CCC Communications Refresher Radio Basics

Cupertino Citizens Corps

CERT, Block Leaders, Neighborhood Watch

March 30, 2022
Jim Oberhofer

Topics for tonight

1. Welcome

2. Volunteer Overview

3. CCC Radio Overview

4. Best Practices

5. Radio Operations Basics

6. Field references

7. What's next?

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Why volunteer?

- In the United States, volunteers hold up the foundation of civil society. They _help their neighbors_, _serve their communities_, and _provide their expertise_.   No matter what kind of volunteer work you choose to do, you are contributing in an invaluable way.

- In Cupertino, volunteers are a valuable resource to a community affected by a disaster who _bring their experience and expertise_ to bear on whatever emergency we face.

- Volunteers, with the appropriate training and qualifications, can supplement the capabilities of local government and other agencies, thereby helping to _speed the recovery_ after an emergency or disaster.

Cupertino volunteer organizations

- **Block Leader** – A neighborhood engagement program; helps neighbors get to know their neighbors and organize activities so neighbors can more easily communicate.

- **Neighborhood Watch** – A crime prevention program; involves neighbors getting to know each other and working together in a program of mutual assistance.

- **CERT** – Prepares residents for and respond to life-threatening events in their community.

- **MRC** – a specialized function within CERT, uses volunteer expertise to promote public health throughout the year as well during times of emergency.

- **CARES** – FCC-licensed amateur radio operators who plan, prepare, and respond to emergencies with backup and emergency communications for our community, city, and served agencies.

During an emergency, what's the plan?

1. Take care of yourself
    *   Determine your condition and assess your immediate safety.

2. Take care of your family
    *   Determine the condition of your family; apply first aid if necessary.
    *   Determine the structural soundness of your home; get out if necessary.

3. Take care of your neighbors
    *   Activate the neighborhood emergency plan (if you have one).
    *   Is everyone ok? Does anyone need help?
    *   Can your neighborhood handle the local problems?
    *   If not, what help do you need?
    *   And, can you call for help?

During an emergency, what's the plan?

4. Take care of the community
   - No matter where or how you choose to volunteer, during an emergency, there are a few things with which the City needs your help.

Emergency Tasks	Neighborhood Watch	Block Leader	Citizen Corps
Assess your neighborhood	✓	✓	✓
Report your neighborhood status	✓	✓	✓
Request additional aid	✓	✓	✓
Receive and share city information	✓	✓	✓
Render local aid		✓	✓
ARK activations			✓
Light Search and Rescue			✓
Fire Suppression			✓
Cribbing			✓

The three "R's"…
Its all about communications

- **Report…**
  What is the status of your neighborhood?
  - Injuries, damage, utility problems, fires, power outages

