After Action Report
Earthquake 2018

Cupertino
ARES/RACES

1. Overview

Description: Infrastructure Safety Assessment Drill
Event Date: 15-Dec-2018
Report Date: 6-Jan-2019
CARES Event: CUP-18-34T
RACES Event: CUP-18-34T
Control: Cupertino ARES/RACES
Report Revision: 1.1, **REVIEW**
Submitted by: Jim Oberhofer KN6PE

Requirements for Reporting[1]
Completing an After-Action Report is part of the required SEMS reporting process. The Emergency Services Act, Section 8607 (f) mandates that the Office of Emergency Services (OES) in cooperation with involved state and local agencies complete an After-Action Report within 120 days after each declared disaster. Section 2450 (a) of the SEMS Regulations states that, "Any city, city and county, or county declaring a local emergency for which the governor proclaims a state of emergency, and any state agency responding to that emergency shall complete and transmit an after-action report to OES within ninety (90) days of the close of the incident period as specified in the California Code of Regulations, Title 19, s2900(q)."

CARES will follow this requirement for reporting the results and recommendations for this Training Event.

i. Introduction and Background

Terms

AAR[2]: After Action Report: A document intended to capture observations of an exercise and make recommendations for post-exercise improvements. The final AAR and Improvement Plan (IP) are printed and distributed jointly as a single AAR/IP following an exercise.

AAR/IP: Improvement Plan; Identifies specific corrective actions, assigns them to responsible parties, and establishes targets for their completion.

Alt911cts: Software App, Alternate 911 Call Taking System; integrates with Outpost PMM.

[1] http://www.caloes.ca.gov/cal-oes-divisions/planning-preparedness/after-action-corrective-action-reporting; http://temp.caloes.ca.gov/PlanningPreparednessSite/Documents/01%202450.pdf
[2] https://training.fema.gov/programs/emischool/el361toolkit/glossary.htm

ARP:	Alternate Response Plan. This outlines specific communications that CARES maintains in the event Comm 469 is out of service, or additional portable communications equipment is needed.
CAP:	Corrective Action Plan. FEMA; HSEEP[3]: actions identified during individual exercises that are tracked to completion, ensuring that exercises yield tangible preparedness improvements.
CARES:	Cupertino Amateur Radio Emergency Service, ARES/RACES organization supporting the City of Cupertino.
CCC:	Cupertino Citizen Corps; the City's umbrella organization for CARES, CERT, and MRC.
CERT:	Community Emergency Response Team; trained members who can assist others in their neighborhood or workplace following an event when professional responders are not immediately available to help.
Comm 469:	City of Cupertino Public Safety Communications Vehicle #469.
CuSD:	Cupertino Sanitary District; a CARES Served Agency.
DOC:	Department Operations Center. Manages the overall field CCC deployment; aggregates data to be passed to the EOC. Advices EOC Staff on CCC capabilities, readiness, and activities.
NCO/NCS:	Net Control Operator / Net Control Station. The control function that ensures the efficient passing of messages between stations on the frequency.
RRO:	Radio Room Operator. The position that originates and receives messages for exchange with field responders.
SCC:	Santa Clara County. Used in reference to County RACES
SJWC:	San Jose Water Company; a CARES Served Agency.
Served Agency:	An agency, special district, or other recognized organization with which CARES has a signed Memorandum of Understanding to assist in time of need.

Introduction

The City of Cupertino supports testing the community emergency response plans and ongoing disaster preparedness training as an essential component to a successful community disaster response. The one scenario we are all anticipating is a large earthquake. USGS estimates there is a 72% probability of one or more M ≥ 6.7 earthquakes from 2014 to 2043 in the San Francisco Bay Region[4]. As a result, the City has made emergency preparedness investments that would help address the impact of such an event when it does occur.

Over the years, CARES has developed, planned, and tested a series of response activities that we believe are relevant to address the impact of a large earthquake event. What we have not done is to exercise them in an end to end scenario, that is, from the initial occurrence of the event through a 2nd shift. This scenario covers almost all of the operational mission elements that we have put in place to date.

The purpose of this exercise was to test the first 8 hours of a response to a large earthquake event as performed by Cupertino Citizen Corps, specifically Cupertino ARES/RACES and CERT.

