

**EMERGENCY MGMT 2.0: HOW #SOCIALMEDIA &
NEW TECH ARE TRANSFORMING PREPARED-
NESS, RESPONSE, & RECOVERY #DISASTERS**

HEARING

BEFORE THE

**SUBCOMMITTEE ON EMERGENCY
PREPAREDNESS, RESPONSE,
AND COMMUNICATIONS**

OF THE

**COMMITTEE ON HOMELAND SECURITY
HOUSE OF REPRESENTATIVES**

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On June 12, 2013, Mr. Tom Marino of Pennsylvania resigned as a Member of the subcommittee and Mr. Mark Sanford of South Carolina was appointed to the vacancy.

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**EMERGENCY MGMT 2.0: HOW #SOCIALMEDIA
& NEW TECH ARE TRANSFORMING PRE-
PAREDNESS, RESPONSE, & RECOVERY
#DISASTERS #PART1 #PRIVATESECTOR**

Tuesday, June 4, 2013

U.S. HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON EMERGENCY PREPAREDNESS,
RESPONSE, AND COMMUNICATIONS,
COMMITTEE ON HOMELAND SECURITY,
Washington, DC.

The subcommittee met, pursuant to call, at 10:02 a.m., in Room 311, Cannon House Office Building, Hon. Susan W. Brooks [Chairwoman of the subcommittee] presiding.

Present: Representatives Brooks, King, Palazzo, Perry, Payne, and Clarke.

Mrs. BROOKS. The Committee on Homeland Security's Subcommittee on Emergency Preparedness, Response, and Communications will come to order.

The subcommittee is meeting today to examine the impact social media and new technology is having on disaster preparedness, response, and recovery.

I now recognize myself for an opening statement.

In today's technology-driven world, social media and other types of new technology are becoming one of the primary ways we receive, process, and relay information.

Studies have shown that more than 60% of the people in the United States have at least one social media account, with many having multiple accounts to include Facebook pages, Twitter profiles, and Pinterest boards.

While social media originally started out as a way to share information among family and friends, it is evident that it has evolved to serve other functions, such as prevalent sources for news, advertising, and entertainment.

But another evolving and very important role, and the subject of this hearing, is its use in preparing for, responding to, and recovering from disasters.

We have heard numerous stories from Hurricane Sandy and the Boston bombings of how citizens used Facebook, Twitter, and Instagram to relay information to first responders, communicate with loved ones, and request assistance when cell phone service was unavailable.

According to the 2013 National Preparedness Report, which was released by FEMA last week, during Hurricane Sandy, "Users sent

more than 20 million Sandy-related Twitter posts, or 'tweets,' despite the loss of cell phone service during the peak of the storm."

We have also seen how response organizations are using social media to quickly share public safety information and maintain direct communication with disaster survivors during and after an incident.

The Center for Naval Analysis conducted a survey of the use of social media by emergency management agencies and found that 77 percent of survey respondents use social media, with 55 percent setting the goal of monitoring social media during an event.

Even just last month during the devastating tornado in Oklahoma, the cities of Moore and Oklahoma City used their Twitter accounts, their cities' Twitter accounts, to relay real-time updates on open shelters, road closures, lost-and-found pets, and personal items. They also actively monitored their Twitter accounts and responded to requests for assistance posted by disaster survivors.

I personally found that during the severe flooding that occurred in my district in Indiana in April, the Indiana Department of Homeland Security also used Facebook and Twitter to relay information to my constituents, such as how to report damage, where to get assistance, which was very effective and proved to be more efficient than using traditional media avenues, like television and radio. I also personally posted on my Facebook page to inform constituents about the flooding and the Federal assistance that was available.

Social media is not the only thing that is transforming how we prepare for, respond to, and recover from disasters. In January of this year, I had the opportunity to travel to Silicon Valley with some of my colleagues, and on that trip, we met with companies that were on the leading edge of new technology that are also contributing to the preparation for, response to, and recovery from disasters.

Two of these amazing companies are here today, Google and Palantir, and it was amazing to see the innovation and the ingenuity being used by the private sector.

It gave me hope, filled me with excitement to sit with representatives from these companies, learn about not only what they are doing, but what they are planning and what they are thinking about for the future.

The management of "big data" and the use of social media provide enormous opportunities for efficiency in emergency management, and I believe that these companies and organizations before us can make a difference in how this country is able to prepare for and respond to disasters.

While there are numerous examples of how social media and new technology have enhanced emergency management activities, I would be remiss to not also point out that there can be some pitfalls of which we need to be wary.

For example, recent events have shown us how misleading, faulty, or even malicious information can escalate quickly on social media sites and negatively affect response efforts.

We have also seen that social media can be used to spread messages of hate. Immediately after the recent terror attack for instance in London, the attackers actually engaged those who had

cameras knowing that their message would make its way to YouTube and be broadcast around the world.

We also must be cognizant on the limitations of technology, such as its reliance on power sources and internet connections.

But I am very pleased today to be welcoming our distinguished panel of witnesses and we look forward to hearing your perspectives again, on particularly the private sector's involvement with Government in preparation, response to, and recovery in disasters.

[The statement of Chairwoman Brooks follows:]

STATEMENT OF CHAIRWOMAN SUSAN W. BROOKS

In today's technology-driven world, social media, and other types of new technology are becoming one of the primary ways we receive, process, and relay information. Studies have shown that more than 60% of the people in the United States have at least one social media account, with many having multiple accounts to include Facebook pages, Twitter profiles, and Pinterest boards. While social media originally started out as a way to share information among friends, it is evident that it has evolved to serve other functions, such as a prevalent source for news, advertising, and entertainment.

Another evolving role, and the subject of this hearing, is its use in preparing for, responding to, and recovering from disasters. We have heard numerous stories from Hurricane Sandy and the Boston bombings of how citizens used Facebook, Twitter, and Instagram to relay information to first responders, communicate with love ones, and request assistance when cell phone service was unavailable. According to the 2013 National Preparedness Report, which was released by FEMA last week, during Hurricane Sandy, "users sent more than 20 million Sandy-related Twitter posts, or 'tweets,' despite the loss of cell phone service during the peak of the storm."

We have also seen how response organizations are using social media to quickly share public safety information and maintain direct communication with disaster survivors during and after an incident. The Center for Naval Analyses conducted a survey of the use of social media by emergency management agencies and found that 77 percent of survey respondents use social media, with 55 percent setting the goal of monitoring social media during an event.

For example, during the devastating tornado in Oklahoma last month, the cities of Moore and Oklahoma City used their Twitter accounts to relay real-time updates on open shelters, road closures, lost-and-found pets, and personal items. They also actively monitored their Twitter accounts and responded to requests for assistance posted by disaster survivors.

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Social media is not the only thing that is transforming how we prepare for, respond to, and recover from disasters. In January of this year, I had the opportunity to travel to Silicon Valley with some of my colleagues. On that trip, we met with companies on the leading edge of new technology that are also contributing to the preparation, response, and recovery from disasters—two are represented here today, Google and Palantir. It was amazing to see the innovation and ingenuity being used by the private sector. It gave me hope and filled me with excitement to sit with representatives from these companies and talk not only about what they are doing, but what they are planning and thinking about for the future. The management of "big data" and the use of social media provide enormous opportunities for efficiencies in emergency management and I believe that these companies and organizations before us can make a difference in how this country is able to prepare for and respond to disasters.

While there are numerous examples of how social media and new technology have enhanced emergency management activities, I would be remiss to not point out that there are pitfalls of which we need to be wary. For example, recent events have shown us how misleading, faulty, or malicious information can escalate quickly on social media sites and negatively affect response efforts. We have also seen that social media can be used to spread messages of hate. Immediately after the recent terror attack in London the attackers actually engaged those with cameras knowing

that their message would make its way to YouTube and broadcast around the world. We must also be cognizant on the limitations of technology, such as its reliance on power sources and internet connections.

I am pleased to welcome our distinguished panel of witnesses and look forward to hearing your perspectives on this topic.

Mrs. BROOKS. I now will recognize the gentleman from New Jersey, Mr. Payne for any opening statement you might have.

Mr. PAYNE of New Jersey. Good morning.

I would like to thank the witnesses for being here today and Chairwoman Brooks for holding these series of hearings.

The internet has changed the world. It has changed how a Government serves its citizens and how businesses serve its customers and how the public engages in the political and social action.

During recent disasters from Hurricane Sandy to Boston Marathon bombings, the internet was used to galvanize ordinary citizens. After the Boston Marathon bombings, Boston residents used Google Docs to let marathoners know that their homes were open to those who were unable to get back to their hotels.

After Hurricane Sandy, survivors used Twitter and Facebook to post images of the devastation caused by the storm. Survivors also used social media to reconnect with loved ones and share information about gas stations, grocery stores, and pharmacies that were available.

Others used social media to coordinate volunteer response and aid efforts. Clearly, social media and “big data” have revolutionized disaster preparedness and response activities.

The FEMA’s 2013 National Preparedness Report, which was released last week, found that emergency management agencies are increasingly using social media to disseminate information and are exploring additional applications of social media.

The same report also found progress in the use of information management systems and on-going data integration efforts to improve information sharing and situation awareness.

As Members of the Committee on Homeland Security and the Subcommittee on Emergency Preparedness Response Communications, we sit in a unique position as internet technology evolves and the world continues to change around us.

Our role requires us to help the Federal Government, State, and local first responders and the private sector harness the potential that the internet technology can bring to bear in disaster preparedness and response activities while working to mitigate the inherent limitations of the technology.

Despite the benefits social media can yield, we know that technology can be used to spread misinformation. We know social media and web data are vulnerable to hacking and misuse.

We know that unless data is integrated and organized properly and shared with the right people, it is useless, and we know that unless someone has the internet, none of this information is going to reach them. During disasters it is critical the information be accurate, secure, and accessible.

I look forward to exploring these issues with our private-sector witnesses today. By launching rumor control, a website devoted to correcting misinformation circulated by social media sites, FEMA has begun to tackle some of these issues, but I think the witnesses here today have valuable insight to offer.

I know the PSE&G was recently recognized for innovative use of social media during Hurricane Sandy. I know that PSE&G participates in the Business Emergency Operation Center Alliance in New Jersey which facilitates public and private information sharing during disasters. Their good work should provide valuable information on best practices to improve the use of social media during major disasters.

I look forward to the testimony of all of our witnesses here today, and I yield back the balance of my time.

[The statement of Ranking Member Payne follows:]

STATEMENT OF RANKING MEMBER DONALD M. PAYNE, JR.

JUNE 4, 2013

The internet has changed the world—it has changed how the Government serves its citizens, how businesses serve its customers, and how the public engages in political and social action.

During recent disasters—from Hurricane Sandy to the Boston Marathon bombings—the internet was used to galvanize ordinary citizens. After the Boston Marathon bombings, Boston-residents used Google Docs to let marathoners know that their homes were open to those unable to return to their hotels.

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Survivors also used social media to reconnect with loved ones and share information about open gas stations, grocery stores, and pharmacies. Others used social media to coordinate volunteer response and aid efforts.

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During disasters, it is critical the information be accurate, secure, and accessible. I look forward to exploring these issues with our private-sector witnesses today. By launching Rumor Control, a website devoted to correcting misinformation circulated by social media sites, FEMA has begun to tackle some of these issues.

But I think that the witnesses here today have valuable insight to offer. I know the PSE&G was recently recognized for its innovative use of social media during Hurricane Sandy. And I know that PSE&G participates in the Business Emergency Operations Center Alliance in New Jersey, which facilitates public-private information sharing during disasters. Their good work should provide valuable information on best practices to improve the use of social media and big data during disasters.

Mrs. BROOKS. Other Members of the committee are reminded that opening statements may be submitted for the record.

[The statement of Ranking Member Thompson follows:]

STATEMENT OF RANKING MEMBER BENNIE G. THOMPSON

I have served on this committee for over a decade. During that time, I have witnessed natural disasters and terrorist attacks. And I have seen the use of social media evolve as a tool in our efforts to keep this Nation safe.

When you compare the response following Hurricane Katrina with the response following Hurricane Sandy, it is clear that both the Government and the public have grown increasingly adept at integrating social media into emergency response activities.

The advent of social media has provided the general public with new avenues for sharing information and organizing private response activities.

And social media allows the Government and private sector to disseminate useful information to hundreds of thousands of people. We cannot underestimate the value of useful, accurate information before, during, and after a disaster. It can save lives.

So while I support the innovative use of social media and big data in disaster preparedness and response, we must be certain that this technology is not only used appropriately and effectively, but also that the information distributed is reliable.

I was particularly troubled by misinformation that circulated after the Boston Marathon bombings, which incorrectly identified a missing man as a possible suspect.

And while I am not advocating censorship, I am concerned that social media may not have the appropriate policies in place to ensure either that disaster-related information is accurate, or that inaccurate information is quickly removed.

Additionally, I have concerns about how law enforcement uses social media in executing investigations. We must take some reasonable steps to assure that the users of social media have a clear understanding of privacy rights and protections.

Although an expectation of privacy in personal information placed on social media networks may not be reasonable, there is a reasonable expectation that the information will not be used to engage in data mining or otherwise target individuals who are exercising Constitutionally-protected rights.

Mrs. BROOKS. We are very pleased to have a very distinguished panel before us today for this important topic.

First on the panel is Mr. Matthew Stepka, the vice president of Google.org. In this role, Mr. Stepka leads social impact efforts at Google including Google.org, Google Giving, Google Ideas, Google Green, Elections & Politics, Google for Non-Profits, and Crisis Response.

Since joining Google in 2007, Mr. Stepka has led efforts in areas ranging from expanding internet access, developing clean energy, and extending Google's footprint in emerging markets.

Next on the panel is Mr. Jason Payne who serves as the head of the philanthropy engineering team at Palantir technologies. Mr. Payne manages the implementation of Palantir's philanthropic endeavors and has extensive experience with counterterrorism and counter insurgency missions as well as of the rule of law and counter corruption efforts.

Mr. Michael Beckerman is the president and CEO of the Internet Association, a Washington, DC trade association representing some of the most well-known global internet brands. Prior to his appointment as CEO, Mr. Beckerman served as 12 years as a Congressional staff member serving on the House Committee on Energy and Commerce.

I would ask Ranking Member Payne to please introduce our next panelist.

Mr. PAYNE of New Jersey. Thank you, Madam Chairwoman, and just for full disclosure to the committee, Mr. Payne and I are not related.

Mr. PAYNE. Thank you.

Mr. PAYNE of New Jersey. Thank you.

Our final witness is George Cardenas, vice president of asset management and central services at PSE&G.

In this role, he is responsible for electric and gas asset strategy and reliability, electric delivery planning, unit business performance and improvement, and utility operation services among other things.

Prior to this position, Mr. Cardenas was the vice president for gas delivery with responsibility for providing gas delivery and appliance repair services to 1.8 million public service electric and gas customers.

He is recognized as a champion for health and safety in the workplace. He sits on the leadership council of the American Gas Association and serves on the Board of Directors of the Northeast Gas Association and has honored with the New Jersey Minority Achievers award in 2004.

Mr. Cardenas received his bachelor's degree in engineering from the Stevens Institute of Technology and completed the Penn State Executive Development program.

He received his masters of business administration degree from Rutgers University Executive MBA program, and given his impressive background, there is no surprise that he is part of the leadership innovating to provide the best customer communications during disaster.

Public Service Electric and Gas was recently recognized by CS Week and JD Power Associates for its innovative use of social media during Hurricane Sandy and is a member of the BEOC Alliance, which facilitates communications among the private sector during disasters.

I am grateful for Public Service Electric and Gas' efforts, and I am happy to have Mr. Cardenas here to talk about Public Service Electric and Gas and about my home State of New Jersey—are on the cutting edge of using the new technology during disasters, which we are very proud of.

Thank you.

Mrs. BROOKS. Thank you.

The witness' full written statements will appear in the record.

The Chairwoman now recognizes and Mr. Stepka for 5 minutes for your opening statement.

**STATEMENT OF MATTHEW STEPKA, VICE PRESIDENT,
TECHNOLOGY FOR SOCIAL IMPACT, GOOGLE.ORG**

Mr. STEPKA. Chairwoman Brooks, Ranking Member Payne, and Members of the subcommittee, thank you for the opportunity to appear before you today and for your interest in the importance of internet-based technology and disaster preparedness, response, and recovery.

My name is Matthew Stepka. I am vice president of technology for social impact, a part of Google where we use trends and information and technology to address global challenges and make a lasting impact.

We have learned that people turn to the internet when there is an emergency. We want to help ensure that the right information is there when people need it.

In the first half of this year alone, millions of people around the world have been affected by natural disasters. Just 2 weeks ago, we witnessed the devastating power of tornadoes raging across Oklahoma. Our hearts go out to all of the individuals affected by these disasters.

Our goal is to make it easier to get people the actionable emergency information they need when they need it most. We do this by organizing emergency alerts, news updates, and missing persons information, building tools that enable better communication and collaboration among responders and those affected by crisis, providing updated satellite imagery and maps of affected areas, and donating to charitable organizations that are on the ground helping to provide direct relief.

As a result of our work, we have learned a number of lessons about the space. The first is that people want to find critical information through a familiar technology. So we collect and curate relevant information and make it available on Google tools where it is most effective.

We add essential phone numbers, add links to the top of our search results, we place links on our home page, we create maps that show information from authorities and communities, and provide tools to help people connect with loved ones in the aftermath of disasters.

We are able to do this thanks to the innovative technology all around us, and more and more things through the ubiquity of mobile devices. Via smartphones, we are able to send our users critical notifications that are relevant to them in near-real time based on the location and the conditions around them.

One of our services, public alerts, compiles and displays authoritative emergency information across Google properties based on user's locations or search query.

Four days before the Sandy storm hit the East Coast, users who typed in terms like Sandy, hurricane, high wind into Google search started seeing an official National Weather Service warning containing a link to more information including maps, news, and how to stay safe.

Recently through a partnership with the National Center for Missing and Exploited Children, we started publishing Amber Alerts using the same public alerts platform.

When you receive a message on your phone about a child who just went missing in your neighborhood or a tornado that is forming nearby, the first thing you will do is search for more information, which we can help you find.

We also pulled crisis maps which compile authoritative emergency information from multiple sources into one single map so people no longer have to search across many websites.

Following the Oklahoma tornadoes, for example, our team launched a crisis map that included Red Cross shelters, traffic alerts, storm reports, post-disaster imagery, and other information.

A second lesson is that crowdsourcing can enhance both quality and timeliness of critical information. Anyone can use Google mapping services to create their own maps and even host their content and data in a scalable way. Because they are open-source, anyone can employ, update, and improve our tools.

We have learned during some disasters, authoritative sources may not have as expansive information as individuals on the ground do. For example, do filling stations have gasoline? To answer that question during Sandy, a group of student volunteers called stations in New Jersey to check whether they were open and had gas available.

Within a few days they had data for more than 1,000 different stations, which was fed into our Sandy crisis map automatically. The Department of Energy's call center ended up referencing this information.

A third lesson is that we learned, critical for emergency information to be available, it should be open and on-line formats.

So open and secure formats which have open licenses before a disaster. This is critical. In the past, Google has had to gather emergency information from websites in non-structured and difficult to automate formats such as texts and PDFs and translate them into open standards.

When data is not in open formats, many steps are required to share it and each extra step can keep critical information from getting to people in a timely manner.

This is why we advocate using an open, secure, and common standard so that everyone has a consistent way to receive and share alerting information and to create useful visualization of the content.

Data providers that follow these practices could update their information automatically making it available on-line securely within seconds.

The Government can help by ensuring that important emergency information is available in open, interoperable formats. We commend the White House for the recent Executive Order requiring the Federal Government data to be made available in open machine readable formats by default. We also welcome steps Congress has taken to increase access to Government data.

We hope that agencies with emergency information in particular begin adopting these standards and licensing terms as soon as possible.

It is through open data that we are able to develop innovative alerts and other new products. With more open and secure data we can display more consistent and more actionable alerts covering things like power outages and road closures where there are floods. We can also send specific evacuation instructions to different people based on their location.

We still have a long way to go, but we look forward to working alongside emergency relief organizations and governments to help people find the information they are looking for during disasters.

Thank you very much for your time. I am happy to answer any questions you may have.

[The prepared statement of Mr. Stepka follows:]

PREPARED STATEMENT OF MATTHEW STEPKA

JUNE 4, 2013

Chairman Brooks, Ranking Member Payne, and Members of the subcommittee: Thank you for your interest in the importance of internet-based technology in disaster preparedness, response, and recovery. My name is Matthew Stepka, and I am

honored to appear before you on behalf of Google. As vice president of technology for social impact, I lead our efforts to develop technologies to help address global challenges, including our Crisis Response initiatives.

In the first half of this year alone, millions of people around the world have been affected by natural disasters in places like Iran, China, Australia, Japan, Indonesia, and Myanmar. Here at home, just 2 weeks ago, we witnessed the devastating power of tornadoes raging across Oklahoma. Our hearts go out to all of the individuals affected by these disasters.

When emergencies like these arise, people turn to the internet for information. Google wants to help ensure that the right information is there in their time of need. So we build tools to collect and share emergency information, and we support first responders in using technology to help improve and save lives.

Google Crisis Response has been responding to natural disasters since Hurricane Katrina in 2005, making information such as storm paths, shelter locations, evacuation orders or zones, and donation opportunities easily accessible. More recently, Hurricane Sandy catalyzed a broader awareness of how the internet can play a critical role in crisis response. As that storm approached and then struck the East Coast last fall, our team at Google put everyday tools like Google Search and Google Maps to use, sharing emergency weather updates, maps of the storm path, shelters, and evacuation zones, and many other kinds of information across our services. For those of us with loved ones affected by the storm, being able to follow updates of that crisis on-line in near-real time was invaluable.

During a disaster, our Crisis Response team follows the lead of emergency relief organizations, Government agencies, and first responders with the goal of supporting them with services that make it easier to get people the actionable emergency information they need when they need it most. The types of activities we might initiate include:

- organizing emergency alerts, news updates, and missing person information, and making this information visible through our web properties;
- building tools that enable better communication and collaboration among crisis responders and those affected by the crisis;
- providing updated satellite imagery and maps of affected areas to illustrate infrastructure damage and help relief organizations navigate disaster zones;
- donating to charitable organizations that are providing direct relief on the ground.

Each time, we learn more about how governments, organizations, and companies can maximize the potential of the internet to assist in disaster preparedness and relief by providing access to actionable information. We believe that applying the lessons of our continual learning in this area can improve the use of technology in crisis response.

OBSERVATIONS AND BEST PRACTICES

1. People want to find critical information through familiar technology.

We know that during disasters, people look on-line to learn how to stay safe and we want to ensure that the right information is there in their time of need. In the wake of the earthquake in Sendai, Japan, 2 years ago, we saw a massive spike in search queries coming from Hawaii for information about a tsunami. Unfortunately, the immediate results were not providing all the information those users needed because authoritative sources did not share that information in easily discoverable ways. So last year we launched a product called Public Alerts to make authoritative emergency information easier for our users to find. Through partnerships with Government agencies and other authoritative information providers, we are able to collate critical alerting information and provide instructions for how to prepare for severe weather conditions and other events such as wildfires and earthquakes.

In incorporating public alert data from authoritative, trusted sources into Google Search, Google Maps, and other Google properties, we hope to simplify the process of finding critical emergency information. In order to provide the most relevant alerts to our users, the alert you see (if any) may depend on what alerts are active at a given location, their severity, your search query, your default location settings, or your device location.

Four days before Hurricane Sandy hit the East Coast, we began providing an alert for users who typed terms like “Sandy,” “hurricane,” or “high wind” into our search box. An official National Weather Service warning appeared with a link to more information, including maps, news, contextual information, and steps people could take to keep themselves safe. To scale this initiative, we are currently working with official U.S. agencies, such as the National Weather Service and the Geological

Survey, to show relevant alerts to Google users, and we welcome partnerships with other agencies—domestic and international—who publish authoritative alerts.

We also developed an application called Crisis Map that uses our Maps technology to help people find information before, during, and after major emergency events. We use Crisis Map to provide authoritative information such as evacuation routes, hurricane tracks, disaster-related satellite imagery, and emergency alerts, by compiling it from multiple data sources. People no longer have to search across many websites for different pieces of relevant information because Crisis Map makes all of the data available in one central place and allows both agencies and individuals to create their own rich mash-ups of crisis data.

As Hurricane Sandy approached landfall, we launched a general Crisis Map with several Sandy-related layers, including current and forecasted storm locations and information about cloud and wind conditions courtesy of NOAA's National Hurricane Center, and Public Alerts featuring emergency information like evacuation routes. We also launched a Crisis Map specific to New York City, featuring evacuation zone data from the NYC Datamine, information about open shelters, and footage from live webcams. Throughout the recovery period, our Crisis Maps had 15 million unique visits, with 10–20% of the visits coming through mobile phones and 80% of the traffic being referred through third parties—meaning that the maps were either shared by users or embedded in other sites.

2. Crowdsourcing can enhance both quality and timeliness of critical information.

Do local filling stations have gasoline? On this kind of question, authoritative sources often may not have as extensive intelligence on the ground as individuals do. Anyone can use Google's mapping tools—on our servers, or their own—to create their own maps and even host their content and data in a scalable way. In addition, by enabling user-generated content in Crisis Maps during Hurricane Sandy, we were able to share better updates than those we got from only official sources.

While some organizations contacted us with their data for our Hurricane Sandy Crisis Map, other map curators and data providers created their own crowd-sourced maps to address challenges they identified locally. For example, Dr. Wansoo Im mobilized a group of student volunteers to call local gas stations in New Jersey to see whether or not they were open and check if gas was available. Within a few days, they had data from more than 1,000 different stations. After doing some additional research on-line, they put the information into a KML layer (a machine readable and crawlable format used to describe geographic information) and continued to update it through mobile devices and edits on desktop. The KML layer was fed into Crisis Map automatically and through user commenting, people were able to correct and update the gas layers when they became out-of-date. The Department of Energy ended up referencing information from this map for people who dialed their call centers.

We also designed our Person Finder tool to empower individuals in the wake of emergencies. Person Finder is a web application that allows people to post and search for the status of relatives or friends affected by a disaster. By using an open data standard, the tool lets press agencies, non-governmental agencies, and others contribute to the database and receive updates. Websites can choose to embed Person Finder as a gadget on their own pages. Because it is open-source software, any developer can create her own instance of Person Finder after a disaster and help us improve the product.

Before, those seeking missing loved ones had to sift through multiple websites, posting the same inquiries over and over, hoping that the person in question happened to register with one of these websites. After the earthquake in Haiti, for example, we noticed there were 14 separate missing persons databases spontaneously set up by different groups, including non-governmental organizations, newspapers, and volunteers. They were all running on different infrastructure, were not integrated, and all had different amounts of data that, if coordinated, could have comprised all missing persons records.

To make this process more effective and efficient, while continuing to leverage the power of crowd-sourced information, our team built Person Finder to act as a central database, pulling the feeds from all 14 databases and allowing users to search across all their records. Person Finder accepts information in a common machine-readable format called PFIF (People Finder Interchange Format), which was created by Hurricane Katrina volunteers in 2005 and allows press agencies, NGOs, and others to sync their own data sources to Person Finder.

Our team worked around the clock to build and launch Person Finder in less than 72 hours during the early days of the crisis in Haiti. We have now made this resource available in more than 40 languages. The product is purposefully simple, fast, and easy to use. More importantly, it is backed by an open programmatic inter-

face, or API. This means that different sites can update missing persons lists automatically using the common format. Because of this, *The New York Times*, CNN, NPR, and a number of other websites quickly integrated Person Finder, increasing its reach and resulting in a more complete list of missing persons.

We have since launched Person Finder for a number of emergencies, both natural and man-made. For example, within an hour after bombs went off in Boston 2 months ago, we initiated an instance of Person Finder to help people locate loved ones or let family and friends know they were alright. In total, we hosted thousands of records after the tragedy. In all these emergencies, we have found that crowdsourced information has been crucial to provide individuals updates about their loved ones.

3. Emergency information should be available on-line in open formats and with open licenses before a disaster.

To be easily integrated and disseminated in the event of a crisis, emergency information must be readily available—in open formats, open licensing structures, and already on-line—in advance of a disaster. Otherwise there can be delays in getting information out. Each extra step—uploading, emailing, downloading, publishing, or putting on a site—can keep critical information from getting to people in a timely manner.

To respond to some recent crises, Google had to gather emergency information from Government websites in non-structured and difficult-to-automate formats—such as text and PDF—and then translate them into open standards. When we set up our Hurricane Sandy Crisis Map, we had to spend time copying and pasting information about public hazards from a PDF. After we did so, the data quickly became obsolete, and we had to ask for an updated version. Generally, email attachments can take a few days to process and upload and need to be reloaded and integrated for each update, while open data feeds like KML only take minutes to integrate and can be updated automatically in near-real time. We are also often hindered by unclear licensing of data. While some datasets are clearly in the public domain, many essential ones are not clearly attributed or licensed, making them difficult to use.

Data providers that have their information clearly licensed, in standard data formats, and that provide live feeds—including the Common Alerting Protocol (an international standard for publishing and sharing alerts that is used by NOAA, FEMA's iPAWS, and USGS) for Public Alerts, or GeoRSS (an open standard for encoding location information) and/or KML for Crisis Map—can update their information automatically. As a result, open alert data is usually available in Google tools within seconds of its being published.

We advocate using an open and common standard in order for everyone to have a consistent way to automatically receive and share alerting information, to publish alerts securely using open web formats like Atom and RSS (XML-based languages used for web feeds), and to create useful visualizations of content.

HOW GOVERNMENTS CAN SUPPORT TECHNOLOGY EFFORTS IN CRISIS RESPONSE

Information dissemination in an emergency depends on several factors: Open and interoperable formats for emergency data, timely release of such data, and location awareness. Without these, it is extremely difficult to get the right emergency information to the right people at the right time.

The ability of the internet to assist in crises depends on both companies' and governments' improving how they share information. Using divergent standards slows collaboration and response time, while speedy and open access enables users to easily share information and accelerates relief efforts.

To pursue some of the projects we've described, Google had to gather emergency information from Government, NGO, and sometimes corporate websites in arcane formats or bare HTML and then translate them into open standards. Sometimes the information was spread across numerous websites; other times, the licensing status of the data was not readily apparent. Even today, some important data is not even on-line at all, but in someone's spreadsheet on a personal computer.

Government can help by ensuring that important information important is available in open, interoperable formats. For that reason, we commend the White House for the recent Executive Order requiring that data generated by the Federal Government be made available in machine-readable formats by default, as well as steps Congress has taken to increase access to Government data. State governments also play an important role—the Florida Division of Emergency Management, for example, has been a leader in publishing preparedness data. We hope that agencies with emergency information in particular begin adopting these standards as soon as possible, so more people can access that information easily and speedily.

With better open and interoperable alerting systems, private actors could interact with Government systems to display alerts or maps tailored to geography, vulnerability, and situation. Information providers like Google have the ability to contextualize alerts by providing related news and other relevant information, as well as linking these to sharing platforms and other social experiences that are critical for empowering individuals and enabling better decision making. They also can do so in an open manner so any other internet company or emergency organization can use or build on it. Public alerting systems must continue to evolve in ways that leverage the capabilities of modern digital networks to distribute vital, machine-readable information in crisis situations.

With more open data we could display more consistent and more actionable alerts, covering things like power outages and road closures when there are floods, for example. In some cases, a mobile alert—targeted specifically to those who may be directly impacted—may help increase their chances of getting to safety. Today, the Commercial Mobile Alerting System (CMAS) can push mobile alerts that specifically target users who are in the predicted path of a tornado or storm, and Google can also provide location-specific information to supplement these alerts. In the future, mobile devices may enable additional types of alerts, such as ones with location-specific evacuation instructions and shelter information. This type of information is particularly valuable for densely-populated areas where there may be limited resources spread out across the region.

We are committed to continue working with various stakeholders to think of more ways to make the appropriate emergency information available when and where people need it, including making emergency alerts more useful and accessible to those who may be affected by disasters.

CONCLUSION

I would like to conclude by thanking Chairman Brooks, Ranking Member Payne, the Members of the House Subcommittee on Emergency Preparedness, Response, and Communications, and other Members of Congress who have taken an interest in technology and crisis response. Affordable, high-speed internet access, open data, and open standards are minimum requirements for a Government to be considered “tech-ready” ahead of a disaster. By ensuring that people are able to search and find emergency information on-line ahead of time, governments can reduce the amount of time it takes communicate with people when they need help most.

We still have a long way to go, but we look forward to working alongside emergency relief organizations and governments to help people find the information they are looking for and improve the use of internet-based technologies in disaster preparedness, relief, and recovery.

Google public alerts [Advanced search](#)

Important alerts from across the web when and where they are needed most. [Learn more](#)

Show: all alerts, in all locations, sorted by relevance

- A** **M 7.7 Earthquake, Queen Charlotte Islands, Canada region**
Depth 17.5 km (10.9 miles)
15 hours ago
U.S. Geological Survey
- B** **Tropical Storm Warning in Southeastern NC**
Sustained high winds are expected.
Active for next 3 hours, 44 minutes
National Weather Service
- C** **Tropical Storm Warning in Eastern North Carolina**
Sustained high winds are expected.
Active for next 5 hours, 44 minutes
National Weather Service
- D** **Tropical Storm Warning in Eastern North Carolina**
Sustained high winds are expected.
Active for next 5 hours, 44 minutes
National Weather Service
- E** **Tropical Storm Warning for Onslow County, NC**

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High Wind Warning for Washington D.C.
Active for next 2 days
Location: District of Columbia

2 hours ago - National Weather Service

How likely: ■■■■ How soon: ■■■■ How severe: ■■■■

The [original text](#) for this alert has been automatically reformatted to correct capitalization.

The National Hurricane Center forecasts Hurricane Sandy to track to the northeast well off the North Carolina coast Sunday night, before shifting to the northwest and moving toward the Southern New Jersey and Delaware coasts Monday into Tuesday. The track of Sandy is expected to bring high winds to the region Monday through Tuesday evening.

