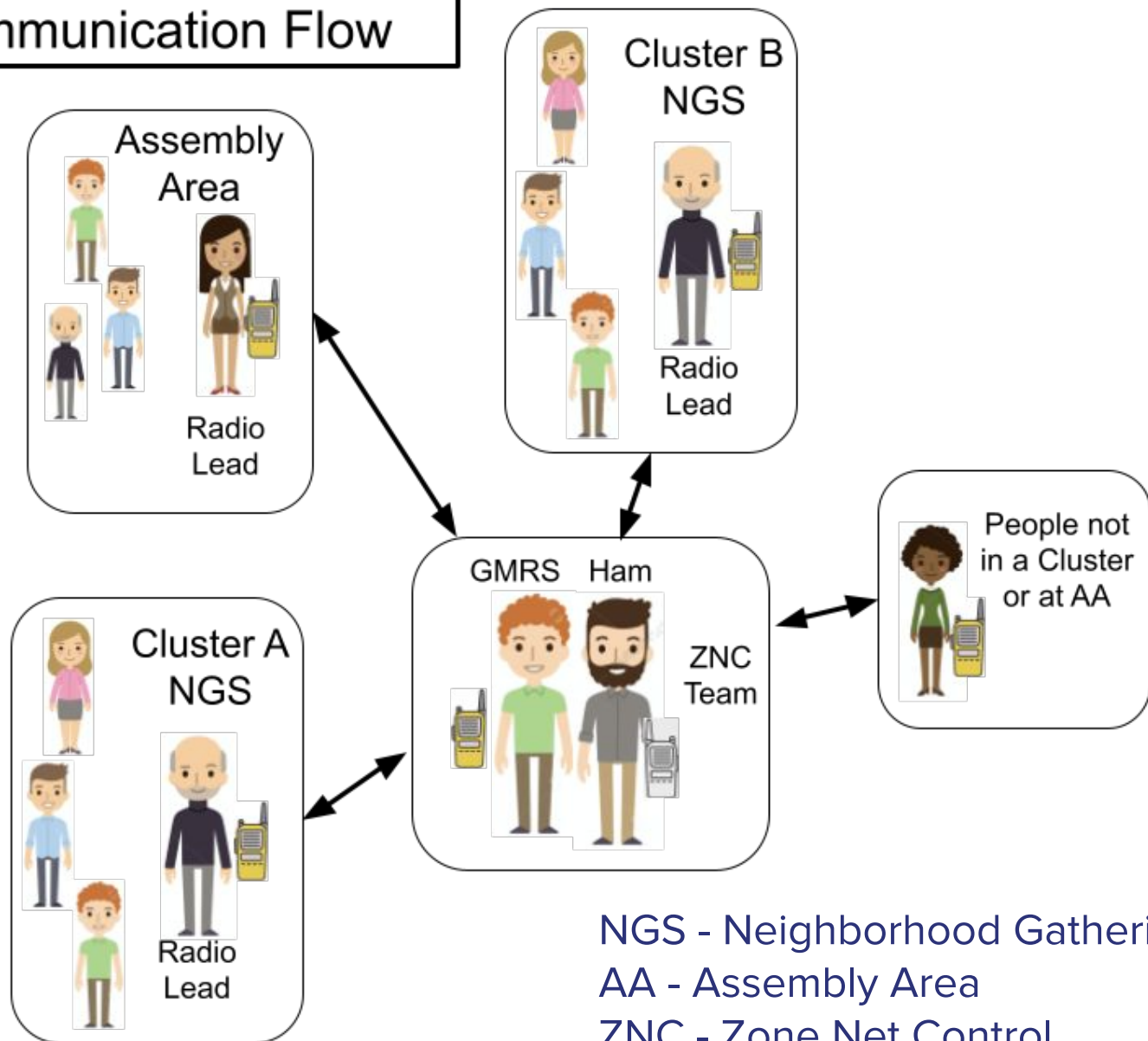
Visitors

- Most staying in tsunami area
- Unprepared
- Assembly Sites (4)
 - Signed
 - Managed by CERT leadership teams
 - TBD caches