- **Request…**
  What help do you need?
  - Medical assistance
  - Road is blocked (trees, power poles, etc.)
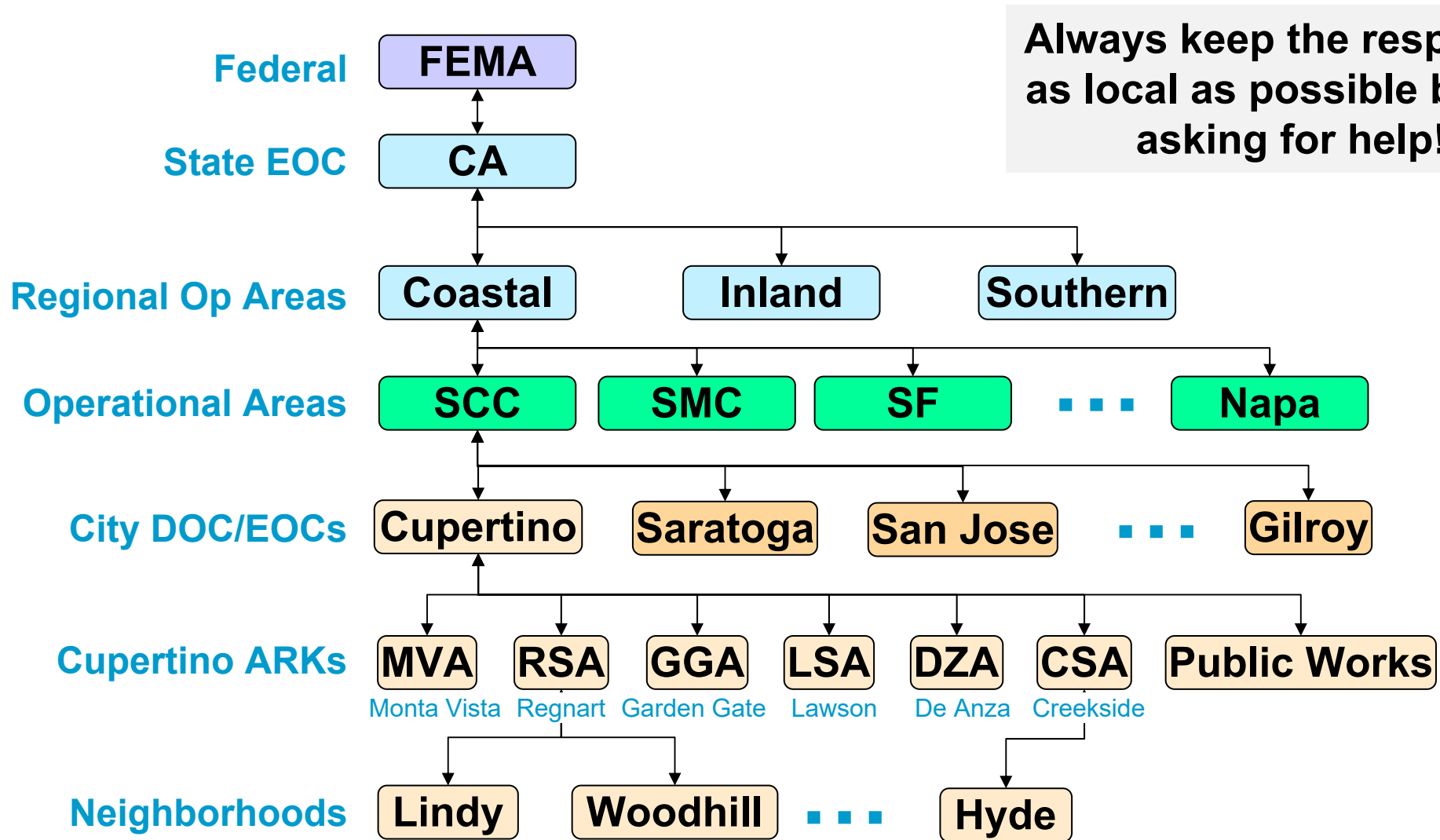 - People are trapped, etc.

- **Receive…**
  Receive information to share about the emergency:
  - Current status of the emergency
  - Safety announcements
  - Evacuation status, instructions
  - Information about open shelters, or where to go for help
  - Requests to help out other neighborhoods or ARKs

Where does help come from?
Emergency information flow

Federal — FEMA

State EOC — CA

Regional Op Areas — Coastal · Inland · Southern

Operational Areas — SCC · SMC · SF · · · Napa

City DOC/EOCs — Cupertino · Saratoga · San Jose · · · Gilroy

Cupertino ARKs — MVA · RSA · GGA · LSA · DZA · CSA · Public Works
Monta Vista · Regnart · Garden Gate · Lawson · De Anza · Creekside

Neighborhoods — Lindy · Woodhill · · · Hyde

Always keep the response as local as possible before asking for help!