High Wind Warning remains in effect from 8 am Monday to 8 pm EDT Tuesday.

- Timing: Wind gusts over 45 mph are expected by 8 am Monday and wind gusts of 60 to 65 mph are expected Monday afternoon into Tuesday.
- Impacts: a prolonged and significant 24-to-36 Hour high wind event will take place across the warning area. Coupled with Heavy rains from Sandy, the high winds will lead to significant tree damage. Residents, visitors. And businesses across the region should plan for widespread power and communication outages.

Recommended actions

Be Prepared for extended power outages. If you live near large trees, remain in the lower level of your home or seek shelter elsewhere if possible.
Refrain from any unnecessary traveling and stay indoors.

News

NWS issues flood, high wind watches for Northern Virginia
Inside NoVA - 20 hours ago
The hurricane is projected to make landfall late

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Google

Search About 27,900,000 results (0.56 seconds) **Test data**

Web Ads related to **amber alert** ⓘ

Images **Amber Alerts | MissingKids.com**
www.missingkids.com/
From National Center For Missing & Exploited Children. Learn More!

Maps

Videos **Current Amber Alerts - Master List of Missing Children**
www.pollyklaas.org/
View Today & Help Them Return Home

Shopping

More

Show search tools

AMBER Alert (missing child) for California
National Center for Missing & Exploited Children - 419 days ago
Test Child - Male, 10 ... Last seen: Aug 30, 2011 in San Diego, CA ... wearing white polo shirt, blue jeans ... Black Toyota Camry #XXXXXX (CA) ...

AMBER Alert - America's Missing: Broadcast Emergency Response
www.amberalert.gov/
A site by the Department of Justice that provides information on **AMBER alerts**, Public Service Announcements, a child safety guide, news, and a toolkit for ...
Active AMBER Alerts - Wireless AMBER Alerts - State AMBER Alert Contacts

AMBER Alert
www.amberalert.com/
Corporate. Law Enforcement. Parents/Guardians. Missing Persons. **AMBER Alerts**.
Prev Next. three. four. Prev Next. three. four. **AMBER Alerts** · About · My Child ...

Share Map Satellite Simple

Hurricane Sandy
Sandy is a category-1 hurricane that is expected to bring life-threatening flooding to the US mid-Atlantic coast and hurricane-force winds from Virginia to Massachusetts, Monday evening and into Tuesday.
National Hurricane Center: Latest advisory.
See also: New York City map for Sandy.
Reset to default view

- Storm: Current location
Zoom to area · Download KML
See also: Historical tracks. Source: National Hurricane Center.
- Storm: Forecast track
Zoom to area · Download KML
Source: National Hurricane Center
- Storm: 3-day forecast cone
Zoom to area · Download KML
3-day forecast cones of active tropical storms and hurricanes. See also: 5-day forecast cone
Source: National Hurricane Center
- Storm surge probability, over 6 feet
- Active emergency shelters (US)
Zoom to area · View data
Source: American Red Cross
- Weather radar (precipitation)
Zoom to area
Legend
12-23 dBZ 64+ dBZ
Source: Weather.com
Last updated: 10:24 AM (13 minutes ago)
- Cloud imagery
- Webcams and YouTube videos

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Mrs. BROOKS. Thank you, Mr. Stepka.
The Chairwoman now recognizes Mr. Payne for 5 minutes for an opening statement.

**STATEMENT OF JASON MATTHEW PAYNE, PHILANTHROPY
LEAD, PALANTIR TECHNOLOGIES**

Mr. PAYNE. Chairwoman Brooks, Ranking Member Payne, and Members of the subcommittee, thank you for the opportunity to speak with you today.

My name is Jason Payne, and I lead the philanthropy engineering team at Palantir technologies.

Palantir Technologies is a Silicon Valley software company. We build data integration and analysis software for the Governmental, private, and public sectors.

In the context of emergency preparedness, response, and recovery our technology on laptops and smartphones leverages one of the most scarce resources during disasters.

Information; to help our partners get the right physical resources to the right places as soon as possible. Above here is a screenshot of our technology displayed on a tent of an emergency operation center in Oklahoma City.

[The information follows:]



Mr. PAYNE. This fusion that you are seeing here of public data, of Governmental data, of social data, and mobile data allows users to build a common operating picture to improve the efficacy of response efforts.

One of our partners in Oklahoma City, Direct Relief, is a non-profit that donates over \$300 million of medicine every year. They use Palantir to integrate information from their own databases with social data, public data from FEMA, DHS, CDC, NOAA, and even Google flu trends to conduct meteorological, social vulnerability, supply chain, and health risk analyses of communities throughout this Nation.

In the context of extreme weather relief, this knowledge enables direct relief to pre-position supplies and medicine at Federally-qualified health centers before storms hit, analyze real-time weather data during the storm, and donate additional medical supplies where they are needed most in wake of the storm.

Another Palantir partner, Team Rubicon, is a group of veterans engaged in disaster relief. They use Palantir to tactically understand operational environment during disaster response. After Hurricane Sandy, Team Rubicon used Palantir mobile to survey and clean up over 1,000 structures in the Rockaways.

Fusing surveys collected with Palantir mobile along with public 3-1-1 data and even hand-written requests for help collected in a church parking lot, several hundred Team Rubicon members were able to efficiently harness over 14,000 spontaneous community volunteers, which is a tremendous resource that has often been under-utilized in disaster scenarios.

Those volunteers, often joining through social media posts, removed sand, saltwater, and sheet rock from homes damaged by Sandy before mold set in thus keeping people in their homes. That large-scale success was possible because of social media, the veteran leadership of Team Rubicon, and acknowledged management that Palantir facilitated.

As a result of our successes during Hurricane Sandy, Palantir has made a commitment to action with the Clinton Global Initiative to steer our cutting-edge technology capabilities to more disaster-focused organizations.

Part of this commitment is our deployment that you see here in Oklahoma City with direct relief in Team Rubicon to help people get back on their feet after the devastating tornadoes.

Most importantly, it is using all of this data to build a common operating picture that allows organizations to better communicate to more efficiently and more effectively help those on the ground that need it most.

Through trial and error we have learned a few important lessons we would like to share with the committee. First, open data is more important than formal exchange models.

In the context of emergent response, we believe that holding out for perfect gets in the way of good enough. We encourage Governmental organizations to adopt a Silicon Valley approach to interoperability to put data out in a publicly available, robust, standardized, secure, well-documented interface and let other organizations come up with innovative ways to leverage that data. We applaud NOAA and the Census Bureau among others for taking this approach.

Second, internet and cloud technologies such as social media are useless without power and connectivity. We encourage the subcommittee to explore innovative solutions to provide deployable 3G and 4G mobile networks as well as mobile device charging stations to the public during large-scale emergencies.

Last, we would like to highlight the need for more robust conversation about data access, sharing, and retention to ensure that the privacy and civil liberties of those affected by emergencies and disasters are respected at all times.

We believe that sensitive information such as names, dates of birth, addresses, phone numbers, and certainly medical information should be shared with only those with a need to know that information even within an organization.

When a large-scale emergency strikes without a doubt there are thousands and thousands of folks that seek to help those most vulnerable. There are also a few bad actors out there that seek to profit from those that are vulnerable.

The technology can make a radical difference to help those with good intention, but can also empower those with ill. So we highly recommend that we look closely at how data is shared, leveraged, and utilized to ensure that it is used for proper purposes.

New technology enables a new era, a whole new era of disaster response. We are humbled to be a part of that transformation and look forward to more work in the future to help those affected by disaster get back on their feet.

This completes my prepared statement. Thank you again for the opportunity to join you here today.

[The prepared statement of Mr. Payne follows:]

PREPARED STATEMENT OF JASON MATTHEW PAYNE

JUNE 4, 2013

Good morning, Chairwoman Brooks, Ranking Member Payne, and Members of the subcommittee: My name is Jason Payne, and I lead Palantir Technologies' Philanthropy Engineering Team. Thank you for the opportunity to speak with you today.

Palantir Technologies is a Silicon Valley software company based in Palo Alto, California. We build data integration and analysis software for the Governmental, private, and public sectors. A key part of our work with NGOs focuses on emergency preparedness, response, and recovery. With our partners Team Rubicon and Direct Relief International, we recently made a Commitment to Action with the Clinton Global Initiative to bring cutting-edge technological capabilities to Voluntary Organizations Active in Disaster, or VOADs.

The fundamental challenge of emergency preparedness, response, and recovery is getting the right resources to the right places, as quickly as possible. We believe that new technology, such as Palantir, significantly improves the ability of organizations to meet that challenge.

Palantir can be rapidly deployed to laptops and smart phones and allows dispatchers and analysts working under critical time pressure to fuse together and analyze large amounts of data from different sources. Originally developed for use by the intelligence and defense community, the platform includes robust, built-in measures to allow users appropriate access and to share information across organizations while protecting privacy and civil liberties.

For example, Direct Relief, a non-profit that donates over \$300 million of medicine every year, uses Palantir to integrate information from their own databases, partnering organizations, and public data from FEMA, DHS, CDC, and NOAA to conduct meteorological, social vulnerability, supply chain, and health-risk analyses of areas vulnerable to large storms.

This resulting knowledge enables Direct Relief to pre-position supplies and medicine at Federally Qualified Health Centers (FQHCs) before storms hit, analyze real-time weather data during the storm, and provide emergency medical supplies where they are needed most in the wake of the storm. After Hurricane Sandy, volunteers and staff on the ground used Palantir Mobile to collect and send data to Direct Relief headquarters in real time. Palantir was also used to monitor infectious disease trends and route donated medical resources to the areas in greatest need.

While Direct Relief uses Palantir to make big-picture strategic decisions about resource allocation, Team Rubicon, a group of veterans engaged in disaster relief, uses Palantir to tactically understand the operational environment during a disaster response. During the response to Hurricane Sandy, Team Rubicon used Palantir's mobile phone application to quickly survey over 1,500 structures in the Rockaways. Fusing those surveys with public 3-1-1 data, and even paper requests for help collected in a church parking lot, several hundred Team Rubicon members were able

to efficiently harness over 14,000 spontaneous community volunteers—a tremendous resource that has often been underutilized in disaster scenarios.

During the Sandy aftermath, those volunteers removed sand, saltwater, and sheetrock from damaged homes before mold set in, keeping people in their homes. That success was possible because of social media, Team Rubicon's leadership, and the data integration, knowledge management, and efficient planning that Palantir facilitated.

As part of our Clinton Global Initiative commitment, Direct Relief, Team Rubicon, and Palantir are collaborating on recovery efforts in Oklahoma City after the devastating tornadoes on May 20 and 31. Leveraging on-the-ground surveys collected with Palantir Mobile, along with Google, NWS, HRSA, and local parcel data, these organizations are working together to help with both health and infrastructure response and recovery. Most importantly, the common operating picture that they are building with Palantir is being shared with other VOAD and Governmental organizations active in the area.

Through trial and error, as well as success and failure, we've learned a few important lessons that we would like to share with the committee.

First, open data portals are more important than formal information exchange models. In the context of emergency response data sharing, we believe that holding out for perfect gets in the way of good enough. We encourage Governmental organizations to adopt a Silicon Valley approach to data interoperability—put the data out publicly in a robust, standardized, well-documented interface and let other organizations come up with innovative ways to leverage the data. This is why Palantir makes a strong commitment to openness and provides programmatic query languages and web services to make all data in Palantir open. We applaud NOAA, NWS, and the Census Bureau, among others, for taking this approach.

Second, internet and cloud technology, such as social media, are extremely valuable as long as people have power and connectivity. Without both, it's useless. We encourage the subcommittee to explore innovative solutions to provide deployable 3/4G mobile networks, as well as mobile device charging stations, to the public during large-scale emergencies. We applaud the idea of the FirstNet initiative from the Department of Commerce, and suggest that the network be opened up to key non-profit organizations as well as Governmental agencies.

Last, we would like to highlight the need for a more robust conversation about data access, sharing, and retention to ensure that the privacy and civil liberties of those affected by emergencies and disasters are respected at all times. When a disaster occurs, thousands of volunteers seek to help vulnerable people get back on their feet. There are also a few unscrupulous bad actors that seek to exploit and profit from those vulnerable people. Data can empower those altruistic volunteer efforts, but without correct data access and sharing technology, that same data can empower those bad actors.

We believe that public data such as locations of shelters and medical facilities, power status reports, and satellite imagery should be available to all organizations and citizens. We also believe that sensitive information, such as names, dates of birth, addresses, phone numbers, social media posts, financial information, and certainly medical information should be shared with only those with need to know that information, even within an organization.

Furthermore, we recommend that sensitive data collected during an emergency should be deleted when reasonably possible after emergencies. We encourage the development of clear data retention policies for all volunteer and Governmental organizations that work in the preparation, response, and recovery life cycle. These retention policies should be clearly communicated with affected individuals, State and local entities, commercial organizations, and VOADs to encourage all parties to share pertinent information.

New technology enables a whole new era of disaster response. We are humbled to be a part of that transformation and look forward to more work in the future to help those affected by disaster get back on their feet.

This completes my prepared statement. Thank you again for the opportunity to join you all here today.

Mrs. BROOKS. Thank you, Mr. Payne.

The Chairwoman now recognizes Mr. Beckerman for 5 minutes for an opening statement.

**STATEMENT OF MICHAEL BECKERMAN, PRESIDENT AND CEO,
THE INTERNET ASSOCIATION**

Mr. BECKERMAN. Thank you.

Chairwoman Brooks, Ranking Member Payne, and distinguished Members of the committee, thank you for calling this timely hearing. It is a pleasure to appear before you today to discuss how the internet and social media are transforming how Americans prepare, respond, and recover when disaster strikes.

My name is Michael Beckerman. I am president and CEO of the Internet Association, a trade organization comprised of the world's leading internet companies.

Our members have been on the forefront of efforts to leverage new technology and communications platforms to inform the public before, during, and after a disaster.

Today I will just highlight a few examples from my written testimony that I submitted for the record.

As you can see on the screen, the rise of social media, crowdsourcing, and the sharing economy have revolutionized how we interact with our friends, family, fellow citizens, and Government.

Communicating during a disaster is now an interactive conversation. Millions of minds converge to solve problems, seek out answers, and disseminate vital information. The convergence of social networks and mobile has thrown the old response playbook out the window.

The earthquake that rocked Haiti in January 2010 served as an example of the opportunity social media and mobile technology provide to support the great work of our disaster response professionals.

A few hours after the earthquake, a man who was trapped with 20 other people under a collapsed building in Port-au-Prince managed to send a photograph of the wreckage from his phone to a cousin in Chicago. The cousin then tweeted the photograph to @RedCross and first responders in Haiti were able to rescue them. In previous disasters, these victims may not have been rescued in time.

Applying the lessons learned from Haiti, a protocol has begun to emerge. Facebook's disaster relief page, which was created during the Haiti earthquake is now used any time a disaster strikes.

The American Red Cross' Facebook page has over a quarter-million people following them to learn about disasters, how they can donate both blood and money, and get information in real time.

Beyond the dissemination of disaster information and donations, the Red Cross has also established a social media command center. This allows them to better serve those who need help, spot trends in real time, and anticipate the public's needs. It not only connects people with food, water, shelter, but it also helps provide emotional support when they need it most.

When a tornado devastated Tuscaloosa in 2011, a local school system went on-line and posted a request for volunteers to help clean up their school. Amazingly, 80 people showed up in less than 30 minutes.

This response typifies the unmatched power of social media. You would be hard-pressed to make these phone calls in 30 minutes, let alone have an outpouring of 80 people show up that quickly.

Just last fall when Hurricane Sandy ravaged the coastline of my home State of New Jersey, people took to the internet to document

their experience. In fact, FEMA encouraged people to “Let loved ones that know you are okay by sending a text message or updating your social network.”

In a truly miraculous story coming out of Hurricane Sandy, a woman noticed a Facebook post showing the badly-hit South Seaside Park, and she knew her 93-year-old grandmother was there trapped, and she sent a message to this page, and as a result, her grandmother was evacuated and saved.

One of the Internet Association member companies, Airbnb, sprang into action following the hurricane as well. As you may know, Airbnb as an on-line marketplace that helps find housing accommodations.

With more than 100,000 people still homeless a week after Sandy, Airbnb partnered with the city of New York to connect to those without shelter to people that had extra space. As you can see on the screen, nearly 1,500 Airbnb members opened their homes for free to provide shelter to people in need.

Finally, just last month, in Oklahoma, social media supplemented the traditional means of spreading the message to take shelter. In the immediate aftermath of the tornado, FEMA again encouraged survivors to update their social networks to let loved ones know their whereabouts so families could be reconnected.

Social media has also changed the way American citizens respond to try to be. The city of Moore, Oklahoma, for example, as you see on the screen, used its Facebook page to inform citizens on ways they could help.

Social media platforms like Flickr and Instagram allow people from all over the country and all over the world see both wreckage and hope in real time. Seeing these unfiltered images in real time help tells the story in ways that traditional media never could and allows people to feel connected, giving them an even greater desire to help.

The internet has served as a remarkable tool to save lives, facilitate philanthropic relief efforts, and improve disaster responsiveness, but there is always work to be done.

Responding to this challenge will require a collaborative effort among the Government agencies, first responders, technology companies, and the general public.

It is our pledge that the Internet Association will do our part working with our companies to facilitate these conversations between Government and technology companies to help harness the power of social media and strengthen our Nation’s emergency preparedness for the 21st Century.

Thank you.

[The prepared statement of Mr. Beckerman follows:]

PREPARED STATEMENT OF MICHAEL BECKERMAN

JUNE 4, 2013

INTRODUCTION

Chairwoman Brooks, Ranking Member Payne, and distinguished Members of the committee, thank you for calling this timely and important hearing. It is a pleasure and an honor to appear before you today to discuss how the internet and social media and are transforming how Americans prepare, respond, and recover when disaster strikes.

My name is Michael Beckerman, and I am the president and CEO of the Internet Association, a trade organization comprised of 17 leading internet companies across the globe, including AOL, Airbnb, Amazon.com, ebay, Expedia, Facebook, Google, IAC, LinkedIn, Monster, Path, Rackspace, Salesforce.com, SurveyMonkey, TripAdvisor, Yahoo, and Zynga. Our members have been on the forefront of efforts to leverage new technology and communication platforms to inform the public before, during, and after a disaster, and to facilitate recovery and reconstruction efforts in the aftermath. We deeply appreciate the opportunity to share the perspective of our membership with the committee today.

The rise of social media, “crowd-sourcing” and the “share economy” has revolutionized how we interact with our friends, family, fellow citizens, and Government. Communicating during a disaster is now an interactive conversation. Millions of minds converge to solve problems, seek out answers and disseminate vital information. Important news can be shared with millions, and by millions, quickly and efficiently. The social web is challenging emergency managers, Government agencies, and aid organizations to adapt time-honored expertise with real-time information from the public (Please see Exhibit A). In short, the convergence of social networks and mobile has thrown the old response playbook out the window.

THEN AND NOW: EVOLUTION OF TECHNOLOGY IN DISASTER RESPONSE

The power and promise of the internet was on full display in the immediate aftermath of Hurricane Katrina, one of the most devastating natural disasters this country has ever experienced. When this catastrophic storm ravaged the city of New Orleans and its surrounding areas, it claimed many lives, displaced hundreds of thousands of people, and left billions of dollars worth of damage with its wreckage.

During an emergency, information is the most valuable commodity. After the storm, the internet played an important role in mitigating the breakdown of communication that is typical during times of disaster. According to the Pew Research Center, about 50% of all internet users received news about the hurricane not only from mainstream media websites but also from blogs.¹ A quarter of on-line users shared e-mails or instant messages about the storm while others used the internet to check on someone’s safety.²

The water’s recession revealed the true extent of the devastation, which inspired the rest of the country and the world to make monetary contributions critical to rebuilding the city. In just a few short weeks after the storm, private donations neared about \$2.7 billion.³ In reaching this record-setting level, the internet served as an important outlet for relief donations with about 13 million Americans turning to on-line sources to provide donations.⁴

That was 2005—only a year after Mark Zuckerberg created Facebook, before Twitter came into existence and even before smartphones became as ubiquitous as they are today. Since then, our member companies have continued to innovate, achieving significant advancements in on-line tools and services such as social media. Today, crowd-sourcing and social media allow information to be shared in real time, allowing first responders to reach victims much faster than before.

In the years since Hurricane Katrina, many wonder how the robust and well-developed social media websites we enjoy today could have been leveraged. Could we have saved more lives had there been a full-fledged Facebook or Twitter?

The 7.0 magnitude earthquake that rocked Haiti in January of 2010 served as an example of the opportunities social media and mobile technology present to support the great work of our disaster response professionals.

Within a few hours of the quake, a man trapped with 20 other people under a collapsed building in Port-au-Prince managed to send a photo of the wreckage from his phone to a cousin in Chicago. The cousin tweeted the photo to “@RedCross” and the Red Cross in turn relayed the location to first responders in Haiti. In previous disasters, these victims may not have been rescued in time. In other instances, using geo-location technology built into phones, allowed rescue workers to pinpoint the location of trapped victims and save many lives.

¹ Stephen Morris and John Horrigan, “13 million Americans made donations online after Hurricane Katrina and Rita,” <http://www.pewinternet.org/Reports/2005/13-million-Americans-made-donations-online-after-Hurricanes-Katrina-and-Rita/Data-Memo.aspx> (Nov. 24, 2005).

² Id.

³ Thomas Frank, “Katrina inspires record charity,” *USA TODAY* http://usatoday30.usatoday.com/news/nation/2005-11-13-katrina-charity_x.htm?csp=34 (Nov. 13, 2005).

⁴ Stephen Morris and John Horrigan, “13 million Americans made donations online after Hurricane Katrina and Rita,” <http://www.pewinternet.org/Reports/2005/13-million-Americans-made-donations-online-after-Hurricanes-Katrina-and-Rita/Data-Memo.aspx> (Nov. 24, 2005).

To cite one prominent example of innovation in disaster response from our membership, immediately after the 2010 Haiti earthquake, Google worked with the United States Department of State to create Google Person Finder, an on-line registry and message board for survivors, family, and loved ones affected by a natural disaster allowing them to post and search for information about each other's status and whereabouts. Google Person Finder launched in English, French, and Haitian Creole on January 15, less than 3 days after the earthquake.

Social media a vital role in the critical days and weeks after a disaster, when efforts transition from response to recovery. In a connected, borderless medium, the excuse that donating relief money is too complicated and confusing has largely been eradicated through text messaging and social media. In the first 48 hours following the Haitian Earthquake, the Red Cross raised more than \$3 million dollars from people texting a \$10 donation. "Crowd funding" empowers citizens to donate to, and solicit donations for, victims of disasters through posts to Facebook, Google+, LinkedIn, Twitter and other social media sites.

To highlight just a few examples from The Internet Association membership:

- Facebook launched the Disaster Relief on Facebook Page, where millions of people could educate themselves and find out how to help.
- Zynga, the on-line gaming company, was able to raise nearly \$3 million for relief efforts from their game players.
- Amazon.com customers gave more than \$750,000 through the Amazon.com website.

Through a corporate campaign, Expedia, Inc. donated \$200,000 to the United Nations and held a special 2:1 match, with employees donating an additional \$75,000 (total donation of \$270,000 to the United Nations).

Applying the lessons learned from the Haiti disaster, a protocol has begun to emerge. Facebook's Disaster Relief Page is now used for wherever disaster and misfortune may strike. The American Red Cross's Facebook page alone now has more than half a million fans to which the organization delivers disaster news and allows people to donate both blood and money.

Beyond the dissemination of disaster information and donations, the Red Cross has established a Social Media Command Center—the first social media-based operation devoted to humanitarian relief. Located in the Red Cross National Disaster Operations Center in Washington, DC, the center is expanding the Red Cross's ability to engage with the public during emergencies and enabling Red Cross team members to determine where to position workers on the ground. The command center allows the Red Cross to better serve those who need help, spot trends, and better anticipate the public's needs; and connect people with the resources they need, like food, water, shelter, or even emotional support.

Additionally, the Red Cross has established a Social Media Volunteer Corps program to help respond to questions from and provide information to the public during disasters. The Red Cross has conducted numerous webinars to train this new digital volunteer army, who have played critical roles in working to verify and curate the incredible volume of data during disasters, notifying Digital Operations Center staff of on-line trends and situational information that can inform disaster-response efforts. Google's work on the Haiti earthquake led to the formation of the Google Crisis Response team, which has launched Google Person Finder again for several subsequent disasters, in many different languages and with a variety of data exchange partners. Before I conclude, I'd like to quickly touch on a few more recent disasters and highlights some social media success stories from among our membership.

Japan Tsunami, March 2011.—Images of entire cities being crushed under water half a world away left many Americans feeling helpless. Luckily we have companies like Amazon.com, which offered homepage placement to the American Red Cross and Mercy Corps in addition to donating their payment technology. This led to more than \$1.8 million in relief aid for our friends in Japan. Social media played an important role as the most efficient and reliable way to connect with relatives. Even the U.S. State Department took to Twitter to publish emergency number and inform Japanese residents in America of how to contact their families affected in Japan.⁵

Tuscaloosa, AL and Joplin, MO Tornadoes, April & May 2011.—When a tornado devastated Tuscaloosa, Alabama, a local school system went on-line to post a request for volunteers to help clean up their school—amazingly, 80 people showed up in less than 30 minutes. This typifies the unmatched power of social media; you would be hard-pressed to make 40 phone calls in 30 minutes, never mind 80. As users leverage our member companies' services, our member companies also lend

⁵Harry Wallop, "Japan earthquake: how Twitter and Facebook helped," <http://www.telegraph.co.uk/technology/twitter/8379101/Japan-earthquake-how-Twitter-and-Facebook-helped.html> (Mar. 13, 2011).

their manpower and expertise in the recovery process. Expedia, Inc. employees continue to volunteer to provide their on-going support in the clean-up and recovery effort.

Hurricane Sandy, October 2012.—When last fall's once-in-a-century type storm slammed our eastern seaboard, people took to the internet to document their experience. The volume was so large that the Red Cross asked 23 staffers to monitor over 2.5 million social media posts; of which, 4,500 were tagged for first responders to follow up on.

New York City itself turned to Twitter to seek out emergency-related tweets in the aftermath of the storm. For instance, the city's Chief Digital Officer organized responses to hundreds of Twitter questions pouring in for those in need of accurate information.⁶ In addition to disseminating information, the Fire Department of New York's Social Media Manager used Twitter to serve as a liaison between those residents in distress and firefighters and EMS members. As phone lines remained down, the Social Media Manager responded to tweets requesting assistance by collecting phone numbers and the details of the emergency then relayed that information to first responders.

Airbnb, an on-line marketplace for users to find housing accommodations, sprang into action following Hurricane Sandy. With more than 100,000 people still homeless a week after Hurricane Sandy hit the Northeast, Airbnb partnered with the city of New York to connect those without shelter to people who had extra space. Nearly 1,500 Airbnb members opened up their homes for free to people in need. Please See Exhibit B.

Justin Ausiello's Jersey Shore Hurricane News Facebook page became a trusted place for information and served as a crucial tool for those affected by the hurricane, by informing citizens about shelters, supplies, and news.⁷ In a truly miraculous story, a woman noticed a post on Mr. Ausiello's page of the badly-hit South Seaside Park, where her 93-year-old, diabetic grandmother was trapped. After the woman sent a message to the News Page, her grandmother was subsequently rescued.

Ebay Inc., an on-line market place for consumers, coordinated a company-wide effort to support the massive community relief and recovery effort and looked to more than 210,000 users for assistance. As a result, StubHub, ebay, and PayPal facilitated over \$10 million of support for Hurricane Sandy relief.

Moore, Oklahoma Tornado, May 2013.—Thanks to advanced technology and excellent meteorologists, Oklahomans knew of the tornado risks days in advance. Social media supplemented traditional means of spreading the message to take shelter. In the immediate aftermath, FEMA encouraged survivors to update their social networks to let their loved ones know their whereabouts, if they were safe or needed emergency assistance. Along with the Red Cross, cities, animal assistance groups, and prayer/religious support groups now have a strong presence on social media.

Social media has changed the way American citizens respond to tragedy. The city of Moore uses its Facebook page to inform citizens on ways they can help. (Please see Exhibit C). Social media platforms like Flickr and Instagram allowed people from all over the country to see the both the wreckage and the hope in Moore, Oklahoma on their computer screens, tablets, and smartphones. Seeing unfiltered images in real time tells the story in ways the traditional news media is unable to, and allows people to feel connected giving them an even greater desire to help.

Continuing similar efforts as it did with Hurricane Sandy, ebay is promoting and facilitating customer donations. In addition to providing an opportunity on its home page for customers to make contributions, sellers, and buyers have other options available to them. For instance, sellers may donate a percentage of their sale proceeds to a featured relief organization or buyers may purchase items via the website that benefit relief organizations, marked with a special charity icon. Additionally, PayPal powers payment processing for partner organizations and personal fundraisers.

CONCLUSION

The internet has served as a remarkable tool to save lives, facilitate unprecedented philanthropic relief efforts, and improve disaster responsiveness.

And yet, there are still challenges that remain. Emergency response professionals are not yet fully ready to collect, respond, or react to the incoming stream of social data in a timely manner. Responding to this challenge will require a collaborative

⁶ Chris Moody, Meet FDNY's one-woman Twitter response team guiding New Yorkers through storm, <http://news.yahoo.com/blogs/ticket/meet-fdny-one-woman-twitter-response-team-guiding-141143449.html> (Oct. 30, 2012).

⁷ Jersey Shore Hurricane News, <https://www.facebook.com/JerseyShoreHurricaneNews?sid=0.9051242845943719>—last visited June 3, 2013.

effort among Government agencies, first responders, technology companies, public safety officials, and the general public.

It is my pledge to you that The Internet Association will do its part to facilitate these conversations and collaborations so that we can harness the power of social media and strengthen our Nation's emergency preparedness, response, and recovery for the 21st Century.

EXHIBIT A⁸



⁸First Image: Oklahoma Governor Mary Fallin's Twitter Post Updates. Also available at http://www.huffingtonpost.co.uk/2013/05/21/oklahoma-tornados-2013-killed_n_3310410.html (last visited May 31, 2013). Second Image: Instagram Photo of Oklahoma Tornado Aftermath by [lynn_love](#).

EXHIBIT B—THE CITY OF MOORE FACEBOOK PAGE⁹

City of Moore's Facebook Page

Recent Posts By Others

 **Shaun Rowell** x
 A family is reporting they are stuck in their storm shelter which is in their garage. They are unable to get the door open. 1104 NE 6th.
 Like · Comment · 3 minutes ago

 **Prayers For Oklahoma City, OK**
<https://www.facebook.com/pages/Prayers-for-Moore-OK/159808000773876>
 Please share prayers and information on page.
 **Prayers For Oklahoma City, OK**
 To help others find comfort in horrible times.
 Page: 46 like this
 Like · Comment · Share · 7 minutes ago

 **Jesse Alarcon**
 i live in plaza towers, if anyone sees 3 boston terriers, please call me they have tags with my house number i believe but my house is gone. please call me 343-0981 or my wife 213-7841, they are names gus, libby and sammy
 Like · Comment · 7 minutes ago

 **Jessica-Josh Lively** | pray they are safe
 3 minutes ago · Like

 Write a comment...



EXHIBIT C—AIRBNB PAGE FOR HURRICANE SANDY

AirBnb Page for Hurricane Sandy



Thank you to the 1440 Airbnb members who have already opened up their homes for free.



⁹The City of Moore, <https://www.facebook.com/cityofmoore> (last visited June 3, 2013).

Mrs. BROOKS. Thank you, Mr. Beckerman.

The Chairwoman now recognizes Mr. Cardenas for 5 minutes for an opening statement.

STATEMENT OF JORGE L. CARDENAS, VICE PRESIDENT, ASSET MANAGEMENT AND CENTRALIZED SERVICES, PUBLIC SERVICE ELECTRIC AND GAS COMPANY

Mr. CARDENAS. Chairman Brooks, Ranking Member Payne, and Members of the subcommittee, thank you for the opportunity to appear before you today.

My name is Jorge Cardenas. I am vice president of asset management and centralized services for Public Service Electric and Gas Company, which is New Jersey's largest utility, best known as PSE&G.

PSE&G's service territory includes all of New Jersey's major urban areas. We serve some 2.2 million electric customers and 1.8 million gas customers. These really has come together to be about 70 percent of the population of New Jersey.

Superstorm Sandy hit New Jersey hard. In our service territory, it took down 48,000 trees which impacted our distribution system. It destroyed 2,400 utility poles—many of them were snapped like toothpicks—drove walls of water into 29 of our switching and substations, and damaged our gas lines and meters.

Over 40,000 of our gas customers were impacted and almost 2 million of our electric customers lost power. Restoration efforts were impeded by a forceful nor'easter that hit a week later. The impact of destruction and the complexity of the work to restore service made communications of all kinds a key component of the Sandy recovery effort.

Before I discuss our social media experience, let me also note the importance of smart grid technology, which enables utilities to obtain critical information that can help pinpoint problems and automate restoration.

Smart grid technology enhances our ability to communicate with our own system. It can dramatically shorten the time it takes to restore service in the aftermath of a storm and can prevent outages from becoming widespread.

That is why in New Jersey we have proposed \$450 million investment in smart grid technology as part of our energy strong proposal, which will harden our system against these types of extraordinary weather events, those we have experienced over the recent past.

Turning to social media, we used email and Twitter the days before the storm to communicate about safety and to help people prepare, and after the storm passed we use them to explain the historic amounts of damage and the huge effort it would take to rebuild.

We used Twitter to advise on the daily location of our giant tents and generators which allowed customers to charge electronic equipment, get free ice, water, and food. We explained the importance of reporting outages and damaged equipment and the correct method to do so, so we can take action.