Infrastructure

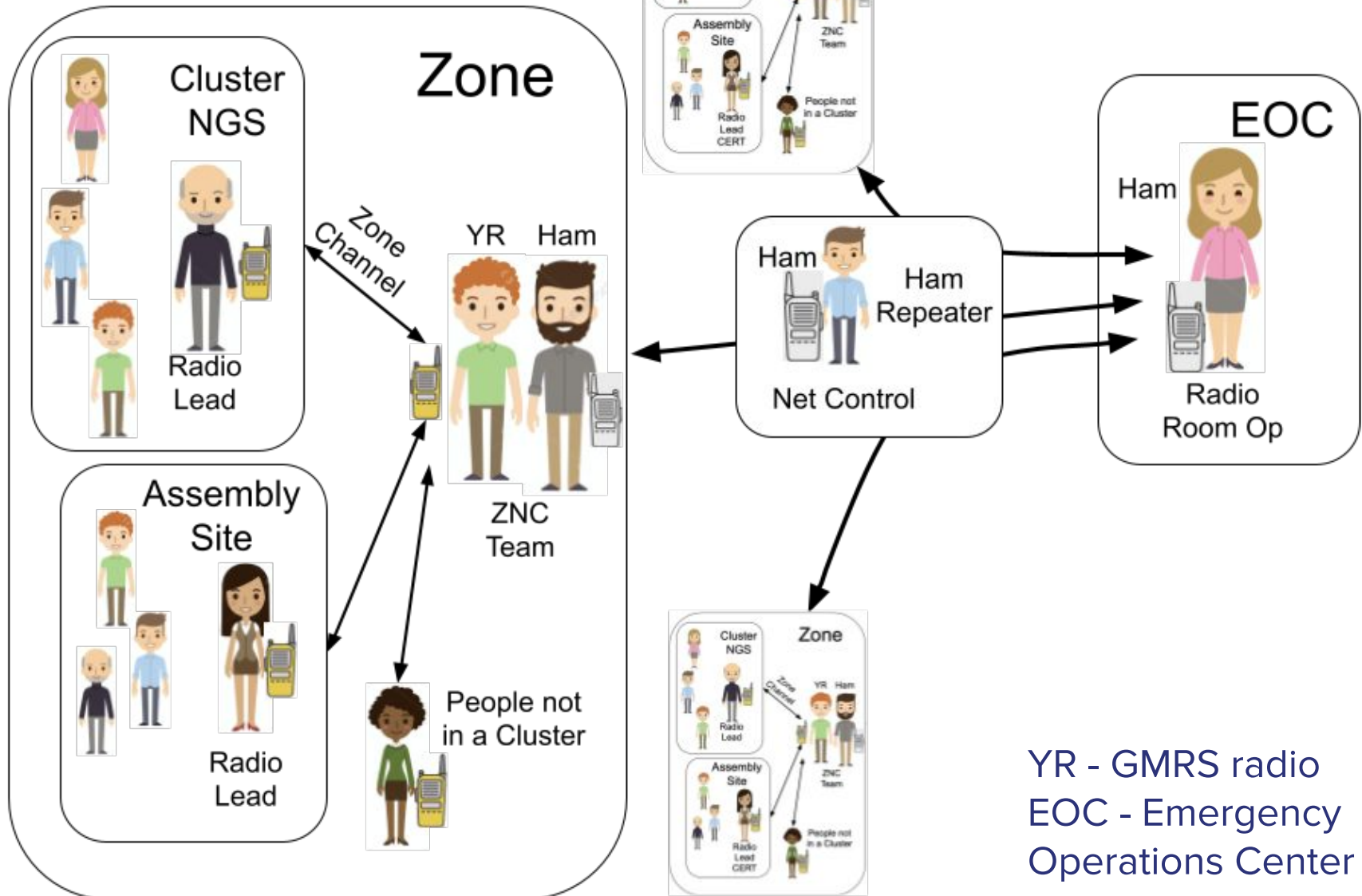
- 3 EOCs
- 3 Shelters
- 2 Medical Clinics
- 2 MRC trailers
- Fire Station
- School
- Mass Care

