2018 Earthquake!
Drill Prep

December 6, 2018
Jim Oberhofer KN6PE

Agenda

1. Drill introduction – what's the plan?

2. Our 15-December scenario

3. Drill Objectives

4. PSAs, ISAs

5. ARK Level 2 Activations
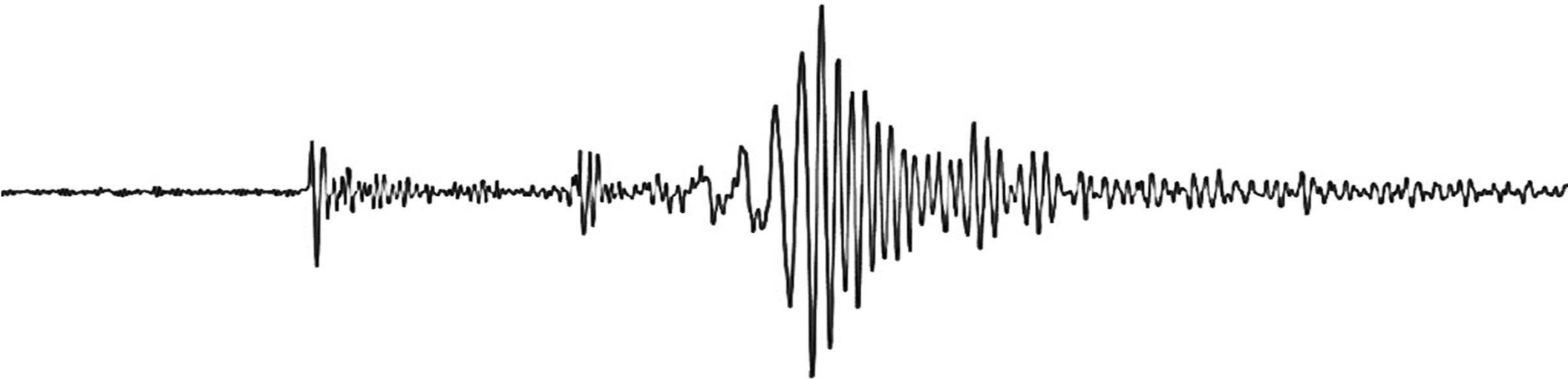
6. Alt911 Message Handling

2018 Earthquake!

*** THIS IS DRILL TRAFFIC ***

The Bay Area was rocked by a 7.9 earthquake on the San Andreas Fault. Wide-spread damage is reported. Power and communications are out throughout the area.

Who are the players?
Earthquake Scenario

County Fire	• Responds to fires within their jurisdiction • Responds to medical emergencies
County Sheriff	• Maintains law and order • Handles traffic control, road closures, evacuations
Cupertino Public Works	• Is the Response Organization within the city • Responsible for city facility inspections, clearing debris from roads, traffic signal restoration, restoring City infrastructure services
Cupertino EOC	• Activates the EOC, sets the strategy for stabilization, recovery • Provides community information • Makes decisions that serve the best interest of its residents • Supports the response with material, logistical support, and resources as necessary
Citizen Corp	• Provides CERT, medical, and Communications resources as needed to support the City and its served agencies

CARES Response – what we generally do
Earthquake Scenario

1. Preliminary Safety Assessment	CARES collects and reports information about the state of the city immediately after a city-wide emergency or disaster occurred.
2. Field Response	CARES members respond and operate at a field assignment during a declared emergency.
3. Infrastructure Safety Assessment	CARES observes and reports on selected Cupertino critical facilities that are deemed to be important to the City or other Agencies.
4. EOC Support	• Staff the Comm Van / Radio Room • Provide situation roll-up of field reports

CARES Response – what we will do
Earthquake Scenario

1. Preliminary Safety Assessment	CARES collects and reports information about the state of the city immediately after a city-wide emergency or disaster occurred.
2. Field Response	CARES members respond and operate at a field assignment during a declared emergency. • ARK communications support • 9-1-1 message passing • Shelter communications
3. Infrastructure Safety Assessment	CARES observes and reports on specific Cupertino critical facilities that are deemed to be important to the City or other Agencies.
4. EOC Support	• Staff the Comm Van / Radio Room • Provide situation roll-up of field reports

2018 Earthquake Exercise, Introduction
*** THIS IS DRILL TRAFFIC ***

Scenario

- A major earthquake occurs along the San Andreas Fault, rupturing approximately 300 miles of the northern segment of the fault, from the San Juan Bautista area in the south to Cape Mendocino in the north.