We educated the public about what we were doing to get power to refineries, hospitals, schools, businesses, and homes. While we

had historically used social media only during business hours and with a small group of employees, we quickly staffed up for 17 days, operated our Twitter feeds 15 hours a day, 7 days a week.

We sent more than 9,000 messages and saw some 90,000 directed at us. At one point during the storm we sent so many tweets that we exceeded our daily allowances. Through our utility contacts we reached the leadership of Twitter to expand our capacity. That is a lesson learned for the next storm.

Ultimately, we added over 47,000 followers during the time of the storm. When we exited the storm, we had the largest following of any utility in the United States.

Our innovative use of social media has been noticed outside the company. In a recent report, JD Power and Associates cited our industry-leading communication success. Following Sandy, the utility customer service non-profit CS Week gave PSE&G an award for our use of social media during the storm.

Here are some of our key takeaways; lessons learned. Mobile technology is a game changer. More than half of Americans have a smart phone and more and more people in almost every age demographic are active on social media. People have an increasing and insatiable need to be connected even more so in times of emergency.

They want to be heard. They want to be validated. They want to help and influence us. The number of people on social media spikes in times of disaster. People flock to Twitter and Facebook and the like because they are searching for immediate information that they can't get via traditional broadcast channels.

Engaging influencers is critical. It is just as important to grow the influence of your on-line community as it is to grow its size. Connecting with people who have credibility in their local communities is critical to an organization's ability to spread its message.

The public respects and rewards consistent, transparent interaction and cooperation between the private sector and community leaders. During Sandy we used Twitter to amplify messages from municipal and State officials, police departments, Office of Emergency Management, and social service agencies helping get valuable information right away to those who needed it.

Tone matters. It does matter a lot. People respect a social media effort that is continuously empathetic, authentic, and helpful. Public notes of appreciation matter too, especially to the fiercely proud people who work in the utility industry. We regard ourselves as first responders and supportive messages can go a long way with a weary employee base in need of a boost.

In closing, Sandy hit home how important it is to continue to improve our ability to communicate in an increasingly 24/7 connected and cyber-savvy world.

To that end, I want to thank Congressman Payne for working with us on a National Research Council study that will help our industry use digital information to improve reliability and resiliency and help us understand our vulnerabilities to cyber-attacks.

Thank you again for the opportunity to share our experience.

[The prepared statement of Mr. Cardenas follows:]

PREPARED STATEMENT OF JORGE L. CARDENAS

JUNE 4, 2013

Chairman Brooks, Ranking Member Payne, and Members of the subcommittee, thank you for the opportunity to appear before you here today.

My name is Jorge Cardenas. I am vice president of asset management and centralized services for Public Service Electric and Gas Company, which is New Jersey's largest utility company, best known as PSE&G.

PSE&G's service territory includes all of New Jersey's major urban areas, along a 2,600-square-mile north-south corridor that hugs much of the New Jersey Turnpike. We serve some 2.2 million electric customers, and 1.8 million gas customers.

PSE&G is a subsidiary of Public Service Enterprise Group, an integrated generation and energy company headquartered in Newark, New Jersey.

I appreciate your invitation to appear at today's hearing to discuss the use of social media and technology during disaster.

Superstorm Sandy hit New Jersey hard. In our service territory, it took down 48,000 trees affecting our distribution system, destroyed 2,400 utility poles, drove walls of water into 29 of our switching and substations, and damaged gas lines and meters.

The damage, and the impact to our system, was unprecedented.

All in all, over 40,000 of our gas customers were impacted; many needing their heating systems repaired and their gas meters and regulators replaced, and 90 percent of our electric customers—almost 2 million—lost power. Restoration efforts were impeded by a forceful nor'easter that hit a week later.

The impact of the destruction and the complexity of the work that needed to be done in order to restore service made communication—of all kinds—a key component of the Sandy recovery effort.

I'm here primarily to talk about our use of social media, but let me also note the importance of smart grid technology which makes it possible for utilities like ours to obtain critical information that can help pinpoint problems and automate restoration. Smart grid technology can dramatically shorten the time it takes to restore service in the aftermath of a storm, and can prevent outages from becoming widespread.

That's why, in New Jersey, we have proposed a \$450 million investment in smart grid technology as part of our \$3.9 billion "Energy Strong" proposal, which will harden our system against the types of extraordinary weather events that have hit our area over the last few years.

Now I'd like to talk in more detail about our experience with social media and its value as a communications tool for a storm event like Sandy.

We already had email addresses for about 800,000 customers and almost 15,000 people in our Twitter community, and the ability to communicate directly was helpful.

We used email and Twitter in the days before Sandy to communicate about safety and to help people prepare. After the storm passed, we used them to explain the historic amount of damage and the Herculean effort it would take to clean up and rebuild.

We explained the importance of reporting outages and damaged equipment, and the correct method for doing so.

We supplemented the messages we typically send in a storm through traditional media outlets with a greater number of proactive outbound phone calls to customers, daily conference calls with local leaders, more frequent emails to stakeholders, and a much stronger social media presence than we had ever before attempted.

We educated customers and community leaders about our inspection and restoration process for getting power to refineries, as well as heat and light to hospitals, schools, businesses, and homes.

Throughout it all, we were frank about the challenges and setbacks we faced—as well as our victories.

That consistent and transparent dialogue helped our customers and the communities we serve set expectations and plan appropriately.

We not only listened and pushed out valuable information—we talked with people. That was a differentiator.

For our part, we're proud of the speed and flexibility with which we ramped up, our ability to adapt to the magnitude of the situation, the volume of interactions we handled via social media and the intense and sustained nature of our efforts.

While we had historically used social media only during business hours and with a small group of people at the helm, we quickly staffed up and, for 17 days, staffed our Twitter feeds 15 hours a day, 7 days a week.

We used Twitter to send word about the daily locations of our giant tents and generators—which allowed customers in hard-hit areas to charge their electronic equipment and get free ice, water, and food.

We sent more than 9,000 messages (more than 500 a day) and saw some 90,000 directed at us. When the volume of in-bound tweets became too great to us to reply to each individually, we responded to messages about safety and offered comment when we felt it could benefit a broad audience.

At one point during the storm, we sent so many tweets to alert customers, we exceeded the amount of tweets allowed per day. Through our utility contacts, we reached the leadership of Twitter to expand our capacity. A lesson learned for the next storm.

We gained almost 47,000 followers during this time, and exited the Superstorm with the largest Twitter community of any utility in the United States.

Our innovative use of social media was certainly noticed. In a recent report, JD Power and Associates mentioned our use of Twitter during Sandy as a best practice, citing our “industry-leading communications success.”

And CS Week, a nonprofit that focuses on customer service for utilities, recently gave PSE&G an award for “Innovation in Customer Service” for its use of social media during Sandy.

While we are back to a more reasonable pace now, we are now more convinced than ever about the power and importance of social media—especially in times of emergency.

We continue to build and engage our on-line communities with the understanding that “blue sky days” are different than those marked by crises, and social media and mobile technology are an increasingly important part our communications strategy.

Here are some other things we learned:

1. *Mobile technology is a game changer.*—More than half of Americans have a smart phone, and more and more people—in almost every age demographic—are active on social media.
2. *People have an increasing and insatiable need to be connected.*—Even more so in times of emergency. They want to be heard, to be validated, to help and to influence. Understanding that, and honoring it, is key to creating community and getting through crises.
3. *The number of people on social media spikes in times of disaster.*—People flock to Twitter and Facebook and the like because they are searching for immediate information that they can’t get via traditional broadcast channels. And the big social media platforms are all mobile-optimized.
4. *Engaging influencers is critical.*—It’s just as important to grow the influence of your on-line community as it is to grow the size. Connecting with people who have credibility and influence in their local communities is critical to an organization’s ability to spread its message outside of its own networks, and increase the effectiveness of the communication.
5. *The public respects and rewards consistent, transparent interaction and cooperation between the private sector and community leaders.*—During Sandy we used Twitter to amplify messages from municipal and State officials, police departments, Offices of Emergency Management and social service agencies—and that was integral in getting valuable information to those who needed it when it was needed.
6. *Tone matters.*—People respect a social media effort that is continuously empathetic, authentic, and helpful.
7. *Public notes of appreciation matter too, especially to the fiercely proud people who work in the utility industry.*—We regard ourselves as first responders, and supportive messages can go a long way with a weary employee base in need of a morale boost.

So—how do we build on this experience at PSE&G?

Today our customers can access outage maps on our website and get information about safety and our outage reporting and restoration processes.

We are optimizing these pages and other parts of our website so that they can be more easily utilized via smart phones.

While we have some exciting new texting capabilities, we are looking to enrich our offerings even further so that customers can report their outages via text and get updates from us as we make progress on restoring their service.

And we are working on developing separate web pages for each of the municipalities we serve, which will provide localized information including an estimated time of restoration for specific geographic areas.

Sandy reminded us how important it is to continue to improve our ability to communicate in an increasingly 24/7, connected, and cyber-savvy world. We continue to work with our peers both within the energy industry and in other industries to learn and develop best practices.

While I work for the utility company, it is worth noting for this committee that the generation side of our business has begun incorporating social media into its emergency planning.

Working with the Nuclear Energy Institute, PSEG Nuclear has begun to transform its existing news center operations into a virtual joint information system (JIS).

The virtual JIS would incorporate social media platforms and a dark website to share information with the public in the event of a nuclear plant emergency.

The plan incorporates NEI's lessons learned through the tragedy in Japan as well as PSEG's learnings from Superstorm Sandy.

This process is being developed with support from the New Jersey Office of Emergency Management as well as the Delaware Emergency Management Agency. It would also meet requirements established by the Federal Emergency Management Agency.

Finally, I want to thank Congressman Payne for his bill which calls for a National Research Council study that could help our industry use digital information to improve reliability and resiliency, and help us understand our vulnerabilities as they relate to cyber attack.

In closing, changing weather patterns and an increased dependence on electricity require us to rethink the use of communications technology throughout our operations. Social media certainly has an increased role to play in the dissemination of emergency and disaster information.

And when we think about how to make our grid more resilient, it is smart grid technology that allows our equipment to "talk"—giving critical pieces the ability to automatically locate, isolate, diagnose, and begin to address problems—which helps us keep the lights on.

Thank you again for the opportunity to testify this morning, and I'd be happy to take any questions.

Mrs. BROOKS. Thank you, Mr. Cardenas.

Before I begin to ask questions and before the rest of the panel begins to ask questions, I would like to mention that in the spirit of this hearing, last week I, as well as some members of my team and staff from homeland security, participated in last Friday's weekly "SMEM chat" or what is Social Media Emergency Management chat on Twitter and solicited questions from those participants.

So on a weekly basis folks participate in this manner, and I appreciate all of the wonderful insights. I am not sure if this has been done in Congress before to solicit these types of questions, but since this is the people's house, I am happy to be submitting some of these questions that came from this chat last Friday.

I should also note that during that chat, I was asked to express their appreciation for the work that your companies and your association are doing to support emergency managers. They truly appreciate it, and they wanted to make sure that we, you know, thanked the private sector for all of the work they are doing to support their work.

I would like to start out first of all with Mr. Stepka.

Thank you for speaking with us today, and certainly I know and you have shared with us all of the positive things that Google is doing to assist survivors and responders during Hurricane Sandy in particular, but I am very curious what kind of feedback you have received particularly from the users of your products; whether it is crisis maps, people finder, public alerts, and what kind of changes have you made, because this is obviously an evolving process, and I am curious, you know, what you have heard from the users.

Mr. STEPKA. Sure. One thing we look at for feedback is just how much things are being used and definitely our products are being used a lot. We had over 15 million unique visits to the Sandy pages alone. We had millions of people over the years using our products in this context.

I think one of the key areas we looked at—I mentioned about crowdsourcing and how that became important, I think, to add to the crisis maps. We realized that that information is necessary. Sometimes the authoritative sources are not going to have everything you need to know. That is one piece of feedback.

Mrs. BROOKS. Can you just explain to us and for the audience what crowdsourcing is?

Mr. STEPKA. Sure. The notion of crowdsourcing is that basically rather than just taking data from authoritative sources like from, you know, FEMA or other organizations that have information from their sources which are authoritative, we also have the idea of crowdsourcing is collecting data from our users directly and finding a way to put that onto our properties around our products; so like on a map.

The example I gave was around fuel stations in New Jersey. That information came from users and then was then put on our website and on our maps so people could see where the stations were that had fuel.

The advantage of crowdsourcing is it lets lots of people on the ground participate and provide that information and you have to have a way to do that in a way that makes—that there is good feedback and people can correct data if they find errors. This is a crowd effort to make sure the data is accurate.

Mrs. BROOKS. Thank you. Just a follow-up with respect to your maps. I know you receive information data feeds from multiple sources like you have said, FEMA, Red Cross, and others. Have you experienced, and you mentioned it in your testimony, have you experienced interoperability issues with importing that information onto your maps?

How does that work? What are you doing to address those issues? Or what should groups like FEMA and Red Cross who we hope to be talking to in a next panel discussion, you know, what should we be sharing with them?

Mr. STEPKA. Yes. Over the years we spent a lot of time early on doing a lot of massaging of data frankly to get it on to the maps. It was a lot of work initially; it was very ad hoc because we just wanted to get the information to people as quickly as possible.

It did slow things down quite a bit. We are working a lot to get data in machine-readable formats and that is the most important thing—ways that we can actually receive the data and integrate it and we think the open standards is the best way to do it. This way it is available not just that Google but to anybody who can use that information in a secure way on whatever products they have or services they have.

So I think the most important thing we are doing and what I would suggest is that we have these standards that organizations get behind like, for example, for alerts, we have a standard called Common Alerts Protocol, which is being adopted by a lot of organi-

zations. I know in particular USGS is doing it for earthquakes for example.

So as much as possible getting information in these standard formats so that it is very easy for us to integrate. Once they are in those formats, it is not a problem for us to integrate all of that data. It is just when they are not machine-readable it requires a lot of handholding and manual work, frankly.

Mrs. BROOKS. How might you suggest that we educate everyone about the need for this open format?

Mr. STEPKA. I think it will come up probably in, as many things do, in terms of funding; resources for—make sure those resources are focusing on writing to standards. It does require that organizations, Government organizations take the data they have and take the effort to change it so that it can be made available through these secure protocols, and I think that does require some resources.

Mrs. BROOKS. Thank you.

Very briefly, Mr. Payne, the work you are doing of course, at Palantir, to support the disaster relief efforts is truly impressive. I would like to ask you a similar question. As a result of lessons learned from Hurricane Sandy, what are some of those lessons? I know you shared some of those with us, but with respect to the users of your technology?

Mr. PAYNE. I think that one of the first and most important lessons learned is the value of connectivity. What we saw in Hurricane Sandy is if you look at open 3-1-1 data, which is a great example of governments embracing open data and pushing out non-urgent requests for help from the community, to make that data publicly available.

Before Hurricane Sandy, you saw a—something that reflected the heat map of the population density of New York City by and large. Then afterwards, there were discrete areas that were completely gone from requests for help because they had lost connectivity.

So the first lesson is the absolute importance of empowering people to have ways to share that message to communicate directly with individuals. You know, at the end of the day a car battery will power an iPhone or an Android phone 150 times, but how do you make that link up such that that device stays hot or active in days after a storm? So that is one lesson.

That being said, technology can be used and built to work in areas where there is not that connectivity. The second lesson is that the more data that you can fuse, the better cohesive picture you can build.

Here one of the great things that happened after Hurricane Sandy is NOAA released very good high-resolution, overhead imagery of the affected areas. They flew an aircraft along the coastlines and made that data publicly available and so in tools like Google Maps or Palantir's geographic capabilities, we were able to actually look at where there was sand in the streets, where there were broken-down cars, where there were destroyed buildings, et cetera, and then use that to allocate resources to help those people affected by that get back on our feet.

Mrs. BROOKS. Thank you very much.

My time is now up. I now recognize the Ranking Member of the subcommittee, the gentleman from New Jersey, Mr. Payne, for any questions.

Mr. PAYNE of New Jersey. Thank you, Madam Chairwoman.

Mr. Cardenas, you know, most utility companies have a presence on social media, but PSE&G has been a trailblazer in that regard. What differentiates public services' social media efforts from others in the utility industry?

Mr. CARDENAS. I think that the key differentiator is that we had real people speaking with real people. Our employees live in our service territories. They were experiencing the same exact things are customers were. We were very transparent.

Our people on Twitter had the latest information. They knew about our challenges. They knew about time lines to restore certain communities. They did the best they could up front when we had individual responses. Later on they turned to more geographically encompassing messages.

We were empathetic. I think we were very well-connected to each of those who sent us a tweet and we did our very, very best to get timely, very real information out to the public.

Mr. PAYNE of New Jersey. Have Government entities responsible for disaster relief reached out to PSE&G? To ask them their expertise in developing these best practices?

Mr. CARDENAS. We have as late as yesterday, we had a meeting with a number of other utilities, other entities to share amongst us our best practices and our successes both in government throughout the storm whether it be the municipal mayors, whether it be the Governor's office, the Congressman's offices, we work clearly with them all the time to get their messages and our messages out to ensure we reinforced each other and make sure people were well-informed.

Mr. PAYNE of New Jersey. Thank you, sir.

Mr. Stepka, you know, I represent the 10th District in New Jersey which was greatly impacted by Hurricane Sandy. I understand that you had a strong presence in the area. Would you elaborate on what you did with the State and for the residents of New Jersey?

Mr. STEPKA. Sure. I think the most notable thing we did is through the crisis map I think gave people a lot of warning about where the map—wherever the storm was moving and how it was going and evacuation routes things like that, shelter information.

I think the issues about the gas stations as well, I think was also New Jersey as well. That was probably one of the responses we did and we worked through our tools to provide people information.

Mr. PAYNE of New Jersey. Okay. What can we do in the region to prepare for the next crisis?

Mr. STEPKA. I think the lesson learned about getting data in advance in these available to—in these open formats I think is important. There is always more information we can get. I think it is interesting about the fuel information, the longer-term time to recover from the storm.

It is important to figure out ways to get that data in advance, but I think at the same time with crowdsourcing, we always have

to find the right balance between getting good information and making sure it is accurate.

Mr. PAYNE of New Jersey. Okay. Thank you.

Mr. Beckerman, how do you feel—how can the Federal, State, and local governments and first responders best leverage the social media in data integration the tools available on the internet and disaster preparedness and response activities moving forward?

Mr. BECKERMAN. I think one of the most important things is having an open line of communication between the technology companies and the Government and that appears to be happening.

Social media and the internet can help before a storm like we have seen in the hurricanes and tornadoes. When you have some advanced warning, you can send messages out on social media and let people know the shelter in place or evacuate during a disaster as we have seen with help—responding to people to get real-time help, and then after a disaster to make sure that relief and volunteers and money and blood and things like that are getting to communities that need it most.

Mr. PAYNE of New Jersey. This should be an on-going conversation.

Mr. BECKERMAN. On-going, absolutely.

Mr. PAYNE of New Jersey. Not waiting for the next disaster to happen, correct?

Mr. BECKERMAN. That is correct.

Mr. PAYNE of New Jersey. Okay, okay.

Let's see. Mr. Payne, you have identified development of clear data retention policies as a means of preventing sensitive information from falling into the wrong hands and bad actors. How do you envision these policies being developed and should they be directive or voluntary?

Mr. PAYNE. In some cases, that they will be directive. Obviously, personal information about someone's health information or health status is a very good example that falls under HIPAA law.

The important thing is that an organization does not know what is happening to the data that they are sharing. Them making the decision to share that data becomes a very difficult decision to make.

If it is an all-or-nothing, far too often the answer has to be nothing, but if there is abilities to technologically drive subsets of data, remove personally identifiable information, et cetera, that can empower that organization or that individual to make the decision of yes.

At the end of the day, those most vulnerable during disaster are those most vulnerable before the disaster and often it is systemic health concerns and that sort of thing.

Knowing who those people are and where they are can be very useful for first responders to ensure that they have the correct medication, the correct resources that they need, but redacting that information or removing that information after the disaster is something that I think would make it much more likely for the decision to be yes to share that information.

Mr. PAYNE of New Jersey. Thank you.

Madam Chairwoman, I yield back.

Mrs. BROOKS. Thank you very much.

The Chairwoman will now recognize other Members of the subcommittee for questions they may wish to ask the witnesses.

In accordance with our committee rules and practice, I plan to recognize Members who were present at the start of the hearing by seniority on the subcommittee, and those coming in later will be recognized in the order of their arrival.

At this time, the Chairwoman now recognizes the gentleman from New York, Mr. King, former chair of the Homeland Security Committee, for questions.

Mr. KING. Thank you, Madam Chairwoman. Let me thank you for holding this hearing which is especially vital and it certainly has a real significance coming so soon after Sandy.

Let me join Mr. Payne in commending Mr. Cardenas for the outstanding job that PSE&G did in New Jersey. Unfortunately, we did not have the same experience in New York. I am not trying to drag you into a cross-border dispute here, but in my district, and the district next to mine, we have about \$8 billion in damage, and that we can cope with.

What we could not cope with was almost a total lack of communication between the consumers and the public utility, Long Island Power Authority. It was again, almost impossible to get information, get answers. Again, I say almost a total breakdown in communication.

From what Mr. Payne has said, and certainly your testimony today, it is clear that PSE&G was making substantial use of social media. I know you are working within New Jersey, but are you making any effort to reach beyond New Jersey to share your experiences with other utilities throughout the country?

Mr. CARDENAS. Absolutely. Absolutely. We have met with ConEdison, with LIPA, with members from Connecticut to share our best practices. We have shown them what we did, how we were able to in real time ramp up to train our employees to respond on Twitter.

It has become a brand-new technology that grows every day, changes every day. So you have to stay ahead and we chose to embrace it and to be very transparent.

I think that is the one thing we told the other utilities. Please, provide information you have and that is important and that it be done with people who can speak with people, not to people, because everybody is kind-of on the same boat here and we are all trying to help each other. So we have met with utilities in the surrounding States.

Mr. KING. Can you tell us if they have been listening to you?

Mr. CARDENAS. I think only—

Mr. KING. You know, I am not trying to drag you—

Mr. CARDENAS [continuing]. Only time will tell, and I am sure they will. I think the energy industry, the utilities tend to share information, we just hope that everybody takes it on in a very timely manner.

Mr. KING. Thank you, Mr. Cardenas.

Once again, Mr. Payne is ahead of the rest of us, he gets the break in New York with the good service, I mean, in New Jersey, and we in New York are trying to, you know, catch up. But anyway.

Don, thanks for bringing the witness today.

Let me ask Mr. Stepka—really I guess expanding on your testimony with the Chairwoman, can you describe the partnerships that you have established with first responders and Government agencies as Google rolls out its crisis response efforts and also if you could again again emphasize what you did with Sandy and how that would apply to the future?

Mr. STEPKA. Sure. I think the Red Cross is one of the key partnerships we work with very closely—actually for things like shelter information and resources for recovery.

With the city of New York, we were very engaged as well. We created actually a separate crisis map just for the city of New York. We had actually special data that was available for them for evacuation routes and things like the affected areas.

Of course we work with NOAA as well for weather information. They are also working with a CAP standard for alerts. It is very helpful for like when storms are coming and we can alert that information to our users. With Sandy those partnerships, a lot of those were in place already, so we were able to really respond more effectively.

Mr. KING. Do you recall if you have had any relationships on Long Island, Nassau County, Suffolk County, or the State government?

Mr. STEPKA. You know, I don't recall off the top of my head. We can get back to you on that.

Mr. KING. Okay, if you would and if not, let me know, and I will, you know, contact the county executives. From listening to your testimony and the way it was described, I think it would be very vital.

Mr. STEPKA. Okay.

Mr. KING. All of us were really caught off guard with Sandy.

I yield back, Madam Chairwoman, thank you very much.

Mrs. BROOKS. Thank you.

The Chairwoman now recognizes the gentlelady from New York, Ms. Clarke.

Ms. CLARKE. Thank you, Madam Chairwoman, and to our Ranking Member, Mr. Payne, to our distinguished panelists.

I wanted to sort-of, a follow-through on some of the train of thought here, because what we saw with the Sandy event was a unique confluence of conditions and one of the things that have—being a New Yorker—has concerned me is the way that the mobile phone scenario degrades very rapidly in those types of environments.

You couple that with a water event so that perhaps Mr. Payne's idea of using a car battery becomes a nonstarter and then the going down of the grid, now you know we have no way of communicating.

So I would be interested in sort of getting a sense of other ways that we can perhaps tap into the technology world beyond that affected environment to bring relief as rapidly as possible to those environments.

Has there been any discussion about satellite technology and how that in some way can be of assistance, and then finally just a description of your partnerships with New York responders and

agencies around such an event such as Sandy—now I spoke about a natural disaster, but in the event of a terrorist attack which we have experienced in New York City, the same scenario plays out once everyone starts getting on their mobile phones at the same time.

It becomes you know—if you can get through to someone you are lucky and it seems to go out in concentric circles. The closer you are, the harder it is but after a while there is a cascading effect. So can you just sort of share with me your thoughts around that? Because that was a major concern, for many days, quite frankly, after the event in New York City.

Mr. STEPKA. The first part of your question about the usefulness of mobile phones during a crisis. It is a problem—of course if we don't have power. That is the first thing you need to have and there are, I think, very creative ideas of getting around that issue and they are on a different grid so they tend to have their own power sources separately.

You mentioned the ideas of satellites or other technologies. I think it is something we have done a lot of internal discussions around, like what technologies would be useful as a back-up system in this situation? A lot of them have advantages and disadvantages. I think they are worth looking into more deeply and making investments overall, but we don't have anything now in place for that.

I do think, I mean, all of these tools are limited by the fact that if you don't have connectivity, you can't get them. I do think it is something that we are focusing more immediately on, which is probably more cost-effective and that is getting people more prepared before-hand.

So the cool thing about a storm like Sandy—you can see it coming, unlike a tornado which unfortunately gives very little warning, but with a situation like, you know it is coming, we can actually give people a lot more certainty and give them instructions and ideas about how to prepare for it so they don't have to deal with it as badly; either evacuating early or at least getting supplies ready for the emergency.

So I think that something we can do a much better job at and I think it is something we are looking at closely.

The second question, I think you were asking around—more around I guess terrorists events and that sort of thing. For the most part, we have been focusing on a natural disasters. In a terrorist attack we did actually help with the Boston bombing. We turned on our Person Finder so people could find out where their loved ones were during the crisis—after the crisis because there was a lot of chaos right then.

I think in general it is a very different set of issues and I think it is important to look at them very carefully. Like you see there is a bad actor in play, you need to understand what is the motivations and how they are engaging on this event and how do we make sure that we be very careful how we respond?

Mr. PAYNE. Today, there exists a system for NGO's focus on response to use voice. It is called to the Wireless Priority Service. That is over a decade old and it doesn't have any allocations for data. To change that to allow folk to use data would reduce the

congestion on networks and allow people to be more effective in communicating.

Further known are the First Net initiative looking long-term at something that I think can really help. It is a Nation-wide 500 megahertz' worth of spectrum allocation for specific data transmission during emergency response.

My understanding right now is that that is only allocated for official Government agencies. If there could be small portions of that system, of that First Net system, that could be allocated for individuals at FEMA shelters or Red Cross shelters or NGOs to do quick communications to check in with their loved ones, I think that would go a long way towards empowering people to communicate in wide-scale disasters.

Ms. CLARKE. Thank you very much, Madam Chairwoman.

I thank you for your responses.

Mrs. BROOKS. Thank you.

The Chairwoman now recognizes the gentleman from Pennsylvania, Mr. Perry, for 5 minutes.

Mr. PERRY. Thank you, Madam Chairwoman.

Gentlemen, I appreciate your testimony.

I am interested in prevention of things that we have seen happen and wondering what you see as the Federal Government's role, and in particular in cases, if we could use the Boston, the bombing at the marathon and the—and the Facebook postings in advance of that.

How should—how do you see that that should be monitored? Should it be monitored in the first place? How should it be monitored? What would the triggers be? Should that information go to law enforcement? Who should send it?

I think there is a lot of questions there because I think there is some expectation that this stuff is open source that it no longer bears the same privacy concerns that maybe your email would once you posted on Facebook.

Is that true, and if that is available, should or should we not be using that to safeguard our communities? I would just like to have a continuing dialogue.

I guess, Mr. Stepka, anybody would like to answer?

Mr. STEPKA. Sure. I think it is a very important question to get that right and we do take this very seriously. I think in general, all this public information that is available on social media, I think can be a source, I think for law enforcement to look for potential bad actors and I think they can do that.

In general instances, that being posted publicly, that can be reviewed by law enforcement without any need to get subpoenaed or even working with either Google or other technology companies. They can do that directly.

I think, you know, that is pretty much—I think the most important thing to think about with that. This is a—in a free society it is a hard balance to figure out how to deal with these kinds of information out there. There is many—there is usually a very small number of people who are bad actors and they get lost in the noise, I think, unless you are looking for them specifically.

Mr. BECKERMAN. From our perspective, privacy is very important. Our companies take the privacy of the users very seriously ei-

ther every day and also during disasters, and there are a lot of tools on-line, but we feel that law enforcement should use the same warrants and due process and that they do in the analog world that they should apply to the digital world.

Mr. PERRY. So in that case, where there have been or were Facebook postings, who would have—whose responsibility is it to monitor? How would they find in this huge universe of postings, how would they find that in a timely—whoever they are—first of all, who do you see?

Who are the “they?” Is it law enforcement? Is it the Department of Justice? Department of Defense? Is it the CIA? Who is it that would do it? Is it you folks? How would they go about finding that needle in the haystack on a continual basis, if you have any thoughts on that?

Mr. STEPKA. One thing we can do is, and this is related to YouTube when people would post either things which violate our terms of service around hate speech or terrorist activity, that sort of thing, if someone flagged that information we do take it down.

So we do rely on our users to help police it in that sense. I think, like I mentioned before, if there is public postings, I would leave it to law enforcement to look at the public postings. If they are not public, they do have to go through their normal process to get access to the information, the same as any other kind of subpoena process.

Mr. PERRY. So when you take it down—if it falls within the criteria that you find objectionable per your company’s policies, do you then report? Do you feel an obligation to report in the instances of—in the instance of these—these Facebook postings or these videos in particular, is—should there be an obligation?

Was there any obligation other than just taking it down because of course that doesn’t help law enforcement, that doesn’t alert citizens or the authorities to what might be impending? What is your protocol—what should the protocol be there?

Mr. STEPKA. Yes, specifically on YouTube I know that if a user flags something as being terrorist, a terrorist activity or basically a bomb-making-type thing, we do take it down.

You know, I don’t know the answer to your question about whether we do then inform law enforcement of that. I can find out that and get back to you.

Mr. PERRY. All right, thank you.

Madam Chairwoman, I yield back.

Mrs. BROOKS. Thank you.

At this time I recognize gentleman from Mississippi, Mr. Palazzo, for 5 minutes.

Mr. PALAZZO. Thank you, Madam Chairwoman.

I thank our witnesses here today for their testimony and answering our questions.

I represent the Mississippi’s 4th Congressional District which spans the entire Mississippi Gulf Coast. We got hit pretty hard during Hurricane Katrina and that was in 2005, almost 8 years ago.

It feels like a long time, a very long time, but the remnants of the storm are still heavily present with us every day and we are

still recovering. But I would like to point out Facebook was still in its infancy, relatively speaking.

It was almost nonexistent to many people. Twitter was nonexistent. The first iPhone wouldn't come out for almost another year. Last year, Hurricane Sandy hit the Northeast and there were millions of people on social media sharing information, watching live Twitter feeds, and checking up on their loved ones. So just in a few short years we have seen social media explode, and I think most of my questions have already been answered.

We have talked about lessons learned, but if any of you have the experience, can you kind of compare the technologies that we had during Hurricane Katrina, the lessons that we learned that brought us up to the successful information sharing that we had during Hurricane Sandy?

Mr. Stepka, we will just go left to right.

Mr. STEPKA. Sure. I think the biggest change would be with, I think, the mobile phone technology, it is a major change the people have access to communications especially wherever they are and also if their main lines go down. I think the second, of course, is social media.

No question that has been a big difference. I think people are more connected imminently in that sense and have many outlets and many ways of contacting both authoritative organizations as well as each other so they can tell their family members that they are okay. That sort of thing.

Mr. PAYNE. I believe one of the biggest fundamental differences that social media has provided is the efficiency of the supply and demand of those that want to help and those that need help.

What we saw in Hurricane Sandy is we had one group of veterans, a couple hundred people in total, harnessing over 14,000 volunteers from the community and those volunteers by fusing a bunch of technology requests for help, all sorts of data were efficiently tasked to muck basements, to remove the sand from parking lots and playgrounds, etc.

The net effect being that very quickly after the disaster folks' houses had the material removed that prevented mold from growing in those houses and those houses being destroyed.

So looking ahead, I believe that we will see an ever-increased ability to harness more goodwill and more help from individuals in the surrounding areas to help people get back on their feet. I think that is the best sort of siren of social media.

Mr. BECKERMAN. Yes, thank you. I think you explained the differences perfectly by the fact that Facebook had been only a year in existence, Twitter didn't exist, there were no iPhones.

So during Hurricane Katrina in 2005, only half of the internet users used on-line sources to find news, and today that is obviously much higher. Only 25 percent used on-line sources to check in on loved ones and let people know they were all right and things like that. Today obviously as we heard from the rest of the panel and from the Members of that number is much higher.

After Hurricane Katrina 13 million people went on-line in the United States to donate and again, today that is higher. So we have seen as the technology has grown the benefits of the internet

and social media really help people, and I think it could have been obviously a benefit during Hurricane Katrina as well.

Mr. PALAZZO. All right, well I definitely agree with everything that you said. I can tell you just the other day we had a severe weather event and my phone went off and I did not apply for the app—I guess it was just the phone service just notifying us that we are about to hit some severe weather on the Mississippi Gulf Coast and I was very grateful for that.

