

2013

# Berkeley CERT Citywide Exercise

**When a 6.9  
earthquake  
strikes  
Berkeley,  
will you  
know what  
to do?**



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## Acknowledgements

Special thanks and acknowledgements go to the following key contributors to the development and delivery of the 2013 Berkeley CERT Citywide Exercise:

The 2013 Berkeley CERT Citywide Exercise Planning Team

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Berkeley Fire Department

NALCO ARES RACES

City of Berkeley Office of Economic Development

City of Berkeley Public Health Division

City of Berkeley Parks and Recreation Department

Berkeley Unified School District

Berkeley Chamber of Commerce

Downtown Berkeley Association

Ecology Center

City of Oakland Office of Emergency Services

Albany Fire Department

KALX 97.5

Camp Creative

Berkeley Bowl, Walgreens, Monterey Market, Orchard Supply Hardware

And to all participating individuals, neighborhood groups, businesses and community organizations.

## Executive Summary

This after action report is intended to assist the City of Berkeley's Office of Emergency Services and the Community Emergency Response Team (CERT) program by identifying strengths, identifying potential areas for further improvement, and by recommending follow-up actions learned from the 2013 Berkeley CERT Citywide Exercise.

The 2013 Berkeley CERT Citywide Exercise was conducted on April 27, 2013. Objectives of the exercise focused on communications, fire safety, and damage assessment. This was the second year of the annual exercise in Berkeley. Exercise events were scheduled from 9am to 11am, followed by a Citywide Exercise Debriefing hosted by the City's Office of Emergency Services at 12pm. Over 2,000 community members throughout Berkeley participated.

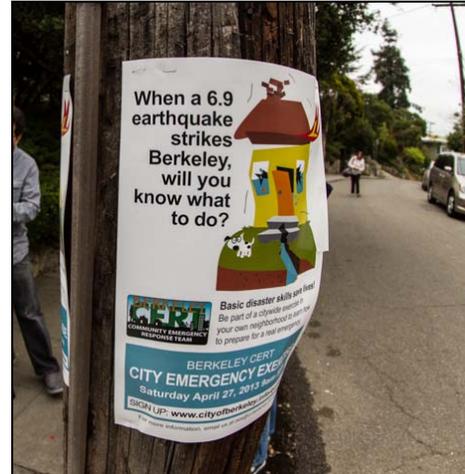


Photo: Cybele D'Ambrosio

A website and Participant Handbook was developed to guide exercise players in activating themselves and their neighbors for the event. Participation was designed to be scalable so that any individual or group of individuals could participate to their current level of preparedness and knowledge regardless of prior training in Berkeley's CERT program. More than three quarters of the participants in the Citywide Exercise did not have any prior CERT training.



Photo: Cybele D'Ambrosio

Scale of activities ranged from basic phone contact with out-of-area emergency contacts and listening to emergency broadcasts from the City to in-depth set up of neighborhood incident command posts to organize and conduct simulated CERT light search and rescue operations and practice of emergency radio communications. The largest number of participants in one group was 42 with fourteen groups having 20 or more participants at their site.

The City activated and promoted awareness of emergency communications systems like Radio 1610 AM and the Berkeley Emergency Notification System (BENS). Also among the exercise objectives, the City activated amateur radio operators from Northern Alameda County Amateur Radio Emergency Services/Radio Amateur Civil Emergency Services (NALCO) to provide emergency message passing from fire stations. Berkeley Unified School District exercised amateur radio capabilities in conjunction with the NALCO net. Berkeley Fire Department dispatched companies to conduct damage assessment drills simulating post earthquake



## Strengths

Key strengths identified included:

- Community participation was more than doubled over previous year. Over 2000 participants and over 70 neighborhood groups participated in the exercise.
- Scalability of the exercise was effectively implemented by participants at both the individual and group levels.
- The Participant Handbook successfully conveyed ways that groups can participate and to engage their neighbors to participate.
- Outreach for the exercise increased community enrollment in the Berkeley Emergency Notification System (BENS).
- Support from many parts of the community- schools, businesses, multiple City departments and community organizations – helped to extend outreach and boost participation levels.

## Areas for Improvement

Recommendations for improvement included:

- Evaluation of the effectiveness of the model of CERT message passing via ham radio should be conducted.
- Radio 1610 AM broadcast was not understandable by many participants in the exercise.
- Outreach and marketing efforts should continue to be increased and improved for future exercises.
- Improve registration process and improve clarity of exercise objectives and expectations of participants.



Interim Fire Chief Gil Dong addresses the audience at the Citywide Exercise Debriefing. Photo: Mark Coplan

## Narrative

The City of Berkeley's Community Emergency Response Team aims to provide education in disaster preparedness and training in basic emergency skills. By preparing neighborhoods and community groups with basic emergency skills we can lessen the effect of a disaster and help sustain ourselves until assistance can arrive.

