



## Unit 9

# NET Emergency Communications

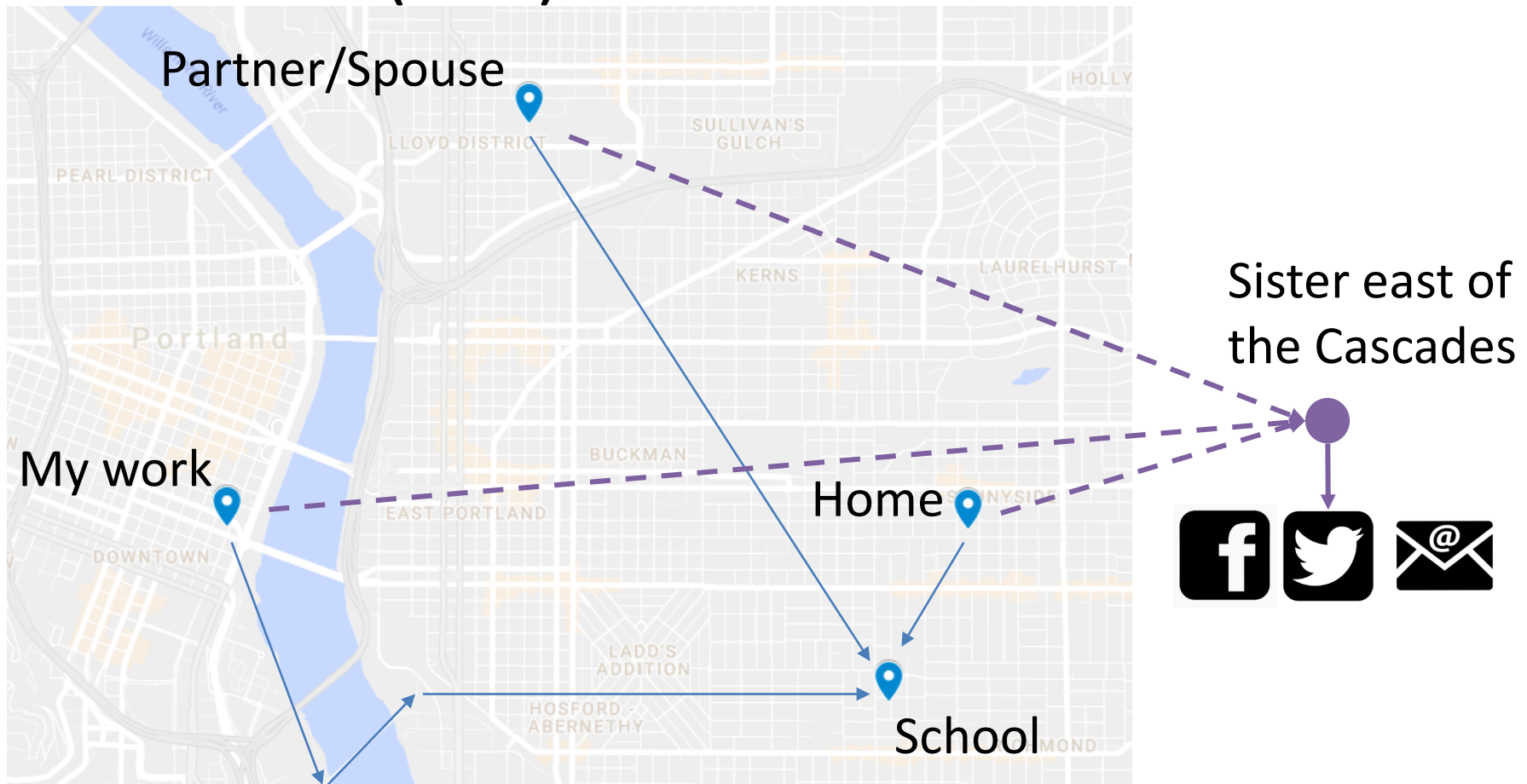
# Unit Objectives

- Understand the Big Picture of radio
- Communicate like a pro
- Practice using tactical radios
- Remember “The Must Knows” about using any radio

How do you get ready?