I have seen—as we have seen in the tornadoes that have recently happened in my district and all across the country, it does allow people from all across United States to help in some form or fashion even if it is donations or having people come out and help fill sandbags, remove mold.

I think that is a fantastic—and my final question would be—and this is for everyone again, what suggestions or tips do you have for Americans that are actually users of the technology, the social media, during a disaster? What tips would you provide, if anybody?

Mr. STEPKA. I think the first tip I would give; I think it is good to have a plan in advance of an emergency. Every family should be thinking about this in advance. They should know how to contact each other, they should have—whatever means they want to do it—whether electronic or some back-up ways, they should do that.

So I think preparation is the best thing for everyone. During an emergency itself I think power is essential. If we think about, you know, water, other kinds of resources you want to have ready, but having power connectivity I think are really important, so you can have access to communications.

Mr. CARDENAS. For us, from a utility perspective, don't take for granted that we know that you don't have power. So it is good to know that information because you know maybe two blocks from you, right, people may not have power, you may get power, they don't have power, so please be accurate.

You don't have power, let us know. Because it may be that you have a problem that is only localized to your block or to your service. So provide information. The more the better.

Mr. PALAZZO. All right.

Well thank you, Madam Chairwoman. It is a very informative hearing. Thank you.

Mrs. BROOKS. Thank you.

I have a couple of questions kind of following up on that a little bit. How can our emergency management officials monitor and validate the information that they received or the power companies, how can you or do you monitor and validate?

We learned this and that SMEM chat on Twitter last week. Those officials shared with us, how can the private sector help the emergency managers and first responders efficiently collect, validate, share this information posted by the public during the disaster? Any suggestions as to how your experiences and work can inform and, I guess, I will start with Mr. Cardenas.

Mr. CARDENAS. During the storm and right now real-time we have people on Twitter, on Facebook, and information that is posted is shared not only with us but back with municipal officials, State officials, and I think that is critical to have that partnership

between the public and the private sector and that it is a two-way street.

They come to us with information, we go to them. During events any times there is false information posted and working with that municipal official you can correct the information. You can provide—it is not—you are not going to be out 3 weeks.

It may be 3 days. That kind of sets people to be on the right page as to what they have to plan for. Many of these events are real-time, so that real-time information is critical.

Mrs. BROOKS. Mr. Stepka.

Thank you.

Mr. STEPKA. Yes, I was going to say I agree. I think that is important to look at the information as being—it could be imperfect in the crisis and is going to evolve. You will iterate on the information.

I think collaborating among agencies and organizations is critical as well as the public because the public can help validate information.

I think the crowdsourcing idea makes a lot of sense in this context, but we have to think about where it is appropriate and how to act on it when we need to validate the information before you act on it—or corroborate that information elsewhere.

Mr. PAYNE. There truly is a risk of data obesity as we grow with significant amounts of information streams coming on in the future. I think that robust data fusion capabilities with data analysis capabilities can empower that analyst to tease through the information that is relevant to them, vet it against other sources, and use of social media as part of a holistic approach to information to make resource allocation decisions.

Mrs. BROOKS. With respect to the work that you have all been doing, just last week FEMA released 2013 National Preparedness Report, which did identify the need to mature the role of public-private partnerships as a new National area for improvement, and this was also highlighted during our Twitter chat last week.

Based on the incredible work that your companies are doing, what has your actual interaction been with Federal, State, and local governments, and has FEMA reached out to you all specifically, and have you worked with FEMA?

I will, you know, ask Mr. Stepka and Payne specifically initially because I am sure you have worked with them, Mr. Cardenas. Or—

Mr. CARDENAS. Yes.

Mrs. BROOKS. Yes.

Mr. STEPKA. Yes, we have worked with FEMA and we have talked with them about how we can better work together to help support their efforts. So I think I would like to do that more as well.

I think at every level of government we have been working on it with different situations. I mentioned we worked with the city of New York as well in the crisis.

I think we look for scalable ways to reach out to Government organizations. It is hard to reach out to all of them, so I think it is important again to go back to standards. If we have standards laid out, it doesn't require that we have relationships with every single

organization, every level of government. If we all can agree on certain kinds of interaction with secure data, that will take care of a lot of those interactions.

Mr. PAYNE. I think this relationship highlights the importance of open data. FEMA does a great job with certain data sources that they can publicly release making them available so that organizations like Google, ourselves, and other response organizations can leverage that information. We would certainly welcome the opportunity to engage them to see on both sides how we can improve that relationship.

During Hurricane Sandy, we did work with the Office of Executive Management at New York City. I think they did a fantastic job interfacing with the dozens of organizations to help as much as possible and I think that was a success story of a governmental-social sector interaction.

It is something that we take a very strong commitment to openness at Palantir Technologies and with all of the work we have done, be it a flood, tornado, or hurricane have ensured that all the data that was generated by mobile devices integrated et cetera was made available to relevant authorities to ensure that they had access to all of that information that they—other than the personally identifiable information that was removed.

Mrs. BROOKS. Thank you. I would ask the Ranking Member, the gentleman from New Jersey, for any further questions.

Mr. PAYNE of New Jersey. Yes, ma'am. Thank you, Madam Chairwoman.

Mr. Cardenas, I had a great deal of interest in smart grid technology and have had conversations with your company officials as well in reference to it, and in your testimony you explained the smart grid technology enables utility companies to pinpoint problems and restore service more quickly. How does the smart grid technology differ from 20th Century technology?

Mr. CARDENAS. Well, equipment in a smart network talks to the components of that system. It can reconfigure automatically the way a neighborhood is fed. It relies not on human beings doing individual steps; information between these components can automatically restore services in many cases.

In addition to that, it provides efficiencies with the setting up of a circuit you are going to work on remotely so that you don't have to send people to each piece of equipment and put it in a way that people can work on it.

For instance, we had 4,000 people who came to help us out, and we had to, every morning, send them out to do work. It took us a long time to allow them to be able to do the work because we had to make it safe.

With a smart grid, with a supervisory control and information system, we could do that remotely and gain efficiencies in the actual time and leveraging that resource to get the restoration done.

So a smart grid is quantum leaps ahead of what we had 10 years ago, 20 years ago. It is now the way we go and it is where we are hoping to make very large investments in.

Mr. PAYNE of New Jersey. So that is basically how the smart grid technology would improve responses during disasters. Is that correct?

Mr. CARDENAS. It will do it both ways. It will do it with the efficiency of the people working to restore service as well as the automated restoration associated with reconfiguring the way the grid is fed.

Mr. PAYNE of New Jersey. Thank you.

Mr. Stepka, in your testimony, you note that, you know, the affordable high-speed internet access, you know, is necessary to be tech ready for disasters. Nearly 100 million Americans do not have access to broadband and one-third do not have access to internet, and, you know, I discussed that a bit yesterday when we were in my office.

So from your perspective, how does the digital divide undermine disaster response efforts, and how would you address the problem?

Mr. STEPKA. I think it is a very important issue. I think it is in addition to crisis response we also work on this issue in general trying to provide a better internet access to people around the world actually.

As you know, we have launched an effort to bring high-speed internet access starting in Kansas City, Austin, and Provo, and I think the idea being is in general this is very important.

Obviously, we need to have a way to provide internet access to everybody as well as high-speed access in their home. I think so that everybody has access to these great tools and also seeing the advantages of being connected not just in a crisis.

I think it is a challenge, what we are doing, in general and we are focusing a lot of resources on. There are a couple of challenges which are different. One challenge is in urban environment versus rural environments. Rural environments are very hard to reach using fiber, for example, and usually a wireless technology is probably more efficient.

So we have experimented working with the FCC on a different technology which provides potentially the ability to provide access to people using the TV white spaces, which is a low bandwidth—sorry low-frequency bandwidth that can be used to reach rural parts of the world.

Mr. PAYNE of New Jersey. Thank you.

Madam Chairwoman, I yield back the balance, and I would like to thank all of the witnesses for their testimony.

Mrs. BROOKS. Okay. Thank you.

I have a question.

Mr. Beckerman, I will start with you and others might want to chime in, but what are—in following up—what are some things that the Federal Government should do in forming partnerships with the private sector to take advantage of the new technologies? I might ask whether or not you are aware you represent a number of associations or I am sorry a number of companies and incredibly innovative companies.

Are there any new technologies we can be anticipating that can be used that you can talk with us with respect to social media for emergencies and disasters, but how can we better connect up the Federal Government with these new technologies?

Mr. BECKERMAN. Well, I would say this hearing today is a great start opening the dialogue. So thank you for having the hearing.

You know, the most important thing is for private sector, our companies, and the Federal Government to have an open dialogue and talk. The technology is evolving, and as we go through each one of these unfortunate situations, lessons are learned and the Federal Government gets better and our companies get better and the public gets better at understanding how to use the technology.

Crowdsourcing is a very powerful tool, both during a disaster to help bring volunteers, and after disaster to help bring money and volunteers and rebuild.

So, you know, we just ask that the Federal Government—and they have been doing a great job so far—is keep an open dialogue with our companies and share data where they can, and we will educate the public on how they can use this technology.

Mrs. BROOKS. Do you believe that the Federal Government is improving its use of social media for emergency alerts and preparedness or what is your opinion on that?

Mr. BECKERMAN. Absolutely. It is improving every time, and as we have seen from some of the protocols from FEMA, they are already using social media to send out alerts telling people to get their shelter in place or evacuate and that is a great step.

Mrs. BROOKS. Any others on the panel would like to comment on about how we, you know, work even better together and any emerging technologies?

Mr. STEPKA. I would echo everything he said as well.

I think it is very helpful to work collaboratively on these ideas. The technology is still evolving. I think it is still early days in some ways.

I think working together on open formats for data to be shared in a secure way that is appropriate using crowdsourcing in an appropriate way as well is a very important thing in this context.

But I think there has been a lot of good progress to date. I am actually very encouraged by as I mentioned what the White House said recently on data standards, and I think those general movements are all in the right direction.

Mrs. BROOKS. Okay.

Mr. Payne.

Mr. PAYNE. To echo the other panelists, I concur that we are moving in the right direction.

I am heartened by many of the openness data initiatives and open data standards. The White House CTO has done a fantastic job pushing new standards that make computer comprehensible formats the norm.

One good example I will offer of this is nonprofit data. Today nonprofit data is publicly available, but as a scanned piece of paper the computer cannot read very well and it takes hundreds of thousands of man-hours to rewrite the database that exists with information that is supposed to be public data.

So in the new budget proposal is the ability for that to be electronic information and thus much, much easier for tech-knowledgeable organizations to leverage the data.

There are one-and-a-half—1.4 million nonprofit organizations in America today and having the ability to engage them in a disaster or in an emergency would have a lot of benefit to those on the

ground and that open data could go a long way towards that engagement.

Mrs. BROOKS. Thank you.

Mr. Cardenas, any thoughts you might have?

Mr. CARDENAS. I will give you one example of the collaboration and how we are going to be able to help.

I don't—in the not-very-distant future, I can see a first responder from a municipality going out with a phone taking a picture, sending that to us, telling us what equipment is at that location the picture was taken from and then take action on that.

The collaboration between the utility and the way it formats this information and its ability to speak and connect with that device will be critical as we move forward into the future where whether it be crowdsourcing or just the use of these devices to locate and identify equipment that has been damaged is going to continue to be critical. That I am hoping I will be able to see in the next 9 to 12 months.

Mrs. BROOKS. Thank you.

Thank you, very much.

Mr. Payne.

Mr. PAYNE of New Jersey. Madam Chairwoman, I ask unanimous consent to submit testimony from Humanity Road and the Business Emergency Operation Center Alliance of New Jersey to the record.

Mrs. BROOKS. Pardon? Oh, yes. Oh, thank you.

Thank you. Without objection, that will be admitted.

[The information follows:]

STATEMENT SUBMITTED FOR THE RECORD BY RANKING MEMBER DONALD M. PAYNE, JR.

PREPARED STATEMENT OF CHRISTINE THOMPSON, PRESIDENT AND CO-FOUNDER OF HUMANITY ROAD

Chairman Brooks, Ranking Member Payne, and distinguished Members of the subcommittee. My name is Christine Thompson, president and co-founder of Humanity Road, a 501c3 Public Charity that specializes in digital disaster relief. In support of its mission, Humanity Road volunteers harness internet and mobile communications technology to collect, verify, and route information on-line during sudden onset disaster. Using the internet, we research and share public safety information and direct the public to Governmental and aid agencies that provide disaster assistance. Since 2010 Humanity Road supported over 500 emerging events in 53 countries and helped develop and execute 11 joint social media exercises for private and public-sector partners. We responded in social media for tornado outbreaks, hurricanes, earthquakes, tsunamis, flash floods, blizzards, and man-made events and activated to provide surge support monitoring of social media by local, county, and State-level officials. In the past 3 years we watched the amazing growth of mobile and internet-based communications used by the impacted public in the United States. During our operations, including Hurricane Sandy, we documented the effective use of social media and technology tools in fast-moving and slow-moving events. Social Media has been used to facilitate rescues, reunite loved ones, manage spontaneous donations, and collect situational information. We are here to provide examples of how technology has been used, the benefits and challenges, and ask for your support on four specific areas:

1. Engage Humanitarian Technology Partners
2. Manage Response—Structure for the Use of Technology Partners
3. Manage Preparedness—Plan for Technology in Training and Exercises
4. Accelerating Lessons Learned and Innovation.

The Belle Harbor community response in Rockaway, New York after Superstorm Sandy provides an excellent example of a whole community approach to disaster response and how social media, digital disaster response, and new technology are

transforming preparedness, response, & recovery. This community is positioned on a peninsula accessible only by bridge. The area was inundated by storm surge, sand, and winds causing a power and communications blackout with catastrophic damage. In the face of these challenges local residents, through the use of social media and technology partners, catalyzed a recovery effort that serviced over 10,000 people a day. Two hundred volunteers managed the operation daily. St. Francis de Sales School had no functioning phones, power, or heat. The nearest Red Cross Shelter was more than 30 miles away and transportation and gas were nonexistent or challenged. By request, a collaborative technology team delivered an innovative communications solution on-site within 24 hours. And within a few days, this local community-led effort had their own citizen-run command center with satellite communications and Wifi hotspot. The command center solution was operating on generator and solar-powered lights. It became the central coordination point for volunteer coordination, field survey teams, feeding, donation management, medical assessments, and community response teams that helped with debris removal to name a few. The community volunteer team at St. Francis included Monsignor Brown, local youth, residents, and spontaneous volunteers from throughout the city. The community used social media to list “essentials” controlling donation and volunteer management. A mobile medic team also went door-to-door taking water and supplies, performed health screenings on the vulnerable populations, particularly the elderly who were stranded without elevator service in high-rise buildings. Challenges remained; the community needed to warn its residents about a second dangerous storm that was approaching. Paper bulletins were posted on church doors, paper handouts made in multiple languages and locals resorted to using bullhorns.

The collaborative communications solution team at St. Francis de Sales provided over a quarter-million dollars in communications assets and services. The lead partner cost for spearheading this physical deployment was only \$5,000. The solution team included nonprofits such as Humanity Road, Disaster Tech Lab, Information Technology Disaster Relief Center (ITDRC), and other private-sector partners including Aruba Networks, Viasat, Cisco, and Goal Zero. Each played a role in empowering the local community response efforts through technology. This innovative approach was not a Joint Resource Center (JRC) or Disaster Resource Center (DRC) launched and run by FEMA. It was a Whole Community Resource Center which put the recovery at the local level, not State or Federal. The FEMA Innovation Team is studying these local response activities and working on recommended improvements in the design of the disaster recovery center models. The approach used in Belle Harbor worked and not only because of the innovative use of social media, communications technology, and power solutions; but because the solution provided was for the community by the community. Technology is only useful when people know how to use it, it must fulfill the local need and not intrude on or complicate the primary mission of the local disaster response and recovery efforts.

In summary, the effective use and implementation of technology and social media can rapidly reach populations isolated from the response chain due to communications and power impacts. Digital volunteerism and digital response organizations in the social media age can help empower a community to take part in their own recovery efforts. This can also provide relief that mitigates traditional response chain issues in large-scale events reducing the recovery period and associated costs. However, whenever innovation meets implementation, there are challenges. There is a gap in assessing communications outages as currently, there is no publicly-available map for communications availability or outages. There are also challenges in response reporting, preparedness planning, and measuring effective social media and technology mobilization. Having provided examples of Humanity Road’s Rockaway deployment and considering the benefits and challenges faced there, we ask for your support in four specific areas:

1. *Engage Humanitarian Technology Partners.*—Humanitarian technology disaster response organizations work both on-line and also deploy into the impacted area. These teams provide a great opportunity for improving the speed and accuracy of initial damage assessments by improving communications. We recommend disaster response officials and organizations take advantage of using volunteer-based disaster response organizations that are skilled in the use of internet and mobile communications technologies including social media. This can provide a cost-effective solution to a high-volume problem and closes gaps between non-technical Government organizations and high-tech disaster response techniques. These humanitarian partners work with equipment and service providers to deliver solutions that meet local needs and participate in disaster preparedness training and exercises to build resilience and readiness.
2. *Manage Response—Structure for the Use of Technology Partners.*—We recommend that officials review and designate a suggested reporting structure

within the Incident Command Structure for technology deployment activities such as surge support media monitoring and crowdsourcing during disaster.

3. Manage Preparedness—Plan for Technology in Training and Exercises.—Technology-driven communications solutions such as social media, crowdsourcing, crisis mapping, and surge support for social media should be included in preparedness planning and exercises. Training is also needed to build basic skills in local, county, and State organizations. The existing grant process is tied to county and State government and is geography-centric. Digital disaster response is not always tied to a specific geography. We recommend that grants be made available to non-governmental technology organizations for preparedness and response initiatives to build competence and resilience with consideration that these initiatives may be regional or National in scope.

4. Accelerating Lessons Learned and Innovation.—We recommend that Congress adopt innovation and acceleration by supporting the DHS Virtual Social Media Working Group and the FEMA Innovation Team & FEMA Think Tank programs. These are working models that can facilitate and accelerate process improvement in the area of social media and technology. These partners help to identify lessons learned and can test them in a fail-safe environment for incubation, planning, and implementation. The FEMA Innovation Team, which is part of the FEMA think tank is working on a communications heat map that would provide the public with availability of wireless communications and WIFI hotspots during disaster. And the DHS Virtual Social Media Working Group just published its newest document: *Lessons Learned: Hurricane Sandy*.

Thank you for the opportunity to submit testimony. I will be glad to answer any questions and can also elaborate on additional examples of the effective use of technology and social media during disaster.

STATEMENT SUBMITTED FOR THE RECORD BY RANKING MEMBER DONALD M. PAYNE, JR.

PREPARED STATEMENT OF BEOC ALLIANCE

BEOC ALLIANCE OVERVIEW

The BEOC Alliance, a non-profit 501c3 organization, strives to expand and strengthen the capacities of Government agencies (local, county, State), business partners and non-Governmental organizations in preventing, preparing for, responding to, and recovering from disasters of magnitude. The Alliance's underlying goal is to improve private-sector self-reliance and self-sufficiency during such events through rapid information sharing, situational awareness, and common operating pictures. The Business Emergency Operations Center (BEOC) is a means to achieve these desired end-states.

The BEOC construct epitomizes an adaptable and scalable communications hub as well as a private-sector node within the Homeland Security Enterprise. The synergies produced through steady-state and elevated operational activities emanates from an interactive partnership triad composed of academia, Government, and the private sector. Real-time situational awareness is more than a goal; it's a functioning reality.

The BEOC functions as a business fusion center supported by a formal research component based on a technology capabilities-centric matrix. The BEOC Alliance continuously exchanges information through weekly conference calls, alerts, portal postings, listserv notifications, exercises, and symposia. When situations dictate, members can quickly transition to a state of readiness for a rapid response and realistic recovery with a physical or virtual BEOC providing omni-directional communications vis-a-vis established distributed networks.

Distributed communication networks support BEOC Alliance efforts through a "mash-up" of information technologies and systems. The research component of the BEOC program explores and evaluates an array of communication technologies at the Crisis Communication Center housed at the New Jersey Institute of Technology. Resultant findings become thrust areas for improving interoperability and collaboration across the entire breadth of the private sector.

BEOC ALLIANCE TALKING PAPER

Primary Goal.—Business-to-Business assistance, collaboration, and cooperation through information sharing.

- Whole is greater than the sum of its parts philosophy
- Knowledge-sharing community

- Bottom-up organic network formed through collaborative efforts of like-minded organizations and executives
 - Inclusive affiliations and memberships
 - FEMA National BEOC Initiative
 - CI/KR Sectors through DHS IP RCCC
 - U.S. Northern Command
 - Private-Sector Organizations—National and Local
 - Non-Government Organizations
 - Academic Institutions
- What is the BEOC Alliance?
- Member supported 501c3 non-profit organization
 - Certified Federal Government contractor
 - FEMA National BEOC Charter member

Business Emergency Operations Center (BEOC) Construct

- A Communications Model
 - Omni-directional information sharing
 - Creates common operating picture for enhanced situational awareness
- A Practitioner's Tool
 - Aids in decision-making
 - Supports Private-sector readiness and operations
- A Research Project
 - Technology Capabilities Matrix provides research roadmap
 - Ten identified capabilities
 - Research underpins first two construct components

Goals

- Strengthen Private-Sector/Public-Sector/Department of Defense Communication
 - All phases of Homeland Security and Homeland Defense Emergency Management through adaptable BEOC implementations
- Resource to the Private-Sector/Public-Sector/DoD in implementing other BEOCs
 - Provide consultation and guidance to States and regions developing BEOCs
- Enable proactive business managers to cut through the chaos during disasters
 - Ensure Access to timely, reliable, and actionable information
- Information sharing
 - Identify critical issues pre-event to avoid reactionary behavior during disasters
- Continued outreach and linkage of organic networks
 - Create common operating pictures
- Resilience and restoration of vital functions and services
 - Maintain organizational resilience through information exchanges, establishing priorities, and implementing plans of action during the fluidity of crisis
- Increase number of technology tools available to the private sector for improving reach, connectivity, and redundancy
- Advocate for the Private Sector
 - Help link public-sector agencies/organizations with private-sector BEOCs

Scope of Activities

- Ranges from local to National levels
- Integrated research component
 - Continued research into networks, hardware, and communication protocols
 - NJIT C4IF Lab a venue for experimentation
- Formulation of Private Sector doctrine
 - Periodic cross-sector think-tank sessions
- Host symposiums on Private-Sector/Public-Sector communication and coordination issues

Operating Environment

- Virtual during steady state
 - BEOC List serve
 - CyberCop Portal
 - BEOC Alliance Webpage
 - Recurring conference calls
- Physical activation when circumstances warrant extended or expanded operations
 - Events page
 - Multidisciplinary teams
 - Subject matter reach-back

Mrs. BROOKS. At this time, I would like to ask Mr. Payne if he has anything for closing, he would like to say before I close out. Okay.

Thank you very much. I would very much like to thank this panel for their very valuable testimony. I think we have learned a lot. We have started a very important discussion.

What I think is happening with emergency managers, whether it is municipal or State or Federal officials, your companies are paving the way. You have created new technologies.

I am looking at the back of this actual hearing room is a picture from 9/11 and what the technologies that you all discussed whether it was People Finder, you know, whether it is the mapping capabilities that would have been so critical during that horrific time in our country's history.

So we truly have come a very long way, and as I talk about the emergency technologies and knowing what is coming, I think we can't even imagine as Mr. Cardenas just shared with us, you know, the possibilities of what your companies and the innovators and engineers and inventors in your companies are creating.

We just ask that you continue to share those with Government, with the public sector, with the volunteers. It is amazing to me that 14,000 volunteers, you know, come together quickly but that we already had a team of veterans in place to help mobilize and that were trained and so it is a wonderful marriage of, you know, the Government and the military and our veterans and that point, you know, marrying up with volunteers to really aid in recovery and save a lot of lives and save homes and save property, but most importantly, save lives and that is what I think your testimony here today has also shown.

I think we absolutely have some challenges that, you know, everyone needs to be mindful of and some of those challenges, you know, the—sadly, the few bad actors that do come up, the privacy issues that we need to be mindful of, but I do think—and the connectivity you have talked about, you know, without power, none of this works, and we do need to continue to explore and continue to advance and partner between the public and the private sectors, and I just want to thank you for your time. There may be questions submitted by others, and we look forward to working with you in the future.

We plan on having another hearing in the future with Government officials, with FEMA and Red Cross and some others, and we look forward to trying to ensure that all of the innovation that you are creating and the way in which your companies want to contribute in emergency preparedness, we just thank you very much.

So thank you. This meeting is adjourned.

[Whereupon, at 11:29 a.m., the subcommittee was adjourned.]

**EMERGENCY MGMT 2.0: HOW #SOCIALMEDIA
& NEW TECH ARE TRANSFORMING PRE-
PAREDNESS, RESPONSE, & RECOVERY
#DISASTERS #PART2 #GOVT/NGOS**

Tuesday, July 9, 2013

U.S. HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON EMERGENCY PREPAREDNESS,
RESPONSE, AND COMMUNICATIONS,
COMMITTEE ON HOMELAND SECURITY,
Washington, DC.

The subcommittee met, pursuant to call, at 10:07 a.m., in Room 311, Cannon House Office Building, Hon. Susan W. Brooks [Chairwoman of the subcommittee] presiding.

Present: Representatives Brooks, Palazzo, and Perry.

Also present: Representative Swalwell.

Mrs. BROOKS. The Committee on Homeland Security, Subcommittee on Emergency Preparedness, Response, and Communications will come to order.

I would like to welcome our witnesses, everyone in the audience, and those who are watching this webcast to our second hearing on how social media and new technology are transforming disaster preparedness, response, and recovery.

Last month, the subcommittee heard from the private sector on this topic, and today we will continue our discussion with the Government and the NGO officials on how they are incorporating social media and new technologies into their emergency management efforts.

Before I recognize myself for an opening statement, I ask unanimous consent that the gentleman from California, Mr. Swalwell, a member of the full committee, be permitted to sit on the dais and participate in today's hearing.

So without objection, so ordered.

There is no doubt that social media and new technologies are playing an increasing role in the way we prepare for, respond to, and recover from disasters.

As we have seen through recent events, such as Hurricane Sandy and the Boston bombings, individuals and organizations, more than ever, are turning to social media and the internet to obtain public safety information, to connect with friends and family, and to request, most importantly, assistance from emergency response organizations.

In fact, in a 2012 survey conducted by the Red Cross, we learned that 70 percent of respondents suggested that emergency response

agencies should regularly monitor their social media sites so they can promptly respond to any requests for help.

In addition, an infographic created by the University of San Francisco, and those are what you are seeing on the screens, showed that during a disaster, 1 out of 3 citizens expects help to arrive within 60 minutes of posting a request on social media.

Social media also enables response organizations to quickly push information out to the public; something that has not been possible on such a wide scale until recently. A great example of this was in the Boston bombings when the first official announcement that Dzhokhar Tsarnaev had been captured, it came not at a traditional press conference like in the past, but instead, it was tweeted out through the Boston Police Department.

Also, during the search for the Tsarnaev brothers, individual citizens were able to tweet and post videos, photos, and other information to law enforcement officials, which actually served as a force multiplier and it assisted in the hunt for the Tsarnaev brothers.

We have also seen similar examples in which response officials have leveraged information from social media to enhance the response efforts in such instances as Hurricane Sandy and the Oklahoma tornadoes.

Two of the most prominent emergency management organizations are with us today: The American Red Cross and the Federal Emergency Management Agency.

Earlier this year, I had pleasure to visit both of their headquarters to learn more about their roles in preparing for, responding to, and recovering from disasters, and I was impressed to see how these agencies are incorporating 21st Century technology into their operations.

It was because of those visits that we had the idea to host these hearings and to learn more and have them share more with the American public about what they are doing.

In my visit to the Red Cross, I learned how they partnered with Dell to develop their Digital Operations Center, which is the first social-media monitoring platform dedicated specifically to humanitarian relief.

This center allows the Red Cross to crowdsource information from affected areas during a disaster, spot trends and better anticipate the public's needs, and connect people with the resources they need; food, water, shelter, even emotional support.

In conjunction with the Digital Operations Center, the Red Cross has developed what I think more and more agencies and local and State governments need to consider, and they have developed a Digital Volunteer Program, on which we will hear more; it trains digital volunteers from across the country and even the world, I have learned, as to how to use on-line apps to respond to questions from the public, distribute critical public safety information, and provide comfort and reassurance.

During Hurricane Sandy, the digital volunteers played a critical role in enabling the Red Cross to actively monitor and verify social media posts around the clock and provide information to create that situational awareness.

FEMA's Administrator, Craig Fugate, has been a big supporter of social media as well, and FEMA has been an active user of Facebook and Twitter to communicate with the public.

I have also heard that FEMA is engaging with private-sector companies, including Google and Twitter, to determine how best to take advantage of open data, social media, and the two-way interaction to enhance their emergency management capabilities.

We are also seeing a rise in the use of social media by State and local emergency management organizations, and in a recent survey conducted by the National Emergency Management Association and CNA on the use of social media, the majority of State, county, and local agencies reported using some social media in their disaster preparedness, response, and efforts, but to varying degrees.

I think a great example of this was—at the local level—was how Moore and Oklahoma City used their Twitter accounts during the devastating tornadoes last month. Both cities used Twitter to relay real-time updates on open shelters, road closures, lost and found pets, and personal items, and they also monitored their accounts and responded to requests for assistance posted by disaster survivors.

Just last week, in my home State in Indiana, I toured MESH Coalition, which is a public health, non-profit, public-private partnership, and it is using social media for what they call infodemiology.

They have dedicated staff monitoring social media as a disease surveillance tool and they push information to the hospitals and to the public health departments through Twitter about what they are seeing.

I had the opportunity to see this operation last week, and again, I am hopeful that this new use of social media will be replicated far beyond the Hoosier State.

While I have highlighted some positive developments in the use of social media and new technology, I do recognize that there are some challenges.

For example, we must be mindful of how misleading, faulty, or malicious information or pictures can escalate quickly on social media sites and potentially negatively affect response efforts.

In addition, as we have learned from our private-sector partners in the last hearing, we need to establish common standards and procedures to help make the sharing of data more efficient.

Our private-sector witnesses also agreed that there more could be done in the way of public-/private-sector partnerships to help maximize the use of social media for disaster purposes and particularly to leverage big data so that the response and recovery efforts can be focused on those areas most in need.

I am pleased to welcome our distinguished panel of witnesses.

[The statement of Chairwoman Brooks follows:]

STATEMENT OF CHAIRWOMAN SUSAN W. BROOKS

JULY 9, 2013

There is no doubt that social media and new technologies are playing an increasing role in the way we prepare for, respond to, and recover from disasters. As we have seen through recent events, such as Hurricane Sandy and the Boston bombings, individuals and organizations, more than ever, are turning to social media and the internet to obtain public safety information, to connect with friends and family, and to request assistance from emergency response organizations. In fact, in a 2012

survey conducted by the Red Cross, 70 percent of respondents suggested that emergency response agencies should regularly monitor their social media sites so they can promptly respond to any requests for help. In addition, an Infographic created by the University of San Francisco showed that during a disaster, 1 out of 3 citizens expects help to arrive within 60 minutes of posting a request on social media.¹

Social media also enables response organizations to quickly push information to the public—something that has not been possible on such a wide scale until recently. A great example of this was after the Boston bombings when the first official announcement that Dzhokhar Tsarnaev had been captured came not at a traditional press conference, but through a tweet by the Boston Police Department. Also, during the search for the Tsarnaev brothers, individual citizens were able to tweet and post videos, photos, and other information to law enforcement officials, which served as a “force multiplier” and assisted in the hunt.

We have also seen similar examples in which response officials have leveraged information from social media to enhance response efforts during recent natural disasters, such as Hurricane Sandy and the Oklahoma tornadoes.

Two of the most prominent emergency management organizations are with us today, the American Red Cross and the Federal Emergency Management Agency. Earlier this year, I had the opportunity to visit both of their headquarters to learn more about their roles in preparing for, responding to, and recovering from disasters. I was impressed to see how they have incorporated 21st-Century technology into their operations.

During my visit to the Red Cross, I learned how they partnered with Dell to develop a Digital Operations Center, which is the first social-media monitoring platform dedicated to humanitarian relief.² This center allows the Red Cross to crowdsource information from affected areas during a disaster; spot trends and better anticipate the public’s needs; and connect people with the resources they need, such as food, water, shelter, or even emotional support.

In conjunction with the Digital Operations Center, the Red Cross has also developed a Digital Volunteer Program, which trains digital volunteers from across the country in how to use on-line applications to respond to questions from the public, distribute critical public safety information, and provide comfort and reassurance during emergencies. During Hurricane Sandy, the digital volunteers played a critical role in enabling the Red Cross to actively monitor and verify social media posts around the clock and provide information to create situational awareness.

FEMA’s administrator, Craig Fugate, has been a big supporter of social media as well, and FEMA has been an active user of Facebook and Twitter to communicate with the public. I’ve also heard that FEMA is engaging with private-sector companies, including Google³ and Twitter,⁴ to determine how best to take advantage of open data, social media, and two-way interaction to enhance their emergency management capabilities.

We are also seeing a rise in the use of social media by State and local emergency management organizations. In a recent survey conducted by the National Emergency Management Association and CNA on the use of social media in the emergency management field, the majority of State, county, and local agencies reported using social media in their disaster preparedness and response efforts, but to varying degrees.

I think a good example of the use of social media at the local level is how the cities of Moore and Oklahoma City used their Twitter accounts during the devastating tornadoes last month. Both cities used Twitter to relay real-time updates on open shelters, road closures, lost and found pets, and personal items. They also actively monitored their accounts and responded to requests for assistance posted by disaster survivors.

