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THE RESILIENT SOCIAL NETWORK

@OccupySandy #SuperstormSandy

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GLOSSARY OF TERMS

AFGJ	Alliance for Global Justice
CERT	Community emergency response team
COP	Common operating picture
CRM	Constituent relationship management
DHS	Department of Homeland Security
EOC	Emergency operations center
FCO	Federal coordinating officer
FBO	Faith-based organization
FEMA	Federal Emergency Management Agency
HSSAI	Homeland Security Studies and Analysis Institute
IRS	Internal Revenue Service
NGO	Nongovernmental organization
NRCC	National Response Coordination Center
NVOAD	National Voluntary Organizations Active in Disaster
NYC	New York City
NYCHA	New York City Housing Authority
NYPD	New York Police Department
NYU	New York University
OWS	Occupy Wall Street
RCPT	Regional catastrophic planning team
RRCC	Regional response coordination center
SMS	Short Message Service
VAL	Voluntary agency liaison
VOAD	Voluntary organizations active in disaster
VPA	Volunteer Protection Act
YANA	You Are Never Alone

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EXECUTIVE SUMMARY

Around 7:30 p.m. on Monday, October 29, 2012, Superstorm Sandy—a post-tropical cyclone that mixed with an intense low-pressure system—made landfall near Brigantine, New Jersey. It would become the second costliest storm in United States history,[1] responsible for 65 billion dollars in damage and 159 deaths[2] across 24 U.S. states, causing particularly severe damage to New York City (NYC) and New Jersey.

Within hours of Sandy's landfall, members from the Occupy Wall Street movement—a planned social movement comprised of social activists who protested income inequality in the United States—used social media to tap the wider Occupy network for volunteers and aid. Overnight, a volunteer army of young, educated, tech-savvy individuals with time and a desire to help others emerged. In the days, weeks, and months that followed, "Occupy Sandy" became one of the leading humanitarian groups providing relief to survivors across New York City and New Jersey. At its peak, it had grown to an estimated 60,000 volunteers[3]—more than four times the number deployed by the American Red Cross.[4]

Unlike traditional disaster response organizations, there were no appointed leaders, no bureaucracy, no regulations to follow, no pre-defined mission, charter, or strategic plan.

There was just relief.

Purpose

The purpose of this task is to produce case studies on natural and man-made incidents of global consequence, such as Superstorm Sandy, focusing on efforts that improve community resilience. Our primary purpose in conducting a case study on Occupy Sandy is to provide the Department of Homeland Security (DHS) with a basic understanding of an emerging type of grassroots relief collective so that it might enable government to work in a unity of effort with such groups when the next disaster strikes.[5]

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[1] National Oceanic and Atmospheric Administration, National Weather Service, *Service Assessment: Hurricane/Post-Tropical Cyclone Sandy* (Washington, DC: U.S. Department of Commerce, October 22-29, 2012), 10.

[2] "Billion Dollar Events," National Climatic Data Center, National Oceanic and Atmospheric Administration, accessed September 17, 2013, http://www.ncdc.noaa.gov/billions/events.

[3] Federal Emergency Management Agency (FEMA), *Hurricane Sandy: Youthful Energy and Idealism Tackles Real World Disaster Response*, Lessons Learned Information Sharing report (Washington, DC: FEMA, August 22, 2013).

[4] "Red Cross Recovery Efforts to Help Sandy Survivors," American Red Cross, first published December 19, 2012, accessed September 2, 2013, http://www.redcross.org/news/article/Red-Cross-Recovery-Efforts-to-Help-Sandy-Survivors.

[5] As social media becomes widely used by citizens during emergency response, grassroots movements comprised of unaffiliated volunteers like Occupy Sandy will likely play a growing role in future disasters. Since Superstorm Sandy, similar collectives using horizontal organizing and social media have sprung up in Oklahoma following the May 2012 tornados and in Boulder, Colorado, after recent historic flooding.