***First things first:  
Your family's communications plan.***

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SMS (text) out-of-state contact***



***First things first:  
Your family's communications plan.***

- SMS (text) out-of-state contact
- Carry a whistle  
One of the most effective wireless devices

# Oregon's North Coast

Sunday, December 2, 2007

The wind started blowing at 2:30pm  
It topped out at 129 mph in Bay City, OR



By nightfall, the damage was done.

- All electrical power lost.
- All landlines severed.
- All cell towers inoperable.
- All roads closed by fallen trees and debris.
- Highways US 30, 26, 101, OR 6 and 22 closed.

The North Coast was isolated and silent.





# The good news:

# Clatsop County radio operators were ready



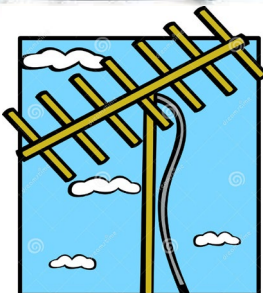
# Here's what volunteers and emergency responders did:

Messages, relayed radio-to-radio

Ham Radio



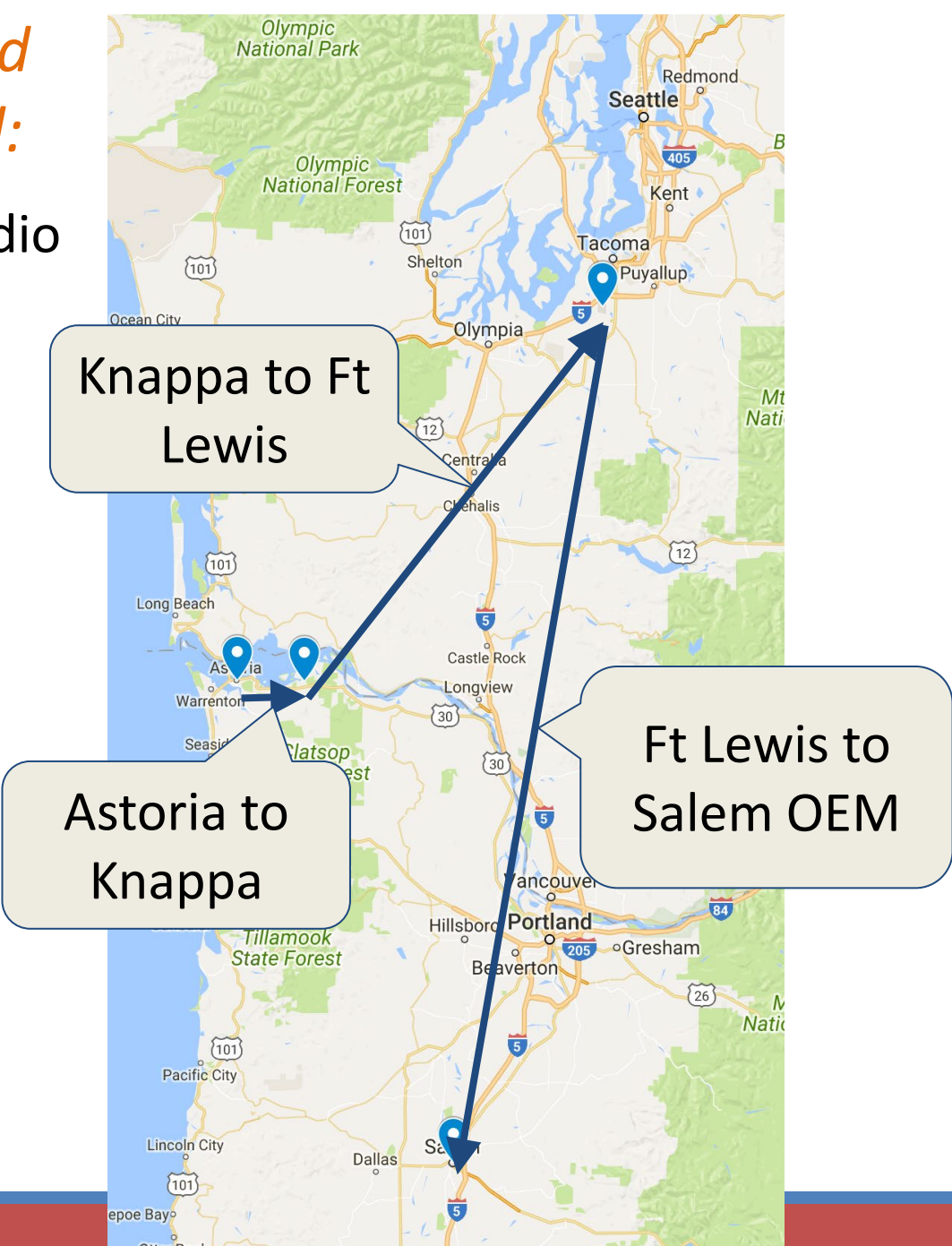
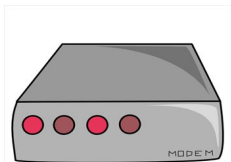
Antenna