The Berkeley CERT Citywide Exercise provides participants an opportunity to practice disaster response in their own homes, neighborhoods, businesses and workplaces. All individuals or community groups are encouraged to participate regardless of their level of CERT training or previous participation in City disaster preparedness activities.



Residents practice techniques for putting out small fires. Photo: Sandy Miarecki

## Exercise Objectives

1. Conduct fire prevention activities and practice fire suppression skills.
2. Perform a damage assessment of the neighborhood.
3. Practice emergency communications.

## Fire Safety

One component of this year's exercise focus was fire prevention and suppression. Earthquakes can start fires and prompt, safe, and effective suppression of small fires will be critically important. Fire prevention actions before an earthquake can be equally critical in mitigating the potential impact of the disaster. Participants in this year's exercise aimed towards this goal by checking their fire extinguishers, testing their smoke alarms, and practicing fire suppression techniques with garden hoses. Simulated fires (made out of cardboard) and group tours of utilities control techniques and location were popular ways to simulate post-earthquake response to fire safety issues.



Props were used to simulate fires. Photo: Kim Tonkyro

## Damage Assessment

When fires and other hazards are beyond the capability of community volunteer responders, damage assessment reported to professional responders helps resources get to where they are most needed in the community. Community members practiced this exercise objective through simulating injuries, building damage, fires, and trapped victims. Simulated scenarios were posted on locations in neighborhoods and reported back by damage assessment teams to their neighborhood group incident command posts. Incident command system (ICS) was used by trained CERT members to organize damage assessment efforts in their groups.

Berkeley Fire Department conducted a damage assessment drill integrating departmental procedures following a large-scale earthquake. “Windshield Assessments” were performed in all 7 fire districts as fire companies drove prescribed routes gathering information and simulating triage of multiple emergency incidents. CERT trained neighborhood leaders provided fire officers with critical needs and damage assessment information from their neighborhood command posts.



Photo: Robert Smith

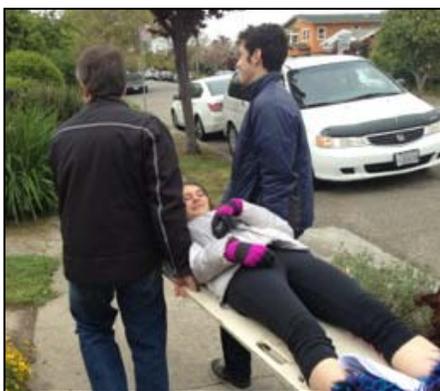


Photo: Bruce Birkett



Photo: Robert Smith

## Amateur Radio Operators

The City of Berkeley simulated Emergency Operations Center (EOC) information gathering through activation of amateur radio operators at fire stations and at the simulated EOC. Twenty-four trained amateur radio operators activated with the Northern Alameda County Amateur Radio Emergency Service/Radio Amateur Civil Emergency Service (NALCO) for this exercise. Eleven were assigned to four of the seven fire stations, two at the simulated EOC, nine were embedded in neighborhood groups and one mobile operating position was set up.

Simulating the loss of traditional 9-1-1 communications systems, community members utilized the amateur radio network established at fire stations and directly in neighborhoods for emergency communications and reported attempted delivery of over 300 messages to the EOC in the two-hour exercise operational period. Forty messages were passed on the voice net within this time frame.



Jordan Hayes, KG6UAE, operates as net control at the simulated EOC. Photo: Mark Coplan

Some improvements were gained during this exercise by increasing the number of operators at each station and embedding amateur radio operators in neighborhoods. Unfortunately, the gains were not enough to offset the limits of handling messages by voice.

Other than the voice net, NALCO prototyped and tested a number of other technologies during this exercise. These included packet radio and high-speed multimedia mesh radio (HSMM). A mobile operating position (MOP) was deployed from a pickup truck which set up at the Virginia Gardens basketball court.

This portion of the exercise highlighted the importance of trained amateur radio operators as a medium of emergency communications especially when other communications are compromised as well as the continued need for training and exercise on effective message passing.



Glen Epperson, K6GSE, communicated from NALCO's Mobile Operating Position (MOP) set up at Virginia Gardens basketball courts. Photos: Glen Epperson

### **Out-of-Area Contact**

About 400 of the exercise participants reportedly made contact with their designated out-of-area emergency contacts. As a basic part of a disaster plan for personal and family preparedness, this exercise objective promoted participation at the individual level. Exercising this part of the plan helps participants not only establish an emergency contact plan if they did not already have one, but also to test what they would do if their out-of-area contact were unreachable or unavailable at the time.