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In general, ways to communicate

1. **Telephone/Cell phone –** requires commercial phone system to be working

2. **Texting –** requires the cell phone infrastructure to be working

3. **Email –** requires the internet to be working

4. *Sneaker-net* – personally carrying information from one place to another

5. **Two-way radio** – a radio that can both transmit and receive a radio message

Two-way radio

Why

- Works when other communications methods fail
- Doesn't require the internet, telephone infrastructure, or commercial power
- Great for back-and-forth information exchanges
- Small, fairly inexpensive

When not to use

- If other communications methods are available, (internet, phone system), then use them
- If covering a small area, just walk there

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Typical radios used by volunteers

FRS (Family Radio Service)

- Inexpensive
- No FCC license
- Very low power (2 watts)
- Fixed antenna
- Limited distance

GMRS (General Mobile Radio Service)

- Slightly more expensive
- FCC License required
  - o No test, currently $70
  - o License is good for 10 years
  - o One license covers the entire family
- Medium power (5-50 watts)
- Detachable antennas
- Greater distance

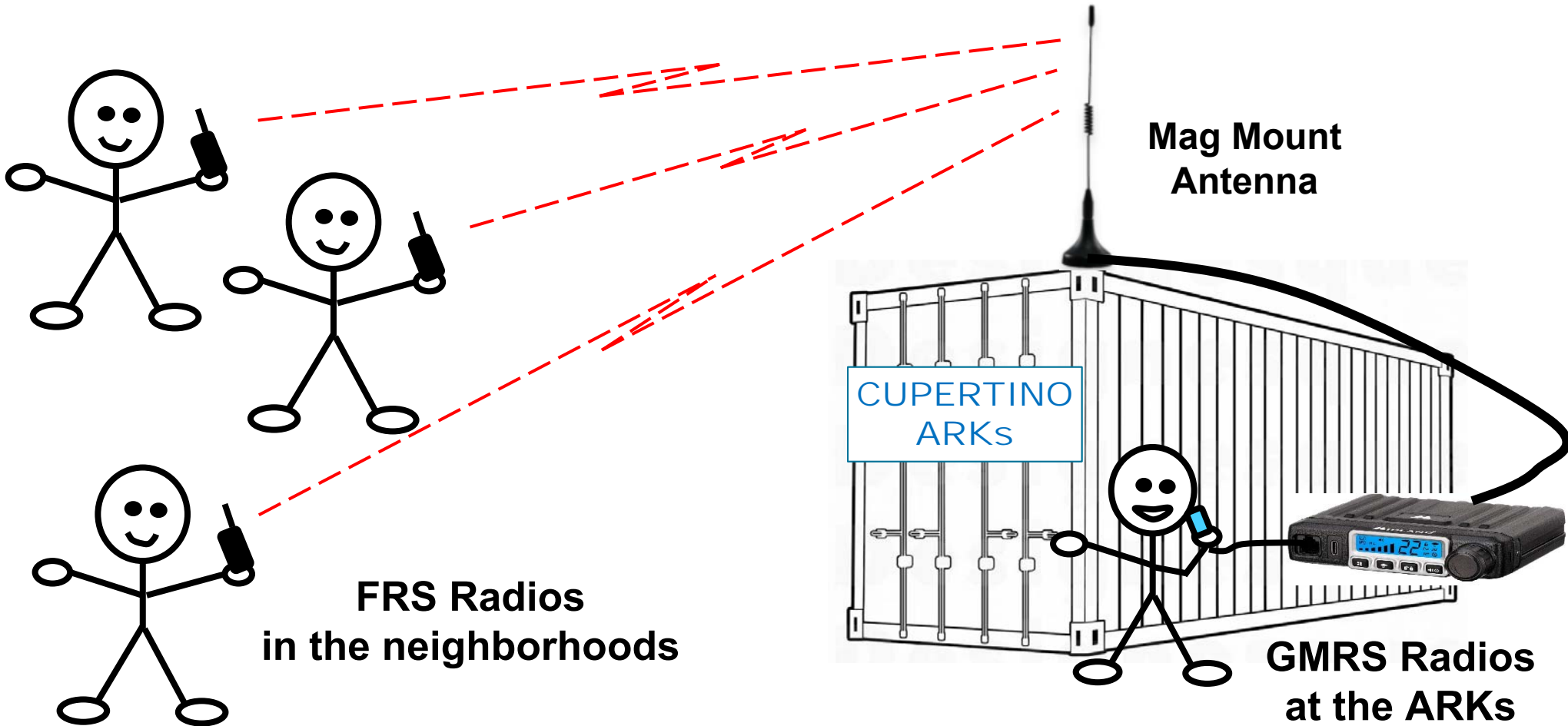# Typical radios used by volunteers

Ham Radio (Amateur Radio Service)

- More expensive

- License required

  o Knowledge test
    – most people pass with a *ham-cram* class

  o License is good for 10 years

- Medium-high power (5-50+ watts)

- Detachable antennas

- Much better infrastructure

- Santa Clara County Emergency Communications

  o Robust training opportunities
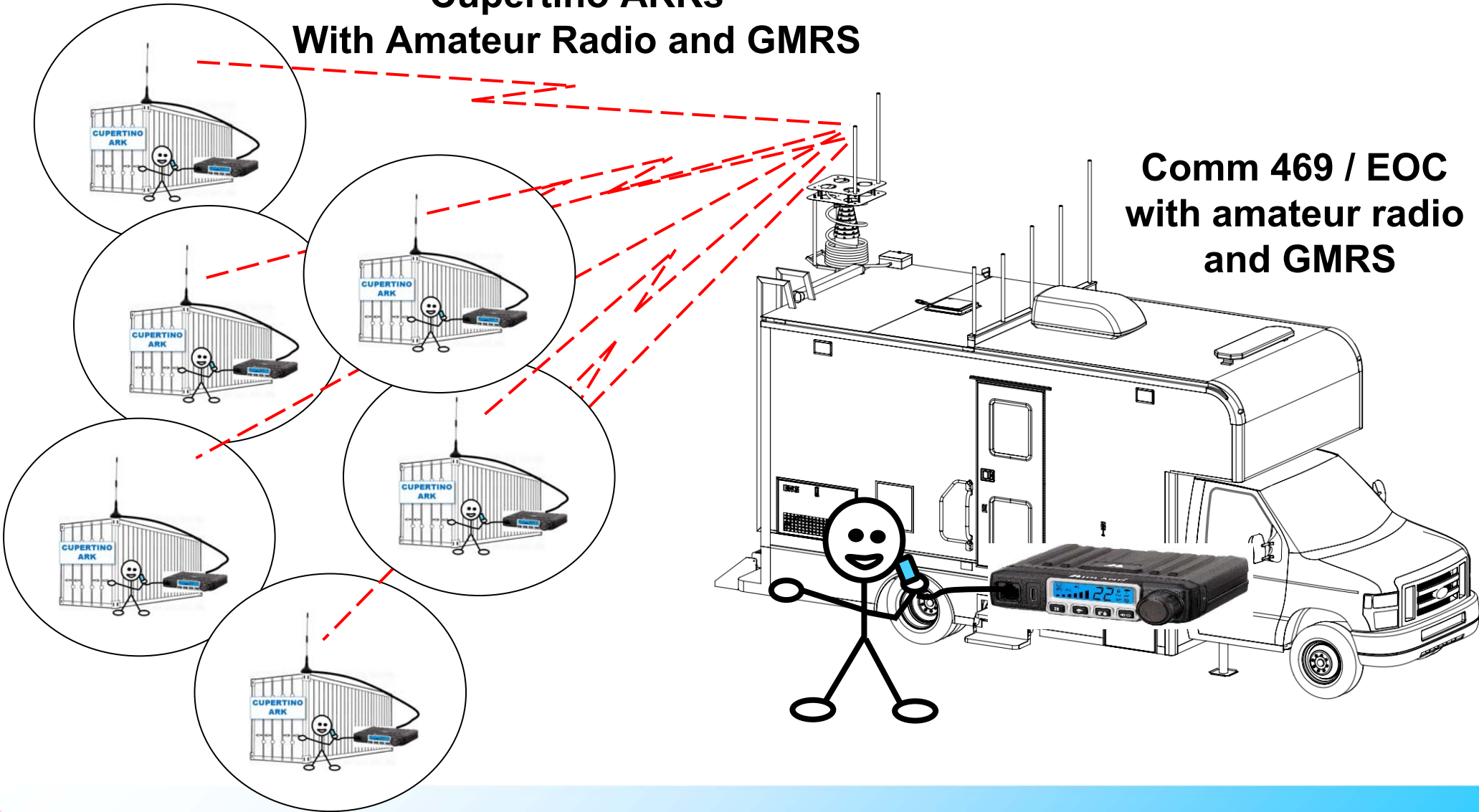
How we will use FRS and GMRS
ARKs and Field Teams