[3] https://www.fema.gov/media-library-data/20130726-1914-25045-8890/hseep_apr13_.pdf
[4] Earthquake Outlook for the San Francisco Bay Region 2014-2043

The City of Cupertino authorized this exercise with training activation number CUP-18-34T. This report covers the activities undertaken by CARES and the findings from that exercise.

ii. Type / Location of Event / Drill / Exercise

Event Type: City of Cupertino, CARES Training Activation
Event Identifier: CUP-18-34T
Event Name: Earthquake 2018 Exercise
Location: City of Cupertino

iii. Description of the Event / Drill / Exercise

While 7 objectives were identified, 22 specific activities were specified. The CARES exercise objectives were:

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.

Event resources came from the following organizations:

1. Cupertino ARES/RACES: Responsible for checking into the CARES emergency net, responding to the field to support EOC communications, ARK activations, Alt911 messaging, and ISA processes. Twenty-five (25) CARES members participated in the exercise.

2. Cupertino CERT: Responsible for partnering with CARES Field Responders on all field assignments. Fourteen (14) CERT members participated in the exercise.

3. Cupertino City Staff: Responsible for simulating all EOC operations.

The exercise was initiated as a pre-announced event with CARES and CERT members responding from wherever they were at the start of the exercise.

Performance against Objectives:

1. Exercise radio operations on all designated nets.

Results: **NEEDS IMPROVEMENT**. The fundamental net operations were OK with specific improvement areas identified. See the CAP for details. Five specific tests were run to address this objective. The results of these tests are:

a) Deliver member-originated Mike-Mike (Modified Mercalli Intensity Index) Reports
Mike-Mike Reports are common with the County RACES. This report was requested by Cupertino OES to increase the speed of the snapshot to the City after an earthquake. Individual reports were successfully passed and captured as an additional data point of the PSA Report.
>>> Need to develop this as an Earthquake scenario expectation.

>>> Look at incorporating Mike-Mike Reports into the initial check-in to generate an even more immediate impact assessment.

b) Test the PSA Data Recorder Process
This was the first test of a PSA Recorder procedure by a member packet operator. Ten PSA messages were collected and recorded directly into a spreadsheet program.
>>> While we identified one individual ahead of time to be the PSA Recorder, we need to develop this as a fundamental packet capability across all CARES packet ops.

c) Pass PSA report summary by Packet
Based on form COES 106, the PSA Recorder was able to produce a summary packet message of received PSA Reports, and transmitted it to the EOC once Comm 469 was operational. Once received, the Comm 469 packet operator was able to extract and re-create the spreadsheet data. This was subsequently passed to the D.O.C.

d) Operate Message NCS from Comm 469 using an ARP Kit
This worked well and offered an opportunity to co-locate the Message NCS with the Comm 469 staff. A CARES ARP dual band radio kit (including antenna and battery pack) was used. Setup occurred using the Comm 469 Pop-up canopy, tables and chairs. Thirty-seven (37) voice messages were initiated and passed between Field Responders and the EOC. With less message traffic during the 2nd shift, the Message NCS and EOC Radio Room Operator positions were combined and fulfilled from within Comm 469.
>>> Need to consider power management for the ARP setup outside of Comm 469. Look at increasing the supply of extension cords for this and other purposes.
>>> On-going message passing practice is needed to maintain message passing expertise.

e) Resource NCS Staffed the entire exercise
This net was staffed for the duration of the exercise. The staggered check-ins of CARES responders, making resource assignments, and managing resource travel to and from assignments pointed out that for a full deployment, a full-time resource net was critical.
>>> Need to address the overall Comm 469 Staffing levels to ensure CARES avoids responder fatigue.

<u>2. Exercise the ARK activation process to Activation Level 2.</u>
Results: **PASS**. All planned ARKs were opened.

f) ARK Access using Activation Handbook.
The new handbook was reported to work well with no specific comments. Ten copies were left at each ARK for responders who did not previously receive one.
>>> Need to ensure all CCC members have a copy of the ARK Activation Handbook. Work with Cupertino OES on the plan for a mass mailing.

<u>3. Exercise CCC (CARES and CERT) ISA team deployment.</u>
Results: **NEEDS IMPROVEMENT**.

g) Perform the ISA.
During the 1st Shift,3 ISA field teams were formed with CARES and CERT members; another 2 teams were formed during the 2nd Shift (repeat coverage for the experience). During the 1st shift, 22 of the 36 (~61%) ISA assets were inspected over a 1.5 hr period. Given a real

operational period and uncertain access throughout the city, all 36 assets probably could have been checked within 4 hours by 3 teams.

h) Deploy CERT members on ISA teams.
With the uncertainty of CERT responders to the ARK, assigned CARES responders were asked to poll the CERT members for interest in helping with the ISA. Three CERT members responded to the EOC for an ISA assignment with a CARES member. Feedback on the experience was very positive.
>>> Need to reinforce go-kit contents, especially mag mounts when traveling in someone else's car.

