

► BUILDING CAPACITY



Darryl Booth, MBA

Building Capacity to Respond and Recover

Editor's Note: A need exists within environmental health agencies to increase their capacity to perform in an environment of diminishing resources. With limited resources and increasing demands, we need to seek new approaches to the business of environmental health.

Acutely aware of these challenges, NEHA has initiated a partnership with Accela (formerly Decade Software Company) called *Building Capacity*. *Building Capacity* is a joint effort to educate, reinforce, and build upon successes within the profession, using technology to improve efficiency and extend the impact of environmental health agencies.

The *Journal* is pleased to publish this bimonthly column from Accela that will provide readers with insight into the *Building Capacity* initiative, as well as be a conduit for fostering the capacity building of environmental health agencies across the country.

The conclusions of this column are those of the author(s) and do not necessarily represent the views of NEHA.

Darryl Booth is senior vice president and general manager of environmental health at Accela and has been monitoring regulatory and data tracking needs of agencies across the U.S. for almost 20 years. He serves as technical advisor to NEHA's informatics and technology section.

The retired environmental health director held the matte black device in his left hand. With the dimensions and weight of a new pack of playing cards, he turned it over slowly, examining its plastic shell and the short, thick wire extending from one end.

The device was a portable USB hard drive with a 500-gigabyte capacity, enough digital storage to capture and retain the history and details of a disaster, along with the federal, state, and local response and recovery. The retired environmental health director was

NEHA Past-President Mel Knight, an experienced professional that contributed to the environmental health perspective following the 2015 Butte Fire in California. The details below are specific, but the concepts are worldwide and the events, unfortunately, are all too frequent.

The 2015 Butte Fire, which occurred east of Sacramento in the Sierra Nevada foothills, started September 9 (Figure 1). Likely caused when a powerline came in contact with untrimmed trees, the Butte Fire was among the most destructive fires in California. It

burned 70,000 acres, destroyed 921 structures, and tragically killed two civilians.

The fire was contained over 20 days later on October 1. One year has passed since the fire and the government's response is nearing completion.

In Calaveras County, Environmental Health Director Jason Boetzer and Health Officer Dr. Dean Kelaita declared a local health emergency early on, thus allowing many resources to be brought to bear. An emergency management mutual aid request was filed soon after by California's Office of Emergency Services. The call also went out through local emergency services offices and the California Conference of Directors of Environmental Health (CCDEH). Seven registered environmental health specialists from health departments near and far joined the assessment team. Boetzer attests that having a network in place to approach these resources was key to completing this critical first step.