In my home State of Indiana, MESH Coalition, a public health, non-profit, public-private partnership is using social media for, what they call, “infodemiology.” They have dedicated staff monitoring social media as a disease surveillance tool and push information to hospitals and public health departments through Twitter. I had the opportunity to see this operation first-hand last week. I am hopeful that this innova-

¹University of San Francisco website. Accessed on June 20, 2013, <http://onlinempa.usfca.edu/social-media/>.

²American Red Cross website. Accessed on June 20, 2013. <http://www.redcross.org/news/press-release/The-American-Red-Cross-and-Dell-Launch-First-Of-Its-Kind-Social-Media-Digital-Operations-Center-for-Humanitarian-Relief>.

³FEMA website. Accessed on June 21, 2013, http://www.fema.gov/medialibrary/media_records/1081.

⁴FEMA website. Accessed on June 21, 2013, http://www.fema.gov/medialibrary/media_records/3581.

tive use of social media and new technology will be replicated beyond the Hoosier State.

While I have highlighted some positive developments in the use of social media and new technology, I do realize that there are some challenges as well. For example, we must be mindful of how misleading, faulty, or malicious information or pictures can escalate quickly on social media sites and potentially negatively affect response efforts. In addition, as we learned from our private-sector partners in the last hearing, there is a need to establish common standards and procedures to help make the sharing of data more efficient. Our private-sector witnesses also agreed that there could be more done in the way of public-/private-sector partnerships to help maximize the use of social media for disaster purposes, and to leverage big data so response and recovery efforts can be focused on those areas most in need.

I am pleased to welcome our distinguished panel of witnesses, and I look forward to hearing your perspectives on these issues.

23 RED CROSS STAFFERS
monitored **2.5 MILLION** Sandy-related social media postings

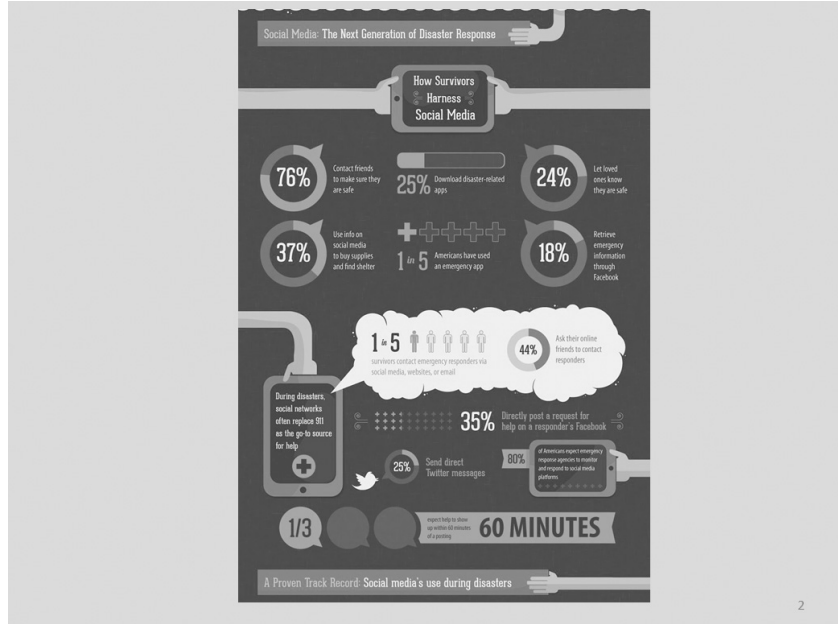
mystery shop to support those affected by the Oklahoma tornado
BESTMARK
American Red Cross
May 24th - June 24th, 2013

Join BestMark in a collective effort to support all families, friends, and individuals who have been in some way affected by the Oklahoma tornado.

2012 Red Cross Survey

70% of respondents suggested emergency response agencies should monitor social media

1



Boston Police Dept. @Boston_Police

Suspect in custody. Officers sweeping the area. Stand by for further info.

5:45 PM - 19 Apr 2013

44,928 RETWEETS 8,315 FAVORITES

25% Send direct Twitter messages

Boston Police Dept. @Boston_Police
 Tweeting BPD News and real time emergency notifications.
 Boston, MA · http://bpdnews.com

6,397 TWEETS 145 FOLLOWING 284,165 FOLLOWERS

Followed by CBC News Alerts, Boston.com News and CNN Breaking News

Boston Police Dept. @Boston_Police
CAPTURED! The hunt is over. The search is done. The terror is over. And justice has won. Suspect in custody.
 Details

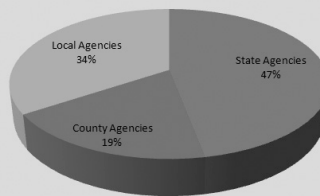
The screenshot shows a Facebook page for 'Moore Oklahoma Tornado Info' with 38,716 likes. A post from 'Hurricane Sandy' dated November 6, 2012, is visible. A callout box indicates that 18% of emergency information is retrieved through Facebook. A large image of a tornado is shown with a Facebook 'f' icon overlaid.

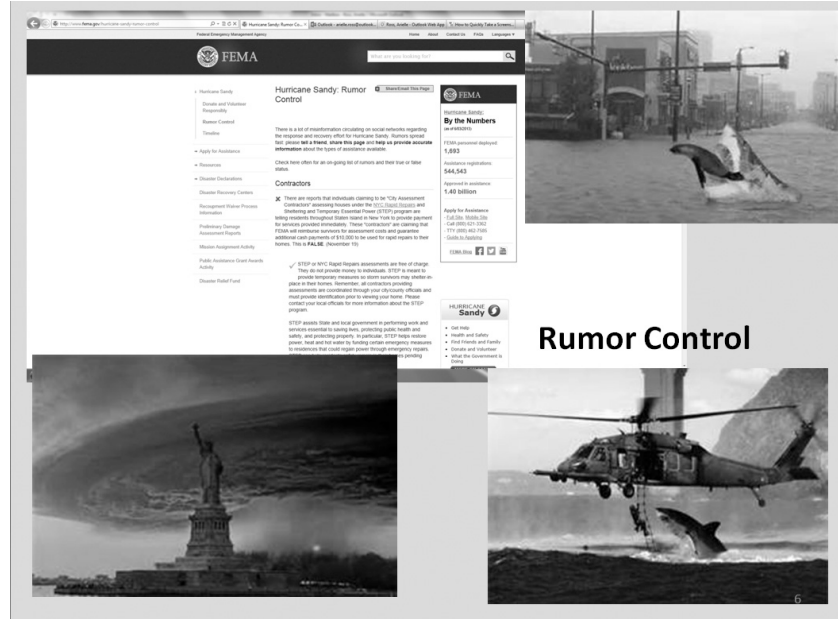
There is a rise in use of social media at state and local emergency management organizations.

FEMA tweeted to its Twitter followers:

"Phone lines may be congested during/ after #Sandy. Let loved ones know you're OK by sending a text or updating your social networks."

Social Media Incorporated into one or more Agency Exercise





Mrs. BROOKS. I look forward to hearing your perspectives on these issues, but I now recognize the gentleman from California, Mr. Swalwell, for any opening statements he might have.

Mr. SWALWELL. Thank you, and good morning.

I would like to thank the witnesses for being here as well as Chairman Brooks. I also appreciate the opportunity to be here and fill in for my colleague, the gentleman from New Jersey, Donald Payne, who is not here today because he has business at the White House.

I would first like to begin by extending my sympathies to those who died or were injured during the plane crash at San Francisco International Airport on this past Saturday and to their families, and I would like to thank our first responders, our police, fire, and emergency personnel, who responded and mitigated the loss of life in that situation.

This hearing is very timely because at the crash scene, we saw first-hand the role that social media can play. In fact, social media was first to provide on-the-ground reports and photos from the crash scene.

It was actually the first tweet, the first information that came out was from a former AOL Media and Studios executive, David Eun from Samsung, who was on the plane and tweeted a picture, relayed that he and the majority of passengers were okay. This turned out to be credible information but also kind of set the tone for what would follow from the ground.

Following what happened, survivors used Twitter, Facebook, and Path to assure loved ones that they were safe.

San Francisco Airport SFO used social media to provide up-to-date information on response efforts and the National Transportation Safety Board did the same with respect to its investigation.

I, myself, during the moments following the crash and the investigation used social media like Twitter and Facebook to both share and learn information, and just yesterday, President Obama gave remarks at the White House in which he talked about the administration's effort and desire to encourage Government to be smarter, more effective, and more efficient through its use of technology. He cited FEMA's use of web apps in the aftermath of Sandy.

In this new age of social media and instant communications, it shouldn't be surprising that they now play such an important role in the moments following an emergency disaster, and their use after this plane accident is a reminder of the most recent example.

Just behind me I have the same infograph that my colleague, Mrs. Brooks, referred to, provided by the University of San Francisco, which provides great information on how modern technology is impacting disaster response.

I do want to highlight that 76 percent of those polled used social media to let people know that they were okay; 76 percent of folks who were in a disaster, and 18 percent of those folks received their information from Facebook.

Much of the social media is developed and produced in Silicon Valley, and I am proud to represent northern Silicon Valley in Congress. What Silicon Valley companies like Google, Facebook, and Twitter are doing to help ordinary citizens volunteer, share information, and be more prepared for disasters was discussed at the first hearing in this series held last month. I applaud them for their efforts.

Today, our focus will be on how Government and our primary non-Governmental response organization, the Red Cross, use social media in disaster situations. This will hopefully include a discussion of both the opportunities and challenges to using modern technology.

Among our witnesses are Sergeant Kierce, director of the Jersey City Office of Emergency Management and Homeland Security. This office has been on the forefront of interoperable communications and social media and last month was recognized in Washington, DC, with an International 2013 Computerworld Honors Laureate for implementation of a remarkable communications surveillance system.

With its internet-based Mutualink, Jersey City OEM can facilitate communications across various frequencies and types of communications, provide first-responder users access to secure video systems, and enable first responders to share images of disaster and videos with hospitals and public safety officials.

By integrating both social media and enhanced communications technologies into emergency response capabilities, Jersey City will be able to respond to disasters more quickly and more effectively.

Although cities like Jersey City and San Francisco have proven particularly adept in integrating new technologies into its disaster preparedness plans, I understand that not every city has been just as successful.

To be fair, Jersey City and San Francisco have benefited from significant grants from Federal homeland security programs. One of our largest challenges is that as funding for these programs has been reduced, fewer cities have had the resources necessary to de-

velop robust communication systems and to cultivate the expertise necessary to navigate and effectively integrate social media into disaster response plans.

The Social Media in the Emergency Management Field, a 2012 survey results study released by the National Emergency Management Association, also known as NEMA, and the non-profit research organization, CNA, which my colleague also referred to, indicates that although local governments consider themselves moderately familiar with social media, the primary barrier to emergency management agencies' use of social media is the lack of dedicated personnel on the ground.

Additionally, there appears to be a generation gap when it comes to using social media on the part of the public and some emergency managers. It is hard to use social media to aid in a disaster response if you cannot spare the personnel to do the work or you don't have anyone who understands the technology.

In other words, we still have a lot of catching up to do.

Another challenge is that there is undeniably a socio-economic component with respect to use and access to social media. Some Americans, particularly those who are low income, simply don't have the same access to the internet, smartphones, or Wi-Fi.

We can't ignore the impact of the digital divide as we begin to integrate social media into disaster response activities. We can't leave them behind or without information.

Finally, for the Government to best utilize social media, it is not just about putting information on Twitter and Facebook, agencies need to be providing data in a usable, open-source format so the high-technology companies like Google can easily and quickly incorporate it into their web pages, apps, and other portals.

I look forward to discussing with our witnesses the challenges that are ahead highlighting the successes and looking forward to what we can do to make sure that we are ready to respond to the next disaster.

Thank you.

[The statement of Mr. Swalwell follows:]

STATEMENT OF HON. ERIC SWALWELL

JULY 9, 2013

I'd like to begin by extending my sympathies to those who died or were injured during the plane crash at San Francisco Airport (SFO) this weekend and to their families. And, I'd like to thank the EMS teams, firefighters, and police for their heroic response.

This hearing is very timely, for we just saw in this horrible accident how critical and relevant social media can be in times of crisis. Following what happened, survivors used Twitter, Facebook, and Path to assure loved ones that they were safe. SFO used social media to provide the public up-to-date information on response efforts and the National Transportation Safety Board did the same with respect to its investigation. I myself used social media like Twitter both to share and learn information.

And, just yesterday, President Obama gave remarks at the White House in which he talked about his administration's desire to encourage Government to be smarter, effective, and efficient, through its use of technology. He cited FEMA's use of the web and apps in the aftermath of Hurricane Sandy.

In this new age of social media and instant communication, it shouldn't be surprising that they now play an important role in disaster response. And, their use after this plane accident is just the most recent example.

I have an info-graphic on the screen, provided by the University of San Francisco—located just across the bay from my Congressional district—which provides great information on how modern technology is impacting disaster response. For example, 76 percent of those polled used social media to let people know they are ok. And, 18 percent got emergency information from Facebook.

Much of this social media is developed and produced in Silicon Valley, and I'm proud to represent Northern Silicon Valley in Congress. What Silicon Valley companies like Google, Facebook, and Twitter are doing to help ordinary citizens volunteer, share information, and be more prepared for disasters was discussed at the first hearing in this series held last month. I applaud them for their efforts.

Today our focus will be on how Government and our primary non-Governmental response organization, the Red Cross, use social media in disaster situations. This will hopefully include a discussion of both the opportunities and challenges to using this modern technology.

Among our witnesses are Sergeant Kierce, Director of the Jersey City Office of Emergency Management and Homeland Security (OEM). This office has been on the forefront of interoperable communications and social media. Last month, the office was recognized in Washington, DC with an international 2013 Computerworld Honors Laureate for implementation of a remarkable communication and surveillance system.

With its internet-based Mutualink, Jersey City OEM can facilitate communication across various frequencies and types of communications, provide first-responder users access to security video systems, and enable first responders to share images of disaster and videos with hospitals and other public safety officials. By integrating both social media and other enhanced communications technologies into its emergency response capabilities, Jersey City will be able to respond to disasters more quickly and more effectively.

Although cities like Jersey City and San Francisco have proven particularly adept in integrating new technologies into its disaster response plans, I understand that other cities have not been as successful. To be fair, Jersey City and San Francisco have benefited from significant grants from Federal homeland security programs.

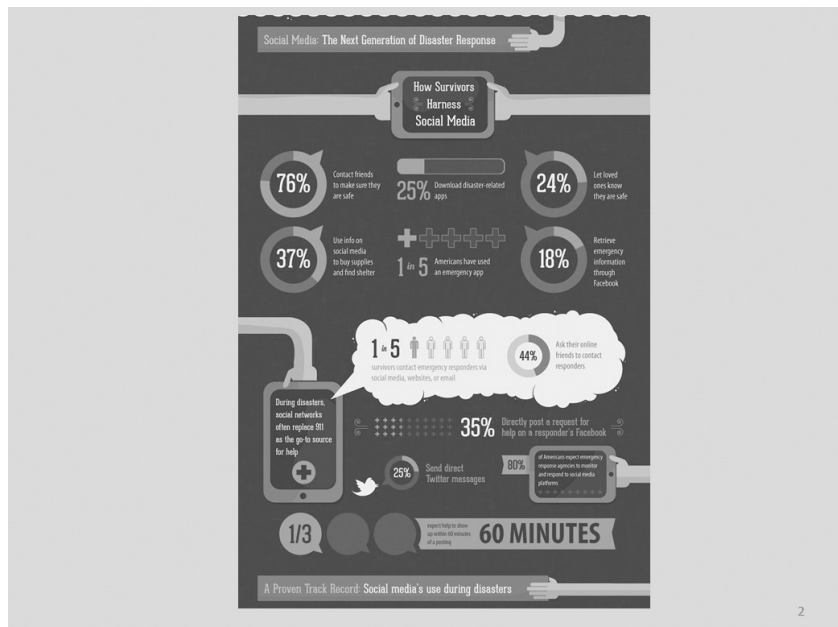
One of our challenges is that as funding for these programs have been reduced, fewer cities have had the resources necessary to develop robust communications systems and to cultivate the expertise necessary to effectively integrate social media into disaster response plans. The *Social Media in the Emergency Management Field: 2012 Survey Results*, a study released by the National Emergency Management Association (NEMA) and the nonprofit research organization CNA, indicates that although local governments consider themselves at least “moderately familiar” with social media, the “primary barrier to emergency management agencies’ use of social media is a lack of dedicated personnel.”

Additionally, there appears to be a generation gap when it comes to using social media—on the part of the public and some emergency managers. It's hard to use social media to aid in disaster response if you can't spare the personnel to do the work, or don't have anyone who understands the technology.

Another challenge is that there is undeniably a socio-economic component with respect to use of and access to social media. Some Americans, particular those who are low-income, simply don't have the same level of access to the internet, smart phones, or WiFi. We can't ignore the impact of this “digital divide” as we begin to integrate social media into disaster response activities. We can't leave them behind, or without needed information.

Finally, for the Government to best utilize social media, it's not just about it putting information on Twitter and Facebook. Agencies need to be providing data in a useable, open-source format so the high-technology companies like Google can easily and quickly incorporate it to their own web pages, apps, and other portals.

I look forward to discussing with our witnesses both the opportunities presented by social media and the challenges I laid out, as well as how we can go about tackling them. Be it more resources, new statutory authority, or better guidance from the Federal Emergency Management Agency (FEMA), we should be doing all we can to best harness the tremendous power of social media in disaster relief and recovery. The Congress should stand ready to work with the President in this effort, part of his broader goal to make Government more technologically savvy.



Mrs. BROOKS. Thank you.

Other Members of the committee are reminded opening statements may be submitted for the record.

[The statement of Ranking Member Thompson follows:]

STATEMENT OF RANKING MEMBER BENNIE G. THOMPSON

JULY 9, 2013

Good morning. Thank you Chairwoman Brooks and Ranking Member Payne, Jr. for holding this hearing today.

Last month, this subcommittee heard testimony from private-sector witnesses who described the social media and big-data technologies that emergency managers and first responders can use to improve disaster response activities.

Google.org and Palantir brought to bear impressive resources during Hurricane Sandy and the Boston Marathon bombings.

PSE&G—a Newark, New Jersey utility company—described its social media efforts to keep its customers informed of power restoration efforts after Hurricane Sandy.

PSE&G's is sharing its best practices and lessons learned with other utilities and critical infrastructure companies.

From Hurricane Sandy to the tornadoes in Oklahoma, it is clear that social media is becoming a staple in effective disaster response.

Both the public and Government entities involved in disaster response have come to rely on social media to supplement and enhance situational awareness and outreach activities.

This kind of innovation can not only be cost-effective but it can also saves lives. That said, we cannot lose sight of social media's inherent vulnerabilities: The security and accuracy of information shared.

As Jason Payne from Palantir aptly noted during the June 4 hearing, social media platforms must include "robust, built-in measures to allow users appropriate access and to share information . . . while protecting privacy and civil liberties."

I look forward to learning about the policies used by FEMA and its non-Governmental partners to ensure that potentially-sensitive information gathered to inform disaster response is destroyed when it is no longer needed.

I also look forward to hearing that this information is used only for the purpose of disaster response.

Additionally, I am concerned about the circulation of misinformation during a disaster.

We all know that rumors and unverified information can undermine legitimate response activities.

I understand that FEMA launched Rumor Control, a website devoted to correcting misinformation circulated by social media sites, in the aftermath of Hurricane Sandy.

That is a good start.

But I am interested in learning about the guidance FEMA provides to its State and local Government and private-sector partners about how to verify information before it is shared.

I am also interested in learning about the type of guidance provided to help verify open-source information that authorities may gain from social media.

I look forward to hearing the testimony from our witnesses.

Thank you, and I yield back the balance of my time.

Mrs. BROOKS. We are very pleased to have a very distinguished panel before us today, and I would like to start out by introducing Shayne Adamski. He serves as the senior manager of digital engagement at the Federal Emergency Management Agency, a position he has held since 2010.

In this capacity, he is responsible for the strategy and coordination of web, mobile, and social media initiatives across the agency.

Next up is Ms. Susie DeFrancis. She serves as the chief public affairs officer at the American Red Cross. She oversees all communications, Government relations, and strategic partnerships. Under her leadership, the American Red Cross has built a 21st Century communications operation concentrating on the use of social media, other forms of digital engagement, and building, as I said earlier, the first-ever social media center for humanitarian purposes.

Next is Mr. Albert Ashwood. He is the director of the Oklahoma Department of Emergency Management, a position he has held since 1997. He joined the State's emergency management department in 1988 and he previously served as president of NEMA, the National Emergency Management Association, and is testifying on behalf of NEMA.

Finally, I want to thank you, Mr. Swalwell, for introducing Sergeant Greg Kierce.

So welcome. Thank you very much for coming.

The witnesses' full written statements will appear in the record.

The Chairwoman will now recognize Mr. Adamski for 5 minutes.

STATEMENT OF SHAYNE ADAMSKI, SENIOR MANAGER OF DIGITAL ENGAGEMENT, FEDERAL EMERGENCY MANAGEMENT AGENCY, U.S. DEPARTMENT OF HOMELAND SECURITY

Mr. ADAMSKI. Chairwoman Brooks, Mr. Swalwell, Members of the subcommittee, good morning.

I am Shayne Adamski, the senior manager for digital engagement at the U.S. Department of Homeland Security's Federal Emergency Management Agency.

On behalf of Administrator Fugate and Secretary Napolitano, thank you for the opportunity to discuss FEMA's use of social media.

I am pleased to be here today to discuss the role of social media in disasters and emergencies and fortunate to have partners with

us here today who see the value in using these tools for public safety.

Millions of Americans use social media every day to check in on friends and family, learn about current events, and share their experiences on-line.

FEMA uses social media to be a part of this on-going dialogue, to meet people where they are, using tools and platforms they are already familiar with.

With one click of the mouse or one swipe on a smartphone's screen, a message is capable of being spread to thousands of people to have a tangible real-world impact, and as such, FEMA uses social media in numerous ways.

So as we will see on the screens in the next slide, we use it to provide safety and preparedness tips to inform the public of the most effective ways to help disaster survivors as well as to let disaster survivors know where they are able to receive assistance.

We use social media to provide up-to-date information about how the emergency management team, including FEMA, is helping communities and individuals prepare for, respond to, recover from, and mitigate disasters.

On slide No. 3, we see the onset of the recent Oklahoma tornadoes: One of the many messages that we tweeted was "#Oklahoma. We are working closely with State emergency management and local officials." We stand ready to support as needed and as requested.

Soon after we followed up with the news that FEMA had it deployed urban search and rescue, incident management, and mobile emergency response support teams to Oklahoma.

On slides No. 4 and 5 we will see photos that we posted after Hurricane Sandy of our FEMA community relations teams who are now called disaster survivor assistance teams going door-to-door in the impacted areas helping survivors get help and apply for aid.

Social media is, at its essence, a conversation, and it is a conversation that we strive to be an active part of. Of course in true conversation form, both participants listen and respond in turn, and social media is no different.

This exchange is a critical component of being viewed as responsive or authoritative source of information. This two-way flow of information had an impact after Hurricane Sandy. As we will see on the next slide, we launched a rumor control initiative. It was an initiative using all of our on-line platforms to dispel inaccurate information that was being shared on-line.

One example also is our disaster recovery center data feeds—excuse me—so we also regularly collaborate with our partners, particularly those in the private sector as Mr. Swalwell here had mentioned, including colleagues who work at Facebook, Twitter, and Google, so we can better understand how our messaging can be seen by more users especially during and after disasters.

One example is our disaster recovery center data feed that contains information about open disaster recovery centers. Google regularly includes this data in their crisis maps which shares helpful information in a familiar and accessible format.

We are also tapping into the importance that cell phones play in everyday life especially through our smart phone app and text message program.

In 2011, we released our FEMA smart phone app, which provides information on how to make a plan, build your emergency kit, how to stay safe, and how to rebuild after a disaster.

It also has the ability to look up disaster recovery centers and open shelters as we see in my final slide.

We are very proud of the fact that the information in the FEMA app is also accessible even if the user does not have a cellular or a Wi-Fi connection making it a valuable tool during a disaster.

In 2011, FEMA was the first agency to establish its own text message short code meaning that anyone could text 43362 or 4-FEMA to get information on open disaster recovery centers and open shelters.

During the height of Hurricane Sandy, our text message program received more than 10,000 requests in 1 day from people searching for shelter locations within a specific ZIP Code.

Citizens can also sign up to receive regular preparedness tips regarding the hazards that are most common in their area such as earthquakes, wildfires, hurricanes, as well as tornadoes.

Moving forward, FEMA will continue to engage in on-line conversations that lead to a more prepared and better informed public. We are constantly refining our digital and social media approach, listening to feedback from our stakeholders, and keeping our ear to the ground on the ever-evolving world of social media and the digital space.

We learn from the conversations we have on these platforms and from continued collaboration with our partners. We do all of this to achieve our core mission of supporting America's citizens.

I look forward to addressing any questions the subcommittee may have. Thank you.

[The prepared statement of Mr. Adamski follows:]

PREPARED STATEMENT OF SHAYNE ADAMSKI

JULY 9, 2013

INTRODUCTION

Chairman Brooks, Ranking Member Payne, and Members of the subcommittee: Good morning. I am Shayne Adamski, senior manager of digital engagement for the U.S. Department of Homeland Security's (DHS) Federal Emergency Management Agency (FEMA). On behalf of Administrator Fugate and Secretary Napolitano, thank you for the opportunity to discuss FEMA's use of social media.

I am pleased to be here today to discuss the role of social media in disasters and emergencies. Technology grows and changes rapidly, providing us with increased opportunities to educate and empower the public. Tools that did not exist even 5 years ago are now primary modes of communication for millions of Americans. Of course, tools such as YouTube, Facebook, and Twitter were not created for the purpose of preparing for, responding to, or recovering from emergencies and disasters. However, the potential for useful application of these tools to strengthen the effectiveness of the FEMA mission exists and should be explored.

FEMA's success in fulfilling its mission is highly dependent upon our ability to communicate with the individuals, families, and communities we serve. For that reason, social media conversations are extremely valuable to the work we do, and we are fortunate to have partners with us here today who see the value of using these tools to increase public safety.

Today, I would like to discuss why social media is important to the work we do as well as how FEMA uses social media and strategic partnerships to fulfill our mission.

THE POWER AND PROMISE OF SOCIAL MEDIA IN EMERGENCY MANAGEMENT

FEMA's approach to emergency management recognizes that individuals, families, and communities are our greatest assets and the keys to our success. In order to fulfill our mission, we must work together as one team—this notion is at the heart of our whole-community approach to emergency management.

Social media is imperative to emergency management because the public uses these communication tools regularly. Rather than trying to convince the public to adjust to the way we at FEMA traditionally communicated, we have adapted to the way the public communicates, leveraging the tools they use on a daily basis. Millions of Americans use social media every day to check in on friends and family, learn about current events, and share their experiences. FEMA uses social media to be part of this on-going dialogue and meet people where they are, using tools and platforms they are already familiar with.

FEMA also uses social media and other digital methods to communicate because as we have seen, information can lead to action. Our goal is for our safety-related information to have a real-world impact—to inspire actions that lead to more resilient families and communities. If someone sees a preparedness or safety tip from FEMA, the goal is that it will inspire them to prepare or empower them to tell a friend how to be more prepared or where to find help.

Finally, social media and technology allow us to reach more people more quickly during disasters, when they need accurate, timely, and authoritative information that helps ensure the protection of their life or livelihood. With one click of the mouse, or one swipe on their smartphone's screen, a message is capable of being spread to thousands of people and have a tangible impact.

HOW FEMA USES SOCIAL MEDIA

FEMA uses multiple social media platforms to reach the public and to provide them with useful information. While no individual social media tool is exhaustive or all-encompassing, each allows us to communicate with the populations we serve. I would like to discuss a few of the social media tools we use at FEMA, and how we use them.

We are very active on two of the most popular social networks in America—Facebook and Twitter—where we are able to reach the greatest number of active, engaged users. We have three Facebook pages and 34 Twitter accounts. Collectively, our Twitter accounts have 400,000 followers, while our Facebook pages have 143,000 fans. FEMA also manages a YouTube channel as well as discussions on an on-line collaboration site called IdeaScale.

These numbers also show our growth and demonstrate our increasing ability to communicate with Americans on-line. When I started in my position in June 2010, we had 25,000 followers on all of our social media accounts combined. Today, FEMA has well over 500,000 users on these sites.

FEMA uses social media in five primary ways.

First, we use social media to provide up-to-date information about how the whole community emergency management team, including FEMA, is helping communities and individuals prepare for, respond to, and recover from and mitigate disasters.

At the onset of the recent Oklahoma tornadoes, one of the many messages that we tweeted was: “#Oklahoma: We're working closely with state emergency management & local officials. We stand ready to support as needed & requested.” Soon after, we followed up with the news that FEMA had deployed Urban Search & Rescue, Incident Management, and Mobile Emergency Response Support teams to Oklahoma.

And just after Hurricane Sandy we posted photos of our FEMA Corps Community Relations (now called Disaster Survivor Assistance Teams) personnel going door-to-door in the impacted areas, helping survivors get help and apply for aid in New Jersey and New York.

We also leverage our social media accounts to help our Federal, State, local, Tribal, territorial, and private-sector partners share key messages. For example, we shared many status updates from trusted sources before, during, and after Hurricane Sandy, including from Governor Chris Christie, Mayor Michael Bloomberg, and other Governors and mayors throughout the affected region.

Following the Oklahoma tornadoes in May, we amplified key messages from the Oklahoma State government and the city of Moore. We regularly share updates

from our partners at all levels because we recognize that successful emergency management requires a whole-community approach and effort.

Second, we use social media to provide safety and preparedness tips. As the subcommittee is aware, we are currently in the middle of the 2013 Atlantic hurricane season, so we recently posted tips regarding properly securing windows during a hurricane. Similar messages are posted regularly across all of our social media accounts to help ensure that Americans have actionable, specific ways to get themselves, their families, their business, and their communities better prepared for disasters.

These safety tips focus on more than just preparedness. We also share information about how people are able to stay safe during and after disasters with critical reminders to stay away from damaged areas and allow emergency crews and rescue workers to work.

Third, we use social media to inform the public of the most effective ways to help disaster survivors. Americans show tremendous generosity after disasters, so we provide tips on how that generosity could be most effective. For example, we encourage Americans to donate through trusted charities that know the specific needs of the impacted community.

Fourth, we tell disaster survivors where and how they are able to receive assistance—whether that be from FEMA or from another trusted source. To accomplish this, we leverage all of our social media accounts, including those managed in each of FEMA's regional offices. Our regional offices fill an important niche, providing useful information to local users, such as locations of FEMA's Disaster Recovery Centers or by highlighting local resources. We employed this tactic after Hurricane Sandy and during both the recent floods in Illinois and the tornadoes in Oklahoma.

Fifth, we tap into the potential of social media to gain valuable feedback. As I shared before, social media is at its essence a conversation and it is a conversation that we strive to be an active part of. Of course, in true conversation, both participants listen and respond in turn—social media is no different. This exchange is a critical component of being viewed as a responsive, authoritative source of information.

This two-way flow of information had an impact after Hurricane Sandy. In the days following the hurricane, FEMA launched "Rumor Control," an initiative using all of our on-line platforms to dispel inaccurate information being shared on-line. We listened and identified rumors circulating on-line, from logistics information to specific disaster assistance programs, and moved to quickly correct the misinformation. This was done by creating a Rumor Control page on fema.gov and m.fema.gov (FEMA's mobile website), as well as through answering many questions received through our Facebook and Twitter accounts. FEMA receives questions almost daily on Facebook and Twitter, so we dedicate resources to answering them, thus helping to fulfill FEMA's mission of supporting America's citizens.

To further facilitate feedback and interaction from the on-line community, FEMA also holds the equivalent of "virtual town halls" using Twitter chats. Twitter chats are real-time conversations using the platform. One recent example came after Hurricane Sandy. Federal Coordinating Officer for New York, Mike Byrne, participated in a Twitter chat and fielded many questions, such as "How do homeowners get the amounts they need to rebuild?" and "Has @Fema spread into affected communities, holding open houses and is it better coordinated w/other agencies than 1 mo ago?". These on-line "town halls" allow FEMA to answer questions in an open, public forum and contribute to growing our on-line following, which is essential to educating a greater number of Americans.

As we use social and digital media, we follow record management and Paperwork Reduction Act rules. It is also important to note that FEMA writes content explicitly so that it does not trigger the stipulations of the Paperwork Reduction Act and archives all social media content/conversations for records management purposes.

COLLABORATING WITH KEY PARTNERS

In addition to sharing key messages on our social networks from our partners, social media also allows FEMA to work with partners, such as the American Red Cross, to share information about the nature of on-line conversations after a disaster.

We also share what our private-sector partners are doing during a disaster, such as posting information about Tide Loads of Hope locations, where survivors can wash their clothes and Therapy Dogs International, which provides specially-trained dogs to comfort survivors.

Additionally, we collaborate with our partners across the emergency management team on messaging and outreach for preparedness campaigns such as September's annual National Preparedness Month.

To fully collaborate with our partners, particularly those in the private sector, we also make some types of information available for their use. One example is our Disaster Recovery Center data feed that contains information about open Disaster Recovery Centers. Google regularly includes this data in their Crisis Maps, which shares helpful information in a familiar and accessible format.

We also regularly collaborate with our colleagues who work for platforms like Facebook, Google, and Twitter to better understand how our messaging could be seen by more users, especially during and after disasters.

FEMA looks forward to making these non-profit and private-sector relationships even stronger in the future.

SOCIAL MEDIA: PART OF FEMA'S LARGER DIGITAL PRESENCE

FEMA's digital presence extends beyond social media. FEMA also communicates with Americans via the web and various mobile platforms. These channels complement each other and allow us to reach a larger audience.

FEMA runs several websites that serve as authoritative sources for information, including: fema.gov, ready.gov, and disasterassistance.gov.