Objectives

This case study analyzes the formation, operations, and impact of Occupy Sandy during and after Superstorm Sandy. It answers the following questions:

1. What led to the rapid emergence of Occupy Sandy?

2. What was the scope of service Occupy Sandy provided?

3. How did Occupy Sandy choose what services to provide?

4. How was Occupy Sandy governed and managed?

5. What philosophical principles influenced Occupy Sandy?

6. How did Occupy Sandy use technology and social media?

7. What is the state of Occupy Sandy today?

Approach

We drew our findings and recommendations from the following sources:

- interviews with Occupy Sandy members and representatives from disaster relief entities that worked closely with Occupy Sandy during the response and recovery efforts following Superstorm Sandy;[6]

- open-source literature, including primary source material accessible through Occupy websites and social media platforms;

- contact with 35 relief organizations;

- site visits to Manhattan, Queens, Brooklyn, and the New Jersey shore; and

- attendance at borough long-term recovery meetings, New York-based resilience roundtables, and an NYC Mayoral candidate debate in Brighton Beach, New York.

Findings

The scope of Occupy Sandy's efforts should be taken in the context of the total response and recovery effort to Superstorm Sandy. Multiple public and private organizations at the neighborhood, local, state, regional, and federal level conducted massive efforts. However, it is clear from our research that the Occupy movement complemented these efforts and in some cases filled critical gaps. We can learn lessons from Occupy Sandy's successes to ensure a ready and resilient nation.

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[6] We interviewed representatives from FEMA, the American Red Cross, NYC Office of Emergency Management, members of NYC long-term recovery groups, New York Disaster Interfaith Services, National Voluntary Organizations Active in Disaster (NVOAD), Washington, DC VOAD, World Cares Center, CrisesCleanup.org, the U.S. Resilience System, and others.

We divide major findings from this study into two sections: Occupy Sandy success drivers and limitations of traditional relief efforts. We bring attention to these issues as part of the effort to continuously improve the field of emergency management.

Occupy Sandy Success Drivers

1. The horizontal structure of Occupy Sandy enabled the response functionality to be agile.

2. Occupy Sandy used social media as the primary means to attract and mobilize a large volunteer corps, identify real-time community needs, and share information. Open-source software tools were used to coordinate rapid relief services.

3. Occupy Sandy leveraged the Occupy Wall Street infrastructure to emerge within days of the storm.

4. Occupy Sandy leveraged existing community infrastructure to address needs, establish trust relationships, and build local capacity.

5. Transparent practices increased trust among Occupy Sandy members and the general public.

Limitations of Traditional Relief Efforts

1. Emergent grassroots entities, such as Occupy Sandy, were not sufficiently integrated into FEMA's Whole Community approach.

2. Disaster relief entities (e.g., local, state, federal, NGO, unaffiliated entities) lacked a common operating picture to coordinate response efforts during and after Superstorm Sandy.[7]

3. CERT training materials do not address how to use social media to help communities prepare for and respond to disasters.

4. FEMA VALs were constrained by factors that limited their ability to build community resilience.

Recommendations

Certain actions can be taken to minimize the extent of unmet needs and to improve relief structures before the next disaster occurs. Based on our analysis of Occupy Sandy and its role as a grassroots network, we have identified several considerations for the broader DHS response community. We recommend the following:

1. Determine how FEMA can coordinate response activities and capabilities with grassroots entities operating at the local level as a way to further operationalize

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[7] Please see appendix A for a proposed solution to this limitation.

the Whole Community approach to prepare for, respond to, and recover from disasters.

2. Develop capability requirements to increase information sharing across all entities responding to a disaster, including VOADs and emergent relief entities, so the collective can achieve a high degree of shared awareness and understanding of available information.

3. Include guidelines on how to use social media to prepare for and respond to disasters in CERT training materials.[8]

4. Conduct research on the FEMA VAL program to determine whether it adequately aligns with the Whole Community approach (e.g., if the program is adequately resourced for large disasters, and what improvements need to be made to achieve mission success).[9]

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[8] Most studies on the use of social media in disasters have focused on surveillance (e.g., monitoring Twitter feeds to identify trends) or persuasion (e.g., advertising what to do during an emergency). Studies should be conducted to determine how communities can collect data responsibly (evidence-based data) to identify mission critical gaps.