Zone Channel Communication Flow

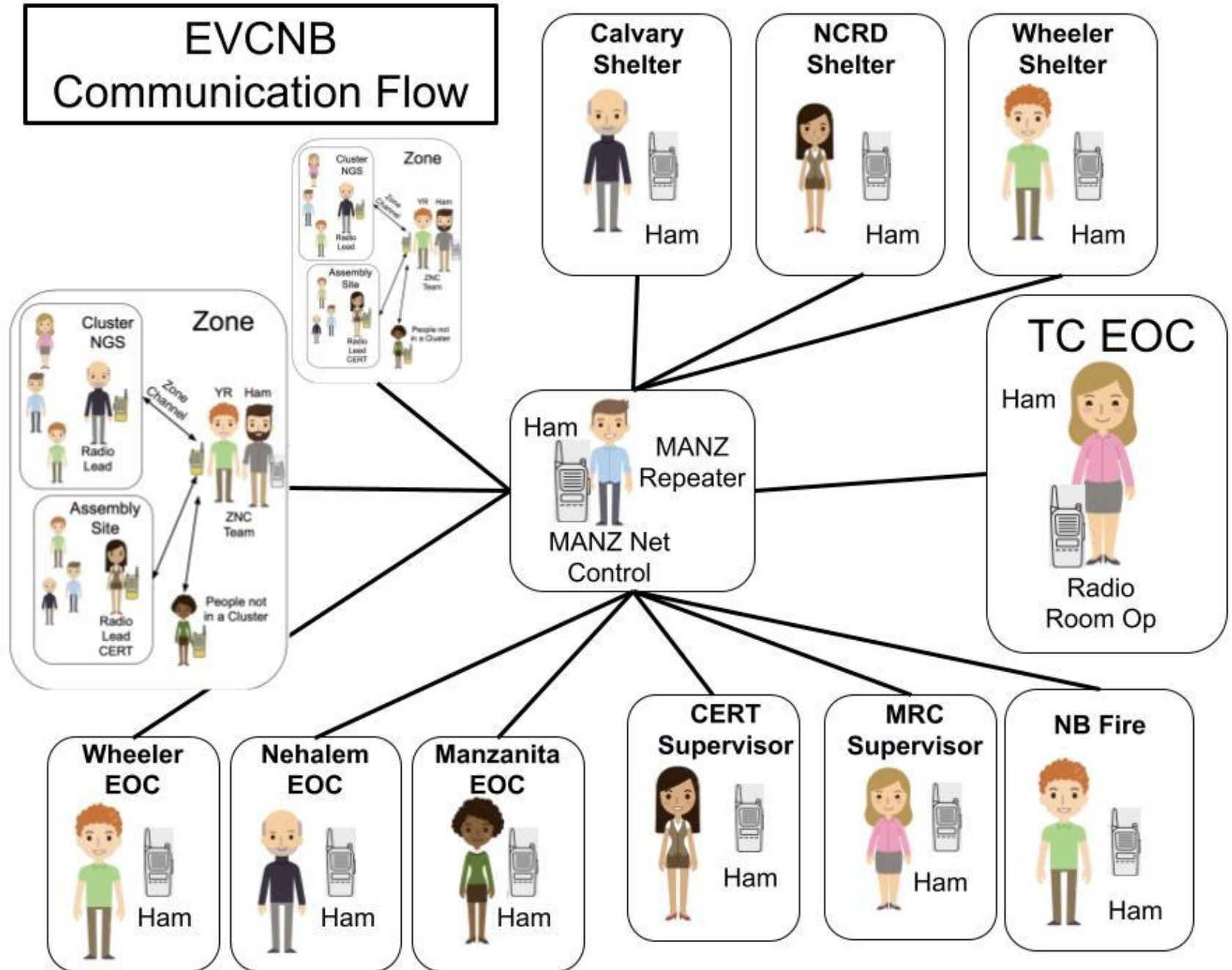


NGS - Neighborhood Gathering Site
AA - Assembly Area
ZNC - Zone Net Control

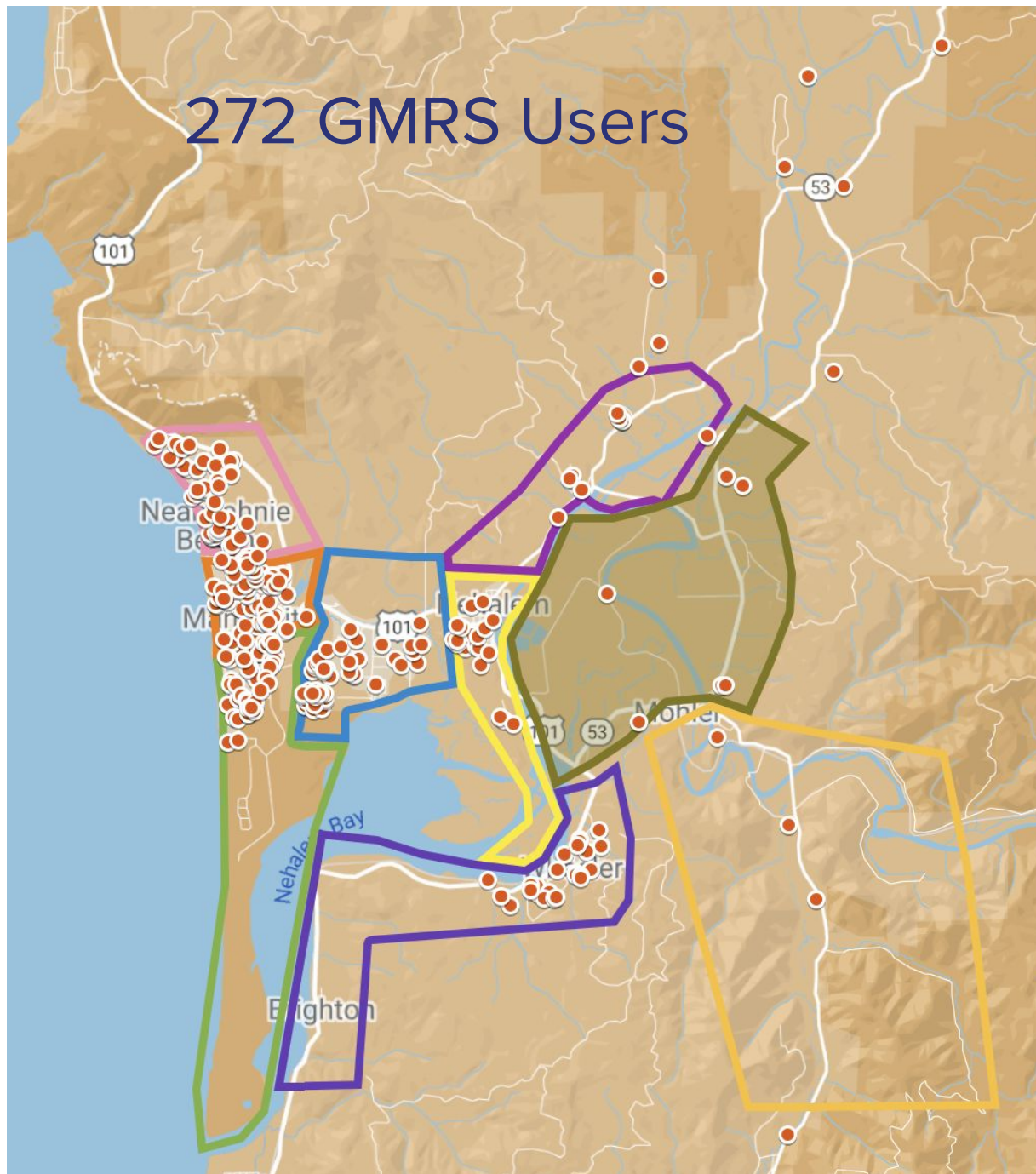
Zone-to-EOC Communication Flow



EVCNB Communication Flow



272 GMRS Users



The Radio

BTECH GMRS-V2

- Covers VHF/UHF
- We program before training
- Encourage hams to get BTECH UV-82HP (or the like)
- Overlapping channel templates
- Common accessories



Accessories



The Training - 2-hour GMRS Basic

Radio Basics

Navigating the display

Keypad basics

Channel selection

Indicator lights

Side buttons

Talking

Etiquette

Magic Words

Phonetic alphabet

Exercise

Operating on a Net

Checking in

Doubling

Relaying

Checking out

Exercise

Radios handed out at training

The Training - GMRS Basic

Troubleshooting

I'm not hearing anything

Not hearing what I expect

Nobody hearing me

Misc

Radio care and feeding

Channel card

Accessories

[Link to Training Presentation](#)