Mag Mount
Antenna

CUPERTINO
ARKs

FRS Radios
in the neighborhoods

GMRS Radios
at the ARKs

How we will use GMRS & Amateur Radio
ARKs and the EOC

**Cupertino ARKs
With Amateur Radio and GMRS**

**Comm 469 / EOC
with amateur radio
and GMRS**

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Radio Best Practices

A radio is not a telephone

- On a telephone conference call, or FaceTime or Zoom, everyone can hear everyone talking at the same time.

- There is no Push-to-Talk (PTT) button on your phone.

- While using a radio, one person talks and everyone else listens.

- When you press your PTT, you can't hear anyone else.

- If two people press their PTT buttons at the same time, a "double" occurs and many if not all listeners don't hear anything that they can understand.

Radio Best Practices

Before Using

- Agree on a channel as your main channel… ***Done!***

- Agree on at least one backup channel … ***Done!***

- Talk with nearby CERTs to avoid channel conflicts … ***Done!***

- Set channel/frequency info, then lock the keypad

- Read the manual cover-to-cover at least once

- Keep the radio, the manual and a set of fresh batteries in your go kit

Cupertino's FRS/GMRS Channel Plan

Function	Ch/Tone	Notes
Monta Vista ARK	1 / 21 (136.5Hz)	2w, Zone 1
Regnart ARK	2 / 22 (141.3Hz)	2w, Zone 2
Garden Gate ARK	3 / 23 (146.2Hz)	2w, Zone 3
Lawson ARK	4 / 24 (151.4Hz)	2w, Zone 4
DeAnza ARK	5 / 25 (156.7Hz)	2w, Zone 5
Creekside ARK	6 / 26 (162.2Hz)	2w, Zone 6
EOC Trailer	7 / 27 (167.9Hz)	2w, Trailer
CERT TAC 8	8 / 0	0.5w
CERT TAC 9	9 / 0	0.5w
CERT TAC 10	10 / 0	0.5w
CERT TAC 11	11 / 0	0.5w
CERT TAC 12	12 / 0	0.5w
CERT TAC 13	13 / 0	0.5w
CERT TAC 14	14 / 0	0.5w
Comm 469 TAC 15	15 / 35 (225.7Hz)	50w, ICP, EOC
CUP CERT/GMRS	20R / 31 (192.8Hz)	50w, Repeater
SJ CERT/GMRS	22R / 16 (114.8Hz)	50w, Repeater

Radio Best Practices

Using the Radio

1. If you do not hear anyone else on the channel, then keep listening and also tune to *Radio Cupertino 1670AM* for any instructions.

2. PTT = Push to Talk, not Push to Think.
   - o   Think through your message before pressing PTT
   - o   Keep your message short and brief

3. Listen first, wait for a pause, then press PTT.

4. Take a breath and pause before talking.

5. Speak slowly and clearly.

6. Keep your messages as short and succinct as possible.

7. Talk in plain English… no 10-codes (10-4,10-20).

Radio Best Practices

Using the Radio (continued)

- Don't shout. If other station cannot hear you, move to another location.