[9] The FEMA VAL program's mission should incorporate the following principles of community resilience: (1) keep locus of control within the community, (2) provide the type of aid that will empower the community to help itself, and (3) support local value chains. Locus of control means control of decision-making about addressing mission critical functions remains with community members. Community capacity building means lessening the community's reliance on dependency aid by investing in community infrastructure and systems with low overhead costs. Support local value chains by injecting resources into community value systems to strengthen the social, ecological, and infrastructure resilience system.

PROJECT OVERVIEW

Introduction

The purpose of this task is to produce case studies on natural and man-made incidents of global consequence, such as Superstorm Sandy. Our primary purpose in conducting a case study on this particular storm is to provide the Department of Homeland Security (DHS) with a basic understanding of a grassroots disaster relief network that emerged in the wake of Superstorm Sandy: Occupy Sandy.

Recent examples from history[10] have led us to believe that networks of capable unaffiliated volunteers,[11] like Occupy Sandy, can emerge after disasters. Our goal is to inform DHS about the capabilities of such networks so that it might enable government to work with them in a unity of effort when the next disaster strikes.

Case Study Objectives

This case study analyzes the formation, operations, and impact of a grassroots disaster relief network called Occupy Sandy during and after Superstorm Sandy. The case study answers the following questions:

1. What led to the rapid emergence of Occupy Sandy?

2. What was the scope of service Occupy Sandy provided?

3. How did Occupy Sandy choose what services to provide?

4. How was Occupy Sandy governed and managed?

5. What philosophical principles influenced Occupy Sandy?

6. How did Occupy Sandy use technology and social media?

7. What is the state of Occupy Sandy today?

Scope

This case study is a bottom-up account of the Occupy Sandy relief movement. This report is not meant to be an encyclopedic account of the movement; there were far too many

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[10] As social media becomes widely used by citizens during emergency response, grassroots movements comprised of unaffiliated volunteers like Occupy Sandy will likely play a growing role in future disasters. Similar collectives using horizontal organizing and social media have sprung up in Oklahoma following the May 2012 tornados and in Boulder, Colorado, after recent historic flooding.

[11] For years, the emergency management community has classified volunteers as "affiliated" and "unaffiliated." Together, these two groups make up the army that provides response and recovery capabilities. However, they are very different. Affiliated volunteers are those connected in some fashion to an existing hierarchical nongovernmental organization (NGO) or faith-based organization (FBO). Non-affiliated (or also called "unaffiliated") volunteers refer to those volunteers not operating under the auspices of an NGO or FBO known to FEMA.

people and activities involved to compile the complete story. Rather, here we attempt to present DHS with a high-level summary of what Occupy Sandy is and, in examining various aspects of the social movement, suggest what might be learned from it.

This scope of this case study is bounded by the following parameters:

- **Grassroots disaster response networks**. We examined only Occupy Sandy. We did not look at other such networks, emergent response groups, voluntary organizations (faith-based and secular), non-profits, or governmental organizations that provided relief following Superstorm Sandy. However, we would like to acknowledge the many individuals and organizations that provided considerable contributions to the health and security of New York City and New Jersey residents in the wake of Superstorm Sandy. Some partnered with Occupy Sandy to provide aid; many did not. But all provided much-needed assistance. Our focus on Occupy Sandy is not meant to understate the positive contributions of these relief organizations.

- **Superstorm Sandy**. We only examined the role of Occupy Sandy in the wake of Superstorm Sandy. We also make brief mention of a core group of Occupy Sandy members who provided strategic advice to the Operation Oklahoma Relief effort following the recent tornadoes in Oklahoma and to Boulder Flood Relief after recent historic flooding in Colorado. These examples illustrate the potential application of strategies used by the movement that might be useful for future disasters.

- **Time**. The majority of our focus centers around the occurrences related to Occupy Sandy from October 29, 2012, to August 2013; however, research further back in time was necessary to trace Occupy Sandy's relationship to the Occupy Wall Street movement.

Methodology

Occupy Sandy is a difficult research subject for many of the same reasons it succeeded in helping so many communities in New York and New Jersey: its membership and infrastructure are fluid, it has no elected leaders, and it conducted autonomous relief activities across a large geographic area. It is a social movement, not so much a tangible group, and so we sought to capture a wide variety of perceptions about the network— both internal perspectives from Occupy Sandy group members and external perspectives from relief officials who worked with them, as well as academics who study them.

