After Action Report
Infrastructure Safety Assessment Exercise

Cupertino ARES
3 June 2021
Version: v1.2 **REVIEW**

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Overview

Description: Hayward Earthquake / Field Communications Exercise
Event Type: Cupertino ARES Exercise
Event Name ISA Exercise
Activation No: CUP-21-24T
Managing Entity: Cupertino ARES
Event Date: 15 May 2021
Report Date: 3-June-2021
Report Revision: 1.2, **REVIEW**
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Requirements for Reporting[1]

Completing an After-Action Report is part of the required California 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)." Additionally, "Section 2450 (b) The after action report shall, at a minimum, be a review of response actions taken, application of SEMS, suggested modifications to SEMS, necessary modifications to plans and procedures, identified training needs, and recovery activities to date."

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.

CAP: Corrective Action Plan; FEMA; HSEEP[3]: actions identified during activations or exercises that are tracked to completion, ensuring that exercises yield tangible preparedness improvements.

CARES: Cupertino Amateur Radio Emergency Service is a volunteer organization of FCC-licensed amateur radio operators who will respond to requests from the city during times of emergencies. Their focus is on understanding risks facing the city and putting plans, communications processes, and tools in place to respond to these risks.

CCC: Cupertino Citizen Corps; the City's umbrella organization for CARES, CERT, and MRC.

[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
[3] https://www.fema.gov/emergency-managers/national-preparedness/exercises/hseep

Comm 469, C469:	City of Cupertino Public Safety Communications Vehicle #469.
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.
DPW:	Department of Public Works
ESC	Emergency Services Coordinator. City staff member with responsibility for Cupertino's Emergency Planning and Operations.
FLA	First Look Area. A specific selection of streets in Cupertino on which an FLA Assessment will be made.
ISA:	Infrastructure Safety Assessment, A review and report-out on specific critical facilities in Cupertino that are important to the City and other Service Providers.
H&W:	Health & Welfare; used within the context of a Health & Welfare Check. Usually check of field teams to sure they are OK.
NCO/NCS:	Net Control Operator / Net Control Station; the control function that ensures the efficient passing of messages between stations on the frequency.
OEM:	Office of Emergency Management
PSC	Public Safety Communications, used in context with Comm 469 vehicle.
SCCFD	Santa Clara County Fire Department
SJFD	Citty of San Jose Fire Department

Background and Timeline

Introduction

The purpose of an After-Action Report (AAR) is to analyze the management and response to an incident, event, or exercise by identifying the strengths to be maintained and promoted, as well as the areas for improvement.

The focus of this AAR is on the Cupertino Amateur Radio Emergency Service (CARES) exercise to test the Cupertino ARES tools and procedures for the Infrastructure Safety Assessment (ISA). This report is submitted to Cupertino OES as a record of our findings, planned follow-up actions, and recommendations to the City.

Summary

CARES performs the Infrastructure Safety Assessment (ISA) on specific critical facilities that are deemed to be important to the city or our Served Agencies. Critical facilities (or assets) are components of systems or infrastructure that support the delivery of product or services to the residents of Cupertino. These critical assets that could affect Cupertino are:

1. San Jose Water Company, 21 assets
2. Cupertino Sanitary District, 11 assets
3. Santa Clara Water District, 5 assets
4. City of Cupertino, 9 staffed buildings, 7 major roadways

5. CALTRANS, 12 freeway overpasses
6. Fire Stations: 3 SCCFD stations and 1 SJFD station.
7. Sheriff's Office, 1 Substation

Half of these Served Agencies have requested an *eyes-on* assessment of their assets either because the agency will not have the manpower to inspect all of their assets immediately after an infrastructure-shaking event, or that their status is critical to the City to support its internal response efforts.

This exercise was designed to test the new tools and approaches for deploying CARES to perform the ISA process. A new procedure was developed to assess the consolidation of assessments covering ISA assets and FLA major roadways. Additionally, new data management tools were tested to check the feasibility of ISA information-sharing with the city's EOC when tied into the Comm 469 data network.