i) Deploy CERT members with Trunk Radio to CuSD.
Not tested; insufficient staffing. However, a DPW HT was given to a designated CERT Field Supervisor; CARES monitored the OES Talk group and maintained communications with the CERT Field Supervisor.
>>> This test was to determine the feasibility of a non-Ham to deploy to the CuSD offices, and receive and deliver reports. This test is still pending. Need to train CERT on City Trunk Radio operations.

j) Comm 469 Packet Procedure for Passing ISA Traffic.
The ISA Report Template for San Jose Water Company (SJWC) was tested for the first time. With minimal training, the template was updated with field reports as they came in and periodic packet messages were transmitted to SJWC. An Outpost distribution list was created that included the SJWC tactical packet address, the SJWC Emergency Manager email address, and Cupertino EOC (as a copy).
>>> Follow up with SJWC Emergency Manager on the effectiveness of the received reports.
>>> Need to clarify the criteria and/or frequency of passing ISA summaries to Served Agencies.
>>> Need Packet Op training on managing the entire ISA report process.

<u>4. Test the End to End Alt911 communications process.</u>
Results: **NEEDS IMPROVEMENT**. This was the first field test for the Alt911cts program. An enhancement list will be developed to incorporate requests for functional changes to the program.

k) Pass ALT911 messages from field.
Seventy-nine (79) Alt911 test messages were created and passed from the field to a simulated County Comm packet station. An additional 4 Alt911 test messages were sent outside of the Alt911cts program. A detailed review of their content is pending. General comments from the field are positive with some suggestions for improving the Alt911cts program.
>>> Given these messages will be sent to County Comm, need a plan to qualify individuals as approved Alt911 packet ops – training, equipment, latest software installs, etc.

l) Staff County Comm
Not tested. County Comm packet station is not set up in "hot standby".
>>> Recent discussions with County Comm require an automatic download and delivery feature given that a significant earthquake event may make access to the site difficult if not impossible.

<u>5. Exercise an activation of the Cupertino Alternate EOC.</u>
Results: **NEEDS IMPROVEMEMT**. This was the first time in over 20 years that the Alternate EOC site was used for an exercise. Special thanks to Cupertino Public Works for their support. While Comm 469 was

successfully deployed and set up, the Alternate EOC infrastructure is not in place.
>>> Work with City OES and Staff on the plan to outfit the Alternate EOC as an operational location.

6. Test resource management over two operational periods.
Results: **NEEDS IMPROVEMENT**.

m) Resource Assignments 1st Shift from Resource Readiness List, ICS 304
n) Resource Assignments 2nd Shift from Resource Readiness List, ICS 304
This objective was complex to meet given the number of individuals involved, the location of critical information, and the capabilities of the responders.
>>> This area requires a broader discussion on CCC resource planning and tracking.
>>> Determine the need, requirement, and method for tracking CARES, CERT, and MRC members who are directed by the CARES Net to respond for an assignment.

o) Field Shift Change
Communications was missing that was to inform the current shift of resource plans for a subsequent shift. As a result, some ARKs were inadvertently shut down.
>>> Need to develop the plan/checklist for managing, communicating, and tracking assignments.

p) Comm 469 Shift Change
While position changes occurred, the effectiveness of the handoff was inconclusive.
>>> Need to address the level of information management for which each position is responsible (logs, counts, assets, etc.), and the method for passing it on to the next shift.

7. Test initial Demob plan with a focus on forms completeness.
Results: **NEEDS IMPROVEMENT.** All generated (not necessarily required) paperwork was recovered and a cursory check for completeness was performed.
>>> Need to continue to emphasize the importance, completeness, and legibility of the event documentation.
>>> Need to review, evaluate, and formalize the type and degree of documentation required by all responders.

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iv. Chronological Summary of Event / Drill / Exercise

CARES ran this exercise under activation number CUP-18-34T. The following is a summary of the activities as reported on ICS-214's that were submitted after the test. All times listed here are in local time. The following is a very high-level summary.