FEMA is also tapping into the importance that cell phones play in everyday life, specifically through our smartphone app, text message program, and Wireless Emergency Alerts. In my experience, cell phones are often a lifeline after a disaster and many times are the only source of information in the hardest-affected areas. As citizens continue to use smartphones more and more, those of us in emergency management should continually be looking for ways to share our message and make our services available through those devices.

In 2011, we also released our FEMA smartphone app, which provides information on how to: Make a plan and build your emergency kit; stay safe and rebuild after a disaster; and look up open disaster recovery centers and open shelters. We are very proud of the fact that the safety information in the FEMA app is accessible within the app even if the user does not have a cellular or Wi-Fi connection—making it a valuable tool during a disaster.

Text messaging is a form of communication that is particularly useful during and after a disaster when phone lines may be congested and voice calls often do not get through. Sending and receiving text messages requires less bandwidth and helps reduce the volume of phone calls in an area so that necessary communications are able to continue to be made.

After the May 20 tornadoes in Oklahoma, we posted a message to Facebook that reminded people to use text messaging to check in with friends/family in the impacted area, as well as the American Red Cross Safe and Well site. The message was seen by more than 230,000 people on Facebook.

In 2011, FEMA was the first Federal agency to establish its own text message short code—meaning that anyone could text 43362 or 4FEMA to obtain valuable information. Texting this code allows people to search for open disaster recovery centers and shelters. During the height of Hurricane Sandy, our text message program received more than 10,000 requests in one day from people searching for shelter locations within a specific ZIP code. Citizens could also sign up to receive regular preparedness tips regarding the hazards that are most common in their area, such as earthquakes, wildfires, hurricanes, or tornadoes.

Local and State public safety officials can send Wireless Emergency Alerts directly to citizen's cell phones, utilizing FEMA's Integrated Public Alert & Warning System. These geographically-targeted messages are sent from emergency managers, the National Weather Service, and the National Center for Missing and Exploited Children to warn citizens about severe weather, AMBER Alerts and other threats to safety. During National emergencies, the President can also communicate with citizens using Wireless Emergency Alerts.

PERSONAL PREPAREDNESS MEETS DIGITAL

At FEMA, we often share how Americans could use technology to be "digitally prepared," and I would also like to take this opportunity to share some of those items today.

To ensure they are prepared, we encourage people to take these steps:

- Store useful phone numbers in their phone, including numbers for local police, fire departments, and their utility company;
- Create a group of emergency contacts in their cell phone;

- Educate themselves on what social media tools are being used by their State, local, Tribal, and territorial emergency management offices, so that they are able to quickly access them in the event of an emergency;
- Have an extra battery for their phone (or a solar charger) in their emergency kit;
- Update their social media channels in the aftermath of a disaster to let their friends and family know they are safe by simply texting “I’m OK”; and
- Know how to use text messaging to check in with friends and family after a disaster.

Many social media sites also allow users to update their status via text message, and I would encourage the public to become familiar with how to do so.

MOVING FORWARD

Moving forward, FEMA will continue to engage in on-line conversations that lead to a more prepared, better-informed public.

We are constantly refining our social media approach, listening to feedback from our stakeholders and keeping our ear to the ground on the ever-evolving world of social media and the digital space. We also learn from the conversations we have on these platforms and from continued collaboration with our partners. We do all of this to achieve our core mission of supporting America’s citizens.

I look forward to addressing any questions the subcommittee may have.

Social Media & Emergency Management #smem



FEMA

Safety Tips & Ways to Donate

2/8



A tip for #hurricane season: Trim trees & shrubs around your home so they are more wind resistant m.fema.gov/hurricanes

Reply Retweet Favorite More

39 RETWEETS 2 FAVORITES [User avatars]

9:32 AM - 10 Jun 13



For donation info to help those impacted by the #Oklahoma tornadoes, here's the best local info ok.gov/okstrong/Donat... via @okgov

Reply Retweet Favorite More

44 RETWEETS 4 FAVORITES [User avatars]

7:22 AM - 24 May 13



Oklahoma Operational Updates

3/8



#Oklahoma: We're working closely with state emergency management & local officials. We stand ready to support as needed & requested

Reply Retweet Favorite More

110 RETWEETS 18 FAVORITES [User avatars]

4:10 PM - 20 May 13



5/20- We've deployed Urban Search & Rescue, Incident Mgmt & Mobile Emergency Response Support teams to #Oklahoma fema.gov/news-release/2...

Reply Retweet Favorite More

316 RETWEETS 49 FAVORITES [User avatars]

6:49 PM - 20 May 13



Sandy Community Relations

4/8



Sandy Community Relations & FEMA Corps

5/8



Sandy Rumor Control

6/8

Cash Cards / Food Stamps

✘ There are message boards and traffic on social media sites related to FEMA and/or the American Red Cross distributing cash cards to individuals affected by Hurricane Sandy. This is **FALSE**. (November 5)

✓ If you are a survivor in a declared county and have losses **other than food**, including damage to your home, personal property, or vehicle, please [apply for assistance online](#) (www.disasterassistance.gov), on a [mobile device](#), or over the phone 1-800-621-FEMA (3362).

✓ If you are seeking additional information about Red Cross assistance, call 1-800-RED-CROSS or visit www.redcross.org.

Shelter

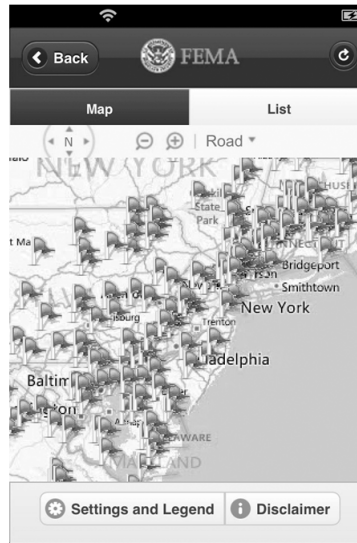
✘ There was an inaccurate report on a radio station discussing a tent city for sheltering at Monmouth Park race track in New Jersey. This is **FALSE**. (November 5)

✓ There are tents set up at Monmouth Park for first responders and utility and construction workers as a place to rest, take a break and receive food and water. If you are in need of shelter, visit the American Red Cross [FIND OPEN SHELTERS](#) by visiting, www.redcross.org/find-help/shelter.



FEMA App: Open Shelters

7/8





FEMA

Mrs. BROOKS. Thank you, Mr. Adamski.
The Chairwoman now recognizes Ms. DeFrancis for 5 minutes.

**STATEMENT OF SUZANNE C. DE FRANCIS, CHIEF PUBLIC
AFFAIRS OFFICER, AMERICAN RED CROSS**

Ms. DEFRANCIS. Thank you, Chairwoman Brooks and Members of the committee.

The American Red Cross appreciates this opportunity to share our experiences using social media to help people stay safe and recover from disasters, and we also look forward to learning from our Federal, State, and local partners here today.

So today, I would like to make three points.

The public is increasingly turning to social media and mobile apps to get help and to give help during disasters, and all of us must be listening and responding and integrating that information better into our response operations because, as you mentioned, the public has very high expectations that we are doing that.

At the American Red Cross, social media plays an important role now in what is a 130-year-old mission. It is helping us provide critical information to the public, connect people to resources, and literally, save lives.

Finally, social media is a powerful form of citizen engagement which can be harnessed to create more resilient communities so that the community can actually own the disaster response and this will help ensure our Nation is as prepared as possible.

So as you mentioned, Chairwoman, that the American Red Cross surveys show people use social media for many reasons. Three out of four use it to find their friends and family and see if they are safe or to give information about their own safety.

They are also looking for hard facts. They want the weather conditions, road closures, damage reports. We saw during Sandy, they were looking for gas stations that had gas.

More than a third say social media has motivated them to gather supplies or seek shelter. As you know, it is very hard to convince people to prepare, but social media is making a dent in that.

As you said, the public expects us to be listening and responding. Three out of four Americans expect help in less than 3 hours to arrive after a post on social media, and clearly, we know we have a gap there in meeting that expectation.

So the hub of Red Cross social media is our digital operation centers, opened in March 2012 but with a generous gift from our wonderful partner, Dell, and as you said, it is the first social media center specifically devoted to humanitarian relief.

We were so pleased that you were able to come and visit our center along with Ranking Member Payne and we hope that other Members of the committee will come, other Members of Congress, we welcome and want to show you our facilities.

So this center allows us to pull data from social networks, all social networks, and categorize them by topics. So it could be a topic such as damages, emotional support, need for shelter, food, and then we can categorize that and then read, reply, or take the data and redirect it to inquiries to our disaster operations staff so they can get on it.

During Hurricane Sandy, we analyzed more than 2.5 million pieces of social data. We were searching for any actionable content. We tagged 10,000 of these posts and whether it was labeling it situational awareness or something that needed to go to our mass care operations.

We sent more than 300 individual pieces of information to our operations team on the ground and about 88 of those resulted in concrete actions where we actually took a step we weren't planning on taking to get people help.

We tweeted and posted information on where our shelters and mobile feeding sites. I used to love to see our New York chapter send out a tweet that would say, "The Red Cross truck is at 99th and 101st streets in Howard Beach, and we are serving Salisbury steak today."

Social media also helped us identify gaps in our service delivery. When residents of Sayreville, New Jersey had not received assistance 5 days after landfall, they used Facebook to let us know, and we were able to route this information to our operation on the ground to get some service delivery going in an area we just hadn't identified.

Now you know the Red Cross relies on volunteers and so the way that we are able to scale up our social media operations during a disaster is through trained digital volunteers.

During Sandy, more than 50 American Red Cross digital volunteers, some working remotely from around the world like Christoph Dennenmoser, from our German Red Cross, were actually responding to thousands of Facebook messages and tweets about Sandy.

Now social media apps and other digital tools are an increasing part of 21st Century response but these tools, I need to hasten to

add, are not a panacea. Social media can supplement but does not replace traditional communications.

Not everyone, as you mentioned, is on social media. There is a digital divide, and when the power is out and people can't charge the cell phones, nobody is on social media, and the Red Cross will still drive through neighborhoods with bull horns announcing that we are there with food, water, and other supplies.

Now our surveys have also found that mobile apps are increasingly becoming important. They are the fourth most popular way to get information in an emergency and remember TV, radio, and on-line news are still the top sources of information.

The American Red Cross has released a series of five free apps for both iPhone and Android. People have downloaded these new apps 3 million times. They have weather alerts, preparedness information, shelter locations, and the ability to let loved ones know they are safe.

A top Apple executive told our CEO, Gail McGovern, that he never leaves his kids without leaving our first aid app open for the babysitter to use.

People have told us that they have literally saved lives in a restaurant using the app because it tells you how to stop people from choking, what to do in terms of cardiac arrest.

Our tornado apps and other apps that we have are now tapping into the Government systems so that we can send an alarm that sounds when a tornado is approaching. We got a message from some mother who said, "Now I can go to sleep because I know this alarm wakes me up."

Finally, in catastrophic disasters, the Red Cross witnesses an abundance of care and concern from people who are unaffected, people who just really want to help their neighbors. They are often eyewitnesses to the events as you described with the plane crash and the first to help their neighbors.

We are seeing the possibilities here as limitless in terms of giving the public a seat at our disaster operations table and have them help control the response if you will.

So by social media and mobile apps and new technology, we can create more resilient communities, more effective disaster response, and a more prepared Nation.

Thank you again for your leadership on this topic, Chairman, and I am happy to address any questions you may have.

[The prepared statement of Ms. DeFrancis follows:]

PREPARED STATEMENT OF SUZANNE C. DEFRANCIS

JULY 9, 2013

Good morning, Chairman Brooks, Ranking Member Payne, Members and staff of the subcommittee. The American Red Cross appreciates the opportunity to share our experience using social media and new technology to help people stay safe and recover from disasters and other emergencies. Chairman Brooks, we applaud the personal interest you and the Ranking Member have in this area, as evidenced by your visit earlier this year to our Digital Operations Center, and we look forward to further engagement with you and the entire committee.

The destructive disasters we have seen across our country—from wildfires in the West, to the Oklahoma tornadoes, Superstorm Sandy, which impacted Ranking Member Payne's State of New Jersey and, the outbreak of tornadoes that devastated Henryville in Chairman Brooks' home State of Indiana—underscore the fact that

disasters can strike anywhere at any time, and we all use all the tools and methods we can to help our neighbors in need.

Today, I'd like to make three points to the committee:

1. The public is increasingly turning to social media, mobile apps, and other new technology to find information and get help during disasters, and all of us who provide emergency relief must be listening and responding.
2. The American Red Cross works to continually improve our services, and social media is an important tool in helping us share life-saving information, connect people to resources and literally save lives.
3. Social media is a powerful form of citizen engagement which can be harnessed to create more resilient communities and ensure our Nation is as prepared as possible.

EMERGING SOCIAL MEDIA AND NEW TECHNOLOGY TRENDS

The power of social media as a communications tool during disasters became clear to us in the aftermath of the earthquake that struck Haiti in 2010. The American Red Cross saw tweets from people trapped under collapsed buildings. We heard directly from members of the Haitian diaspora who were communicating via text with loved ones in need of help. With cell service down in the early hours, people sought help however they could.

Like many other disaster relief organizations and emergency responders at the time, the American Red Cross did not have an efficient way to process and respond to this information. We had to manually intake the messages and try to route them to the right places. It was a sign to us that technology was rapidly-changing traditional disaster response methods.

In August 2010, the American Red Cross convened an Emergency Social Data Summit to discuss the evolution occurring in disaster response with the use and reliance by the public on social media. We convened other emergency response and disaster relief agencies, as well as the social media entities that were part of this growing phenomenon. This was the first time that Government, nonprofit, technology, and citizen sectors came together to discuss the opportunities and challenges we face in integrating social data with disaster response.

More than 150 people attended the all-day summit and another 1,200 contributed virtually to the conference via Ustream and Twitter. It was quite a sight to see people live-blogging and tweeting in the same Red Cross headquarters building where citizens had once rolled bandages during World War I.

SURVEYS OF WEB USERS

To inform the summit discussion, the American Red Cross conducted a survey of web users. Our survey results showed that many web users would turn to social communities to seek help during disasters and other emergencies. And, even more importantly, they expected first responders to be listening.

The 2010 survey also found that Americans have high expectations about how first responders should be answering their requests, and it revealed a gap between public expectations and our ability to meet those expectations. For example, 69 percent said that emergency responders should be monitoring social media sites in order to quickly send help—and 74 percent expected help to come less than an hour after their tweet or Facebook post.

In 2011 and 2012, the Red Cross conducted follow-up surveys on use of social media in emergencies. Those surveys found that Americans are becoming increasingly reliant on mobile devices during emergencies to provide information, useful tools, and a way to let loved ones know they are safe.

The Red Cross surveys found that mobile apps now tie social media as the fourth most popular way to get information in an emergency, following TV, radio, and online news. The Red Cross survey found that 20 percent of Americans said they have received some kind of emergency information from an app. These findings led to the development of a series of Red Cross apps that I will discuss later.

The survey identified a subsection of the population deemed “emergency social users,” people who are the most dedicated users of social media during emergencies and likely to take action based on information gathered through their social networks.

- Three out of four emergency social users say they have contacted friends and family to see if they were safe.
- More than a third say social information has motivated them to gather supplies or seek shelter.

- These users look for the hard facts—road closures, damage reports, and weather conditions—and they share personal information about their safety and their emotions.
- Three out of four Americans (76 percent) expect help in less than 3 hours of posting a request on social media, up from 68 percent in the 2011 survey.
- Forty percent of those surveyed in 2012 said they would use social tools to tell others they are safe, up from 24 percent the year before.

USING SOCIAL MEDIA TO ADVANCE THE RED CROSS MISSION

For more than 130 years, the mission of the American Red Cross has been to help prevent and alleviate human suffering in the face of emergencies by mobilizing the power of volunteers and the generosity of donors.

We respond to nearly 70,000 disasters each year—ranging from a house fire to a hurricane. We supply about 40 percent of the Nation's blood to patients and hospitals. We teach skills such as First Aid and CPR that can save lives. We provide international humanitarian aid and support our military and their families through emergency communications and other programs.

It may seem incongruous to some for an institution as old as ours to be embracing social media. But our experience teaches us that during a crisis, people will communicate the same way they communicate every day. Today, people are depending upon social media to communicate with their family and friends on a daily basis. And, as our surveys show, they are increasingly using social media to communicate in a disaster.

To that end, the Red Cross has made social media and other forms of new technology a priority and our social presence continues to grow. We are present on all the major digital platforms. We have over half a million Facebook followers and we just celebrated our one millionth Twitter follower.

DIGITAL OPERATIONS CENTER

The hub of our social media engagement is our Digital Operations Center at our Washington, DC, headquarters, which opened on March 7, 2012. It is the first social media monitoring center specifically devoted to humanitarian relief efforts.

This center was made possible by our generous partner, DELL, which built the center for us and provided the equipment and its expertise. This revolutionary center enables the Red Cross to clearly see what is happening on the ground during an emergency. It helps us to better anticipate disaster needs and to dispense help more quickly—whether it is in the form of preparedness tips, first aid instructions, and information about shelter, food, or other services.

The center allows us to pull in data from social networks on topics we choose. It consists of an engagement console which allows us to categorize posts by topic, and read, reply to them, or redirect inquiries to our disaster operations staff or other appropriate subject-matter experts.

There are four screens which visually depict this information so we can easily monitor it:

- The Heat Map tells us WHERE posts are coming from geographically;
- The Community Screen tells us WHO is posting;
- The Universe Screen tells us WHAT they are saying;
- The Conversation Dashboard tells us HOW we are doing in our response efforts.

The American Red Cross is very proud of our Digital Operations Center. And, we love to show it off. I invite all Members of Congress and their staff to visit our cutting-edge communication center to learn more about its capabilities and witness it in action.

PUTTING EMERGENCY SOCIAL DATA TO WORK

Chairman Brooks, as you will recall, on March 2, 2012, an early season tornado outbreak devastated many communities in Kentucky and southern Indiana with more than 30 deaths and 300 injured. This disaster actually served as our first-ever test of the Digital Operations Center. Our small team of social media experts watched the heat map go red as the Indiana storms struck. Based on the activity and content of social media in the area, the team was able to determine that the tornadoes were heading right toward Henryville and quickly distribute preparedness information to thousands of people by offering links to Redcross.org and safety tips in 140 characters. We also were able to make operational decisions based on feedback and connect those on the ground with the resources they needed.

Last October, when Superstorm Sandy struck, the American Red Cross launched the largest U.S. disaster response in more than 5 years. Our Digital Operations Center again played a crucial role.

Starting prior to landfall and continuing well after the storm passed, our teams in the Digital Operations Center analyzed more than 2.5 million pieces of social data searching for any actionable content from people affected by Sandy. They tagged 10,000 of these posts and interacted with them in some way, whether it was labeling a post as “situational awareness” or routing a need to our Mass Care operations.

The social team sent more than 300 individual pieces of information to our operations team to help inform their decision making. This level of engagement allowed us to immediately address the needs and concerns of a large number of people in a densely-populated region of the country.

We also were able to scale up our social media operations through the use of trained digital volunteers. They helped us monitor, authenticate, and route incoming disaster requests and information to our operations people and partners. They worked remotely using hash tags such as #crisisdata or #redcross to collect, collate, and respond to queries and concerns.

During Sandy, more than 50 American Red Cross digital volunteers—some working virtually from around the world—responded to thousands of Facebook messages and tweets. They addressed an array of service delivery needs from finding the nearest shelter to answering questions about fallen trees and downed power lines. One of our Digital Volunteers was Christoph Dennenmoser, who works for the German Red Cross and has helped us respond to social posts on operations such as Haiti and Hurricane Sandy . . . all from his home or office in Germany.

Our social engagement team, chapters, and digital volunteers offered information on where to find our shelters and mobile feeding sites. For example, our New York City chapter would tweet out that a Red Cross Emergency Response Vehicle would be at 99th and 101st streets in Howard Beach with hot meals and water. Some even tweeted out the menu for the day: Salisbury steak.

The Red Cross found during Sandy that social media also helps us identify gaps in our service delivery. For example, residents of Sayreville, NJ had not received assistance 5 days after Sandy’s landfall. Several people there used Facebook to let us know, and we were able to provide this information from our Digital Operations Center to the operation on the ground and get service delivery going in that hard-hit area we hadn’t identified before.

We have found one major need remains consistent during all disasters—people are anxious and need emotional support. This gives us an opportunity to provide comfort and care using our “digital hugs,” delivered in 140 characters or less.

For example, we received a tweet saying: OK #Sandy, you win. It’s official. I’m scared.

We replied back: Sorry you are scared, pay attn to warnings and find shelter nearby just in case. Redcross.org (hugs) to you!

The answer: Thank you. Stay safe as well. Thanks for the hugs . . . I need it.

The Red Cross continues to learn from all of our response efforts as social media evolves. There is a balance between acting on information shared through social media outlets and ensuring what has transpired is accurate and correct. By watching and tracking social media continually, we often can correct misinformation quickly as we authenticate and verify information.

MOBILE APPS PLAYING LARGER ROLE IN DISASTERS AND SAVING LIVES

As smart phones increasingly play a larger role in our lives, the American Red Cross is responding to this change with mobile solutions. Since June, 2012, we have released a series of five free apps for both iPhone and Android users.

People across the country have downloaded these new apps more than 3 million times, giving them vital weather alerts, preparedness information, shelter locations, and the ability to let loved ones know they are safe.

The First Aid app, which was launched in June, 2012, is the most popular and has been downloaded more than 1.4 million times. A top executive at Apple told our CEO Gail McGovern that he never goes out for the evening without leaving the app open for the babysitter.

The First Aid App was followed by four more disaster apps: Hurricane, earthquake, wildfire, and tornado. Popular with users, they receive average ratings of 4.5 out of 5.0 stars and received the “Best in Show—Most Life Changing Product” award at the recent CTIA—The Wireless Association Conference.

CNN has called our Tornado App one of the “7 apps to survive a tornado.” It includes a siren that warns users when a tornado warning has been issued in their area. When the deadly tornadoes struck Oklahoma in May, our Tornado App was the number one free weather app and had 167,000 new downloads, bringing the total to 594,000 downloads since its March launch.

The Red Cross hurricane app, which has been downloaded more than 824,000 times, became the No. 1 free weather app during Sandy and received the “Outstanding Achievement” award at this year’s National Hurricane Conference.

But most gratifying is the feedback from users about how our apps helped save lives:

“I was in my friends car . . . when suddenly a friend of mine started having a seizure. I immediately looked at this app for help while calling 9-1-1 on another phone. I told the police about it and they said that there’s a good chance the information in this app saved my friends life.”

“I never have to stay up night again worried a tornado is coming when there’s a watch. I have a 9-month-old. I’m terrified one will come and I won’t have enough time to get her room & downstairs. I’ve had apps before that don’t work every time. This 1 actually does.”

ON-LINE TOOLS ARE A SUPPLEMENT, NOT SUBSTITUTE FOR TRADITIONAL COMMUNICATIONS

Social media, apps, and other digital tools are becoming an increasingly important part of 21st Century disaster response and services. But it would be a mistake to assume that these tools are a panacea. Social media should supplement but not replace traditional communications. Not everyone is on social media, especially in vulnerable communities. And those who do use social media tend to be younger, more urban, and more affluent.

Moreover, when power is out and you can’t charge your smart phone, you will still need the Red Cross to drive through neighborhoods with bullhorns announcing that we are there with food, water, and other supplies.

During Hurricane Sandy, the American Red Cross delivered help that cannot be delivered over the internet, as we:

- Mobilized more than 17,000 workers and volunteers;
- Provided more than 81,000 overnight stays in shelters;
- Served more than 17 million meals and snacks;
- Distributed more than 7 million relief items.

PARTNERING TO EXTEND REACH OF SOCIAL MEDIA/NEW TECHNOLOGY

Social media and mobile technologies are bringing everyone closer together, and when Government, non-profits, internet, and other private companies, work together we can reach even more people with life-saving information and help.

We can do this by sharing updates and information, and spreading the word through our own networks, while still preserving what is unique about our brands and the services we provide.

For example, in the first hours after a disaster strikes, it’s important to inform and connect with family and friends. What better place to do that than on social media. The Red Cross has made changes to its Safe and Well website that allows people to update their status on Facebook and Twitter. We have also added an “I’m Safe” button to our apps that allows people to immediately send a text message, tweet, or Facebook post to let loved ones know they are safe.

We have a very close working relationship with FEMA and State and local emergency management, often sharing information with each other through social media.

During major disasters, the Red Cross social engagement team has a daily check-in with the FEMA social engagement team. We frequently echo and/or share one another’s outgoing content—for example FEMA will often help us push out Safe and Well to the public.

We share situational awareness to be sure we’re coming to similar conclusions about client needs, and we are working to integrate our findings with the work of State emergency operations centers.

A NEW FORM OF CITIZEN ENGAGEMENT

In catastrophic disasters, the Red Cross witnesses an abundance of care and concern from the unaffected—people eagerly wanting to help. They are often eyewitnesses to the events, and the first to help their neighbors.

FEMA Administrator Craig Fugate often speaks of his goal to have people see themselves as survivors and not victims of a disaster. He has pointed out that social media can empower the public to be a part of the response, not victims to be taken care of. We agree.

In just a few weeks, we are set to launch the new, dynamic Team Red Cross app. This new app allows people to sign up to help, get trained right on their mobile de-

vice and receive notifications about Red Cross volunteer opportunities in their community.

We are very excited about this next level of digital engagement with the American people.

With the help of technology, we are able to offer limitless opportunities, thereby, turning an abundance of care into more resilient communities, more effective disaster response, and a more prepared Nation.

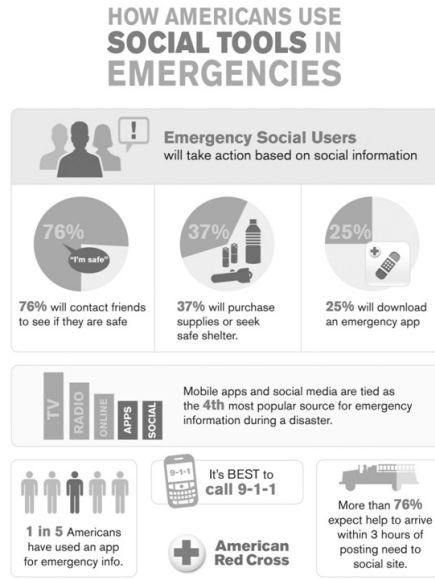
THE NEXT TECHNOLOGICAL HORIZON

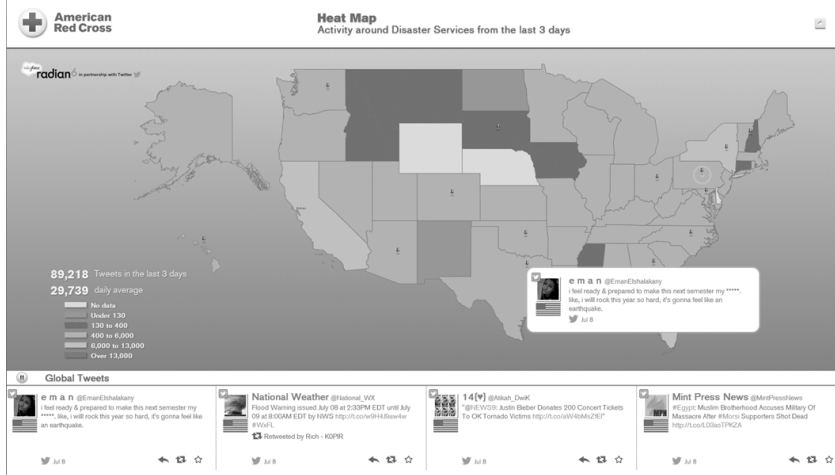
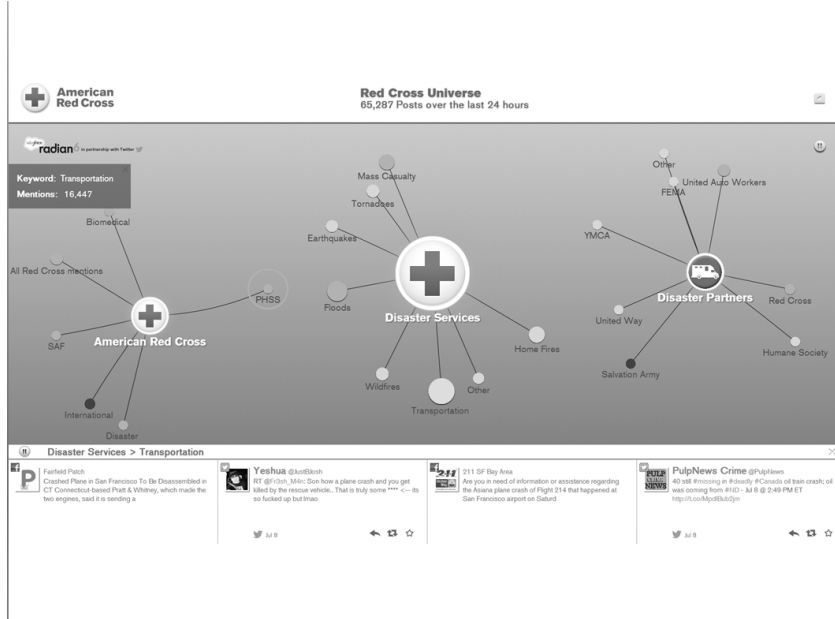
Chairman Brooks, Ranking Member Payne, and Members of the subcommittee, thank you again for this opportunity to provide testimony today. We are delighted to be working with this subcommittee and your colleagues as we further explore the opportunities presented by engaging social media in our disaster preparedness and response.

Social media is helping us improve our service delivery by giving us better situational awareness of the needs, helping us target help to specific locations, and getting more people engaged in giving and getting help. It is giving the public a seat at our Disaster Operations table.

We have learned on this recent journey that we must continue to embrace change, remain open to new ideas and new platforms, and look forward to the next technological horizon.

Thank you again for your engagement and leadership on this important topic. I am happy to address any questions you may have.





Mrs. BROOKS. Thank you, Ms. DeFrancis.
The Chairwoman now recognizes Mr. Ashwood for 5 minutes.

**STATEMENT OF ALBERT ASHWOOD, DIRECTOR, OKLAHOMA
DEPARTMENT OF EMERGENCY MANAGEMENT**

Mr. ASHWOOD. Chairwoman Brooks, Congressman Swalwell, Members of the committee, thank you again for holding the hearing today on growing issue to the emergency management community.

Today I am pleased to be representing the National Emergency Management Association as legislative committee chairman and past president of the association. I am also the director of the Oklahoma Department of Emergency Management.

As you know, in May of this year, my State suffered a series of severe weather events including two EF5 tornadoes. These storms developed in and around Oklahoma City within 11 days of each other.

The EF5 is the most damaging classification of tornadoes with the wind speeds in excess of 200 miles per hour. It is so rare that the National Weather Service has only documented 60 since 1950. So to experience 2 within 11 days is extremely rare.

Our job in emergency management, as is true with the entire public sector, is one of customer service. Part of our mission is accomplished by helping our customers respond to and recover from extreme events such as these.

As the first tornado landed, we maintained contact with our Federal partners to not only meet the needs of response but to establish recovery efforts. Urban search and rescue teams were mobilized as Governor Fallin made a verbal request for Major Disaster Declaration.

Later that evening, the President approved the request and we were well on our way of turning disaster victims into disaster survivors.

Today we have nearly 14,000 families registered for assistance and roughly \$45 million disbursed for rental assistance, repair, low interest loans, and grants. I cannot thank FEMA enough for the continued support and Congress' continued support of the emergency management profession.

Now, to the topic we are here for—social media and disasters.

Communications with the public is always a great challenge following events of this magnitude and social media is no doubt the new tool of messaging.

Once we were able to gain our footing following the immediate response, social media gave us situational awareness on the ground. We were able to confirm damage reports and assessments through photos and messaging from the general public. Between June 10 and June 23, we received 105 retweets and nearly 250,000 impressions on Twitter as well as constant activity on Facebook.

As the storms continued, the likes on our Facebook page increased from 200 to over 8,000 in a little less than a month. The emergency management community has recognized in the power of social media and its continuous evolution.

Last year, NEMA joined with the Center for Naval Analysis to conduct a survey on how emergency managers use social media. We outlined numerous issues including both the strengths and limitations which I have outlined in detail in my statement for the record.

State public information officers are currently utilizing these findings and addressing them through their work groups. Their charge is to create a template of standard operating procedures and concepts for virtual operation support teams that will give us a surge capacity through volunteer manpower.

These efforts will continue to bring social media into the everyday functions of emergency management. Even though emergency management community is still experimenting with using social media for two-way communications, we realize the necessities to try such things for the future.

I have been in the business for 25 years and while I personally do not have a Facebook page nor do I know how to tweet, I know my customers need accurate, timely information, and social media is a tool we must not ignore.

Thank you again for this opportunity to testify. I look forward to your questions.

[The prepared statement of Mr. Ashwood follows:]

STATEMENT OF ALBERT ASHWOOD

JULY 9, 2013

INTRODUCTION

Thank you Chairman Brooks, Ranking Member Payne, and Members of the subcommittee for holding this hearing today. I am the director of the Oklahoma Department of Emergency Management (OEM), and today I am pleased to represent the National Emergency Management Association (NEMA) as we discuss the recent tornados in my State, how social media was utilized in this disaster, and trends of social media in the emergency management community. NEMA represents the State emergency management directors of the 50 States, territories, and District of Columbia. I am also chairman of the legislative committee for the association.

In order to effectively understand the role of social media in a disaster, I will first outline a recent disaster in Oklahoma, describe how social media was utilized, and then examine the larger context of this new medium in an age-old profession.

RESPONDING TO RECENT EVENTS

In May of this year, a series of severe weather events impacted numerous communities in Oklahoma, including two EF5 tornadoes developing in the Oklahoma City metropolitan area within 11 days of each other. The EF5 is the most damaging tornado with wind speeds in excess of 200 miles per hour. Since 1950, the EF5 and its predecessor the F5 tornado have been documented only 60 times in the United States. Therefore, the May events in Oklahoma should be categorized as extremely rare in our Nation's severe weather history.