Computer



Modem

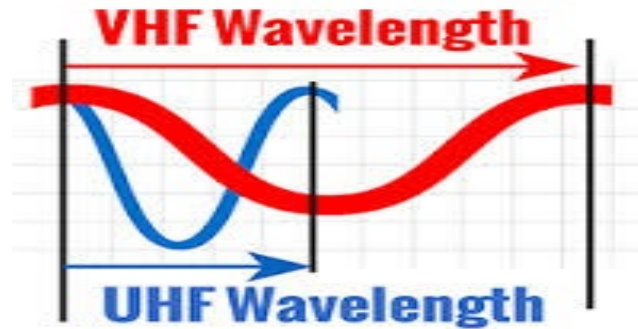


- Situation reports
- Health and welfare reports
- Medical consult for the delivery of a premature baby



**Everything was communicated  
over two-way radios**

# Understanding Your Us and Vs



## □ UHF – Ultra High Frequency

**All NETs – FRS/GMRS – ‘Tactical Radio’**

Penetrates walls better and works well for Search and Rescue.

## □ VHF – Very High Frequency

**Ham and AROs (Amateur Radio Operators)**

Longer distance. Team-to-team communication.

# NET Radio Types



	License	Range	Wavelength	Other
FRS Handheld	None required	¼-1 mile	UHF	22 Channels
GMRS Handheld/ Mobile/Base	Family (\$35 / 10 years)	½ - 5+ miles	UHF	22 Channels Ext antennas Repeaters
BEECN	Licensed to City of Portland	½ - 5+ miles	UHF	Radios are Owned by City
Amateur Handheld/Mobile/B ase	Individual – exam required (\$15 one-time exam fee + \$35 / 10 years)	½ mile – regional	HF VHF UHF	Many frequencies Repeaters Training/ARES

# Buying a FRS/GMRS Radio



**Motorola MR350R 35-Mile Range 22-Channel FRS/GMRS Two-Way Radio (Pair)**  
by Motorola  
★★★★☆ 677 customer reviews

List Price: \$79.99  
Price: **\$52.65 & FREE Shipping**  
You Save: \$27.34 (34%)

**In Stock.**  
Ships from and sold by Amazon.com  
**Want it Thursday, March 19?** Order **Shipping** at checkout. [Details](#)

- VibraCall vibration alert or 20 different
- 11 weather channels (7 NOAA) with
- 22 channels each with 121 privacy c



**Midland GXT1000VP4 36-Mile 50-Channel FRS/GMRS Two-Way Radio (Pair) (Black/Silver)**  
by Midland  
★★★★☆ 1,849 customer reviews | 225 answered questions

List Price: \$89.99  
Price: **\$59.25 & FREE Shipping. Details**  
You Save: \$30.74 (34%)

**In Stock.**  
Ships from and sold by Amazon.com. Gift-wrap available.  
**Want it Thursday, March 19?** Order within **7 hrs 52 mins** and choose **Two-Day** [Shipping](#) at checkout. [Details](#)



**Uniden Submersible 50 Mile FRS/GMRS Two-Way Radios with Charging Kit - Dark Grey (GMR5089-2CKHS)**  
by Uniden  
★★★★☆ 380 customer reviews | 32 answered questions

List Price: \$109.99  
Price: **\$74.68 & FREE Shipping. Details**  
You Save: \$35.31 (32%)