Time	Description, Notes, Comments
0634	Retrieve Comm 469, deliver to Cupertino Service Center, Alternate EOC (artificiality)
0700	CARES Emergency Net activated. Started taking check-ins.
0749	Van Set up
0815	Hand off from Field Resource NCS to Comm 469 Starting Demob Plan development
0830	Began making field assignments: ARKs, ISA
0900	First ARK opened
0920	First of 3 ISA Teams dispatched
0955	DOC received first ALT911 report (copy)

Time	Description, Notes, Comments
0957	Begin SAT Phone setup and test
0958	Final ISA Team 3 assigned
1040	First ISA Report sent to San Jose Water
1130	End 1st Shift
1200	Start 2nd Shift
1430	End of Exercise announced.
1510	All ARKs closed.
1545	Completed Demobilization; shut down Demob Unit
1555	Returned Comm 469 to Service Center

v. Response at SEMS Levels (as appropriate):

Include a summary, conclusions, the field response, and other local, operational area, regional, state or federal response.

The Field Response was primarily driven by CARES and CERT members responding from their homes to assigned locations either by pre-existing assignments (CERT) or by over-air assignments (CARES). The following specifics are noted:

- The Two-Man Rule (buddy system) was in effect for all field responders.
- Twelve field team assignments over two shifts were made with at least one CARES member and a CERT member when available.
- One hundred eight (108) packet messages and 37 voice messages were passed over an 8 hour period.
- Field Responders transitioned from the Resource Net to the Message Net and back without issue.
- The CCC DOC was staffed, and successfully received field reports and plotted items of interest to populate the *Common Operating Picture* for the EOC.
- A Demobilization plan was put in place to collect and verify all event documentation.

No other organizations or entities participated in this drill.

Other than CARES and CERT, no other organizations or entities participated in this drill.

vi. Interacting Systems, Agencies, and Programs:

Include mutual aid systems (law enforcement, fire/rescue, medical, etc.); cooperating entities (utilities, American Red Cross, Sheriff's Office, City Departments, etc.); telecommunications and media interactions.

Alternate 911 Call Taking and Delivery

This was the first test of the Alt911cts program by CARES. Two overview sessions were held prior to the exercise to familiarize packet operators with the program, process, and expectations. The key success factors for this exercise were:

1. Packet Operators were familiar with the program and could deploy in the field.
   Results: For those operators who did participate in the overview sessions, their operations were

reported to go smoothly. One team was able to send all 26 exercise Alt911 messages in 1 hour 40 minutes. As a follow-up, need to work with County Comm on additional techniques and training options for interacting with a community member looking for help.

2. County Comm expectations.
   Results: There is work to be done with County Comm to ensure the Alt911cts system at their location is in place and operational.

ISA Report Handoff to Served Agencies

1. As ISA reports come in, notifications to ISA Asset partners needs to occur. An initial process was tested that confirmed the usefulness of the proposed process, with additional process improvements and training to be identified. Specifically, packet and email messages were originated from Comm 469 to SJWC. After the exercise, the SJWC Emergency Manager confirmed that ISA reports were received.

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vii. Improvements, Conclusions, Recommendations:

As applicable, include a description of actions taken, assignments, associated costs or budget, timetable for completion or correction, and follow-up responsibility.

The following is a summary of the key Conclusions and Recommendations.

What worked

- Having 2 nets operating at once.
- ISA maps, locations, and directions were straight forward; found most places quickly.
- Good team work between CARES and CERT; everyone worked well together
- ARK setup was easy and straight forward.
- CERT and new CARES members had the opportunity for sending packet messages.
- Packet worked well at the ARKS.
- Message passing.
- Assignment and deployment process.
- Good radio reception from ARK locations to Comm 469 at the Alternate EOC.
- PSA Recorder process.
- Operated Packet from 5 ARKs (Regnart not staffed).
- Initial handoff from the field Resource Net Control to Comm 469.
- Used T-Cards 2nd shift made assignments and tracking much easier.

What didn't work / needs improvement

- Not everyone was transmitting a PL tone.
- Shift change and resource check-ins.
- ARK Generator failed 2 hours into the event and could not start the other 4.
- Need more clarification on the role of CERT at the ARK at Activation Level 2.
- Alt911cts did not work on one system.
- Alt911 messages were not always addressed correctly.
- Switching shifts; not closing down before the 2nd shift arrives.
- We were not able to reach the EOC from some ISA locations; having the right radio antenna equipment for a field assignment
- GGA ARK door was difficult to open; no local restroom.

- Surface Pro 3 was too glitchy and not a good platform for packet
- Various Alt911cts enhancement suggestions
- Paperwork flow of packet messages to Shift Supervisor
- No T-Card process during 1st shift resulting in losing track of one person
- Some delay in making resource assignments

A. Corrective Action Plan

This IP is developed specifically for CARES as a result of Earthquake 2018 Exercise (CUP-18-34T) conducted on 15 Dec 2018. These recommendations draw on the results of the After Action Debrief. The IP has been formatted to align with the CARES Task List and FEMA's Corrective Action Program System.