- The epicenter is west of the Golden Gate Bridge. The main shock lasts 45 to 60 seconds.

- Shaking is felt in Oregon to the north, Los Angeles to the south, and Nevada to the east.

- The estimated magnitude is M 7.9 with reports of (Modified Mercalli Intensity, MMI VIII) severe to violent shaking with heavy damage in widespread areas of the most severely affected counties.

2018 Earthquake Exercise, Introduction
*** THIS IS DRILL TRAFFIC ***

And in Cupertino,

1. Power is out across most of the City.

2. Several city roads are blocked from fallen trees or power poles.

3. Several residential house-fires.

4. Severe damage to City Hall.

5. Landslides along Regnart Road.

6. Chemical leaks from chlorine tanks falling over at De Anza College and Cupertino High School swimming pools.

7. Observed Stevens Dam face cracks after reservoir water was ejected out and eroded some of the northern face.

8. About 70% of Cupertino households are without potable water.

9. Unknown reports of injuries or fatalities.

10. City employees and volunteers are focusing on personal and family safety.

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2018 Earthquake Exercise, Introduction
*** THIS IS DRILL TRAFFIC ***

What's going right…

11. Radio Cupertino 1670 is still on the air (different side of the building).

12. City Manager issued a proclamation of an emergency within 2 hours.

2018 Earthquake Exercise, Introduction
December 15, 2018

Objectives

1. Exercise radio operations on all designated nets.

2. Exercise the ARK activation process to Activation Level 2.

3. Exercise CCC (CARES and CERT) ISA team deployment.

4. Test the End to End Alt911 communications process.

5. Exercise an activation of the Cupertino Alternate EOC.

6. Test resource management over two operational periods.

7. Test initial Demob plan with a focus on forms completeness.

2018 Earthquake Exercise, Introduction
December 15, 2018

Concept

This will be a full-scale communications exercise based on the Bay Area UASI Yellow Command 2018 FSE earthquake scenario.

1. The drill will occur over an 8-hour period on Saturday Dec 15, 2018.

2. The Alternate Cupertino EOC will be activated, but not staffed.

3. Field responders will be deployed to all ARKs; activate to Activation Level 2.

4. Field responders will be deployed to perform the ISA. Communicate results to San Jose Water Company and Cupertino Sanitary District.

5. Staffing requirements will be set to accommodate a real-world deployment.

6. CERT is integral to a response and participates in partnership with CARES.

7. Field message traffic will be based on time-triggered scripted messages and simulated interactions with the outside world.

8. Apply a first draft Demob process focusing on event documentation completeness

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Weather Conditions
Earthquake Scenario

Weather conditions are current. The drill will not be postponed in the event of rain.

Obj #1: Exercise Radio Operations on all nets

Standard Procedures

1. Activate the Resource Net

   - Resource Net will be staffed for the entire exercise.

2. Change to the Preliminary Safety Assessment (PSA) process

   - Collect *Modified Mercalli Intensity Scale* (Mike-Mike) Reports as part of the PSA passed data
   - Formalize PSA data collection and delivery by spreadsheet and packet radio.

3. Activate the Message Net

4. Standard Health & Welfare checks

PSA: Mike-Mike Reports

Obj #1: Exercise Radio Ops on all nets

1. The Modified Mercalli Intensity scale is a seismic intensity scale used for measuring the intensity and effects of an earthquake.