We based our findings and recommendations on the following activities:

- reviewing open-source literature, including primary-source material from Occupy websites

- contacting 35 relief organizations

- interviewing 27 individuals involved in the Sandy response, including nine core members of Occupy Sandy

- visiting sites in Manhattan, Queens, Brooklyn, and the New Jersey shore

- attending borough long-term recovery meetings, New York-based resilience roundtables, and a NYC mayoral candidate debate in Brighton Beach, New York

The case study was developed with considerable input from Occupy Sandy members and representatives from organizations that worked closely with Occupy Sandy during the response and recovery efforts following Superstorm Sandy. These included representatives from the Federal Emergency Management Agency (FEMA), the American Red Cross, NYC Office of Emergency Management, members of NYC long-term recovery groups, New York Disaster Interfaith Services, National Voluntary Organizations Active in Disaster (VOAD), World Cares Center, CrisesCleanup.org, the U.S. Resilience System, and representatives from local relief organizations that responded to Superstorm Sandy. We also interviewed published academics who study the Occupy movement.

Interviews followed a similar question-and-answer format but were structured to allow deeper conversations on particular subjects. All of the interviews followed the same method and lasted on average about 90 minutes. Some interviews were conducted over the phone and others were conducted in-person in New York City and New Jersey.

We attribute the opinions expressed herein solely to the individual; they do not represent the organizations for which they work, those of the Homeland Security Studies and Analysis Institute (HSSAI), or of DHS. Due to the sensitive nature of the subject, interview subjects were guaranteed non-attribution in this report. For that reason, attributions are vague but provide necessary context for the reader.

Constraints

The following constraints were present when conducting this study:

- Due to occurrences beyond the control of the task team, research for this case study was conducted over a relatively short time period: June to August, 2013.

- We reached out to many individuals and organizations in hopes of discussing Occupy Sandy; most were willing to speak quite candidly, but many respectfully declined our request.

- Relatively little time has passed since the emergence and work of Occupy Sandy. Activities may still be taking place at the time of this report's publication that could add further clarity to the movement's historical record.

Organization of This Report

There are four main sections to this report:

- Section one provides background information on emergent response groups and the disaster process in the United States following major disasters.

- Section two is a case study of Occupy Sandy, a grassroots disaster relief network that formed in the wake of Superstorm Sandy.

- Section three provides DHS personnel, principally decision makers and operators who may have to work with emergent response groups or grassroots disaster relief networks following a disaster, with synthesized findings from the case study.

- Section four offers recommendations to DHS as a basis for action.

We also offer five substantive appendices. The first is a white paper on a concept for an integrative, real-time crises management tool. The second is an analysis on the use of social media during and following Hurricane Katrina. The third is an example of a service matrix used by responders during Superstorm Sandy. Additional appendices include a primer on legal liability and spontaneous volunteerism and a profile on a grassroots relief organization called Common Ground Relief that emerged in the aftermath of Hurricane Katrina.

INTRODUCTION TO EMERGENT RESPONSE GROUPS AND THE DISASTER PROCESS

Overview of Emergent Response Groups

Individuals gathering together to assist communities in need following a disaster is not a new phenomenon. The historical record on what is known as "spontaneous citizen aid" dates back to the 1917 Halifax explosion, which decimated the cities of Halifax and Dartmouth, Nova Scotia. The explosion occurred when a Norwegian freighter collided with a French ship carrying munitions in the Narrows, a straight connecting Halifax Harbor to the Bedford Basin. The explosion caused almost 2,000 deaths and 9,000 injuries.[12] American, British, and Canadian sailors worked with civilians to transport the injured to shore by boat.[13]

More recent examples of spontaneous aid include:

- Between 630,000 and 1.3 million people assisted relief efforts following the 1995 earthquake in Kobe, Japan.[14]

- Owners of private vessels teamed up with the U.S. Coast Guard to evacuate between 500,000 and 1 million people from Manhattan on September 11, 2001.[15]

- Commercial ferries were the first to reach passengers of the downed US Airways Flight 1589 that crashed into the Hudson River on January 15, 2009.[16]

Groups of volunteers that self-organize spontaneously to address perceived needs are known as "emergent response groups." They are groups with no preexisting membership, tasks, roles, or expertise that can be specified before an event occurs.[17] A major distinction between these groups and traditional response organizations, such as FEMA

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[12] Joseph Scanlon, "Source of Threat and Source of Assistance: The Maritime Aspects of the 1917 Halifax Explosion," *The Northern Mariner*, no.4 (October 2000): 1.