**In Stock.**  
Ships from and sold by Amazon.com. Gift-wrap available.  
**Want it Thursday, March 19?** Order within **19 hrs 51 mins** and choose **One-Day** [Shipping](#) at checkout. [Details](#)

Size: **50 Mile**



Motorola or Midland work well	AA battery option
Rechargeable batteries	22-channels is fine
Desktop charger	Hands-free earpiece/microphone

# Jargon Decoder

- FRS – Family Radio Service
- GMRS – General Mobile Radio Service
- ARO – Amateur Radio Operator
- ARES – Amateur Radio Emergency Service
- PBEM ECC – Portland Bureau of Emergency Management Emergency Coordination Center
- BEECN – Basic Earthquake Emergency Communication Node

# Local Teams

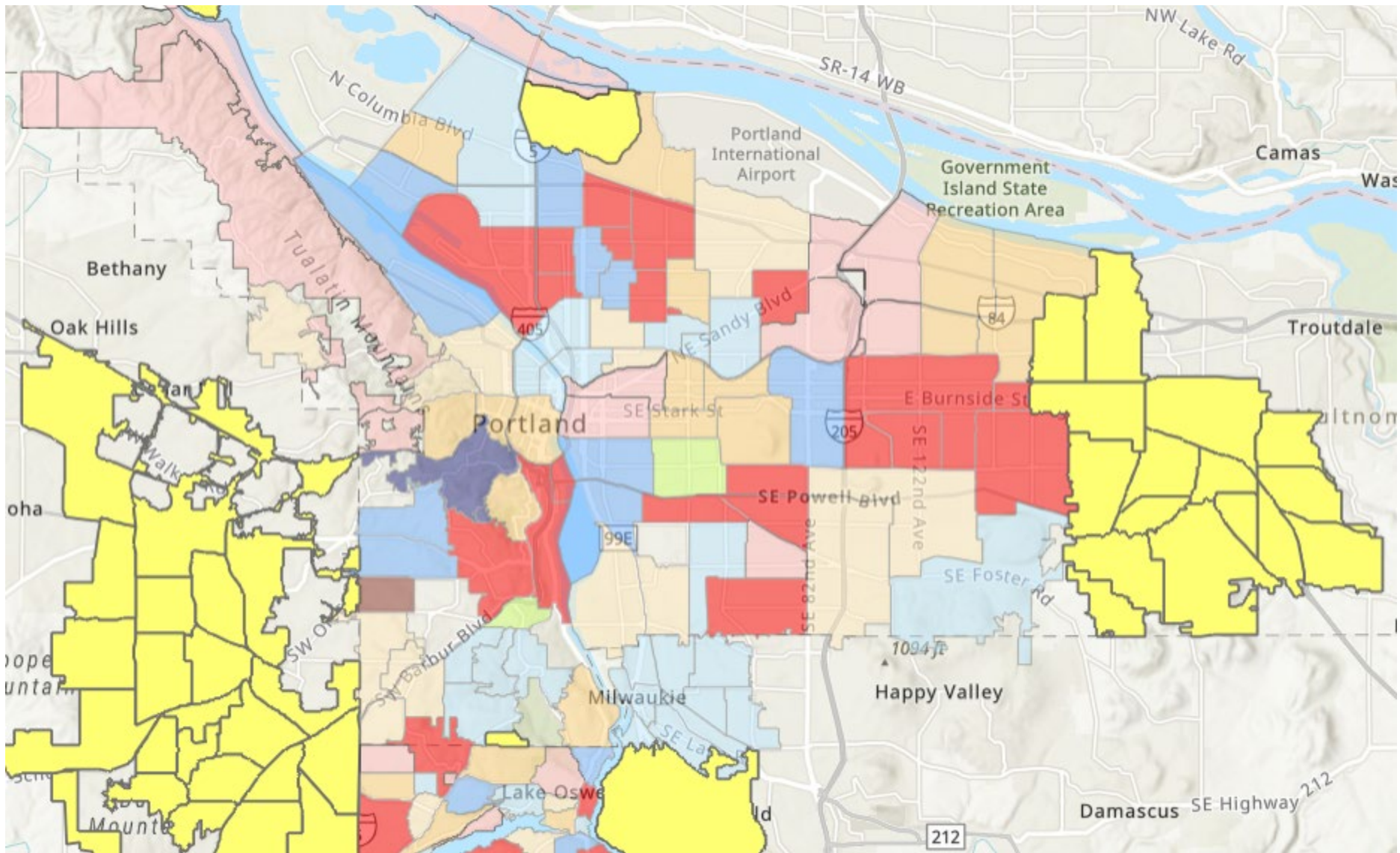
- Frequencies on team map

<https://pbem.link/net-team-map>

- Details in Operations Plans

<https://pbem.link/net-ops-plans>

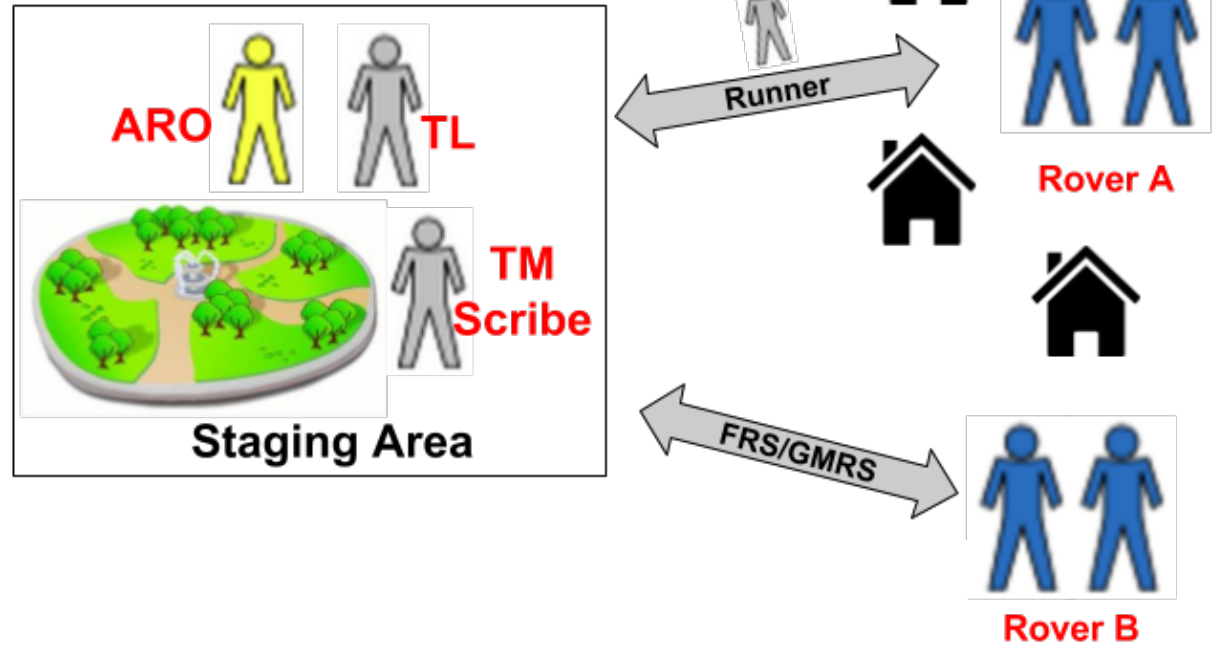




The Communications Section of a team's ops plan should detail:

- Who is responsible for what
- Which radios to use where
- Which channels to use on those radios
- How “local” radios link with other teams