Channel	Name	Service	Channel	Name	Service
3	ANGORA	Ham	90	MURS1	EVC
5	MANZAN	Ham	91	MURS2	EVC
12	PORTRPT	Ham	92	MURS3	EVC
14	NKNRPT	Ham	93	MURS4	EVC
22	CBEACH	Ham	94	MURS5	EVC
56	WX NKN	Weather	101	ZONE 1	EVC
58	WXMEAR	Weather	102	ZONE 2	EVC
62	TCSO 1	Public Service	103	ZONE 3	EVC
64	FIRE	Public Service	104	ZONE 4	EVC
65	TAC 1	Public Service	105	ZONE 5	EVC
66	TAC 2	Public Service	106	ZONE 6	EVC
67	TAC 3	Public Service	107	ZONE 7	EVC
68	TAC 4	Public Service	108	ZONE 8	EVC
69	TAC 5	Public Service	109	ZONE 9	EVC
70	TAC 6	Public Service	110	RBCERT	RB
71	TAC 7	Public Service	111	OPS 1	EVC
72	TAC 8	Public Service	112	OPS 2	EVC
73	SAR	Public Service	113	OPS 3	EVC
74	OSP	Public Service	114	OPS 4	EVC
77	06MAR	Marine	115	OPS 5	EVC
78	09MAR	Marine	117	NELMRPT	EVC
79	16MAR	Marine	119	EVC RPT	EVC
80	17MAR	Marine	121	RBRPT	RB
81	21MAR	Marine	122	CB CMD	CB
82	22MAR	Marine			
83	23MAR	Marine			

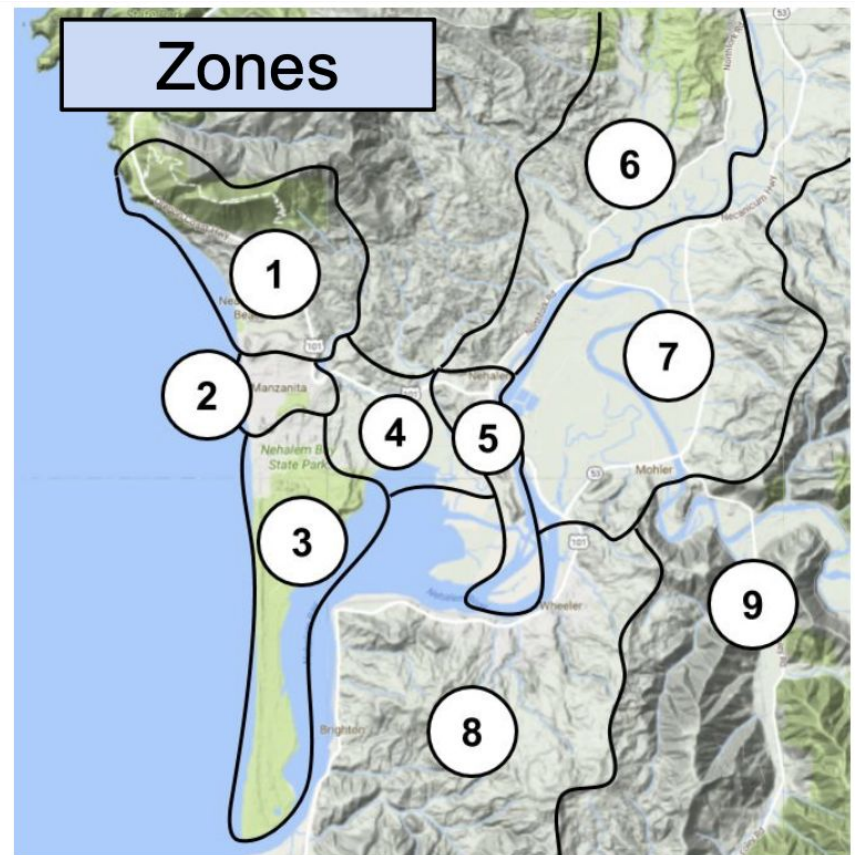


Listen only



EVC - Operational

ITU Phonetics			
A - Alpha	H - Hotel	O - Oscar	V - Victor
B - Bravo	I - India	P - Papa	W - Whiskey
C - Charlie	J - Juliet	Q - Quebec	X - Xray
D - Delta	K - Kilo	R - Romeo	Y - Yankee
E - Echo	L - Lima	S - Sierra	Z - Zulu
F - Foxtrot	M - Mike	T - Tango	
G - Golf	N - November	U - Uniform	



Magic Words

Over - I'm done. Your turn.