2. MMI (Mike-Mike) report will be used by the City as an initial, **qualitative** check of the earthquake's impact.

3. The PSA will still provide the initial **quantitative** report of the earthquake's impact.

4. The Mike-Mike value will be passed as the last item of your PSA report. If you forget to offer it, you will be asked.

8	Modified Mercalli Intensity Scale (MMI)	
MMI value	**Short description**	**Full description**
1	Not mapped	Not felt.
2	Not mapped	Felt by people sitting or on upper floors of buildings.
3	Not mapped	Felt by almost all indoors. Hanging objects swing. Vibration like passing of light trucks. May not be recognized as an earthquake.
4	Not mapped	Vibration felt like passing of heavy trucks. Stopped cars rock. Hanging objects swing. Windows, dishes, doors rattle. Glasses clink. In the upper range of IV, wooden walls and frames creak.
5	Light	Felt outdoors. Sleepers wakened. Liquids disturbed, some spilled. Small unstable objects displaced or upset. Doors swing. Pictures move. Pendulum clocks stop.
6	Moderate	Felt by all. People walk unsteadily. Many frightened. Windows crack. Dishes, glassware, knickknacks, and books fall off shelves. Pictures off walls. Furniture moved or overturned. Weak plaster, adobe buildings, and some poorly built masonry buildings cracked. Trees and bushes shake visibly.
7	Strong	Difficult to stand or walk. Noticed by drivers of cars. Furniture broken. Damage to poorly built masonry buildings. Weak chimneys broken at roof line. Fall of plaster, loose bricks, stones, tiles, cornices, unbraced parapets and porches. Some cracks in better masonry buildings. Waves on ponds.
8	Very strong	Steering of cars affected. Extensive damage to unreinforced masonry buildings, including partial collapse. Fall of some masonry walls. Twisting, falling of chimneys and monuments. Wood-frame houses moved on foundations if not bolted; loose partition walls thrown out. Tree branches broken.
9	Violent	General panic. Damage to masonry buildings ranges from collapse to serious damage unless modern design. Wood-frame structures rack, and, if not bolted, shifted off foundations. Underground pipes broken.

PSA: Collecting the PSA Reports
Obj #1: Exercise Radio Ops on all nets

1. There is no change with how you will create and pass your PSA report.

2. A formal PSA Recorder Process now exists that describes how PSA reports will be recorded for hand-off to the EOC.

3. Collecting the data in a spread-sheet and sending the data by packet ensures the report can be available to the City EOC as soon as Comm 469 can retrieve it.

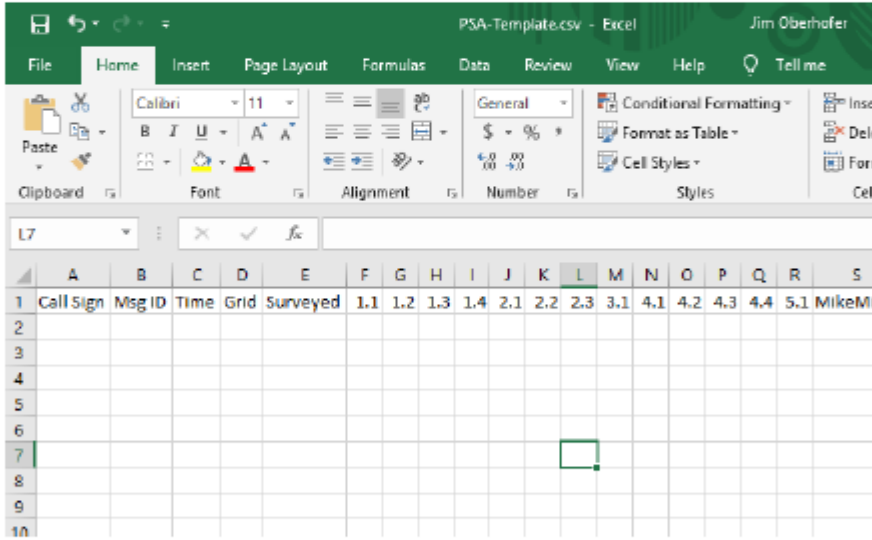4. The "*PSA Recorder Process*" outlines how the process works.