We in the emergency management profession are about people and their capability to prepare for, respond to, recover from, and mitigate the damages these types of events produce. Our job, like all in a public service capacity, is one of customer service with our customers at the local level of government. In recovery, our duty is to administer the appropriate laws and regulations as they were intended to help "victims" of disaster become "survivors" of disaster. I am proud to say this is currently happening in Oklahoma.

As the live video showed the first EF5 tornado cut a path across the community of Moore, we remained in contact with our partners with the Federal Emergency Management Agency (FEMA). Response was the primary subject as Incident Management Teams and Urban Search and Rescue Teams quickly dispatched to support our local first responders. Even during this difficult time we simultaneously initiated recovery actions.

Governor Fallin made a verbal Major Disaster Declaration request, initiated through FEMA headquarters to the President. This was a procedure new to me and my 25 years in this profession. In a short period of time, the President approved the request and by sunrise the next morning Federal equipment and personnel began pouring into Oklahoma to assist. Within the first 24 hours, the State of Oklahoma established Disaster Recovery Centers, dispatched Disaster Survivor Assist-

ance Teams dispatched, and produced recovery messaging. Recovery was in full gear even as firefighters were still digging through piles of debris.

To date, we have over 13,000 families registered for assistance, with all inspections completed, and roughly \$28 million disbursed for rental assistance, repairs, low-interest loans, and grants. Of the estimated 1.1 million cubic yards of debris, we believe 60 percent has been removed, and we plan on completing this rest by early August. On behalf of the State of Oklahoma, I offer a sincere “thank you” to Administrator Fugate, our FEMA partners, and you who continually support this agency and our mission in Congress.

UTILIZING SOCIAL MEDIA IN DISASTERS

Social media once again played an integral role in disaster communications following the tornadoes, flooding, and severe weather that occurred between May 18 and June 2 in Oklahoma.

Due to limited staffing in the OEM, the use of social media was not active during the initial 20 days after the first tornado. Rotating shifts were constructed by public information officers (PIO) to assist along with other agencies in answering media calls during call-heavy time periods. An inadequate number of personnel made it difficult to consistently provide Twitter or Facebook updates. Concurrently, OEM received more than 40 Twitter mentions and 20 Facebook wall posts which we considered positive. In numerous cases, other agencies shared the OEM’s situation updates and other information through social media. Due to the influx in information, the OEM began actively using social media to share recovery information for the State on June 10. Between June 10 and June 23, OEM received 105 re-Tweets and 247,578 impressions on Twitter as well as 103 “likes,” 67 “shares,” and 16,359 people reached on Facebook.

During the disaster, the Department leveraged social media to check damage reports and examine photos on social media sites. This was especially useful during and after the May 31 storms when an EF5 tornado impacted El Reno and continued southeast through the Oklahoma City metro area. Damage reports were limited even as local news was broadcasting uninterrupted coverage, so OEM used social media to gain situational awareness about the level of damage in those early hours following the storms.

As the storms continued, the amount of information on social media sites gained momentum. The “likes” on the OEM Facebook page increased by more than 200 and total reach increased from around 200 prior to the disaster to nearly 8,000 by mid-June. To assist the public with information, Oklahoma Management and Enterprise Services (OMES) and Oklahoma Interactive developed a disaster-specific website which became a centralized location for disaster information from OEM, other State agencies, voluntary organizations, and others. The website received 118,000 visits in 18 days.

Determining the right language to use, in this case the correct “hashtag,” helped separate the weather-related tweets from others during the disaster. The hashtag used during and after the disaster had been used for the last few years during all types of severe weather events and is well known by most Twitter-savvy Oklahomans. Along with aligning the hashtags, more than 25 disaster-related Facebook pages were created by users to share information about the storms, including where to volunteer, how to donate, and other information. On Facebook, rumors and misinformation were more widely reported, but in anecdotal form. The OEM did not find any direct evidence of false information on Facebook, but on several occasions people with false information said they found the information on Facebook. In the same occurrence, Twitter had propagation of rumors and false reports that was in direct correlation with misinformation reported through traditional media. For example, reports of high fatality numbers quoted on local news reports spread quickly on Twitter. As in other events, the public took to social media to express negative opinions of local storm reports and other coverage from local media during the many hours of continuous coverage.

The National Weather Service (NWS) reported an increase in use of social media for these severe weather events. They also posted custom graphics, including tornado track maps, at the same time they were provided to local emergency managers. NWS saw their Twitter follower count nearly double and their Facebook likes increased by more than 15,000. They also used custom time stamps on each of their tweets in order to minimize confusion often caused by re-Tweeting. Along with the OEM, Oklahoma Department of Agriculture, Food and Forestry, local shelters, and local rescue groups used Facebook and also Pinterest to share photos and information about hundreds of pets displaced by the storms. Facebook especially became an invaluable tool in reuniting survivors with lost pets.

SOCIAL MEDIA TRENDS IN THE EMERGENCY MANAGEMENT COMMUNITY

Social Media incorporates various activities such as adapting technology and social interface. This has proven vital to the world of emergency management. Social networking can improve interaction between State agencies and the public. As real-time information is communicated to the public, the need to maintain accurate facts increases in urgency. The concept of using social media to communicate with the public remains a new phenomenon for many in the emergency management community. The idea of using social media to aid in preparing for, responding to, and recovering from disasters, has caught the attention of many in this field. Despite the benefits and shortfalls, social media continues to develop into an accepted form of communication. It has changed the way information is communicated and examined with citizens and the public. Two major trends seem to be forming as social media takes hold in the emergency management community:

1. *Disseminating Information.*—The first trend seen by emergency managers is the use of social media to convey information in or around an affected disaster area. The versatility of this method is recognized, yet it often lacks any guidelines to make an organized effort to reduce the amount of chaos after a disaster. With volumes of information potentially pouring into the EOC, important data can be overlooked. Reliability, coordination, and integration are three critical factors needed to determine how social media will be used from both a public-safety aspect and as an information-sharing tool. As far as information sharing is concerned, social media is in its maturity. From a public-safety standpoint, social media is in its infancy.

2. *Volunteer Mobilization.*—Often after a disaster, volunteer work groups come in quickly to assist communities. Without a robust volunteer management system in place, the influx of personnel could become a management concern. Social media has been able to bridge the gap between the need for volunteers and the chaos which could occur in the absence of coordination. Although social media has reduced the amount of confusion that accompanies a disaster there are still many avenues to be explored. The emergency management community is still in the trial phase of using social media to assist in volunteer management.

To help assess the value and use of social media in the emergency management community, NEMA joined with the Center for Naval Analysis (CNA) last year to conduct a survey. To date, much of the data on social media and emergency management has been limited to anecdotal accounts or studies, so the CNA-NEMA study provided valuable information into the use of social media in emergency management. State emergency management directors and their Public Information Officers (PIO) were closely engaged in the development, distribution, and completion of the survey. Key findings of the survey included:

- *Familiarity with Social Media.*—On average, respondents from State, county, and local levels of government all considered themselves at least “moderately familiar” with social media. Facebook, Twitter, and YouTube have become commonly associated with social media.
- *Use of Social Media.*—Of those surveyed, all State emergency management agencies use social media in some capacity, as do 68 percent of county emergency management agencies and 85 percent of local response agencies. Of those surveyed, nearly all of the State emergency management agencies, half of the county emergency management agencies, and three-fifths of the local response agencies have used social media in response to a real-world event, primarily to push information out to the community. Over 90 percent of the events cited were from 2011 or 2012, underscoring the recent adoption of social media.
- *Determining Capabilities.*—Respondents were asked to characterize their agency’s social media capability along four dimensions:
 1. *Governance.*—Commitment and buy-in from senior leadership and political officials at the State level is more than double that at the county and local levels.
 2. *Technology.*—Technology used for other purposes in an agency is often used in an ad hoc fashion to support basic social media operations, such as posting status updates.
 3. *Data/Analytics.*—Data-extraction efforts at all levels are still reliant upon manual review, making monitoring efforts difficult to scale-up during large disasters.
 4. *Processes.*—Formally defined and tested processes and procedures lag behind social media use.
- *Trust but Verify.*—Of those surveyed 59 percent of State emergency management agencies, 55 percent of county emergency management agencies, and 41 percent of local response agencies trust social media less than traditional media

sources. Nearly all respondents agree that, on receiving information from social media sources, their agency would attempt to verify this information.

- *Barriers to Implementation.*—Survey results indicate that the primary barrier to emergency management agencies' use of social media is a lack of dedicated personnel. While most respondents indicated that they would not necessarily look to the Federal Government to play a large role in supporting the development of their agency's social media capabilities, they identified prime areas for potential support, including grant funding, training on how social media could be used, and the provision of guidance and standards.

As a result of this effort, the State PIOs developed work groups to examine the above findings. The work groups will:

1. Develop best practices and goals for use of social media by State emergency managers to better target resources and funding towards implementation of social media;
2. Develop and distribute a social media governing model that specifically addresses the public-safety responsibilities and the implications for emergency management and response entities;
3. Create a template of standard operating procedures to manage social media information to more effectively integrate social media and public-sourced intelligence into emergency management information processes;
4. Develop concepts for Virtual Operations Support Teams (VOST) that allows for rapid expansion of capabilities by leveraging trained and trusted personnel to respond both virtually via external monitoring and response and as teams with crucial skills for deployment to emergency operations center, and;
5. The range of non-categorical issues raised in the report.

CONCLUSION

Social media has begun to play an integral role in emergency preparedness, response, and recovery. By understanding the way social media complements emergency management services, the future use of it can greatly enhance emergency management capabilities. Social media and its role in emergency management will continue to evolve. As the emergency management community shifts to accept this new form of communication, many aspects will need to be considered. A familiarity with social media will need to be established, the capabilities that pertain to emergency management will need to be identified and explored, verification of information will be a requirement and it will be critical to break down any barriers to implementation. Although the emergency management community is still in the experimental stages of using social media to convey important messages as well as receive information from the public, it represents the wave of the future.

Again, I thank you for the opportunity to testify today and I welcome any questions you may have for me.

Mrs. BROOKS. Thank you, Mr. Ashwood. It is not that hard.

[Laughter.]

Mrs. BROOKS. Everyone can try it.

I would like to just turn it over to the gentleman from California for additional comments.

Mr. SWALWELL. Thank you, Chairwoman.

I am happy to introduce our final witness, Sergeant W. Greg Kierce. Sergeant Kierce is the director of Jersey City Office of Emergency Management and if I am not mistaken, that is in Mr. Payne's Congressional district.

Sergeant Kierce is the director of Jersey City Office of Emergency Management and Homeland Security, and is responsible for planning and coordinating all facets of the city's emergency response to large-scale events impacting the city and the region.

Over 29 years of law enforcement experience, he has received four Department Class A Commendations, eight Excellent Police Service awards, and a World Trade Center award, among many other honors.

I know how much Ranking Member Payne appreciates Sergeant Kierce traveling down to Washington to testify today. I want to

thank you for being here as well and look forward to your testimony.

Mrs. BROOKS. Thank you.

The Chairwoman now recognizes Sergeant Kierce for 5 minutes.

STATEMENT OF W. GREG KIERCE, DIRECTOR, JERSEY CITY OFFICE OF EMERGENCY MANAGEMENT AND HOMELAND SECURITY

Sergeant KIERCE. Thank you, Congresswoman.

Chairwoman Brooks and distinguished Members of the United States House of Representatives Committee on Homeland Security, I wish to extend my sincere appreciation to Representative Donald Payne, Jr. for affording me the opportunity to appear before you today.

As technology continues to evolve, emergency management organizations must adapt to new ways of responding to the media and public. The way people communicate and receive information has gone through a radical transformation in the last few years with the invention of social media.

The potential applications of social media information for disaster managers include providing, evidence of pre-incident activity, near real-time notice of an incident occurring, first-hand reports of incident impacts, and gauging community response to an emergency warning.

This information will contribute towards effective decisions for emergency responses. Yet to do this, emergency services organizations need a reliable way to identify and analyze emerging topics that indicate a significant disaster, emergency event, or unexpected incident is occurring within a given time frame and at a given location.

The Federal Emergency Management Agency wrote in its 2013 National Preparedness report that during and immediately following Hurricane Sandy, “users sent more than 20 million Sandy-related Twitter posts, or ‘tweets,’ despite the loss of cell phone service during the peak of the storm.”

New Jersey’s largest utility company, PSE&G, said at the subcommittee hearing that during Sandy they staffed up their Twitter feeds and used them to send word about the daily locations of their giant tents and generators.

“At one point during the storm, we sent so many tweets to alert customers, we exceeded the number of tweets allowed per day,” PSE&G’S Jorge Jose Cardenas, vice president of Asset Management and Centralized Services, told the subcommittee.

Following the Boston Marathon bombings, one-quarter of Americans reportedly looked to Facebook and Twitter and other social networking sites for information, according to The Pew Research Center.

The sites also formed a key part of the information cycle when the Boston Police Department posted its final “CAPTURED!!!” tweet of the manhunt, more than 140,000 people retweeted it.

Community members via a simple Google document offered strangers lodging, food, or a hot shower when roads and hotels were closed. Google also adapted its Person Finder from previous use with natural disasters.

Emergency Responders are some of the biggest beneficiaries of social media. They also have to manage the challenges that these new networks present. Traditional lines of communications have been redrawn and social media has changed the singular authority that first responders require.

As each disaster sparks its own complex web of fast-paced information exchange it can both improve disaster response and allow affected populations to take control of their situation as well as feel empowered.

Drawing up an effective social media strategy and tweaking it to fit an emergency, however, is a crucial part of preparedness planning. As part of disaster preparedness it would be useful to teach the public how to use social media effectively, how to get information from the web, and also how to put out useful information.

The challenge for first responders is how to integrate the directives that they formulate with the social media conversations impacted citizens are engaged in. Developing an informed public is the first step in getting both citizens and first responders working together.

Applying social media tactics to corporate and Government crisis communication has several advantages.

First, it brings credibility to your organization at a time when it is likely to be most needed. This occurs because the use of social media, including but not limited to blogging and podcasting, is inherently conversational and transparent allowing near real-time information to be disseminated to concerned citizens, employees, and the media.

At the same time, it prompts discussion, debate, and feedback from the very people who most care about the crisis and who are more likely to shape the lasting perception of the incident once the immediacy dies down.

Social media also guarantees your message will be heard. Because there are no press deadlines, no misinformed reporters, and no need for the use of information technology department, you can disseminate the information how you want to and as quickly as you want.

Another benefit of social media is that it provides a unique and efficient way for crisis communicators to defend an organization's brand and reputation.

For example, if a blog is speaking negatively about an organization or spreading false information, crisis communication can respond by posting counter remarks or linking to other blogs and on-line content that sets the record straight.

Key points to consider as to the use of social media—you need to slow down the freight train that is coming at you. Use your social voice to let the public know you are aware of the situation, you are looking to find the answers, and you will be providing the facts as they become available. Putting the brakes on even a bit at time will slow the velocity.

When the crisis hits, start setting up alerts and searches based on the information you have, and who is talking about it. Talk to your people and determine what is factual is and what is not. Here is the key to remember; if there is one ounce of truth to what has caused the crisis, then that is what is needed to focus on. Kill the

rumors, provide the facts, and clarify the issues at play. This will remove the momentum.

Tackle the issues head-on. This is not the time to try to spin the story or make excuses for what occurred. This is time for concrete facts and humility. “We are sorry. We are human. We strive for better and you deserve better.”

These are three sentences can suck the oxygen out of a fiery room and remove the fuel. Own the situation. Explain what was wrong, why it was wrong, and how you will prevent it from happening in the future. Once you do that, the worst that can happen is people will agree with you.

Misinformation and competing directives can often come from unofficial sources and reach large numbers of people through viral distribution. On the other hand, social media allows first responders to communicate directly with citizens without having to rely on third parties like traditional media.

A recent Red Cross survey asked 1,058 adults as to their use of social media sites in emergency situations. It found that if they needed help and couldn’t reach 9–1–1, 1 in 5 would try to contact responders through a digital means such as email, websites, or social media.

If web users knew of someone else who needed help, 44 percent would ask other people in their social network to contact authorities, 35 percent would require post for help directly on response agency’s Facebook page, and 28 percent would send a direct tweet-er message to first responders.

It is human nature to want to help people who need it. As social networks cut out the middle man in traditional media and put ordinary citizens in direct contact with those in emergency situations, the impulse to help is even stronger.

As a result, people organize amongst themselves to solve problems. In some cases it is in concert with emergency professionals; however, in other situations it’s not possible, and people act independently to issue help on the scene.

Social media can help in both of these instances. The key to marshalling whatever help is available is to identify and prioritize needs that arise from the crisis and to track whether these needs are met.

Because of the popularity of Facebook and Twitter, many help actions have begun on these networks but because they haven’t been designed to do this kind of work; the utility is limited.

One thing is clear, the public’s use of social media in crises is growing. One of the many challenges this presents is the ability of first responders and governments to monitor the information and act on it in a timely manner.

The advent of social media has revolutionized the ways people communicate and gather information about stories and topics that are important to them. This change has adversely affected the way public information officers must interact with the public and media during emergencies.

By complementing your first emergency communication plan with social media techniques, your organization has a better chance of communicating messages, informing the public and media, and ultimately surviving a crisis situation.

The first people to respond during a disaster are usually not trained responders or other professionals. Frequently, they are simply bystanders. The enormous potential of social media is to leverage this fact to turn bystanders into lifesavers.

Also like to—New Technology; Mutualink Interoperability Communication Systems.

Behind any collaborative and coordinated undertaking, there must be effective communications. There is a misconception that the Government can quickly and effectively respond in all incidents. In reality, a wide range of situations can occur in your community that requires varied degrees of response at different times of the situations.

This is most often true in long-running or unfolding emergencies such as large natural or man-made disasters. In these situations, often the need for communications continuity across functions and sectors, such as communications among tactical, logistical, and public outreach, is often overlooked.

This can hamper response, mitigation, and recovery efforts in many ways. This includes unnecessary traffic congestion or key transit points being blocked, medical, food, and shelter services being overwhelmed, and/or improperly located.

During incidents many communications channels will reach peak capacity and alternate means of communications will be required to alleviate or supplement first-line communications resources.

Enabling interoperable communications among disparate communications assets plays an important role in ensuring both seamless communication among different agencies and entities, regardless of the communications resources but also provides the needed flexibility to supplement availability and circumvent communications limitations when primary communications resources are unavailable.

A wide variety of communications resources are available and used within our communities. These include a plethora of two-way radio systems, the public telephone system, mobile telephone, satellite, and broadband data working providing IP communications.

Despite a decade of significant investments and concerted efforts, a pervasive National communication interoperability solution for emergency response has remained a bridge too far; at best, small pockets of interoperable communications ability existing among a few select agencies.

With advanced and affordable interoperable communications resource sharing, these assets can be harnessed to provide a resilient and ubiquitous communications environment that will enable seamless communications across a multitude of partners, and provide critical communications paths with them.

Developing—

Mrs. BROOKS. Sergeant, I need you to wrap up. Thank you.

Sergeant KIERCE. Thank you.

Mrs. BROOKS. Okay. Well, we just want to get to our questions. Any final comment?

Sergeant KIERCE. The final comment would be, Chairwoman, I just want to continue on this Mutualink, it will take just a couple of seconds.

In 2009, for the first time, a public safety emergency response marine vessel was outfitted with an advanced multimedia interoperable emergency communications system that is currently in use in Jersey City.

This vehicle was also pressed into service and during the historic flight on the Hudson and we were able to interoperate with—provide interoperable communications between all first responders and also provided real-time situational awareness video to the first hospitals and things of that nature.

Thank you very much.

[The prepared statement of Sergeant Kierce follows:]

PREPARED STATEMENT OF W. GREG KIERCE

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- evidence of pre-incident activity;
- near real-time notice of an incident occurring;
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This information will contribute toward effective decisions for emergency responses. Yet to do this, emergency services organizations need a reliable way to identify and analyze emerging topics that indicate a significant disaster, emergency event, or unexpected incident is occurring within a given time frame and at a given location.

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Key points to consider as to the use of social media:

- You need to slow down the freight train that is coming at you. Use your social voice to let the public know you are aware of the situation, you are looking to find the answers, and you will be providing the facts as they become available. Putting the brakes on even a bit at a time will slow the velocity.
- When the crisis hits, start setting up alerts and searches based on the information you have, and who is talking about it. Talk to your people and determine what is factual and what is not. Here is the key to remember—if there is one ounce of truth to what has caused the crisis, then that is what you need to focus on. Kill the rumors by provide the facts and clarify the issues at play. This will remove the momentum.
- Tackle the issues head on. This is not the time to try to spin the story or make excuses for whatever has occurred. This is time for concrete facts and humility. “We’re sorry. We’re human. We strive for better and you deserve better.” These three sentences can suck the oxygen out of a fiery room and remove the fuel. Own the situation. Explain what was wrong, why it was wrong, and how you will prevent it from happening in the future. Once you do that, the worst that can happen is people agree with you.
- Misinformation and competing directives can often come from unofficial sources and reach large numbers of people through viral distribution. On the other hand, social media allows First Responders to communicate directly with citizens without having to rely on third parties like traditional media.

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public and media during emergencies. By complementing your emergency communication plan with social media techniques, your organization has a better chance of communication messages, informing the public and media and ultimately surviving a crisis situation.

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NEW TECHNOLOGY: MUTUALINK INTEROPERABLE COMMUNICATIONS SYSTEM

Behind any collaborative and coordinated undertaking, there must be effective communications. There is a misconception that the Government can quickly and effectively respond in all incidents. In reality, a wide range of situations can occur in your community that requires varied degrees of response at different times of the situations.

This is most often true in long-running or unfolding emergencies such as large natural and man-made disasters. In these situations, often the need for communications continuity across functions and sectors, such as communications among tactical, logistical, and public outreach, is often overlooked.

This can hamper response, mitigation, and recovery efforts in many ways. This includes unnecessary traffic congestion or key transit points being blocked, medical, food, and shelter services being overwhelmed, and/or improperly located. During incidents many communications channels will reach peak capacity and alternate means of communication will be required to alleviate or supplement first-line communications resources.

Enabling interoperable communications among disparate communications assets plays an important role in ensuring both seamless communications among different agencies and entities, regardless of their communications resources, but also provides the needed flexibility to supplement availability and circumvent communications limitations when primary communications resources are unavailable.

A wide variety of communications resources are available and used within our communities. These include a plethora of two-way radio systems, the public telephone system, mobile telephone, satellite, and broadband data networks providing IP communications.

Despite a decade of significant investments and concerted efforts, a pervasive National communication interoperability solutions for emergency response has remained a bridge too far with, at best, small pockets of interoperable communications ability existing among a few select agencies.

With advanced and affordable interoperable communications resource sharing, these assets can be harnessed to provide a resilient and ubiquitous communications environment that will enable seamless communications across a multitude of partners, and provide critical communications paths among them.

Developing partnerships, engaging in planning and practice, and utilizing new and affordable communications bridging technology to facilitate communications among partners is essential to modern-day emergency preparedness and response best practices.

The Mutualink Interop Network is a ground-breaking method of connectivity. The network operates in a peer-to-peer environment that can be accessed via dedicated or virtual connections. The plug-and-play structure of the network eliminates complex and expensive configurations.

Entities joining the Mutualink Interops Network are “automatically discovered” by all existing network participants make the determination whether to include new Mutualink subscribers in their visible list of network peers. Additionally, network participants can search the directory by geography and entity type developing communities of similar agencies.

Communications on the secure Mutualink Network are end-to-end encrypted using Federally-approved AES ciphers and are mutually authenticated using standard-based public-key cryptography.

An Interoperability WorkStation serves two primary functions: It is the point of communication between two entities on the network for voice, text, and sharing data files; it is also the control point by which resources may be contributed to the incidents.

The Interoperability WorkStation (IWS) allows users to communicate in several distinct methods:

- Intercom allows communications between Interoperability Workstations during an incident.

- Transmit broadcasts to radio and other resources participating in incidents and IWS users can text messages and share video feeds and data files with other incident participants.

Additionally, portable configurations of the Interoperability WorkStation can be moved, at any time to pre-determined destinations with qualified broadband access, providing users with back-up dispatch capabilities.

It is a well-established fact that most of the NYC police and fire department first responders at the World Trade Center in the immediate aftermath of the 9/11 terrorist attacks had virtually no ability to communicate with each other. That utter lack of “interoperability” has been enshrined in the history books as one of the monumental shortcomings of that tragic day.

It is far less known that almost 8 years later, on the day that Captain Chesley Sullenberger brought his Airbus A320 airliner down safely in what has since been dubbed “The Miracle on the Hudson,” that many of the police, fire, and emergency services agencies on the New Jersey side of the Hudson River—as well as many of the nearby New Jersey hospitals—were able to benefit from a remarkable degree of communications interoperability.

At the request of the New Jersey State Police OEM the Jersey City OEM Homeland Security Mobile Command/Communications vehicle equipped with the Mutualink Interoperability system was dispatched that day to Weehawken, NJ.

On-board cameras connected thru the Mutualink system focused on the floating, crippled aircraft, where they were able to capture video images of the stunned passengers, and share those images in real-time with area hospitals, emergency rooms, other public safety agencies and local command centers.

In October 2009 for the first time, a public safety emergency response marine vessel was outfitted with an advanced multimedia interoperable emergency communications platform enabling seamless communications, and video and information sharing among agencies both in the water and on the ground.

The system, developed by Mutualink, allows real-time coordination during incident response by enabling communications between incompatible two-way and push-to-talk radios, telephone PBX systems, and mobile telephones, along with the ability to share and view live feeds from video camera networks traditionally not accessible by remote parties. Following 9/11 and Hurricane Katrina, attaining interoperability between technologies that are normally incompatible with each other to improve response has been a Federal priority.

The state-of-the-art boat dedicated in the honor of fallen police officer Marc Dinardo was acquired by the Jersey City Office of Emergency Management/Homeland Security thru Department of Homeland Security (DHS) Urban Area Security Initiative (UASI) funds and is operated by the Jersey City Police Emergency Services Unit. It patrols the same Hudson River waters where US Airways Flight 1549 made a successful water landing and supplements maritime assets of the NYPD, NJSP, and the U.S. Coast Guard.

In 2012 a Bomb Command vehicle was purchased for the Jersey City Police Emergency Services Unit thru DHS UASI funding and this to was outfitted with a Mutualink system. As was the case with the marine vessel, Mutualink designed a special application providing connectivity to the on-board bomb robot enabling bomb technicians to share video with counterparts throughout the country greatly enhancing information-sharing capabilities.

Mutualink CEO Mark Hatten credits the success of the project to Jersey City’s progressive leadership and commitment in the area of homeland security and emergency preparedness. “Jersey City has been at the forefront of interoperable emergency communications and from the beginning it has been a guiding force in helping us shape a solution that meets the rigors and needs of responders and personnel in real situations. The maritime interoperable communications deployment directly results from Jersey City’s vision of enabling unified communications capabilities across all environments,” stated Hatten.

Previous projects with Jersey City included the installation of Mutualink into their mobile command vehicle, the first to operate over a wireless data connection, as well as into their Emergency Operations Center. Hatten added, “When Jersey City came to us with the idea of doing a marine deployment, we saw it as a great opportunity for both sides to work together and make it a reality.” Mutualink developed a hardened interoperable work station that can be used not only in harsh maritime environments experienced by tactical and response boats, but also in other severe land-based environments.

The successful deployment into a marine environment required Mutualink to engineer a new piece of hardware capable of operating in extreme environmental conditions. A new Interoperability Work Station (IWS) was developed within an IP67-rated waterproof enclosure requiring no outside ventilation for cooling and flash

drive technology was incorporated to handle the excessive vibrations and pounding a boat typically experiences on the water at high speeds. A Furuno 17" LCD screen displays the Mutualink software and video while communication audio is capable of coming over an amplified speaker system or a privacy handset. Data connectivity is accomplished using a Firetide™ wireless mesh network with antennas directed out over the water carrying the encrypted data back to land where it then rides Jersey City's fiber network. Mutualink can also operate in a mobile environment over satellite and cellular data networks.

Mutualink has significantly enhanced our capabilities to react and respond internally but also our ability to interoperate with any other agency on the network including many of our neighbors and critical assets in the private sector to include:

- Newport Shopping Mall (Directly connected to inter-state (PATH) and inter-county transit (Hudson Bergen Light Rail) systems).
- New Jersey City University, Saint Peters University.
- Jersey City Public School System (Sixteen facilities with approximately 35 thousand students).
- Jersey City Medical Center (Level 2 trauma center).
- Christ Hospital.
- Jersey City 9-1-1 Emergency Communications Center.
- Port Authority of NY/NJ Police Communications Desk.
- Goldman Sachs (Jersey City Gold Coast Financial area).
- Le Frak organization (Largest property owner of residential and commercial properties located in the Hudson River Newport area).
- Mack-Cali properties.

This is all accomplished using the same communications infrastructure we already have in place. Newark, Paramus, Trenton, and Atlantic City are just some of the New Jersey cities already using the Mutualink system along with 22 area hospitals in northern New Jersey which can now interoperate via dispatcher, radio, video, and text messaging.

Enhanced communications continue to be of vital importance for effective response to disasters. Lack of communications directly contributes to low levels of situational awareness for both high-level commanders and emergency responders in the field.

When all lines of contact are down, effective response to disaster is greatly diminished. Establishing and maintaining lines of direct contact between decision makers, formal and informal responders, Government officials, and the public is a primary objective in any emergency planning or response scenario.

A continuing reexamination of providing emergency communications is critical for lessening their impacts of future disasters. Utilizing advances in technology that allow for higher degrees of mobility for communications systems introduces a new level of flexibility for operational command structures.

In closing, I would like to once again express my sincere gratitude for affording me this opportunity to appear before you today.

Mrs. BROOKS. Thank you, Sergeant.

At this time, I would like to recognize myself for 5 minutes of questions.

I think it is clear from what we have heard that social media and the use and the dependence by the public, it is obvious, and so I think a critical issue, I am going to start out with you Mr. Ashwood, because you obviously talked about what happened in Oklahoma and our thoughts and our prayers are with those who are now recovering, and I know it is going to take a long time to recover from such devastating tornadoes. You talked about how social media was relied upon and was used in Oklahoma.

What my concern is, and from my time with talking with first responders in Indiana, is how are the personnel in your agencies—whether it is in Oklahoma or on behalf of NEMA—you are representing, you know, National emergency managers—what kind of training are people receiving on the use of social media either from Federal Government sources such as FEMA or from any other source?

What kind of training do people have, because when I think as I mentioned before the hearing began at a conference where I re-

cently spoke to several hundred personnel from Indiana focused on emergency management—when I talked about social media, everyone was quite nervous. I could tell that people are very nervous about their lack of preparedness, their lack of abilities, and so what are we doing with respect to training?

Mr. ASHWOOD. Well, I think it is important to say that of course social media is an evolutionary process that we are going through right now. It is not just Twitter and Facebook, it is what it might be 10 days from now or 5 years from now, and we need to make sure that we stay as close to the curve as possible and a lot of that has to do with the training and what exactly we offer and what exactly we take.

The opportunities are there. FEMA does a good job of making opportunities available for social media training as well as other entities. Our staff in Oklahoma has taken training, but more importantly, we have distributed the training to our local emergency managers. We have done that through our public information officers' course.

We have also done that through a homeland security course that is offered through FEMA that we have utilized as well. So getting it down to the very lowest levels to me is more important than what even we have at the State level.

We need to make sure that the grassroots effort of knowing that social media is there and it is part of our existence and that it is part of our response and recovery efforts from this point forward is more important than exactly what my staff has even right now that they will also get it as well.

I know that is going to be different from State to State. I can only speak on Oklahoma with this issue, but the opportunities are there is what I will say. Whether or not they are taken advantage of, it depends on each State.

Mrs. BROOKS. Thank you.

I would like to—I have a question for FEMA, for Mr. Adamski.

One of the things that we learned not only in the survey, but from our hearing, at the last hearing we had on social media with the private sector was that the data extraction efforts at all levels are reliant upon a manual review often making monitoring efforts difficult to scale up during large disasters.

We know that Red Cross has their digital operation center to help monitor the high volume of social media posts, but we heard from Google and Palantir and other companies that there is software support to help the first-responder communities and nonprofit organizations collect and analyze this information.

How is FEMA using these analytical tools to help sift through all of the data? How are you partnering with the private-sector companies to take the tools that they are creating? How is FEMA using this in this effort and then pushing it out to the State and locals?

Mr. ADAMSKI. Absolutely. Thank you, Madam Chairwoman, for the question.

For the last couple of years, we have been doing it manually, which I believe is a tip to our hat in the fact that we have staff who are trained and who are doing that human analysis.

To your point about the volume of data and scaling it, that is why, we are, when we have recently been looking at tools where

we can automate the analysis, when we do social listening similar to what the Red Cross does. So we can look for those trends as well as to improve and increase our operational efficiencies as well.

So we do training with both our headquarters staff as well as our regional staff as well, who are digital communication specialists and they share those lessons learned and share best practices with their State counterparts and with all of their counterparts across all levels of Government as well and we also share best practices with international counterparts as well.

So it is looking at how we can now learn from previous disasters as well as our relationships with the private sector of how we can utilize their tools if there are new trends and that are out there as well as looking at articles and best practices that anybody out in the private sector is using with regard to the tools to provide good customer service and stakeholder outreach.

Mrs. BROOKS. How large is FEMA's digital engagement team and what kind of training actually since so many rely on FEMA, to then create the training and push it out, can you share with us just very briefly?

Mr. ADAMSKI. Absolutely. It is about 20 people. That includes both headquarters staff, regional staff who are in our regional offices, as well as our joint field offices. So the digital communication staff have regular interactions with their counterparts both—in the digital presence or on digital and social media as well as all communication channels sharing those best practices with their counterparts and answering questions.

