Crowdsourcing Support for Disaster Response

What is Crowdsourcing?

Crowdsourcing is a method for gathering open-source ideas, content, or services produced by many people scattered across the digital world and then curating this data into consumable and informative products. Digital Volunteer Networks (DVNs) are the virtual equivalent of field-based voluntary organizations, which lead specific crowdsourcing efforts. These networks perform crowdsourcing by dividing the collection, analysis, and visualization of data between trained volunteers, who have experience in fields such as mapping, coding, communications, and social media. The resulting products provide emergency managers with increased situational awareness and identifies resource gaps based on data that would have otherwise been untapped. In many cases, crowdsourced data can be more accurate and obtained faster than traditional sources.

Crowdsourcing at FEMA

FEMA's National Response Coordination Center (NRCC) Crowdsourcing Unit acts as a liaison between the emergency management community and DVNs. Requests for crowdsourced products are generated based on information gaps, which have been identified as critical to understanding the situation or informing a decision. During disaster activations, the unit maintains digital communication channels and hosts daily coordination calls with DVNs to communicate disaster response priorities, gain situational awareness of DVN crowdsourcing efforts, and facilitate critical information sharing. The unit supports the integration of DVN crowdsourcing efforts with FEMA and interagency efforts by consolidating data feeds to produce interactive, real-time maps (such as a map displaying where government and non-governmental Search and Rescue [SAR] teams have been active in the past 72 hours). Coordination also occurs with regional, field-based and interagency partners to identify uses for – and assist with interpretation and application of – crowdsourced data and products.

In response to Hurricane Maria (2017), the FEMA Crowdsourcing Liaisons coordinated with six (6) DVNs, engaging a total of 5,700+ volunteers to produce 10 crowdsourced products which supported mission critical needs essential to disaster operations. For example, a DVN crowdsourced the operating status of hospitals in Puerto Rico and integrated this data with near real-time road and bridge statuses on a live map. These products provided emergency managers with an understanding of the impacts to medical facilities and the transportation network connecting the facilities days before official sources were able to, informing resource prioritization. When emergency managers face scenarios prompting emerging information requirements or gaps in traditional data sources, crowdsourcing can be leveraged to fulfill those needs. The Crowdsourcing Unit can facilitate development of such products or provide technical assistance to develop crowdsourcing liaisons within other emergency management structures.

During NRCC activations, the FEMA NRCC Crowdsourcing Unit identifies impacts to critical lifelines through:
- *Active Crowdsourcing* by coordinating with Digital Volunteer Networks developing crowdsourced products specific to the disaster *and*
- *Passive Crowdsourcing* by leveraging existing crowdsourcing platforms and social media monitoring tools developed by the tech industry in the private sector.

How do Digital Volunteer Networks validate data?
Many DVNs have a quality assurance process for their crowdsourced data where they verify public-generated data by identifying and investigating the original sources through social media or other networking channels.

For more information or to get involved, contact **FEMA-Crowdsourcing@fema.dhs.gov**