PSA Recorder Process
December 4, 2018

Prerequisites
1. Must have an operational AX.25 Packet System with Outpost installed.
2. Must have a spreadsheet program installed and be familiar with its use
3. Must have a voice ham station capable for hearing most CARES members (VHF, W6TDM)

Before the Event

_____	1. Review this procedure regularly.
_____	2. Participate in the CARES weekly Net.
_____	3. Participate in the SCCo RACES weekly packet check-ins.
_____	4. With your Spreadsheet program, verify or create a spreadsheet as follows: NOTE: *Microsoft Excel* is shown here. The *Free Libre Calc* program works the sam

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	Call Sign	Msg ID	Time	Grid	Surveyed	1.1	1.2	1.3	1.4	2.1	2.2	2.3	3.1	4.1	4.2	4.3	4.4	5.1	MikeM
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Ensure you have Columns "A" thru "S" set up.

5. Save this spreadsheet in a location you can easily find. Save the File as a .csv (co delimited), as follows:
   a. File > Save As
   b. Select a location you can easily find
   c. In the **Field Name** Field, enter a name, like **PSA-Template**
   d. In the **Save As Type** Field, select CSV (Comma Delimited)(*.csv)
   e. Press Save.

PSA: Collecting the PSA Reports
Obj #1: Exercise Radio Ops on all nets

Packet Opportunity!

1. Interested in giving the **PSA Recorder** job a try?

2. Requirements are: you must have…
   - an operational AX.25 Packet System with Outpost installed.
   - a spreadsheet program installed and be familiar with its use
   - a radio capable of hearing most CARES members (VHF, W6TDM)

3. Download the PSA Recorder Process here…
   www.cupertinoares.org > Resources > Preliminary Safety Assessment > Process

4. Watch for an email for a night-time on-the-air exercise to test this out.

Activate the Message Net
Obj #1: Exercise Radio Ops on all nets

1. The Message Net Control Station has historically been operated at a remote location (usually someone's home station).

2. While we know this works, there is value with having the Message NCS close to the rest of the Communications activities

   • Event coordination

   • Information sharing

   • Opportunities for position rotations

Plan

Test deploy an ARP radio pack as the Message Net Control Station at the Alternate EOC / Comm 469 site.

Obj #2: Exercise the ARK Activation Process to Level 2

How does the City use the ARKs?

We do this through 2 phases:

- *Zone Reporting* – for collecting local status and incident reports, and to act as a conduit for passing information from the City to the community.

- *Incident Command Posts* (ICP) – continue with Zone Reporting as well as for coordinating the local neighborhood response.

ARK Activation Levels
Obj #2: Exercise the ARK Activation Process to Level 2

Transitioning from one activity to the next

*Level 1 – **Zone Reporting**. Responders start zone report collection; they attempt to contact the EOC/DOC to pass local status and ask for instructions.*

*Level 2 – **Zone Reporting with Communications**. Responders continue zone report collection, have established communications with the EOC/DOC, and can provide summary reports to the City or pass requests for assistance.*