# NET Comm in the Neighborhood



# NET Comm in the Neighborhood



# Preparation

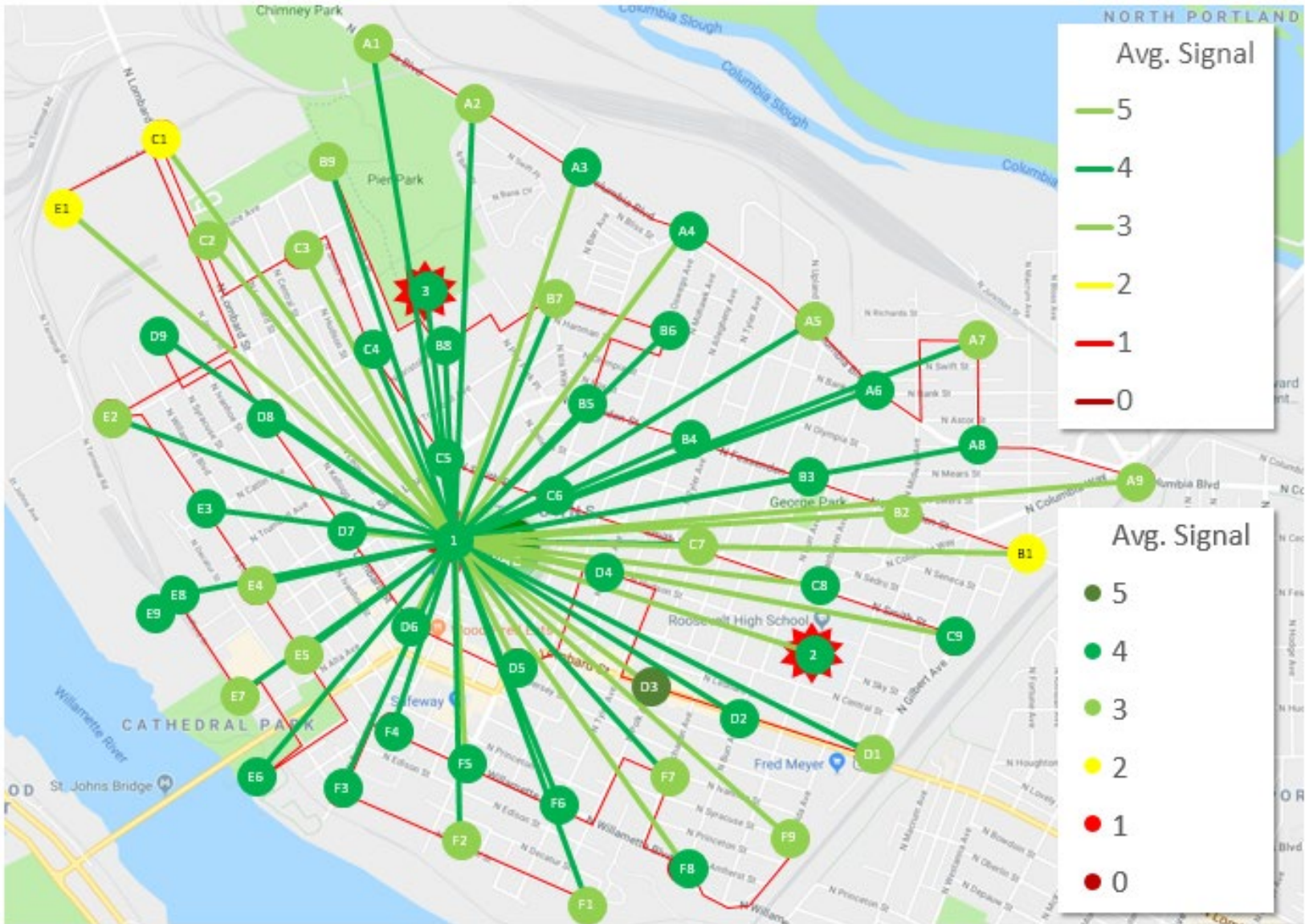
- Own your own radio
- Practice with your team
- Test and map radio range
  - From home and staging area
  - Between staging areas
- Identify and plan around weak areas
- Practice communication between FRS/GMRS, BEECN, and ham radios



# Deployment Example



# St. Johns Radio Map (26Nov18)



# Radio Talk

## Talk Like A Pro!

**Tactical  
Call Signs**

'Rover'  
'Team Leader'

**Use  
Phonetics  
and  
Prowords**

**Net Control**

Controls who has  
the baton

**Correct  
Calling  
Sequence**

Hey you!  
It's me!