[13] Ibid.

[14] Kathleen Tierney, *Emergency Response: Lessons Learned from the Kobe Earthquake* (Newark, Delaware: University of Delaware Disaster Research Center, 1997).

[15] James Kendra, "Creativity in Emergency Response After The World Trade Center Attack," Preliminary Paper #324 (Newark, Delaware: University of Delaware Disaster Research Center, 2002), 8.

[16] Ashley Kindergan, "Young Captain Reacts Like 'Seasoned Pro,'" *NorthJersey.com*, January 16, 2009, accessed September 6, 2013, http://www.northjersey.com/breakingnews/ferrycaptain011609.html.

[17] The original cite is from T.E. Drabek and D. McEntire 2003 and Tierney et al 2001: Drabek, Thomas E., and David A. McEntire. "Emergent phenomena and the sociology of disaster: lessons, trends and opportunities from the research literature." *Disaster Prevention and Management* 12, no. 2 (2003): 97-112. They are cited by Ann Majchrzak, Sirkka L. Jarvenpaa, and Andrea B. Hollingshead, "Coordinating Expertise Among Emergent Groups Responding to Disasters," *Organization Science* 18, no 1 (January – February 2007): 147.

or the American Red Cross, is that they do not exist before a disaster.[18] According to the academics who coined the term, T. Drabek and D. McEntire, these groups form inter-organizational networks after a disaster which attempt to fill important societal functions made evident by an extreme event.[19] Essentially, they try to solve problems not adequately addressed by traditional response organizations.[20] Typically, these groups have taken on three major activities during response: damage assessment, operations, and coordination.[21] According to E.L. Quarantelli, several factors must be present for such groups to emerge: a supportive social climate, relevant social relationships before a crisis, and resources which include people, materials, and knowledge.[22] These groups are more likely to form when formal response organizations do not meet the needs of disaster victims and when the core competencies of the emergent network match the needs of the population at risk or in need.[23]

Traditionally, such emergent groups leveraged preexisting relationships with neighbors, local friends, and members of community organizations. With the advent of social media and portable communication devices, these groups form through, and come to rely heavily upon, online social connections through social media platforms like Facebook and Twitter (please see appendix C for a discussion on social media use and Hurricane Katrina). Typically, such groups leverage their experiences, informational resources, and existing networks to augment established resources to achieve their goals or fulfill their responsibilities.[24]

These groups often consist of individuals who do not have a response mission; therefore, they have no formal organizational structure, resource streams, or chartered responsibilities as traditional response organizations, such as FEMA and the American

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[18] Majchrzak, Jarvenpaa, and Hollingshead, "Coordinating Expertise Among Emergent Groups Responding to Disasters," 147.

[19] T.E. Drabek and D. McEntire, "Emergent Phenomena and Multiorganizational Coordination in Disasters: Lessons from Research Literature," *International Journal of Mass Emergencies Disasters* 20, no. 2 (2002): 197-224; Laura S. Fernandez, Joseph A. Bargera, and Johan R. van Dorp, "Spontaneous Volunteer Response to Disasters: The Benefits and Consequences of Good Intentions," *Journal of Emergency Management* 4, no. 5 (September-October 2006): 58.

[20] Kathleen Carley and John R. Harrald, *Organizing for Response: Comparing Practice, Plan and Theory*, QR61 (Boulder: Natural Hazards Research and Applications Center, University of Colorado, 1993), 23-92. From Fernandez, Bargera, and van Dorp, "Spontaneous Volunteer Response to Disasters," 59.