*Level 3 – **ICP Activation**. Responders continue zone report collection, sign in volunteers, develop action plans, set up an Incident Command Post, and organize teams for the local zone response.*
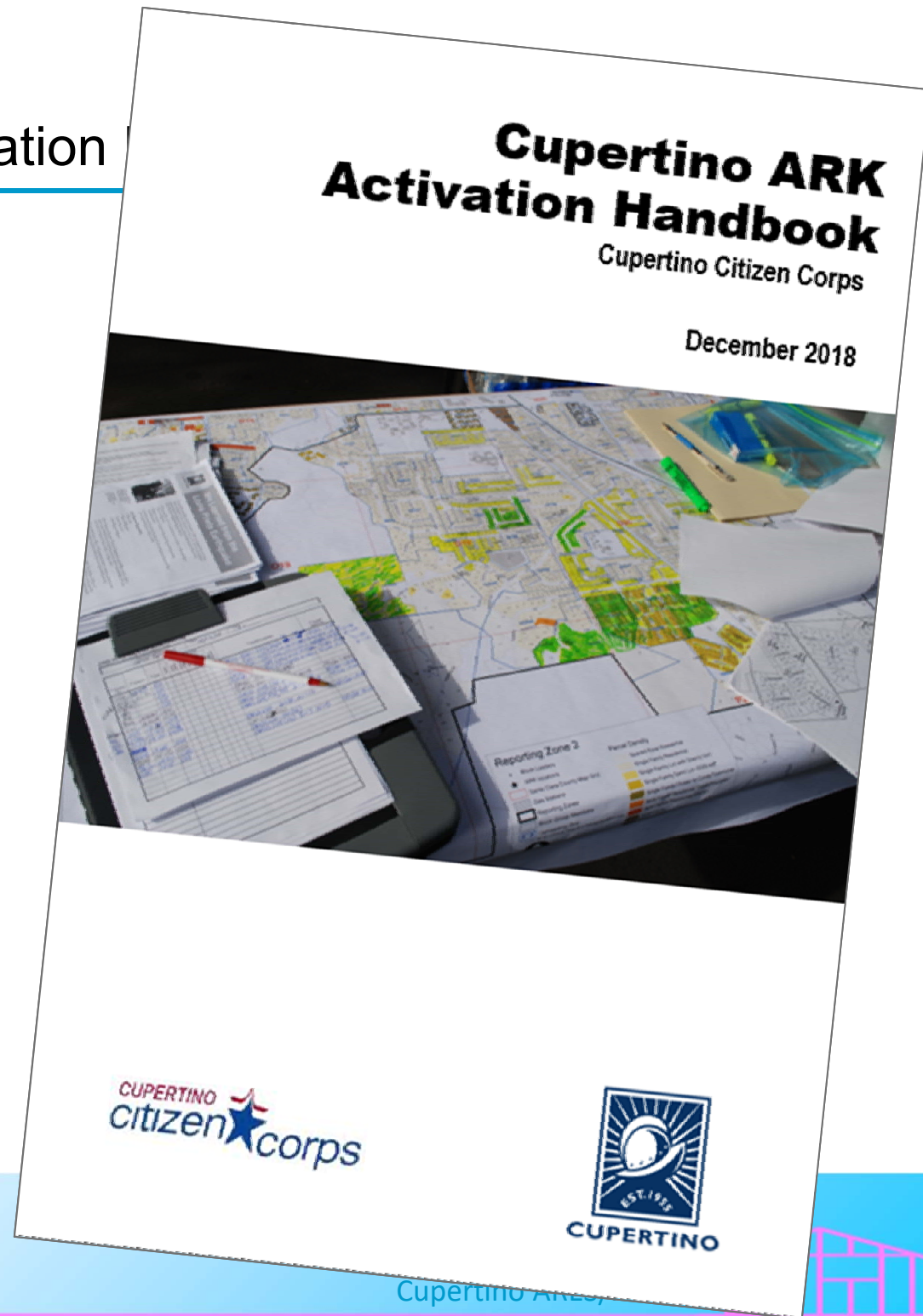
Cupertino ARK

Obj #2: Exercise the ARK Activation

Purpose

1. Activate the ARKs only to a level that aligns with the situation.

   - Extent of the problem

   - Available staffing

   - Training levels

*Refer to the **2018 Cupertino ARK Activation Handbook**!*

Obj #3: Exercise ISA Process

Assignment

- Perform a preliminary Infrastructure Safety Assessment (ISA) on critical infrastructure assets of interest to be reported to the Cupertino EOC.

What's critical?

Served Agencies	Critical Need
San Jose Water Company	21 Assets, includes • Tanks • valve stations • critical pipeline sections
Cupertino Sanitary District	10 Assets, includes • Pump and wet wells • Metering stations
Santa Clara Valley Water District	2 Assets, includes • Westside Distribution Pipeline • Stevens Dam
PG&E	3 Assets, includes • Substations
Transportation	12 Assets, all overpasses
Total	48

The ISA process
Obj #3: Exercise ISA Process

Field Activities

1. Receive your ISA Assignment Sheets.

2. With your buddy, proceed to each ISA location.

3. On arrival, inspect the ISA asset per the assignment sheet.

4. Record your findings.

5. Report to the EOC the results of your assessment.

6. When done, proceed to the next ISA location.

7. If this was your last assignment, check out of the Message Net and back into the Resource Net.

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The ISA process
Obj #3: Exercise ISA Process