- When you're done talking, <u>release the PTT</u>.

- Once you release the PTT, wait.

- Listen, listen, listen since there can only be one person talking at a time.

- Do not pass any sensitive information like victim or patient names over the radio unless asked for the name; these are public airwaves.

Radio Operation Basics

- A **Radio Net is** a moderated conference call conducted over two-way *radio* on a specific FRS channel.

- Cupertino uses Radio Nets during emergencies for relaying messages, receiving status reports, and transmitting important information to those on the net.

- **Net Control Operator** – the person who runs the net.

- At some point, you may:

  1. Check in to the net
  2. Transmit status reports or request assistance
  3. Listen for, copy down, and pass on information to your neighborhood
  4. Check out of the net when you are all done

Radio Operation Basics

Making Contact

- Listen first, press & hold the PTT, take a breath, pass your message, and then release the PTT
  - *"Regnart ARK, this is Sally at Lindy Lane"*
  - *"Net Control, this is Jim at Woodhill Court"*
- Use tactical names, not personal names
  - *"Net Control, this is Lindy Lane with information"*
  - *"Net Control, this is Woodhill with a neighborhood report"*
- When making initial call, key words can help
  - *"Net Control, this is Three Oaks with an emergency message"*
- If the other party doesn't answer, wait and try again
  - They may be busy
  - Frees up the channel for others

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Radio Operation Basics

1. **CHECK IN** to the local ARK Radio Net if you are at home and have a radio, or if you are assigned a task at the ARK. This does a few things:

    i.   Lets the ARK's Net Control know who is on the Net

    ii. Confirms you have your radio set correctly with the correct Channel and Tone for your ARK.

If you are…	You would say…
Creekside ARK	This is Sam, Net Control at Creekside ARK. Any Zone 6 stations, check in now and say your name and location.
Bob	Creekside ARK, this is Bob at Bollinger and Miller, checking in.
Creekside ARK	OK Bob, I have you checked in.
Angie	Creekside ARK, this is Angie at Hyde neighborhood, checking in.
Creekside ARK	Hi Angie, acknowledged.

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Radio Operation Basics

2. ***CHECK OUT*** of the local ARK Radio Net when you need to leave the net or are back at the ARK. This does a few things:

   i.   Lets the ARK's Net Control know you are leaving the Net

   ii. Checking out does not mean that you may be done with your participation, it just that Net Control will no longer look for you on the Net.

If you are…	You would say…
Bob	Creekside ARK, this is Bob, I need to leave the net, checking out.
Creekside ARK	OK Bob, acknowledged.
Angie	Creekside ARK, this is Angie back at the ARK. I am checking out.
Creekside ARK	Hi Angie, acknowledged.

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Radio Operation Basics

Message Passing

1. Listen: Make sure the frequency is clear or Net Control is not talking to someone else whom you might not hear.

2. Tell the ARK Net Control Operator that you have a message to pass. The Net Control Operator will tell you when to pass the message.

3. To pass a very short, simple messages, you send the entire message, and the receiving station may simply say "copied" or "OK" or may read the message back to you.

4. For longer messages, say the message in logical phrases of about 4 to 7 word groups, without repetitions.

5. Talk slowly. The receiving station needs to write this message down!

6. Say **Break** when pausing and release the PTT key while you wait for the receiving station to write down your message and acknowledge you.

7. Always release the PTT key if you stop talking.

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Radio Operation Basics

Message Passing Example

If you are…	You would say…
Team 3	Creekside ARK, this is **TEAM 3** with a message for you.
Creekside ARK	OK Team 3, stand by… Ok, what is your message?
Team 3	Creekside ARK, A large tree is blocking the road… Break.
Creekside ARK	OK, continue
Team 3	… in front of 1236 Bollinger Road… Break
Creekside ARK	OK, continue
Team 3	… west of Miller Avenue. (period) Break.
Creekside ARK	OK, continue
Team 3	Traffic is blocked in both directions. End of Message.
Creekside ARK	OK Team 3, I acknowledge your message.