Out - Conversation done.

Monitoring - I'm listening.

Affirmative - Yes

Negative - No

Will do - Will do it

Emergency - Have emergency info

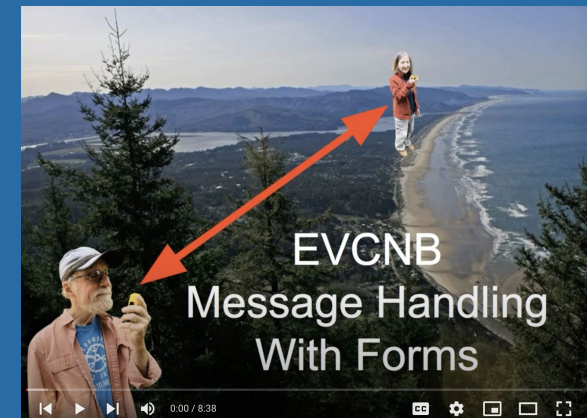
On-going Training

Message Handling YouTubes

LINE message protocol

Solar Radio Gobox

2023 Great Shake Out Evacuation Location Report		
1	Community name	Manzanita
2	Assembly Area location/landmark	Highlanders NGS
3	Coordinator	Julia P
4	Coordinator phone	503-555-1212
5	How many people showed up with emergency supplies?	23
6	How many people showed up without supplies?	I 6
7		Print media 5
8		Social Media 10
9	How did you hear about the event?	Broadcast (TV, radio) I 1
10		Friends 3
11		Other



The Practice - GMRS Nets

GMRS Weekly Net

- Starts on GMRS repeater
- Announcements
- Educational Moment (35+ topics in library)
- Drill (optional) - Users do something
- Switch to Zone Channel for check-ins and drill

Zone Nets (simplex) - 7 nets total

- Zone NC takes check-ins and drill info
- Asks for Zone Ham to pass check-in count and drill summary to Ham Net

Options to mix it up

- All check-ins on the repeater
- Repeater down (all on simplex)

The Practice - Ham Nets

Weekly Ham Net (local 6:30 Th)

Ham NC takes Zone Ham check-ins with counts and summary
Then takes regular check-ins by Zone