Critical Task	Element	Description	Corrective Action	Responsible Organization	POC	Start Date PRIORITY	End Date
Conduct Field Comm Ops	Sys/Tools	ICS 205 Communications Plan	1. Review configuration (ID, CT, etc.) and need for CT/TSQL. Update Comm 469, ARP radios.	CARES			
Event Mgmt	Personnel	Shift Supervisor Qualification	2. Phase 1: develop skills for qualification	CARES			
Event Mgmt	Sys/Tools	Shift Supervisor Playbook	3. Revise and update	CARES	Ken F		
Resource Mgmt	Planning	Develop Resource Management policies and procedures	4. Develop staffing levels based on different response types. a. Field: Review team sizes based on UI Fire, ARK, ISA experiences b. Comm 469: Review team size, make-up c. Evaluate if co-located M/NCO was more effective.	CARES	AECs		
Resource Mgmt	Planning	Develop Resource Management policies and procedures	5. Develop procedures for using T-Cards for assignment and resource tracking.	CARES			
Resource Mgmt	Planning	Develop CARES Resource Readiness List, methodology	6. Agree on the concept. Define process for updates, distribution	CARES	Judy		
Resource Mgmt	Planning	Define ICS 204 Assignment List for anticipated deployment scenarios	7. Finalize general assignments for the Earthquake Scenario.	CARES			
Resource NCS	Planning	Develop Resource Net Control tools, processes, and procedures	8. Develop 1st pass at NCS Handbook	CARES			
Resource NCS	Planning	Develop Resource Net Control tools, processes, and procedures	9. Formally adopt SCC RACES Travel Tracking Form for CARES use	CARES			

Critical Task	Element	Description	Corrective Action	Responsible Organization	POC	Start Date PRIORITY	End Date
Message NCS	Planning	Develop Resource Net Control tools, processes, and procedures	10. Develop 1st pass at NCS Handbook. include Queuing, Prioritization	CARES			
Field Message Handling	Planning	Develop Field Message Handling policies and procedures	11. Review method for assessing the equipment readiness of field responders (ie: mag mounts)	CARES			
Field Message Handling	Planning	Develop Field Message Handling policies and procedures	12. Update Field Comm Operations Handbook	CARES	Jim		
Packet Message Handling	Planning	Develop Packet Kit Readiness plan	13. Determine method for checking for responder packet readiness prior to a deployment (i.e.: SW, power, antenna)	CARES			
Packet Message Handling	Planning	Evaluate CARES packet message capability	14. Look for additional training opportunities for members	CARES, XSC			
Packet Message Handling	PST	City Equipment	15. Clarify the intent of using battery packs in field deployments	CARES			
Packet Message Handling	PST	Packet Communications Operations Handbook	16. Update handbook to reflect Alt911 content	CARES			
Preliminary Safety Assessment	Planning	Develop PSA tools and procedures	17. Review, finalize PSA Data Recorder Process.	CARES			
Preliminary Safety Assessment	Planning	Develop PSA information handoff procedure to the DOC	18. Review, finalize PSA-to-DOC information handoff process.	CARES, DOC			
Preliminary Safety Assessment	Training	Practice PSA Recorder Process	19. Look for opportunities for practicing Field PSA recording	CARES			
Infrastructure Safety Assessment	Planning	Develop ISA tools and procedures	20. Need to clarify the criteria and/or frequency of passing ISA summaries to Served Agencies	CARES			
Infrastructure Safety Assessment	Training	Practice Comm 469 ISA Reporting Process	21. Look for opportunities for practicing Comm 469 ISA Report process	CARES			
Alternate 9-1-1 Message Handling	Planning	Develop Alternate 9-1-1 policies and procedures	22. Develop, review, finalize County Comm access and operations procedures	CARES, County Comm			
Alternate 9-1-1	PST	Packet application Alt911	23. Develop, implement enhancement	Jim			

Critical Task	Element	Description	Corrective Action	Responsible Organization	POC	Start Date PRIORITY	End Date
Message Handling			list for Alt911 application				
Alternate 9-1-1 Message Handling	Training	Alternate 9-1-1 Message Handling procedures	24. Work with County Comm on call-taking training	CARES			
ARK Activation, Operations	PST	Cupertino ARK Activation Handbook	25. Work with Cupertino OES on the plan for a mass mailing	Cupertino OES			

End of Report.