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CCC Field Comm Handbook
your new best friend!

Includes

1. Contact Information

2. Radio channels, frequencies

3. Radio operation basics

4. Operating on the CERT Radio Net

5. Passing message basics

6. CCC FRS & GMRS Radios

7. Phonetic Alphabet

8. Modified Mercalli Intensity Scale

Where's the book?!
bit.ly/CCommHandbook

**Cupertino Citizen Corps
Field Communications
Handbook**

March 2022

CUPERTINO
OFFICE OF EMERGENCY SERVICES

CUPERTINO
citizen corps

Add this to your Go-Kit

1. Current Citizen Corps ID
2. Protective clothing
3. Safety Vest
4. Sturdy closed-toe shoes
5. Hard hat
6. Goggles
7. N95 mask
8. Whistle
9. Leather gloves
10. Personal first aid kit
11. Water and food
12. Sun block as needed

12. Clipboard
13. Pens (2)
14. Pad of 8.5" x 11" paper
15. ICS Forms: 211, 213, 214
16. Cupertino Forms: COES 105, 106
17. Flashlight and Batteries
18. AM Radio (portable)
19. FRS/GMRS Radio
20. Tape (i.e.: blue painters tape)
21. ARK Activation Handbook
22. ***CCC Field Communications Handbook***
23. Whatever else you may need

What's next?

