JOINING THE CLEARINGHOUSE TEAM

Ask yourself if you are prepared to work. Collecting data in a post-disaster environment is very different from collecting data under non-disaster conditions. Collecting post-earthquake information after a major event can be stressful and require long hours of hard work, under challenging conditions, so it is not for everyone. We encourage working in teams. Information and some training will be available at the physical Clearinghouse locations; however the ability to rely on your professional experience and judgment, and problem-solve, often independently, to perform necessary tasks, is desirable.

The Clearinghouse supports both scientific and emergency response efforts. Clearinghouse partner organizations and individuals are highly skilled subject matter experts and have specific roles and responsibilities for post-earthquake response, but all participate on a cooperative basis and all are self-directed. While the Clearinghouse and its partners are NOT First Responders, our partners support the emergency response community (Cal OES, FEMA, military, local jurisdictions, etc) by providing information about the damaging effects of the earthquake. It is critical for key decisionmakers to maintain a situational awareness (i.e., to be knowledgeable of potential and current conditions, possible impacts on populations and infrastructure, and other key indicators of the situation). In any major incident, the degree to which key decisionmakers at all levels of government and within interagency structures are able to gain and maintain a situational awareness on the scene determines, to a great degree, their ability to anticipate requirements and provide appropriate resources. Generally, the most accurate information is obtained from those on the ground, closest to the potential or actual incident site and emergency managers rely on information and analysis from authoritative sources, such as Clearinghouse partners. The information provided is used by decision makers to prioritize activities and the deployment and employment of critical, but often limited, resources. Therefore, in addition to collecting data and observations in support of your individual, long-term scientific research goals, we are asking that you please gather and contribute information to support immediate disaster intelligence and situational awareness. These concepts are summarized from the California Catastrophic Incident Base Plan: Concept of Operations (Annex B.2 Essential Elements of Information) which is found here http://www.calema.ca.gov/TrainingandExercises/Pages/State-Level-Exercise.aspx

The California Governor’s Office of Emergency Services, the California National Guard, and Federal Emergency Management Agency Region IX are among a number of important innovators who will share information with the Clearinghouse through implementation of the information exchange middleware, UICDS. The UICDS (soon to be renamed Keystone) middleware was developed by the Department of Homeland Security and the Department of Defense. It is a web service middleware available at no cost to government agencies to achieve interoperability among incident management software. Through a variety of Keystone Connectors, commercial incident management applications (including WebEOC, ETeam, SpotOnResponse, and Digital Sandbox, among others), dispatch systems, and other software exchange operational data with each other and provide geospatial outputs to ArcGIS Online, Google Earth, and other Shared Situational Awareness and Common Operating Pictures.
BECOME FAMILIAR WITH CLEARINGHOUSE DATA COLLECTION AND SITUATIONAL AWARENESS RESOURCES

It is a priority of the Clearinghouse to use technology to aid in the collection and distribution of important information after an earthquake in California. In addition to field data collection tools, the Clearinghouse website hosts discussion forums. There are permanent sub-groups established for on-going Clearinghouse matters such as overflight and, for professional disciplines e.g. seismology, structural engineering, etc. New forums may be established as necessary during activation based on need e.g. hotspots, coordinating field teams, discipline-specific emerging themes, itinerary exchange. Visit the Clearinghouse website to learn more [http://www.californiaeqclearinghouse.org/data-collection/](http://www.californiaeqclearinghouse.org/data-collection/).

If you work for an organization that provides tools for information gathering, please feel free to contribute to the Clearinghouse efforts using those tools and technologies. If you do not have access to tools and technologies to collect information but would like to contribute your time, talent, and expertise, Clearinghouse SpotOnResponse tool is a free HTML5 web-based mobile tool available for you to use.