CARES members were activated and deployed from their respective homes. Over the course of the exercise, all planned objectives were tested:

1. Execute the response per the CCC IDR Plan protocols.
2. Exercise the Mike-Mike reporting process.
3. Test the ISA process using the restructured asset assignment sets.
4. Test the ISA data collection c469 web app.
5. Perform a GMRS test with ARKs and CERT teams… 10:00am
6. Test the DOC Operational Checklist and JIT training… City Staff

Key Findings

Following the exercise, CARES performed an after-action review of our existing operating procedures and new aspects under test. The lessons learned from this review will drive specific activities within key areas of the CARES response. Two specific findings from this exercise are:

1. ***Field Response and Operations.*** The CARES Field Response worked well at multiple levels. Once back in the message passing 'groove', radio operations and traffic passing were succinct and effective. Members embraced the new procedure and executed it without issue, and provided valuable feedback and ideas on process improvements.
2. ***Consolidated assessment approach.*** The ISA assignment structure was reorganized to 11 assignment sets that covered the 37 legacy ISA assets, the 7 major FLA roadways, and staffed city and fire department facilities. The new assignment structure worked well with 7 teams covering 10 of the 11 assignment-sets in about 2.0 hours. The assignment set structure supported making solo and two-person team assignments and continues to point to an opportunity to leverage solo assignments in the future, post-Covid19 environment.
3. ***Data management tools***. This was the first use of a custom web-app data management solution for collecting and reporting on ISA field results. The solution supported sharing information across multiple EOC response teams in an almost real-time manner. Visibility to ISA assignment progress was significantly enhanced from past manual methods and may open the door to other similar solution for information sharing.

Responding Resources

CARES deployed under activation number CUP-20-24T. Event resources came from the following organizations:

1. ***Cupertino ARES/RACES.*** CARES staffed both Comm 469 and field positions. Seventeen (17) CARES members participated during the 3-hour exercise.

2. ***Household buddies.*** Three (3) individuals were recruited from member households as a team field buddy.

3. ***CERT.*** Two (2) CERT members participated in the field to support the GMRS radio test.

4. ***City Staff.*** Three (2) city staff members were involved to test specific exercise objectives as well as the receipt of field-reported information.

Timeline

The following timeline is a compilation from ICS-214s and other documentation submitted as part of this event.

Time	Description, Notes, Comments
Saturday 15 May	0659 Departed Service Center with Comm 469. 0710: Comm 469 arrived at City Hall, started setup. 0826: Opened Resource Net, began taking check-ins. 0843: Authorized to proceed with ISA. 0845: Deployed ISA staging teams to Jollyman, Stevens Creek locations. 0910: First ISA surveys started. 0908: First ISA assignment received, Cristo Rey group. 0912: First ISA assignments made from Staging. 0937: Shut down Jollyman staging. 0940: Shut down Stevens Creek staging. 1000: GMRS Radio Test held with Regnart ARK, Marianist Center. 1034: Began set up of Demob function. 1109: Last ISA report received. 1114: All ISA assignments complete. 1135: Closed Resource Net. 1134: Shutting down Demob. 1225: Comm 469 departed City Hall for Service Center.

Observations and Recommendations

Observation #1

Initial exercise startup activities do not reflect how we would realistically respond to earthquake events.

CARES typically runs our exercises with a primary focus on resource management, field communications, and message passing. To maintain this focus, one artificiality that has always been invoked is that Comm469 is already set up. The Comm469 setup includes a range of tasks covering vehicle, radio, and data networking that must be in place for the vehicle to be fully operational. Comm 469 setup can take up to about 45 minutes, not counting the time to dispatch and retrieve the vehicle.

During an actual earthquake event, we recognize that for the initial response, Comm 469 will not be immediately available. This implies that there needs to be (i) a remote start activity where the response is initiated from our remote (home) locations, (ii) a vehicle retrieval and setup activity where Comm469 is moved to the EOC and made operational, and (iii) a command transfer activity where information is passed from the remote start team to Comm469. At that point, the information handoff would need to cover (minimally) resource status, assignment status, and field reports to date. None of these processes are in place, have been defined, or tested.