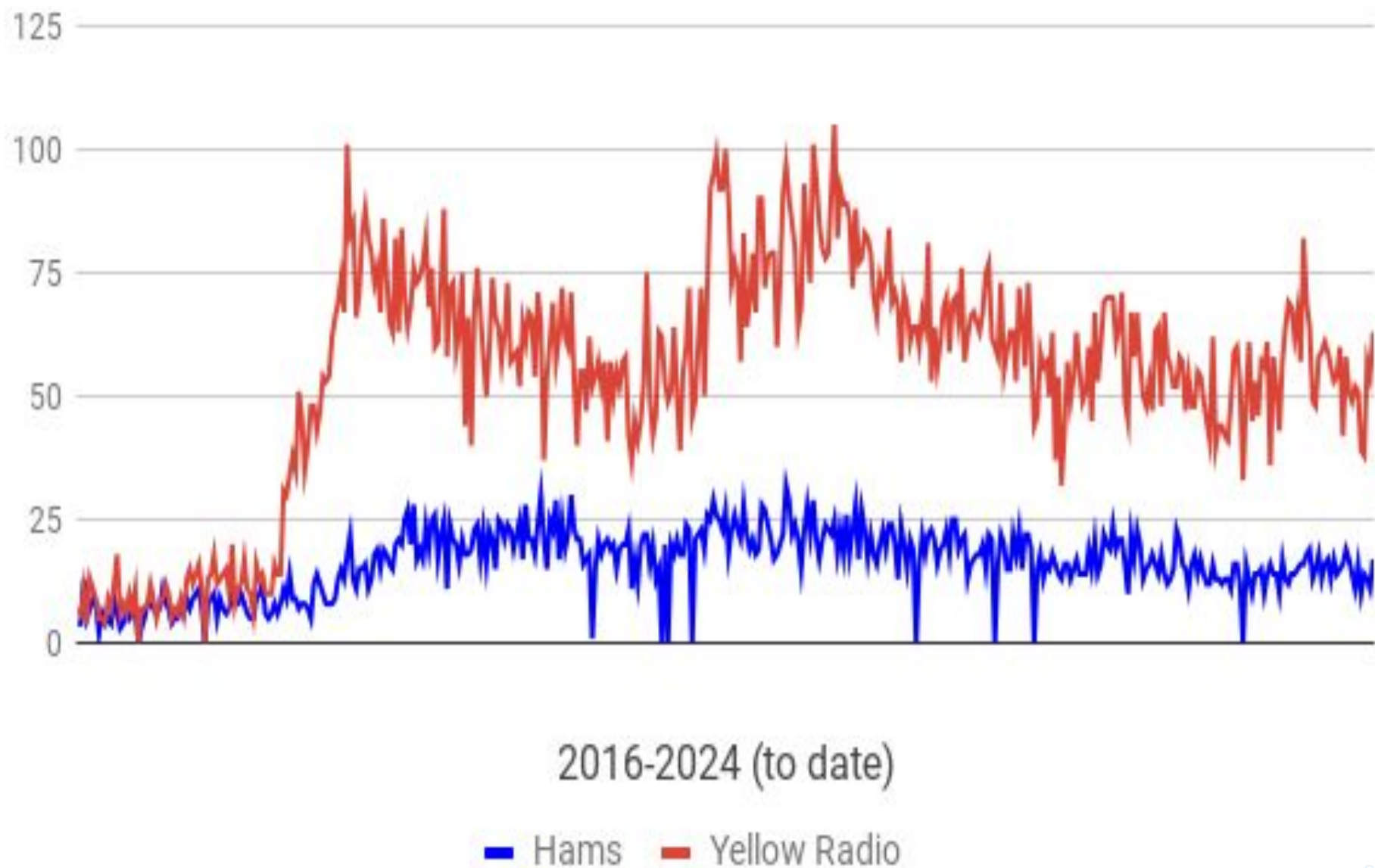
Sometimes make-believe the repeater is down and use simplex or use secondary or tertiary repeater

Weekly Ham Net (county 7 Th)

Also encourage hams to check-in on the county-wide emergency net
(hard to reach from our area)

ZNCs and Ham NC pass check-in info to coordinator via email for tracking (data from 2016)

Yellow Radio-Ham Net Check-ins

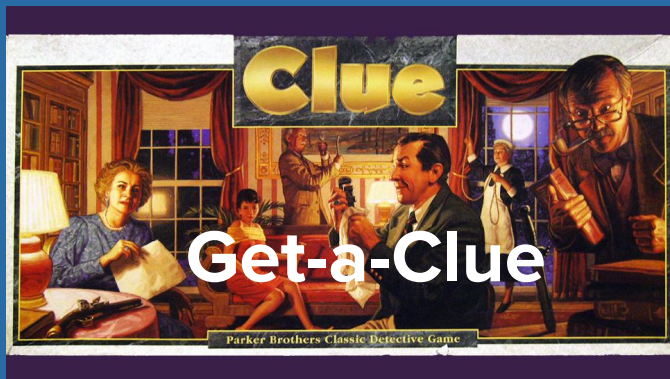


The Practice - Exercises



- Fill Gobag with donations (cans/\$s)
- Evacuate to NGS/AA
- GMRS at NGS/AA report to ZNC
- Zone Ham coordinates mobile ham pickup

- County-wide
- DCH and Evacuation
- GMRS at Evac sites
- Status report to Ham
- Ham to EOC
- Winlink summary



- “Clues” flow from EM to users
- Each Zone a different “crime”
- KQMI, Zone Channels, Repeater each a different source of “clues”
- GForm to demonstrate “solving”

Wrap-Up

Websites:

EVCNB

GMRS (Yellow Radio)

Ham