SpotOnResponse (SOR) can be used to both collect earthquake related data AND provide situational awareness. It is capable of running on any web browser and will help researchers in the field communicate with each other, the Clearinghouse, and first responders, in the event of a damaging earthquake in California. During Clearinghouse activation in response to a real earthquake, the SOR viewer on the Clearinghouse website will display data and information in real time, collected by Clearinghouse volunteers and from trusted emergency response partner organizations such as Cal OES and FEMA [http://www.californiaeqclearinghouse.org/spotonresponse-map/](http://www.californiaeqclearinghouse.org/spotonresponse-map/).
Using SOR to collect scientific data and provide situational awareness

The following examples illustrate how to implement these concepts when conducting field data collection as a Clearinghouse partner. We invite you to contribute additional examples. For detailed directions and instructions for using SOR, see Clearinghouse SpotOnResponse User’s Guide.

Field personnel should use the tool to record new observations and updates, including photos, videos, plans, etc., for incidents they encounter in the disaster area. In addition, field teams will see items on the map that represent incident reports from other sources. Some of these incidents have already been investigated, as indicated by updates associated with the incident. However, many will be reports such as media reports or dispatches from emergency response organizations, which have not yet been investigated and/or authenticated. If not already deployed on specific task, field teams should direct their efforts to providing observations and data on reported incidents for which no data currently exists. Finally, given the certainty of strong aftershocks following a major earthquake, as necessary, field teams should record new incidents and provide additional updates for previously indentified and investigated incidents.

Collection of detailed measurements such as fault offset, displacement, tsunami inundation, wave and current velocity, are important for scientific research supporting long-term mitigation, code improvements, and hazard reduction efforts, and can be recorded on the Clearinghouse FieldNotes forms accessed through SOR. However, scientific data usually are not relevant to emergency response efforts. Taking a few extra moments to provide a summary or interpretation of your scientific data turns it into situational awareness and meaningful intelligence to emergency responders. For example, a scientist studying ground failure would stop to collect information at a site where they identify liquefaction as the cause of damage to a building or facility. They would map the boundaries of the area affected by liquefaction, size/location/composition of sand boils, and vertical and lateral offset, among other features. Emergency responders will not know how to interpret this information though. Summarizing the information, saying that ground failure within the mapped boundaries where liquefaction is observed may mean the roads are not able to support heavy equipment, lets emergency responders know that they may not be able to deploy heavy equipment for rescue operations, or that facilities within the mapped area, such as emergency shelters, may need to be re-located.

Providing detailed reports of observed damage help those not in the affected area understand the impact of the disaster. Keep in mind though that a great deal can also be inferred from reports indicating no damage is observed. For example, a ground failure expert may be searching for damage within an area known to be susceptible to liquefaction and observe a retail facility that is open and serving the public. If the facility is reported as operational by the field investigator, emergency managers may infer power and water are functioning at the location; roads are passable for people to access the facility, and therefore, may be an area where few or no outside resources are needed.
Use the green + icon to create a record of a new Item of Interest (IOI). Use the description field to briefly summarize observed conditions e.g. Cracks observed in road and 2-3 inches of water observed in road. Northbound land of 3rd Street partially obstructed but passable.

The new IOI will appear as a pin or icon on the map and in the list of items below the map. Or, you can click on the icon and information about the incident will appear.

Next, click on either the map icon or the bar for the incident you just created. Click on the pencil icon, and then the update icon, to upload photos, videos, documents, etc. about the incident, and submit. e.g. Photo looking north on 3rd Street with no liquefaction-related traffic issues.
You will now see an update to the IOI
Now record scientific data and observations. Click on the folder icon in the upper left corner, select Clearinghouse Field Notes, and you will be re-directed to access external data collection forms for Fault Rupture, Liquefaction, Landslide, Tsunami, Lifelines, Buildings or additional General information.

After you fill out the forms, click on record and the information entered on Clearinghouse Field Notes forms will appear in SOR. The information will also be shared with other Clearinghouse partners logged in to SOR and connected to the Clearinghouse SOR UICDS core.
Providing Situational Awareness from outside of the affected region

Even if you are not able to participate in person, you can make a meaningful contribution to situational awareness about the earthquake remotely. You can use the Set Location feature in SOR (described in the Clearinghouse SpotOnResponse User’s Guide) to “place” yourself in the disaster-affected region. When you see media reports of damage you can create IOIs to alert nearby field teams they should go investigate.