[21] R.A. Stallings and E.L. Quarantelli, "Emergent Citizen Groups and Emergency Management," *Public Administrative Review* 45, special issue: "Emergency Management: A Challenge for Public Administration," (1985): 93-100. From Fernandez, Bargera, and van Dorp, "Spontaneous Volunteer Response to Disasters," 59.

[22] Quarantelli, Enrico L., and Russell R. Dynes. "Response to social crisis and disaster." *Annual review of sociology* 3 (1977): 23-49. From Fernandez, Bargera, and van Dorp, "Spontaneous Volunteer Response to Disasters," 60.

[23] Fernandez, Bargera, and van Dorp, "Spontaneous Volunteer Response to Disasters," 60.

[24] James Kendra, "Creativity in Emergency Response After The World Trade Center Attack," 11.

Red Cross, do.[25] The groups tend to be nebulous in nature, with unclear and fluid boundaries concerning the work that they will perform. The membership of emergent response groups fluctuates widely depending on the availability and interest of those volunteering.[26] Thus, it is often difficult to reliably estimate the number of members in an emergent response group, as the organizational structure of these groups tends to be very fluid.

Because of their fluid membership, it can be difficult for more established response groups to engage these emergent groups, as determining who their leadership is and what tasks they are capable of as an organization can be difficult. Often, leadership in these groups is determined by which individuals are available and willing to take on a role of responsibility to accomplish a task. As a result, the leadership within the group may change daily.[27] Also, the physical location of some portion of the group on a given day may determine leadership. In that case, leadership may be spread over a large area with no clear sense of who can make decisions on behalf of the organization. Most of these organizations have little oversight over the activities they undertake.[28] Though some emergent groups remain active in the weeks and months following a disaster, others dissolve quickly once the urgency lessens. This can leave promises of support and aid outstanding. By contrast, established organizations use established organizational structures and engage in routine tasks.[29] They are often mandated to perform specific tasks and execute them under hierarchal governance structures with defined leaders. In other words, there are rules and roles to follow and decision making is centralized.[30]

Studying the aftermath of disasters reveals that neither the hierarchical centralized approach nor the horizontal is a replacement for the other. However, as the importance and frequency of horizontal group engagements grows, it is increasingly important for unity of effort to build in order to deepen bridges between hierarchical institutions and emergent response groups.

Disasters create disruptions in structure and conditions that can lend merit to an improvised response.[31] Even when planning occurs, a disaster "can contribute to communication breakdowns, unexpected conditions, the inability to garner or verify timely information, and an overall difficulty in mobilizing sufficient personnel and

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[25] T.E Drabek and D.A. McEntire, "Emergent Phenomena and the Sociology of Disaster: Lessons, Trends and Opportunities from the Research Literature," *Disaster Prevention and Management* 12, no. 2 (2003): 97-112. Adapted from Tricia Wachtendorf, "Instructor Notes for Session No. 11: Emergent Organizations and Networks in Catastrophic Environment," (Washington, DC: FEMA, n.d.), 11-12.

[26] Ibid.

[27] Wachtendorf, "Instructor Notes for Session No. 11," 11-13.

[28] Ibid.

[29] Ibid, 11-4

[30] Ibid.

[31] K.J. Tierney, "Lessons Learned from Research on Group and Organizational Responses to Disasters" (Paper presented at Countering Terrorism: Lessons Learned from Natural and Technological Disasters, Academy of Sciences, February 28 – March 1, 2002. Adapted from Wachtendorf, "Instructor Notes for Session No. 11," 11-4.

material resources in the days leading up to and immediately following the event."[32] Drabek and McEntire argue that "the command and control model incorrectly assumes that the government is the only responder; information from outside official channels is inaccurate; role abandonment will occur; standard operating procedures will always function; citizens are inept, passive, and irrational; society will break down; and ad hoc emergence of the kind so common in disasters is counterproductive."[33] In contrast, they argue that communication, coordination, and resource management are more effective than command and control approaches.[34]

Emergent response groups perform tasks that can vary widely as they are not working from a clear initial mission. How these tasks are defined and assigned tends to change continuously based on varying environmental conditions. As the individuals in these groups generally have had little to no prior training on how to conduct response work, they tend to learn by undertaking tasks as opposed to working from a set boundary of knowledge.