Recommendations:

Cupertino ARES

1. Develop and test the remote start activity that covers the first few hours leading up to command transfer to Comm469.
2. Review, finalize, and exercise the Resource Management methods and tools for remote start and Comm469 operations.

Observation #2

CARES has operated under a set of standing orders for an emergency response during an earthquake. This needs to be revisited in light of the city's Volunteer Annex.

The City EOP includes a Volunteer Annex that outlines the activities, timing, and approvals that CCC responders can assume during different types of events. During a self-evident event such as an Earthquake and when applying sound judgement and specific criteria, CARES is authorized to initiate specific actions that will produce situational status and tactical response information for the EOC before the EOC is operational.

CARES recognizes that it is critical to keep OEM staff informed of our activities and our findings. It is also critical that we have clarity on task approvals required from OEM staff during the initial response phase.

Recommendations:

CARES, OEM

3. Work with OEM staff on finalizing the Volunteer Annex; includes the necessary authorizations for an auto-activated response.

Observation #3

The conditions for using private vehicles in the field by assigned responders needs to be clarified in terms of driver record-keeping.

Regarding the collection of responder driver information, [we speculate that] the issue to ensure the eligibility (valid CDL, have insurance and Lic plates) of individuals to drive as part of an assignment is a City requirement.

Today, T-Cards (with space on the back for driver's information) works well at the ARKs where responders sign in at an ARK, are deployed from that ARK, and sign out at that ARK.

Unlike the ARKs, CARES members may find themselves deployed to a field assignment directly from home. The CARES' Shift Supervisor maintains the T-Cards at Comm469 as the main point of supervision. For this exercise, an interim solution was put in place to (i) record the drivers' information at the ISA Staging Sites, (ii) have ISA Staging managers verify the eligibility of the responders, and then (iii) ISA Staging managers return all paperwork as part of Demob. This approach, or something similar, needs to be finalized before the next exercise.

Recommendations:

CARES, OEM

4. Review Field responder driver information requirement and process. Address different deployment scenarios, such as driving direct to an assignment, driving as part of an assignment, etc. Include the use of methods to record driver's information.

Observation #4

The restructured ISA procedure and test was completed with more assets being inspected in roughly the same amount of time as the last ISA exercise.

Recommendations for improvement for this area come from two specific observations. The ISA assignment sets under test were a mix of legacy assets (37), transportation overpasses (12), major roads (7), and city and fire station facilities (13). As a result, 65 of the 69 assets were reviewed by 7 ISA teams with all reports delivered within a 2-hour period. This was more than twice the number of assets surveyed during the 2017 ISA Exercise using the original survey approach with 5 ISA teams (CUP-17-19T, 30 of 37 assets reviewed).

The key change was to incorporate the major City roads into the survey to ensure access is available by county public safety agencies (Sheriff, Fire, EMS) and city Public Works crews. This approach seemed to work well.

Two primary ISA staging locations were selected that provided the bulk of the field assignments, both were identified late in the exercise planning process. These ISA staging sites, and field staging sites in general, should be pre-identified and based on specific criteria. For instance, such criteria could be:

a. On or close to main roads
b. Sufficient parking for the staging function
c. Close proximity to groupings of ISA assets
d. Close proximity to concentrations of CARES members
e. Good radio coverage with Net Control

Recommendations:

CARES, OEM

5. Review and determine if the new ISA Assignment Sets worked sufficiently to adopt this as the standard ISA process.
6. Develop the plan for using field staging locations. Look at ISA specifically, and any general staging requirements that we may encounter. Look at the process for making assignments assuming 2+ staging locations.

Observation #5

The first test of the c469 Web App tools was very positive with plenty of enhancement requests and recommendations for its operational use.

The CARES deployment includes the Comm 469 PSC Vehicle. Information is relayed to the CCC DOC. The DOC, in turn, determines if the information is CCC specific and acts on it locally, or should be passed to the EOC. CARES built a prototype web application that runs on the wireless link between Comm 469 and the DOC, thereby allowing data to be collected from the field and shared with the DOC and other users on the c469 network. The ISA web app was the first application to be tested as a pilot to determine if this approach is feasible and should be enhanced and expanded.