Comm 469 Activities

1. Receive the ISA Report.

2. Hand off to Packet Op to update the Served Agency Report.
   - San Jose Water: Transmit a cumulative asset report by packet
   - SCVWD: Transmit a cumulative asset report by packet
   - Cupertino Sanitary District: Transmit asset report by voice***

Test Activity

1. ***Deploy CERT team to Cupertino Sanitary District office and pass report by City Trunk Radio (requires OJT)

2. Pilot a new Comm 469 Packet Procedure

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Obj #4: Test the E2E Alt911 comm system

Situation

- Cupertino, Saratoga, and Los Altos Hills contract with Santa Clara County for all Sheriff, Fire, EMS, and dispatch services.

- We cannot easily pass 9-1-1 traffic to our Dispatch because (i) it is located 15 miles away in San Jose, ~~and (ii) DSW restrictions do not easily let us operate outside our city~~.

Plan

1. Test the Alt911 Call Taking System in the field to receive, enter, and transmit simulated 9-1-1 messages to County Comm.

2. Staff the County Comm RACES operating position to receive and hand off simulated 9-1-1 messages for dispatch.

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Alt911 Call Taking System
Obj #4: Test the E2E Alt911 comm system

Packet Opportunity!

1. First CARES field responders to the ARKS need to be fully functional Packet Operators with their own equipment.

2. Requirements are: you must have…
   - an operational AX.25 Packet System with Outpost installed.
   - installed, configured, and tested the Alt911cts program on your local packet system.
   - a radio capable of operating on the CARES message net (all ARKs have mag-mounts to help out).

3. Download the Alt911cts install program here… http://outpostpm.org/alt911.html

STOP Final program update is pending. Watch for an email this weekend to confirm you can download the latest Alt911 program.

Obj #5: Exercise from the Alternate EOC

- Yes! We have one, and it is the Cupertino Service Center 10555 Mary Ave, just south of the I-280 Bicycle Bridge.

- City recognizes the deficiencies of City Hall and its structural integrity (or lack thereof).

- Plans are being developed to upgrade the Service Center to operate as the Alternate EOC.

- Comm 469 will park in front.

- We will have site access during our exercise.

- *Lite* D.O.C. setup

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Obj #6: Test Resource Mgmt over 2 Op Periods

Situation

- Unlike paid Public Safety responders, there is uncertainty as to how many CCC members will show up during a real activation.
- This becomes even more critical when an event lasts beyond the initial activation.

Plan

- Need to look at balancing staffing critical assignments needed now versus over multiple shifts.

- This means:
  - Early assessment of the extent of the problem
  - Guesstimate of the number of periods needed
  - Balancing available resources with staffing critical assignments
  - Delay using some folks now and reserve them for the next shift
  - Perform a *Shift Change*

Possible Earthquake Assignments
Obj #6: Test Resource Mgmt over 2 Op Periods

ASSIGNMENT LIST (ICS 204)

Incident Type: EARTHQUAKE	Incident Name, Activation No:	Operation Period FROM: To:

#	Assignment	Unit Leader (name/cell)
1	Shift Supervisor	
2	NCS, Resource Net	
3	NCS, Message Net	
4	Radio Room Op	
5	XSC Radio Op, Packet Op	
6	Operations Alternate	
7	County Comm Ops	
8	DPW Field Op	
9	CuSD Field Op	
10		
11		
12		

ASSIGNMENT LIST (ICS 204)

Incident Type: EARTHQUAKE	Incident Name, Activation No:	Operation Period FROM: To:

#	Assignment	Unit Leader (name/cell)	Team Member #2	Team Member #3	Team M
13	Monta Vista ARK				
14	Regnart ARK				
15	Garden Gate ARK				
16	Lawson ARK				
17	DeAnza ARK				
18	Hyde ARK				
19	Seven Springs Fire				
20	Cupertino Fire				
21	Monta Vista Fire				
22	West Valley Patrol De Anza Blvd				
23					
24					

ASSIGNMENT LIST

Incident Type: EARTHQUAKE	Incident Name, Activation N

#	Assignment	Unit Leader (name/cell)	Team Member #2 (name / cell / org)
1	ISA Team 1		
2	ISA Team 2		
3	ISA Team 3		
4	ISA Team 4		
5	ISA Team 5		
6	ISA Team 6		
7			
8			
9			

Obj #7: Test Initial Demob Plan

Situation

- Demob (Demobilization) is the process of releasing resources from an assignment. It ensures that an assigned resource has:
    1. completed their task,
    2. returned all loaned equipment,
    3. turned in all event forms and paperwork,
    4. is no longer needed, and
    5. is properly signed out.