Meghan and Marlowe Pakes practiced their emergency plan together as a family with neighbors. Photo: Kaylia Hoffman Bravo

### **Berkeley Emergency Notification System (BENS) Signups**

One goal of the annual exercise is to promote awareness of local emergency response systems and sources for public information. The [Berkeley Emergency Notification System \(BENS\)](#) allows the City to provide Berkeley community members with emergency information and instructions to phones and email addresses. Community members must subscribe mobile phones and email addresses to receive BENS alerts on those devices.

During the primary outreach period for this year's event, January 31 through April 27, community members signed up for approximately 1,250 BENS accounts, compared to approximately 165 signups for the same period in 2012. This increase in BENS signups improves the City's ability to share emergency information with community members.

The City performed a BENS test concurrently with the 2013 CERT Citywide Exercise. Test results and technical details will be posted to [www.cityofberkeley.info/BENS](http://www.cityofberkeley.info/BENS) in late May.

### **Radio 1610 AM**

Radio 1610 AM is the City of Berkeley's broadcast frequency for travel advisory information. This radio frequency may be utilized in an emergency as a method of public information and warning. The Berkeley CERT Citywide Exercise encouraged participants to tune in to test their ability to receive this message in their home or neighborhood.

As with previous communications exercises conducted by the City, the test produced mixed results. Approximately 400 participants reported hearing the 1610 AM messages. However, many others (more than 40 individual survey respondents) were unable to receive the radio station clearly from their locations. Although the relatively small data sample and qualitative nature of the information obtained limit the applicability of this data for specific technical improvements in Radio 1610 AM, the exercise again demonstrated that this public information outlet does not reach all locations in Berkeley with access to AM radio.

Berkeley CERT Citywide Exercise  
April 27, 2013

## Overview

### Activity Name

2013 Berkeley CERT Citywide Exercise

### Duration

4 hours

### Exercise Dates

April 27, 2013

### Participating Agencies

City of Berkeley

Berkeley Community Emergency Response Team (CERT)

Berkeley Fire Department

City Manager's Office

Berkeley Unified School District

### Number of Participants

Players 2000+

Evaluators 3

Controllers 1

### Focus

Response

Recovery

Prevention

Other

### Type of Exercise

Full Scale

## Evaluation

Exercise evaluation was conducted for players through player debriefing, player evaluation and feedback forms, and online feedback survey. The exercise was designed to provide participants with an opportunity to community members to practice and test emergency preparedness, plans and response skills in their homes, neighborhood, business, and workplace setting. Participants identified strengths, areas for improvement and potential improvement actions. Observations focus primarily on overall actions, interactions and challenges at the city program management level and at the neighborhood organizer level rather than on individual players.

## Exercise Schedule

| Date | Time     | Event or Activity Description, Notes, Comments |
|------|----------|------------------------------------------------|
| 4/27 | 0900 hrs | Exercise Start                                 |
| 4/27 | 1100 hrs | Exercise End                                   |
| 4/27 | 1130 hrs | Player Hotwash                                 |
| 4/27 | 1200 hrs | Citywide Exercise Debriefing                   |
| 4/27 | 1300 hrs | End Exercise Activities                        |



Community members gather at Frances Albrier Community Center for a public debriefing. Photo: Berkeleyside/Emily Raguso



Jim Hynes, Assistant to the City Manager, addresses a full audience at the Citywide Exercise Debriefing (top left). This was a time for sharing experiences and lessons learned. Photos Mark Coplan

## Demonstrated Strengths and Improvement Plan

The 2013 Berkeley CERT Citywide Exercise objectives were intended to engage as broad an audience as possible and to be scalable for varying participation levels. Key strengths demonstrated include doubling participation levels for the second iteration of this community event, effective implementation of scalability of objectives and the participant handbook, and that the exercise functioned simply as an awareness tool within itself to promote an opportunity to take the time to evaluate and practice some basic personal, family, and group preparedness actions.

- Over 2,000 individuals participated at varying objective levels compared to about 900 in the previous year. 997 official online registrations were received compared to 150 in 2012. This illustrates a significant increase in community wide engagement in the second year of the exercise.
- Scalability of the exercise objectives proved effective in promoting inclusion across the community given that individual and group preparedness levels can vary to a large extent. This facet of exercise design should perpetuate to future exercises.

- The Participant Handbook was recognized as an effective tool in conveying to both group leaders and individual participants how to take part in the event. This year there was a handbook designed for the individual level as well as for the group leader.
- Outreach for the exercise was successful in promoting awareness of the Berkeley Emergency Notification System (BENS). During the primary outreach period for this year's event, January 31 through April 27, community members signed up for approximately 1,250 BENS accounts, compared to approximately 165 signups for the same period in 2012. This spike in signups was likely due to the Citywide Exercise's reach to community members. With systems that depend on community members to opt in, public awareness plays an important role in effectiveness.
- The citywide event functioned well as an opportunity to practice some basic response skills in the neighborhood setting including basic fire safety, damage assessment skills, FRS radio communications, fire station location and routes, City emergency notification system and radio stations. Promoting and practicing some level of emergency awareness was accessible no matter where in the City a participant was located.