**Echo It  
Back**  
For Accuracy



# Phonetic Alphabet

<b>Alfa</b>	<b>Hotel</b>	<b>Oscar</b>	<b>Victor</b>
<b>Bravo</b>	<b>India</b>	<b>Papa</b>	<b>Whiskey</b>
<b>Charlie</b>	<b>Juliet</b>	<b>Quebec</b>	<b>Xray</b>
<b>Delta</b>	<b>Kilo</b>	<b>Romeo</b>	<b>Yankee</b>
<b>Echo</b>	<b>Lima</b>	<b>Sierra</b>	<b>Zulu</b>
<b>Foxtrot</b>	<b>Mike</b>	<b>Tango</b>	
<b>Golf</b>	<b>November</b>	<b>Uniform</b>	

Official NATO ITU Phonetic Alphabet

[https://www.nato.int/nato\\_static\\_fl2014/assets/pdf/pdf\\_2018\\_01/20180111\\_nato-alphabet-sign-signal.pdf](https://www.nato.int/nato_static_fl2014/assets/pdf/pdf_2018_01/20180111_nato-alphabet-sign-signal.pdf)

# Exercise 1

## Phonetics

- Find a partner
- Decide who is sender and who is receiver
- Sender phonetically spells their last name
- Remember to “sky write” to slow down
- Receiver writes it down and echo it back phonetically
- Switch roles



# Pro(cedural) Words

Pro-word	Usage
I spell	The city is Portland, <b>I spell</b> Papa, Oscar, Romeo, Tango, Lima,...
Figures	We need <b>figures</b> 1, 5 blankets
Initials	<b>Initials</b> November Echo Tango members are cool
Mixed group	Please copy license plate <b>mixed group</b> Golf Echo Papa 3, 7, 9
Fill after Fill before Fill between	Please <b>fill between</b> “need” and “blankets”



NET Form 8: (ICS 213) GENERAL MESSAGE

1. Incident Name (Optional):		
2. To (Name and Position): <b>Kenton ITL</b>		
3. From (Name and Position): <b>Strike Team 1</b>		
4. Subject:*	5. Date:	6. Time:
<b>Priority: Area SitRep*</b>		
7. Message:		
<p><b>Team has found:</b></p> <p><b>9 Immediate</b></p> <p><b>23 Delayed</b></p> <p><b>1 seal named Bongo</b></p>		
8. Approved by: Name: _____ Signature: _____ Position/Title: _____		
9. Reply:		
<div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>*In emergency communications, SitRep means <u>S</u>ituation <u>R</u>eport</p> </div>		
10. Replied by: Name: _____ Position/Title: _____ Signature: _____		
ICS 213	Date/Time: _____	

Staging Radio Op	Team in the field
	Staging this is Strike Team 1. Over.
Rover 1 this is Staging, go ahead. Over.	
	I have a general message. Ready to copy? Over.
Ready to copy. Over.	
	Please copy general message. <b>To Kenton ITL. From Strike Team 1. Subject ....</b> Over.
I copied <b>To Kenton ITL. From Strike Team 1. Subject....</b> Correct? Over.	
	Affirmative. Strike Team 1 out.
Staging out.	

\* Specify the precedence of the message, which should be Emergency, Priority, Health & Welfare, or Routine, follow

## Exercise 2

# Radio Talk & Listening

- Everyone uses either a NET Form 8 or a blank sheet of paper.
- Practice listening to messages and writing them down as they are dictated.
- What do you notice about speed the message is given?