Recommendations:

CARES

7. Determine if additional investments should be made in the C469 app series of tools.
8. If approved, determine the requirements by c469 app users – Comm 469 staff, DOC, and EOC – and develop a plan to address.

Observation #6

Document integrity is a critical aspect of any field response. The Demob process used for this exercise was a reasonable first attempt to ensure document quality.

In the FEMA|Office of Inspector General report titled "*Summary of Key Findings of Fiscal Year 2016 FEMA Disaster Grant and Audits*[4]", OIG stated, "*Over the 7-year period, FYs 2009 to 2015, we found $1.64 billion, or 15 percent, in questioned costs out of the $10.9 billion that we audited, which we recommended FEMA disallow as ineligible and unsupported costs. […] In fiscal year 2016, we found $155.6 million, or 23 percent, in questioned costs out of the $686 million that we audited, which we recommended FEMA disallow as ineligible and unsupported costs.*" In cases where FEMA payments were made and claims later disallowed, recipients would be required to repay these payments, with audits sometimes taking place years later.

Because CARES' documentation could be a used as part of the City's justification for either an expense reimbursement or cost recovery request (volunteer hours are eligible for cost recovery), ensuring the accuracy and completeness of what we submit is critical. During this exercise, CARES tested a draft Demobilization Check Out process and custom Demob form that guided responders through a series of questions. One requirement of the process was on form correctness with corrections made at the time of check out.

Recommendations:

Citizen Corps, OEM

9. Review the exercise Demob forms for completeness.

[4] https://www.oig.dhs.gov/sites/default/files/assets/2017-11/OIG-18-06-Oct17.pdf

10. Review and adopt a CCC Demob procedures and forms.
11. Develop Demob supervisor training to ensure consistency across exercises and activations.
12. Look at adding off-line feedback to responders on the quality of their feedback.

Observation #7

Several miscellaneous items were identified were uncovered that need attention, either during the exercise planning states or during the exercise itself.

Recommendations:

CARES

13. Review how we use the 'assigned' frequencies, particular assumptions around our 2 simplex and 2 repeaters at our disposal. Look at our use of simplex vs repeater communications (We operate on a linked TAC1-TAC3. We now have WW6HP repeater at our disposal).

Citizen Corps

14. Discussion on how to get CERT more on board with GMRS. If this is important, then how do we move this forward?

Tactical Action Item List

15. Resolve BCP Network connections N13 and N14 issue; connections not working correctly.
16. Verify operation of printer access from ad-hoc user connects (did not work from the Packet Op networked PC).
17. Implement a C469 GMRS Antenna portable approach to ensure city-wide coverage.
18. Purchase a new Larsen 2/70N antenna for antenna Position #4.
19. Update C469 Packet Doc procedures to include ISA operations.
20. Reset ISA Doc sets for ISA staging/DP sites operators.
21. Perform continuity checks of all antenna and radio cable paths.
22. Put the Packet TNC on the network for remote access outside of the truck.
23. Replace digital clock batteries all positions; add spare batteries to c469 stock.
24. Add TRANS-104 to c469 ISA Asset list.
25. If c469 web apps are approved, develop and maintain a list of enhancement requests to the C469 app series. Starting requests include:
    - Review the c469 web app for general useability and control flow
    - "Add a site" feature to the c469 ISA Asset app to add ad hoc sites.
    - Add a c469 ISA Asset app status option for "Unable to inspect".

Conclusion

While it is easy to focus on the things that need to get done to – in this case, improve ISA process performance – we cannot lose sight of that fact that a Hayward Fault rupture is long overdue. With 25 items identified above as things on which we could work, not everything can get done.

This ISA exercise was a process merge of legacy (pre-2021) ISA assets, new assets, and aspects of the First Look Area assessment. If the Hayward Fault ruptured tomorrow, what we deployed for this exercise would essentially work during a real event. Prioritizing the things that can make a difference ensures we spend our time effectively on improving our response process. This is the next step.

Special thanks to the Exercise Team for your hours of reviewing, discussing, and agreeing on aspects of this exercise.