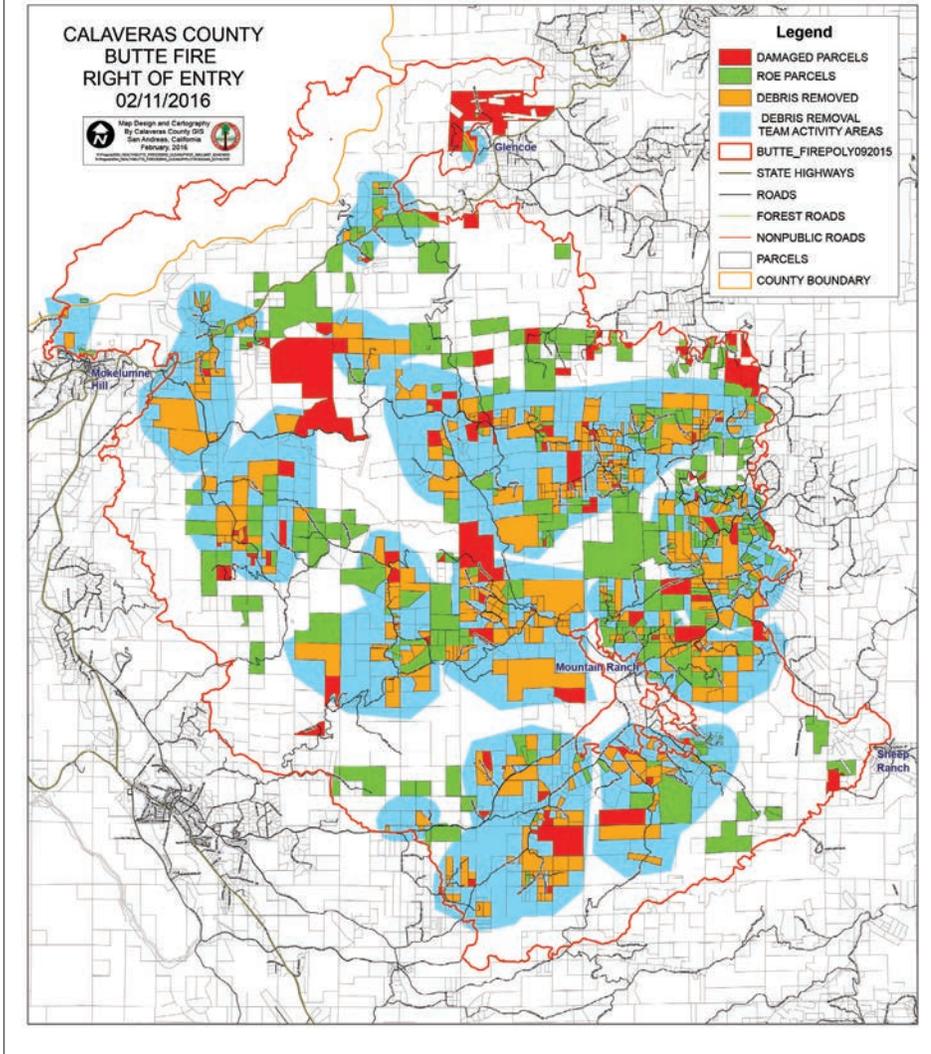
As evacuation orders were lifted, the local Calaveras County Environmental Health Department mobilized to assess 723 residential sites. Can you imagine visiting these remote sites, even as the fire still rages over the next mountaintop and the smoke is thick in the air? It is often said that all disasters are local, and so we initially benefit from local preparedness and expertise.

The county's capable GIS team quickly generated printed maps of parcels, many without addresses. Without reliable street signs and street numbers, and destroyed landmarks, the maps were invaluable to identify each assessed property.

The environmental health concerns included hazardous materials (household hazardous

FIGURE 1

GIS Map Representing the Area Affected by the 2015 Butte Fire



wastes, asbestos, and heavy metals), damaged onsite wastewater treatment systems, and compromised private wells and casings.

Even as property owners were allowed to return and sift through the remains for their possessions, they exposed themselves to these hazards. To that end, the county quickly compiled kits containing instructions, bottled water, masks, and other utilities to avoid exposure and injury. There were no power, water, heat, or bathrooms at these sites. To avoid further injury and potential illness, the county provided returning property owners with instructions on fundamental sanitation practices.

Figure 1 shows the area affected by the fire and used GIS to track the recovery progress. New map assessments were posted daily by the county's GIS team and were shared with the public to let the community know where teams were active, which provided the basis for predicting when individual properties would be cleared. Figure 1 was generated in February 2016, approximate half way through the recovery process.

The amount of time each environmental health staff member spent on different recovery services was recorded in the county health department's data management system. This database of work hours and services per-



Complete devastation immediately following the fire. Photo courtesy of Jeff White.



Parcel following assessment but prior to cleanup. Photo courtesy of Ali Hossain.

formed helped immensely when submitting for follow-on Federal Emergency Management Agency reimbursement. Other county departments with less regimented time tracking had a more difficult effort accounting for their time.

With the initial assessments completed and the fire suppressed, the cleanup work could begin. The state engaged contractors, which in turn secured environmental health professionals for oversight. The California Association of Environmental Health Administrators (an arm of CCDEH) facilitated the recruitment and contracts. The outside environmental health workers, including Knight and others, allowed the local health department to maintain its regulatory responsibilities.