# Any Radio: The “Must Knows”



Change  
Batteries



Power



Volume



Select  
Channel



Microphone  
Push-To-Talk

# Changing Batteries

## Spares

always have 2 sets in  
your NET backpack

## Rechargeables

Charge up once a month  
or  
After every use





On/Off  
Change Volume

Power On/Off  
Volume Up/Down

Battery  
Level

Power  
Level



# Changing Channels

## Menu

-short push-  
Flashing channel

Channel  
Up/Down  
stop when set  
stops flashing

Channel  
number

Set to your team's  
channel number



# Transmitting/ Talking

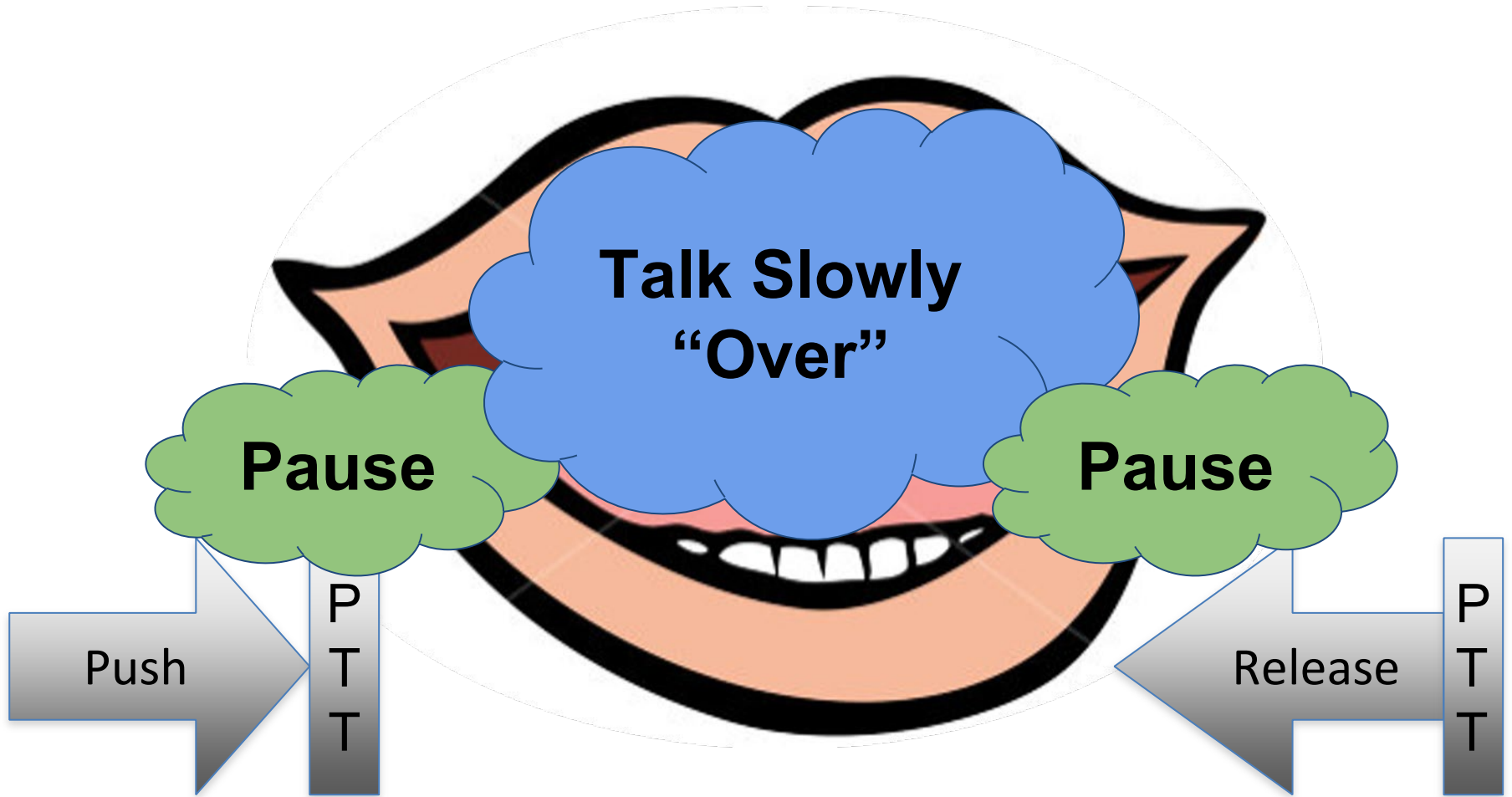
Push-To-Talk  
PTT

Push  
Pause  
Talk Slowly  
“Over”  
Pause  
Release



Microphone

# Push-To-Talk Sequence



# Exercise 3

## Hands-on Radio

### Exercise

# Things to Remember

- Before leaving, check all team on same channel and you can hear each other
- Write out what to say using phonetics
- Talk slowly – remember “sky writing”
- “Ready to copy?” (Script on handout)
- Net Control “directs the traffic”
- There will be interference. Move around. Keep trying.
- **Keep antenna vertical.**
- Mistakes are learning opportunities!

Everyone uses  
the PTT!

Go Have Fun!

# Exercise Debrief

- Success?
- What worked
- What didn't
- What would you do differently?

Practice makes better!  
Be sure your NET team has  
regular radio practices

# Unit Review

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