1. 12-March, Sat, ARK-to-EOC GMRS Radio test, 1 hour… ***DONE!***

2. 17-March, Thu, Comm orientation, Zoom, 1 hour… ***DONE!***

3. 19 March, Sat, FRS radio hands-on session, Monta Vista ARK… ***DONE!***

4. 30-March, Wed, 7:00pm, Communications orientation, Zoom, 1 hour

5. 2 April, Sat, 10:00am, FRS radio hands-on session, City Hall Parking Lot

6. 16-April, Sat, 7:30am, Big Bunny 5K, Wilson Park. See announcement

7. 23-April, Sat, 9:00am, Field to EOC GMRS/FRS test, all ARKs, and from home

What's next?... this weekend

1. Come to the FRS radio hands-on session this Saturday:

   - Hands-on radio refresher

   - Bring your FRS radio with you if you own one

   - Check or update your radio your channels and tones settings

   - Do a radio check to verify it all works

   - Mini-practice *get-on-the-air* session

   - **Pick up your copy of the…**

     1. ***CCC Field Communications Handbook***
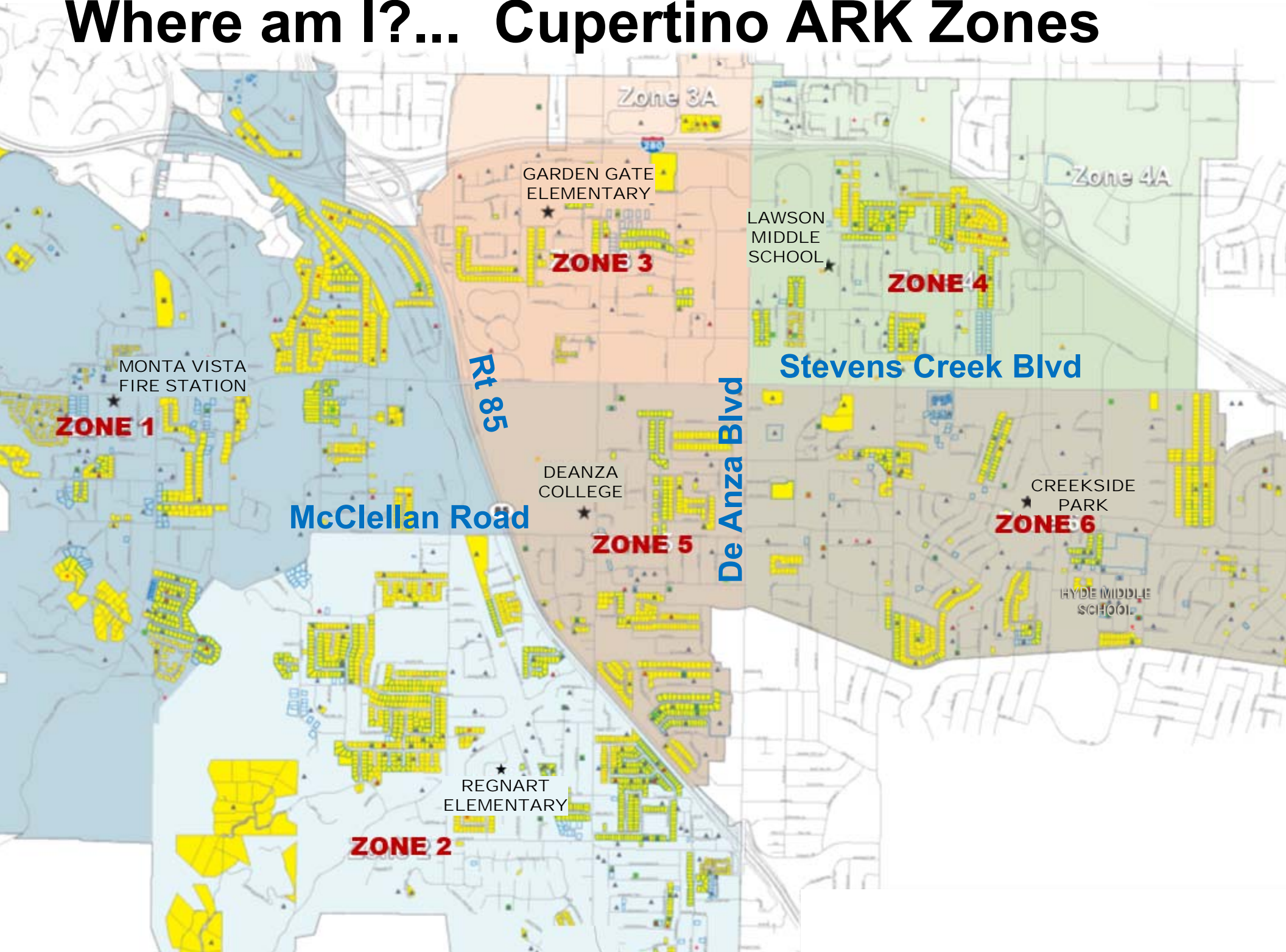   2. ***Cupertino ARK Activation Handbook***

What's next?... next month
23-April CCC Communications Test

1. This is a test of field to EOC message passing
2. From the ARKs,
   - Set up GMRS to talk to all CERT/BL/NW members in the ARK area.
3. From your home,
   - 10:00am: Turn on your FRS radio, select the channel for your local ARK zone.
   - Step outside your house for best radio reception
   - Listen for your ARK's Net Control to open the net and ask for check-ins. When the channel is clear, go ahead and check in. Include your name and location (street or neighborhood name).
   - Listen for other users on the channel.
   - Listen for instructions from your Net Control.
   - Before you go, check out of your net.

Where am I?... Cupertino ARK Zones

Thank you!

Any Questions?

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Thank you!

If you have questions, comments, or feedback about this training, please email them Ken or myself at …
Ken: kennethe@cupertino.org
Jim: jimo@cupertino.org

Please join us this Saturday 2 April at City Hall Parking Lot for our FRS Hands-on session

Finally, easy links to this material

CCC Comm Handbook…   bit.ly/CCommHandbook
These slides…   bit.ly/CCommSlides

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