The first restoration priorities were roads and emergency response facilities (police stations, hospitals, etc.). Clearing evacuation, staging, utility, and environmentally-sensitive areas was the next priority. Residential properties were part of that second priority and so the teams moved quickly. The steps to cleanup, under environmental health supervision, were conveyed as follows:

- household hazardous waste removal such as lead acid batteries from solar systems,

materials from “shade tree” mechanics, pesticides, and others household chemicals;

- asbestos inspection and removal;
- site documentation;
- ash and debris removal;
- hazardous tree removal; and
- erosion control.

The cleanup, plus a myriad of administrative services, proceeded in earnest throughout 2015 and into 2016. By the time Knight showed up in my office with the USB hard drive, the physical work had been completed and the agencies involved were now working to close out billing and reimbursement.

In studying this event, we see two capacity building activities of note. The first capacity

building activity—common to natural and man-made disasters, but somewhat uncommon in an environmental health mode—was the mutual aid secured through existing, well-maintained networks of environmental health professionals. The declaration of a local health emergency and the state’s ready response made these agreements possible.

The second capacity building activity—perhaps more reflective of modern technology—was the consolidation and curation of digital results concerning the event and the services that took place. Calaveras County is now interweaving its own source data with the results to be reintegrated into the county’s GIS parcels.

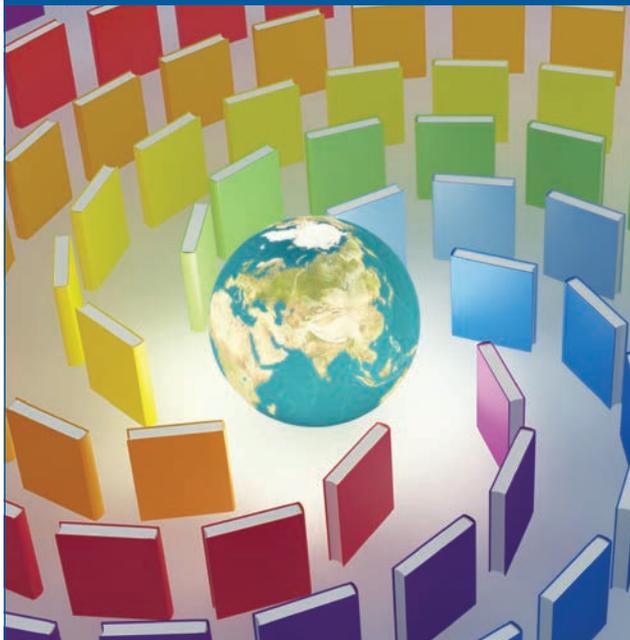
I would advocate making the repository of information from this event, with the exception of sensitive or private information, available for public search. Tools exist for private or public sectors through Google and other search engines to track, collate, and index this information into data for review and improvement planning. More importantly, this wealth of data can be used to create toolkits for future natural disasters. 🐼

Corresponding Author: Darryl Booth, Senior Vice President and General Manager of Environmental Health, Accela, 2633 Camino Ramon #500, San Ramon, CA 94583. E-mail: dbooth@accela.com.

Did You Know?

The NEHA 2017 AEC will be held in Grand Rapids, Michigan.

Grand Rapids was ranked 20th on a list of 52 places to go worldwide in 2016 by *The New York Times*. Join us there on July 10–13, 2017! 2017 AEC information can be found at www.neha.org/aec.



2017 Joe Beck Educational Contribution Award

This award was established to recognize NEHA members, teams, or organizations for an outstanding educational contribution within the field of environmental health.

Named in honor of the late Professor Joe Beck, this award provides a pathway for the sharing of creative methods and tools to educate one another and the public about environmental health principles and practices. Don’t miss this opportunity to submit a nomination to highlight the great work of your colleagues!

Nomination deadline is March 15, 2017.

To access the online application, visit www.neha.org/joe-beck-educational-contribution-award.