Plan

- At the end of your shift, return to the Alternate EOC.
- TEST: Proceed to Demob. Turn in all paperwork & any loaned equipment.
- Sign out.
- CARES: we will track you back home on the Resource Net.

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Paperwork
Obj #7: Test Initial Demob Plan

- Every scrap of paper is part of event/incident and goes to Documentation Unit
  - Must be legible (Print)
  - Use one side only
  - These are legal documents that may be needed to defend decisions
  - Most of this documentation is discoverable
  - If it is not in the documentation, it did not happen

- Some documentation like AAR is specifically created after the event/incident

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Forms? What Forms?
Obj #7: Test Initial Demob Plan

- Required forms

  - ICS 214 Unit Log

  - ICS 213 Message Forms (Short Form)

  - ICS 309 Communications Log (voice messages)

  - ICS 309 Communications Log (Packet; Outpost produces)

  - ICS 211 Check-in Sheet (for ARK Activations!)

- Make sure you have copies of these forms in your go-kits before leaving home!

- https://www.cupertinoares.org/ccc/
  Click on the Forms Link

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To Summarize…

Lots of new things planned!

1. Collect, pass Mike-Mike Reports as part of the PSA data

2. PSA Recorder job: Formalize PSA data collection/delivery by packet radio

3. Deploy an ARP radio pack as the Message Net Control Station

4. Updated 2018 Cupertino ARK Activation Handbook

5. Deploy CARES+CERT ISA teams

6. Deploy CERT team to CuSD office w/ City Trunk Radio to receive ISA report

7. Pilot a new Comm 469 Packet Procedure (esp: ISA)

8. Test the Alt911 Call Taking System in the field

9. Staff the County Comm RACES operating position to receive Alt911 messages

10. Operate from Service Center as the Alternate EOC

11. Two operating periods with shift changes

12. Test Demob process

Field References

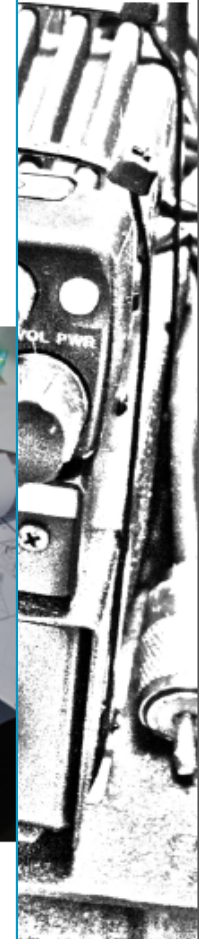All field reference manuals are up on the CARES Website, here…

https://www.cupertinoares.org
   > Docs and References
     > Field References

2016.01
Field Communications
Operations Handbook
Cupertino ARES/RACES

2016.01
Packet Radio Users Guide

Cupertino ARES/RACES

Cupertino ARK
Activation Handbook
Cupertino Citizen Corps

December 2018

Final Review…

2018 Earthquake: Drill Prep

Cupertino ARES/RACES

Timeline
Earthquake Exercise

Saturday, 15 December

- 0645 Simulated Earthquake, M 7.9
- 0700 Activate the CARES Emergency Net; check-ins, initiate PSA
- 0730 Direct Comm Van to Alternate EOC
- 0745 Decision to deploy the field; build team assignments
- 0815 field assignments made. Identify Message NCS
- 0900 Start 1st Op Period
- 1130 Start Shift Change; Shift 1 hands off to Shift 2. Shift 1 to Demob
- 1200 End of 1st Op Period
- 1430 Secure Field Ops. Shift 1 to Demob
- 1500 End of 2nd Op Period; End of Exercise

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Thank you

Any Questions?