Areas of improvement identified include the following:

- Effectiveness of the current CERT message passing model via NALCO should be more closely examined. The Berkeley CERT program should work with NALCO to explore alternatives or enhancements that would improve data throughput, accuracy and usability.
- Although there was some improvement to the registration process, clarifying registration instructions could help to reduce confusion in future exercises or alert systems activations. This could help improve access to participation in this event throughout the community.
- Radio broadcasts on 1610 AM were again not understandable by many participants in the exercise. Although over 400 participants reported hearing the broadcast, many others reported either unintelligible reception, competing interference from nearby frequencies, or simply complete lack of audible signal at their neighborhood location. Recognizing the limits of 1610 AM, the City will explore alternate means for community members to receive information shared through this station.
- Outreach and marketing efforts should continue to be increased and improved for future exercises. Although over 2000 participants took part in activities throughout the community, there is much room for improvement. Many community members still indicated only a low level of awareness in parts of the community. In particular, the UC student population and other vulnerable and underserved parts of the community were not represented in high proportion.

## **Conclusion**

The 2013 Berkeley CERT Citywide Exercise represented an improved implementation of the 2012 inaugural event. It again demonstrated the ability of community responders to access and relay emergency information, to implement basic emergency skills and to engage their fellow neighbors in disaster preparedness activities. Integrating a disaster preparedness activity that is open to citywide participation into the community encourages outreach, promotes awareness and initiates real-life actions taken towards emergency readiness.

The City's Office of Emergency Services commends and appreciates the determined efforts of all participating individuals, and all neighborhood and community leaders in making this valuable contribution towards community readiness.

## Appendix A

Table A.1 - Improvement Plan Matrix

| <b>Task</b>                                                                                                      | <b>Recommendation</b>                                                                                                                                                                                            | <b>Improvement Action</b>                                                                                                                                                           | <b>Responsible Party/Agency</b>                  | <b>Completion Date</b> |
|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|------------------------|
| Evaluate the effectiveness of CERT message passing model.                                                        | Explore alternative models to deploying NALCO for purposes of CERT message passing on a voice net.                                                                                                               | Discuss and propose testing of alternative models for CERT message passing with NALCO and CERT Advisory Committee.                                                                  | Berkeley Fire Department/<br>NALCO ARES<br>RACES | December 2013          |
| Education on Radio 1610AM as a source of Emergency Information                                                   | Radio 1610AM as a source of emergency information and public education on the limitations of this media should be reinforced.                                                                                    | Provide updated education on Radio 1610AM to the public through CERT public safety presentations and community contacts.                                                            | Berkeley Fire Department                         | Ongoing                |
| Increase Participation in Future City-Wide Drills                                                                | Increase community engagement year round and leading up to the exercise with particular focus on community segments that showed limited levels of participation.                                                 | Begin the 2013 CERT Citywide Exercise planning cycle by July 2013.                                                                                                                  | Berkeley Fire Department                         | May 2014               |
| Improve the registration process and the communication of exercise objectives and expectations for the exercise. | Develop a more automated and/or comprehensive registration process for community exercises that will limit confusion from participants. Increase clarity of exercise objectives and expectations to participants | Explore technology solutions to simplifying and more effectively registering participants for future exercises. Work on methods to increase understanding of exercise expectations. | Berkeley Fire Department                         | February 2014          |

## **Appendix B**

### Exercise Statistics Summary

#### **Participation**

2,000+ Individual Participants. 70+ Neighborhood/Community Groups.

#### **Out-of Area Contacts**

About 400 Participants contacted their out-of-area telephone contact.

#### **Berkeley Emergency Notification System (BENS) Signups**

Approximately 1247 self-registrations to the BENS system occurred between January 31, 2013 and April 27, 2013 as compared to approximately 165 for the same period, the year prior.

The City performed a BENS test concurrently with the 2013 CERT Citywide Exercise. Test results and technical details will be posted to [www.cityofberkeley.info/BENS](http://www.cityofberkeley.info/BENS) in late May.

#### **Radio 1610 AM**

Over 400 participants were reported to being able to receive the exercise message on AM radio. More than 40 individual survey respondents were unable to receive the radio station clearly from their location.

#### **Amateur Radio Operators**

31 operator voice net

Participating amateur radio operators combined for a total of 105 hours of exercise time.

4 of 7 Fire Stations staffed with amateur radio operators. 1 mobile operating position. 9 operators in neighborhood groups.

Berkeley Unified School District tested interagency communications on the voice net.

Over 300 messages from CERTs delivered to fire stations. 40 messages delivered through ham radio.

Packet radio and High-speed multimedia radio (HSMM) were prototyped.