Mrs. BROOKS. Thank you.

I now turn it over to the gentleman from California for any questions.

Mr. SWALWELL. Thank you. I wanted to start with Mr. Adamski.

At the last hearing we heard from private-sector witnesses that although social media has allowed us to make great strides in how we respond to disasters or emergencies, the lack of uniform open-source data standards hindered the abilities of companies like Google to develop social media tools during disasters.

Can you elaborate a little bit on what exactly they are talking about and what you are doing and efforts that FEMA is taking to address this?

Mr. ADAMSKI. Absolutely. I appreciate the question.

With regard to open standards and common alerting protocols, as the representative from Google had referenced, that is one thing as they are saying that National Weather Service is taking advantage of.

That is one thing that we are looking at. How can we improve and do a better job of providing our information out there to their points so anybody can go out there and use it, it is not customized to one audience or one technology? It is platform agnostic.

Mr. SWALWELL. Just as an example, this would mean say FEMA puts like a PDF or something on its website, that would not be able to transfer to all of the other types of operating formats that Google or other social media sites have. Is that as you understood it?

Mr. ADAMSKI. Correct, because it is static. It is not dynamic. It can't be read by other machines and any time you use human

intervention, then you are actually, to their point, you are actually creating more time to work on it.

Mr. SWALWELL. In your testimony, you discussed FEMA's efforts to stop the spread of misinformation through its rumor-control website, and to me this sounds a lot like a website I use called Snopes. Are you familiar with Snopes?

My dad will send me crazy emails. I am like, "Dad, just go to Snopes. This is not true. It will debunk it."

Can you talk a little bit about the rumor control and how you are sharing these best practices with local governments so that they can employ this as well?

Mr. ADAMSKI. Absolutely. The one thing that we saw from Sandy because we did social listening, we saw there was a huge number of false information and false rumors that were out there.

So we wanted to be able to, on all of our digital platforms, correct that information as well as let our partners be force multipliers and point—and if they heard that rumor whether 6 hours later or 2 days later, because we did see that the same rumors kept rearing their heads back up.

So using our stakeholders to be force multipliers we found to be very successful. We do find that after every disaster there are sometimes rumors or misinformation as part of normal course.

Not necessarily to the scale of what we saw with Hurricane Sandy, but after even the Oklahoma tornadoes, we created a small page to help correct any misinformation about disaster services, programs, and things like that.

That is another piece of information when our regional staff as well as headquarters staff are interacting we talk about those best practices and how can they be utilized and why and how social listening is important.

Mr. SWALWELL. Great.

Ms. DeFrancis, going back to the digital divide, can you describe what efforts the Red Cross is taking to ensure that traditional forms of communication are preserved as social media is still being integrated into disaster response?

Ms. DEFRANCIS. Sure. Thank you for that question. As I mentioned, TV, radio, and on-line websites are still the place that most people go to get their information. So we make sure that we have a very strong presence on all of those operations.

We have an advanced public affairs team that goes to the site of every disaster to communicate information to the public. We are getting out in advance of a, you know, a disaster we know is coming, we are putting out information in advance about how to prepare through all those traditional means.

So we feel very strongly that—in fact, I remember during Sandy, we knew we were getting through to a community when they were tired of hearing our bullhorn coming through the streets, but we feel very strongly that we need to continue to employ those traditional means of conditions—

Mr. SWALWELL. All of the above of course.

Ms. DEFRANCIS [continuing]. Recognized. Yes.

Mr. SWALWELL. Great.

Finally, Sergeant Kierce, I wanted to talk a little bit about the Urban Area Security Initiative grant also known as UASI. We have

in our district, the Alameda County Sheriff's Office, they put on what is called Urban Shield; it is a training exercise that actually, the Boston Police Department attended and then they put on their own Urban Shield to train first responders and evaluate how they respond to terrorist situations like a mass transit casualty situation, and I am wondering how have programs like that Homeland Security Grant program helped Jersey City achieve the interoperability capabilities that you have talked about?

Sergeant KIERCE. Well, Congressman, basically with the Urban Area Security Initiative, Jersey City and Newark are the two main cities that make up the Jersey City/Newark UASI with the 7 contiguous counties.

As I started to get into the program Mutualink, it allowed two things. It established interoperability between all of the different agencies that respond to events both in Jersey City and Hudson County and for the entire region.

It also allowed us to share or establish a private-sector information-sharing platform where the Jersey City waterfront houses many of the large financial entities that obviously are involved in global economy, and we always had reason to have to get information to them as quickly as possible because of anything that could impact them.

What we have done through the UASI dollars has been able to embrace a program where we can actually bring these folks in and you are dealing with real-time situational awareness, receiving information once it is vetted with us for accuracy, and it helps them actually, you know, perform their business, but without this UASI dollars, none of this would have been possible.

Mr. SWALWELL. Great. Thank you, Sergeant Kierce.

Thank you, Chairwoman.

Mrs. BROOKS. The Chairwoman will now recognize other Members of the subcommittee for questions they may wish to ask of the witnesses, and in accordance with our committee rules and practice, I plan to recognize Members who were present at the start of the hearing by seniority on the subcommittee and those coming in later will be recognized in order of arrival.

So at this time, I would recognize the gentleman from Mississippi, Mr. Palazzo for 5 minutes.

Mr. PALAZZO. Thank you, Chairwoman Brooks, and thank you for holding this timely, relevant, and extremely important hearing especially because we are only 39 days into hurricane season.

In Part I of this hearing a couple of months ago, I highlighted the fact that when Hurricane Katrina devastated my district in the Gulf Coast in 2005, Facebook was still an infant relatively speaking, Twitter was nonexistent, and the first iPhone wouldn't come out for almost a year later.

I also highlighted the use of social media during Hurricane Sandy where millions of people went to social media, shared information, watched live Twitter feeds, and checked up on loved ones.

But despite the explosion of social media used during disasters, many people don't know where to go for credible information. Although most of it—if not, almost most—excuse me—although most, if not all States have emergency agencies and they have Twitter

handles, their followers pale in comparison to the actual population of each State.

For example, Mississippi has a population of 3 million, but the Mississippi Emergency Management Agency only has 8,000 followers on its Twitter page. New Jersey has 13,000 followers despite 9 million citizens. The State of New York has 19 million residents, but its emergency management Twitter handle only has 64,000 followers.

These State agencies constantly provide disaster warnings, preparation tips, and critical information, yet only a fraction of Americans directly follow their social media pages.

This morning, I tweeted links to the social media pages of Mississippi's Emergency Management Agency, FEMA, the Red Cross, and the Mississippi Department of Transportation. I encourage all of my colleagues on this committee and in Congress to do the same and encourage their constituents to follow their own State emergency management agency's social media page.

By tweeting this information, our constituents can know where to go for on-line information before, during, and after a disaster strikes and won't have to make judgment calls as to whether the information they are getting is credible.

So this leads to my question. How can FEMA, State agencies, and Red Cross quickly and better develop a large on-line presence that people will instinctively know where to go for credible information?

Ladies first.

Ms. DeFrancis.

Ms. DEFRANCIS. Thank you, Congressman.

Well, we have been working at it for a while. I mean, we just, I think last week, we passed our 1 millionth Twitter follower, which we were very proud of, and we have about over half a million on Facebook, and of course we are on a lot of the other platforms.

If I could just recognize in the room is Wendy Harman who helped build our social strategy at the Red Cross and now she is moving into our disaster operations team to help integrate this information because it is great to have Twitter followers, it is great to have Facebook, but it is when you want to get their information to people that can actually help them, get them meals—that is what we need to do is really integrate it better.

So we continue to build that presence and cross, so I mean when we are giving a TV interview, we are telling people, you know, to go check our Twitter site. We are trying to cross-reference all of that and they are all part of I think a really seamless 21st-Century communications shop.

I think the other thing we would say is that we are trying to push social media out of just the public affairs shop. It should be really part of all of our operations, whether it is our blood centers, our, you know, our disaster people of course, our health and safety, everyone in a—who is a subject matter expert in a particular area of the Red Cross should be able to use social media. It shouldn't just be handled by the public affairs people. We call that making it part of our operational DNA.

Mr. PALAZZO. Thank you.

Mr. Adamski.

Mr. ADAMSKI. No, I appreciate the question. It is a question that we get an awful lot because the public doesn't also—they don't realize that FEMA as a Government agency or even on Twitter, to your point.

So just like any organization in the private sector who needs to do outreach education, we have to do that for ourselves as well as we help with amplifying local and State messages as well as accounts to your point as well, as well as Red Cross and local Red Cross chapters, to help get that information out there and help share to be a force multiplier for our partners across all levels of Government.

The other piece where we try and enforce it with outreach is on the preparedness side of making sure that folks have a digital plan, that they know about those resources ahead of time.

The other thing I will note real quickly as well is the wireless emergency alerts which is a new tool that is out there is it allows folks who have a newer phone to receive alerts in an area where a local emergency manager would send out that alert.

So the great thing about it is that you don't need to subscribe or even know about it.

The one thing we are doing is educating folks on what those alerts mean and that they should follow those local warnings from local officials because the reason that they are pushing that message out is because there is an imminent threat or possibility for severe weather for example.

So it is constant education and amplification of all of our partners' messages and accounts.

Mr. PALAZZO. Well, thank you. If the Chairwoman would indulge me for one more second, this past week we had some severe weather in our district and my phone started alerting me.

I didn't even know Verizon had an alert messaging system. So those things are really handy and the fact that everybody has some form of mobile device and have become quite dependent upon it I think is extremely important.

But also I always want to thank our first responders—I am definitely tongue-tied today—our emergency operation personnel, our National Guard members, our Salvation Army, our Red Cross.

If people don't think that they go into harm's way, I just want to share a photo from February 10, 2013. We had an E4 tornado in Hattiesburg, Mississippi. It was large. It was violent. That is one of the disaster relief trucks of the American Red Cross.

So we thank you and we depend on you before, during, and after a storm.

Thank you very much.

Mrs. BROOKS. Thank you, Mr. Palazzo, well said.

I would now like to recognize the gentleman from Pennsylvania, Mr. Perry, for 5 minutes.

Mr. PERRY. Thank you, Madam Chairwoman.

This question essentially goes to Mr. Adamski, at least initially.

I believe that Twitter has been and is a very effective tool in relaying information during emergency situations. Unfortunately—I know we have heard a lot of good news stories today, but I think we are charged with kind-of looking at every facet, so unfortu-

nately, following the Boston bombings, there were several tweets containing damaging or potentially damaging misinformation.

For example, there was an explosion at the JFK Library in Boston which was connected to the original blasts or a Saudi Arabian national has been arrested over the bombing or a Muslim with shrapnel wounds is being guarded in a hospital as a person of interest or blood donors are needed now, people need to go and give blood now.

With individuals allowed to tweet and post any information they choose, how do we guard against the spread of misinformation that can prove detrimental to the safety of first responders and victims and—I understand that you have the rumor page, but then it leads to another question as well, is what is the job, what is the role of Federal agencies and what is the role of the private sector and where do we draw the line and when we figure that out, and how do we figure that out in this quickly-evolving arena?

Mr. ADAMSKI. Absolutely. I appreciate the question.

As you know, in our role at FEMA, we coordinate emergency response to disasters as well as support all levels of government. With regard—you are correct with regard to social media as far as there being the bad actors out there which is why it is even more important to make sure that agencies are doing a social listening.

Misinformation can come in through other communication mediums as well, whether it is news reports, whether it is 9–1–1. I often like to use the analogy that folks can call 9–1–1 and call in a false report. Obviously, there are mechanisms in place to be able to root those out and figure out if it is a false report and whatnot. So even though social media is new, they are still going to be bad actors but there are also bad actors in other communication mediums as well.

With regard to FEMA and the social listening that we do, we do it within the scope of our mission of disasters and emergency management and to the extent where we can help our Government partners across the board we will.

I know often our regions will reach out to their State counterparts if there is a disaster in their State and ask them if they need any assistance with social listening for example.

Or at least—and if they don't at that time, at least they know that that is a service that our digital communications specialists can help with as we help support our States in that nature, but again, we are looking at it through the lens of disasters and emergency management.

To your point, it is important across all sectors that because that information and that conversation is occurring, that folks do participate in social listening.

Mr. PERRY. You know, social listening, it is a term that has been bandied about here and I don't know that it is in most people's lives, but, you know, it leads, at least for me, it leads to other questions.

At the least in late of events occurring in the Federal Government recently regarding the IRS or what-have-you and you think about applications like Google's People Finder or social listening in particular and even the alert that the gentleman for Mississippi got on his phone and I am wondering if, you know, do people know?

Is this mostly—did you know that you have the application? Do you want the application? What about HIPAA violations? You know, somebody tweets that their grandmother's X and sends it to Ms. DeFrancis at the Red Cross or something like that. Are there HIPAA violation concerns?

How—you know, I am not home right now because of my home has just been half obliterated and I am down at the neighbors and then the looter at the next town says, "Okay, well that is my next target." I mean, how do we handle those things?

Mr. ADAMSKI. No, absolutely. I think the public using any social communication tool needs to be cognizant and aware that if they are posting information in real time or if they are posting personally identifiable information that anybody can see that.

Even if their account is locked we recommend that they don't post that information to your point that it is personally identifiable information.

If we do see somebody who either sends us an email or tweets at us or sends us a fake Facebook post and they have that information in there that can personally identify them then we will respond back asking them not to continue using those communication mediums but we will give them a way to where—an off-line way—to where we can communicate with them as it fits into our normal operation so then they can feel secure that their information won't be shared and that we won't be sharing their information with—in the public space. So to your point that others won't be able to see it.

Mr. PERRY. Finally, in your interaction with your partners, whether it is Twitter or whether it is Google, what have you, is there ever any concern at least from their part expressed to you about agencies like FEMA or other Government agencies competing in a way and their domains and their intellectual properties in these applications and so on and so forth?

I mean, I know you are trying to be proactive and we applaud you for that, but I think we need to make sure that we are moving with diligence in that regard. I just wonder if that has ever been an issue that you have discussed.

Mr. ADAMSKI. They haven't, no, they haven't raised the concern. To your point about we are being diligent in how we use the tool to make sure that we aren't sharing PII information, personally identifiable information. Absolutely.

Mr. PERRY. Thank you.

Thank you, Madam Chairwoman.

Mrs. BROOKS. Thank you.

Question for Ms. DeFrancis.

I just want to—you talked about volunteers around the globe actually assisting with you and we had a weekly SMEM chat on Twitter and we learned that virtual operation support teams are volunteer teams that lend support via the internet to emergency managers and first responders who are overwhelmed by the volume of data that you might get created after a disaster.

Has Red Cross—is that the type of team that you are referring to? Have they leveraged these virtual operation support teams for your disaster relief efforts? How were they used? I am curious how they were used, and then I would like the others to answer as well.

Ms. DEFRANCIS. Sure. Well, many of the individuals on the VOS, virtual operations teams, are also Red Cross digital volunteers. So these are people who have an interest in helping during a time of disaster to help organizations get out the information they need as broadly as they can.

So while we have not use VOS specifically and they are best at spotting trends and things like that, we have many of our digital volunteers are also members of that and we train our volunteers in Red Cross-specific answers. They are not just spotting trends. There are also able to say you need to go here for shelter. You need to go here for food and water.

So we do have a training program to enable us to do that and be able to scale up. I think that it is an important—you know, you don't keep a big staff. We have like three in our National headquarters. Our chapters all are tweeting as well and posting on Facebook, but you can't keep a big staff all the time.

You need to have a way to scale up because we go from 4- or 5,000 mentions a day to, you know, tens of thousands of mentions a day during a disaster and certainly people like this who can help us scale that up are vital to doing it.

Mrs. BROOKS. So approximately how many digital volunteers does Red Cross have?

Ms. DEFRANCIS. I think during Sandy we used 50 of them and that was probably the, you know, the maximum. Like I said, many of our people in our chapters are tweeting and so we have over 300 chapters who are probably engaged. So it is hard, but I would say 50 about now in digital—trained, digital volunteers.

Mrs. BROOKS. Mr. Ashwood, any comments on your virtual operations volunteers?

Mr. ASHWOOD. While we have not used the VOS acronym, it has been part of our operations plan from many years back that we bring in public information officers from other State agencies that all move into our operation center as an assist during times of disaster.

Of course, a lot of those now are being transitioned over to the technological side to take them to Facebook, to take them to Twitter, to help us with that messaging, and make sure that we do get the accurate messages out there or correct those messages that are inaccurate.

I think the bigger question here is what we do in times of non-disaster. How do we resource to that need, that communications need, because I can promise you any disaster if you do a hot watch and after-action, No. 1, the issue is going to be communications, and information is the silver bullet that takes care of disaster victims afterwards.

If they have the proper information, they can make the proper decisions for themselves and their family. So we have to constantly strive to resource to that need during non-disaster times. The question earlier about why don't people follow us more during non-disaster times—we are not saying anything very interesting most of the time.

We need to make sure that we are well-engaged not just from an ancillary position here but to make sure that we are there. Part of that new communication, that new messaging from Day 1, whether

it were during a disaster or not, and I think that is the key to marketing the whole thing.

Mrs. BROOKS. Thank you.

Sergeant KIERCE, during the Hurricane Sandy episode and the different—I am sure you dealt with a huge number of public safety agencies in New York and New Jersey—do you know whether or not they used digital volunteers and have these virtual operation support teams?

Sergeant KIERCE. I think one of the challenges that we face, Chairwoman, was the fact that both Jersey City and New York had significant power outages in addition to loss of Verizon cellular connectivity and things of that nature.

In Jersey City in particular, we have a very large senior citizen population so what we are doing now through our community emergency response team training, we are kind of embracing a scenario where we can as we train these teams, you know, as our volunteers throughout the city to give them basic training.

As the gentleman to my right had said too I think it has to be more of a non-emergency, more friendly-type use scenario because folks seem to if they don't really use it enough, they tend not to really—forget how to use it or don't want to use it.

So it is kind of a challenge that we all face. On my side, I have three daughters and I learned that if you didn't speak on Facebook they wouldn't speak to you. So I learned how to use it pretty quickly.

Mrs. BROOKS. I understand. I have the same dilemma in my household. So thank you very much.

I will turn it over to the gentleman from California for any further questions.

Mr. SWALWELL. Sure, thank you.

I wanted to go back to Mr. Adamski. As far as the efforts that FEMA is taking right now to work on open-source formats, what exactly, specifically have you done so far and what can we expect in the next say 6 months to a year?

Mr. ADAMSKI. I appreciate the question. So as I mentioned in my verbal remarks and in my submitted testimony, we do have the disaster recovery center data feed which is a useful tool where folks can go and grab that information.

With regard to what we are currently working on, it is looking at the actual data itself and cleansing the data to make sure it is actually good data as well as looking at the infrastructure to be able to support, to be able to push that information out to users.

I can't give—at this time, I can't give necessarily a time frame, but we have multiple folks in multiple program offices at FEMA looking at it and how it impacts each of their areas and how we can get that information out.

So it is not a—so we are not—the conversations aren't why should we do it, it is how do we get it done?

Mr. SWALWELL. Is there a goal to have all of the data that FEMA puts out in an open-source format that can be accessed by all?

Mr. ADAMSKI. I would say it depends on the data. Obviously, we wouldn't be releasing to—we wouldn't be releasing obviously personally identifiable information to the public or things like that, but if it is either—if it is data from disasters where it is not nec-

essarily tied to an individual, then we will look at that as well as if there are other resource information that we can provide, safety tips as well so others can go and grab it, take that and then put it into their products, their websites, so the public doesn't necessarily need to come to a FEMA product, they can actually get that information, to your point, wherever they are going through their normal course and we can use our partners to be force multipliers that way.

Mr. SWALWELL. Great.

This question is for Mr. Ashwood and Sergeant Kierce.

We talked about that CNA report which highlighted that although we have come a long way, there is still a lot of challenges and the biggest being not enough people in local and State government and even Federal Government who are trained to use social media.

Sergeant Kierce, I think your own example, you know, even for yourself it would seem uncomfortable and you know, I can only imagine that millions of Americans are still just now embracing social media and to ask these employees to use it in a disaster situation which many times, you know, you have no preparation, you don't know that it is coming, and now you are put in the position where you have to get this information out there.

What are you doing locally and what can the Federal Government do to assist efforts to make sure everyone in the department, not just the public relations, not just the communications folks, that everyone who needs to relay communication to the public is trained to do so in that kind of all-of-the-above approach, not just social media but making sure that it reaches everyone who needs to know?

Sergeant KIERCE. Well, I think it is—communicating with the public is always a challenge especially during emergency situations and as I mentioned previously, you know, it seems now from our information approximately 60 percent of the people in the United States are dependent on cellular communication as their primary means.

So I think although the social media networking is very, very good, you also have to be very, very cognizant to the fact that you have to remain in a state of readiness where you go back to the old means of communicating where it goes back to establishing local centers where information can be relayed to citizens in times of need.

The other problem that I do see although it is very, very valuable, the old saying, you can't unring the bell. Once the information is out there, if it is inaccurate, you have to make sure you get it back and get things back on track.

We are in a situation now where we have found that, you know, most of the communication was done during Hurricane Sandy when there was cellular communication capabilities through text and things like that.

So with our—we have recently had a new administration come in and they are very electronic-friendly where we are upgrading all of our communications, our Twitter pages and Facebook pages and also the website. And encouraging people to use these more frequently as opposed to just using them during emergency situations.

Mr. SWALWELL. Great.

Mr. Ashwood, do you briefly have anything to add?

Mr. ASHWOOD. Just basically that the real change is with people of my age, my generation, that we have to realize how people communicate today, and it is not—might not be the way that we communicated growing up.

We don't have land-lines anymore. People use cell phones. It is a different scenario and we have to leave our comfort zone and say how do we integrate, how do we engage, how do we make sure that the messaging is out there?

As far as incorrect information that is out there, a lot of that is self-correcting. You know, we talk about—and Mr. Adamski brought it up—there are other misinformation out there. When the traditional media comes out with misinformation, the only person that can correct that is the same person that told it to you.

Mr. SWALWELL. Right.

Mr. ASHWOOD. Whereas within social media, if incorrect information out there, you are bombarded with other tweets coming in that are telling you that is incorrect information. So it is almost self-correcting in that sense.

What we have to do especially like I said, the people who are my age group and older, we have to conform to the new way that people communicate. We have to say that this is not comfortable to us, but it is something that we have to do for the future.

Remember, there was a time none of us wore seatbelts and none of us had smoke detectors either, so change is coming. It is being done as we are sitting here. It is just going to take a little bit of time.

Mr. SWALWELL. Right.

I think Ms. DeFrancis nailed it when she said we still have to make sure that we use traditional means and I know the Chair was a former prosecutor, I was a former prosecutor, and I think this analogy probably works.

I learned in the courtroom when I was presenting a case to the jury, because of the CSI effect, I had to, you know, you know, have PowerPoint presentations that really grabbed the jurors, but I still had to use, you know, the cold hard evidence and put that on the table and let them see that and it was kind of an all-of-the-above approach.

I couldn't, you know, forget about the new technologies that were out there but people still want the traditional means and I think that applies here and how we use social media in disaster response.

Mrs. BROOKS. Thank you.

I just have a couple more questions. This is actually for Mr. Adamski.

The Department of Homeland Security runs the Virtual Social Media Working Group and—out of the Science and Technology Directorate and I have seen some of those reports, and their mission is to provide best practices to the emergency preparedness and response community on the safe and sustainable use of social media technologies.

Does FEMA have a representative on that working group? If so, who is that? What is their title? Does that person report to you or maybe are you on that group?

Mr. ADAMSKI. No, absolutely. I appreciate the question.

So, we do have a member on the working group. It is our day-to-day social media lead, Jason Lindesmith. He served a 3-year term and my understanding is that they asked members who are part of the working group to serve 3-year terms.

So what we are—and since his term is up, we are looking at a digital communication specialist in one of our regional offices to see if we can help add that second person to the new term.

With regard to the person, the person has a dotted line to me. Jason has a dotted line to me.

Mrs. BROOKS. Okay, thank you. I think it is very important, the work that they are doing because obviously the best practices—this is such an evolving, I think a communications tool that we need to ensure that those best practices are coming together and then are being circulated to the field so to speak to ensure that that training happens.

Talking about one of the biggest barriers, I think, and I think Mr. Ashwood has talked about it, with respect to emergency management agencies' use of social media might be the lack of dedicated personnel and, you know while maybe we wouldn't expect for the Federal Government to pay for that personality per se, the training, the guidance, the ability to train and to use grant funding for this purpose I think is very important.

To what extent, if you know, does FEMA incorporate social media and maybe I will open it up to the others into their EMPG grants, the homeland security grants, you know, whether or not this type of training is provided in FEMA grants. Are you aware?

Mr. ADAMSKI. My understanding is that if it fits within the emergency preparedness, their emergency preparedness activities as well as their homeland security strategy but to your note, though, since I am not in the grants department, we can get you a more definitive answer.

Mrs. BROOKS. Okay, thank you.

Mr. Ashwood or Sergeant Kierce, whether or not you know whether or not social media training, helping with personnel costs—is that an allowable expense at this point?

Mr. ASHWOOD. Well, the emergency management performance grant, some view it as the emergency management preparedness grant. It is not. It is the emergency management performance grant and the flexibility is there for the training, for the social media evolution here as we are at the State level and the local level.

It is really the opportunity that is there for the States to take advantage of. I don't see anything in EMPG that does not allow us to do what our strategy is to engage and incorporate social media with our locals as well as our State.

Mrs. BROOKS. Thank you.

Sergeant Kierce, anything further?

Sergeant KIERCE. Yes, just to echo what Mr. Ashwood said, through the UASI program, you know, there is a considerable amount of dollars available for information sharing, especially between the public and private sectors, which I think is also another avenue that needs to be explored.

Obviously, with our business communities and things like that, they have grave concerns that many times they are not receiving the information as quickly as possible which could ultimately, you know, affect their business capabilities also.

Mrs. BROOKS. With respect to the private sector, I am curious, Ms. DeFrancis, whether or not Red Cross Safe and Well website—it has been a very popular resource during recent disasters.

Google also stated that their Person Finder program has been very important. How are those coordinated? Speaking of the private sector, how are we coordinating Google with Red Cross' Safe and Well program?

Ms. DEFRANCIS. Thank you. Well, we developed Safe and Well in the aftermath of Katrina and as Congressman Palazzo said, that was a long time ago in terms of the development of digital tools.

So we have been constantly refining it and bringing it more up-to-date. We recently in our last redesign of it allowed that not only would you go on Safe and Well and register, but then you could also click on a button to post your update to Facebook or Twitter. So more eyeballs would see that you were doing that.

We are in discussions with Google about People Finder and we certainly understand the importance of getting as many people to see that, but we have certain protocols around Safe and Well that protect privacy of people and we want to make sure that we, in doing that, protect that.

Mrs. BROOKS. I guess I will just open it up to the rest of the panel to discuss whether or not—whether technology companies in your own jurisdictions or Google, Twitter, you know, what kind of communications are any of you having with those companies?

Mr. Ashwood.

Mr. ASHWOOD. Well, I think the key there is the relationship with the private sector. It doesn't matter whether it is just social media or working directly with the private sector on all issues of emergency management.

We have a long way to go to make sure that we are fully incorporated within the private sector and that they are working with us. So I think that is the real key. I know many States are further along than others.

I know with our State that we have a Governor's private sector task force that we are trying to utilize and really put them in the solution business for some of the issues that we have because, quite frankly, they have better answers than we do many of the time—much of the time.

So we need to make sure that that relationship is strong and keeps going and this is just one aspect that we utilize during those conversations.

Mrs. BROOKS. Anyone else? Any other discussions on the private-sector partnerships?

Mr. ADAMSKI. No, absolutely. So when we have that conversation at those information-sharing sessions, we share what information we have whether it is preparedness information or as I said earlier, our disaster recovery center data feeds.

So we can make them aware of the tools that they can ingest into their products as appropriate as well as in some of those information-sharing sessions that we have had that was how we learned

that some of the platforms that are out there and specifically Twitter, you can actually update your status message via text message.

So if you actually sync up your account with your cellular phone number, you can actually update your status message in 140 characters with it just having it two bars for cellular connectivity.

So that piece goes to preparedness to all of the previous discussions about being prepared ahead of time, having a plan as well as letting your friends and family and loved ones know that you are okay and sharing that information with them.

So it is those information-sharing sessions that I think have been valuable and will continue to be valuable.

Mrs. BROOKS. I would like to know and Sergeant Kierce, you mentioned that you had so many—you had posted so much on Twitter that it caused a problem with the number of posts, and in fact, it is my understanding that Twitter, you can be in Twitter jail when you post too many times.

I am curious—what are your different organizations' relationship with Twitter? How are we handling that in these times so that Twitter doesn't shut down your account for a period of time? Did that happen, Sergeant Kierce, or did you just have to deal with the shutdown for a period of time?

Sergeant KIERCE. Well, you know, you are limited as far as characters and things like that, being able to formulate many messages especially of an emergent nature, you know, you have to have particulars in there, so it is a bit of a challenge.

We just dealt with it. You know, and fortunately, when it did come back on-line, it did work, but the—as I say, one of the biggest challenges we are facing now is trying to incorporate all of the different groups.

Special needs is a major concern we have also. So updating our registries and things like that and kind of instructing folks as to if in fact they do fall into that category to embrace use of the social media where we can keep in touch with them; very, very important.

Mrs. BROOKS. Yes, Ms. DeFrancis.

Ms. DEFANCIS. Chairwoman, I would say that we are in constant discussions with all of the companies—Twitter, Facebook, Google—all of them, and I think in terms of Twitter, I think we have stayed out of jail by them—having previous conversations with them, them knowing the types of things that the Red Cross will be doing.

But, you know, we know that the next technological horizon is going to come from those private-sector companies. We are very excited to see what more that we can do with those tools, and I think their involvement in all of this is really important because that is the future and like you said, it is Twitter and Facebook today, we don't know what it will be tomorrow.

We have been surprised by mobile apps. We used to put all that information on long tear sheets and hand them out. Now they are on the convenience of your phone, and so we are pretty excited about that, but it underscores the importance of everybody working together.

Our relationship with the technological companies, the internet companies, is they really want to help. They want to be there on the front lines helping with these solutions.

Mrs. BROOKS. Anyone further?

Well, thank you.

At this time I just really want to thank the witnesses for your valuable testimony. It is building upon what we learned from the private sector in our previous hearing.

As you have stated so eloquently, Ms. DeFrancis, that partnership is critical, it is something we need to be looking to the private sector to bring us the next innovations, but then I think that the challenge is, how do we make our own emergency responders, first responders comfortable with this new technology?

What kind of training is being provided to them? What kind of resources are we dedicating to this? I think we will only see it grow from what happened in Hurricane Katrina to future disasters and unfortunately we all know that there will be natural disasters.

Knock on wood, hopefully no more, you know, terrorist incidences in this country, but we must count on all of your agencies and programs, you know, promoting the use of social media. People are expecting it.

With the data that we have seen, people are expecting us to respond. They are expecting us in Government and in the recovery efforts to help them.

So I just want to thank you all so very much for your efforts, for getting people aware and ready prior to disasters, but then even more importantly, for your recovery and all that you all are doing whether it is in the law enforcement, emergency management, non-profit, Federal Government, I just want to thank you all so very much.

This is going to conclude our hearing at this time. Members of the committee may have some additional questions for the witnesses. If they had to leave, they may have some questions which they can pose to you, ask you to respond to these in writing, and pursuant to committee Rule 7(e), the hearing record will be held open for 10 days.

So without objection, our subcommittee stands adjourned, and I thank you.

[Whereupon, at 11:36 a.m., the subcommittee was adjourned.]

APPENDIX

QUESTION FROM CHAIRWOMAN SUSAN W. BROOKS FOR SHAYNE ADAMSKI

Question. As the public has become increasingly more reliant on the internet, and even FEMA recommends that disaster survivors register for assistance on-line, how do you work with the private sector to ensure that resources are brought in such as mobile cell towers and wi-fi hot spots?

Answer. FEMA works in partnership with all levels of Government when we respond to emergencies. One of the tools used is the National Business Emergency Operations Center (NBEOC) that is activated during responses and is located in the National Response Coordination Center under Emergency Support Function No. 15. This is a primary two-way communication flow with private-sector entities. In collaboration with State/local/Tribal/territorial emergency managers, if there is a need after a disaster for mobile cell towers, Wi-Fi hot spots, or even cell phone charger stations, we utilize the NBEOC and our existing partnerships with those in the private sector to assist with filling this need.

As part of our preparedness messaging before an emergency, we encourage individuals to have a NOAA Weather Radio All-Hazards or Red Cross radio to receive important updates and information from local emergency managers. We also encourage individuals to keep on hand extra batteries for cell phones and if they have a car, to have a phone charger so they can charge their phone from the car battery. This recommendation is in addition to having other basics, like extra food, water, flashlights, and batteries. A comprehensive list of suggested preparedness items can be found at www.ready.gov.

QUESTION FROM CHAIRWOMAN SUSAN W. BROOKS FOR ALBERT ASHWOOD

Question. One of the interesting things we saw in the aftermath of the tornadoes was the use of social media to promote grassroots participation in relief efforts. Specifically, the use of Twitter and Facebook to connect survivors with people who were donating goods, services, shelter, and other essential items. Was the Oklahoma Department of Emergency Management aware of these sites when they first surfaced, and from your perspective, how well did these efforts complement the State's response efforts?

Answer. The Oklahoma Department of Emergency Management was aware of the websites that assisted in the response efforts. Not only did the department know that the websites existed, but the OEM coordinated with Oklahoma Management and Enterprise services and Oklahoma Interactive to develop a disaster-specific website that became the centralized location for disaster information from the Office of Emergency Management. This website received 118,000 visits in just over 2 weeks. This website and the creation of those like it, contributed to the management of the goods that were donated for the masses.