Much of the work done by emergent response groups is community based. By not coming from the government or an established structure, these organizations are uniquely placed to interact with community members and to provide for needs that may fall outside the scope of the more established response organizations. Emergent response groups establish trust-based relationships within the communities they assist because they understand the culture, are aware of existing needs, and know how to communicate effectively. As the members of these groups tend to be viewed as members of the community by those they are helping, people in the community are more likely to turn to them for assistance than to a government organization. An Associated Press study of those who requested help following Superstorm Sandy found that about a third of people said they turned to their family, friends, and neighbors for help, whereas just 16 percent said they requested assistance from the government.[35]

At the heart of emergent response groups is an altruistic intent. That altruism can be present in government responders. However, because of the rules and responsibilities imposed by hierarchical institutions, community members in need may perceive a government worker's behavior as being shaped more by their institution than by their personal relationships and deep local knowledge and caring for the community.

There is a common view that government generally has the lead on response and recovery efforts. Thus, while an emergent response group may be able to provide a great deal of assistance, their efforts may become sidelined or marginalized if they are not recognized by the state and the federal government. Often, emergent groups are only able to continue working once the government response arrives if they are embedded in or

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[32] Wachtendorf, "Instructor Notes for Session No. 11," 11-9

[33] Drabek and McEntire, "Emergent Phenomena and Multiorganizational Coordination in Disasters," 197-224. Adapted from Wachtendorf, "Instructor Notes for Session No. 11," 11-4.

[34] Ibid.

[35] Trevor Tompson, et al., *Resilience in the Wake of Superstorm Sandy* (Chicago: University of Chicago, Associated Press-NORC Center for Public Affairs Research, June 2013), 6.

working within their own community. According to Waugh and Sylves, "Notwithstanding the call for a Citizen's Corp of volunteers, there has been little indication that the homeland security apparatus knows how to integrate civilians into its operations."[36]

Emergent Response Groups 2.0

Entities that coordinate primarily through social media add a new element to spontaneous volunteerism and emergent response groups. At the start of an event, such organizing volunteers are likely unaffiliated with a traditional relief organization; as they grow, they coalesce and integrate horizontally through social media. Later in an event, they operate like a traditional affiliated organization (e.g., they offer training, conduct screening, raise funds, form tasking, conduct relief activities in the field, etc.).

We posit that this type of collective does not fit the definition of an "emergent response group" because organizing members have a prior relationship with each other. We call this type of organizing a "grassroots disaster relief network." Another distinction can emerge in how the collective ultimately organizes. Such collectives are more likely to organize horizontally when it cannot fit into hierarchical systems and is using social networks that empower horizontalism.[37]

Typically, the collective of volunteers using social media to coordinate with each other do not have the same connectivity to the greater response and recovery effort as do affiliated volunteers of established nongovernmental organizations (NGOs) and faith-based organizations (FBOs). Among the characteristics of established NGOs and FBOs is a close connection, particularly in the field, with FEMA. This connection may include a path to information sharing and management through the VOAD system, through the FEMA VAL, or through the FEMA office that is set up to deal with the disaster. In the absence of such connectivity, grassroots disaster relief networks operate independently of traditional disaster relief organizations. This may result in a duplication of efforts and non collaboration. It may also result in an incomplete COP for all disaster relief entities.

In high-severity crises in which government (and other hierarchical institutions) response has been perceived as poor, or in situations in which a hierarchical institution is held in low regard or has lost the trust of the public, it would not be unexpected for an entity—affiliated or nonaffiliated—with high credibility to be welcome in many communities.[38]

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[36] William L. Waugh, Jr. and Richard T. Sylves, "Organizing the War on Terrorism," *Public Administration Review* 62, special issue: "Democratic Governance in the Aftermath of September 11, 2001," (September 2002): 153.

[37] In-person interview with Michael McDonald, DrPH, U.S. Resilience System, September 18, 2013.

[38] After Katrina, a community-initiated volunteer organization offering assistance, mutual aid, and support called Common Ground Relief emerged in the lower 9th Ward of New Orleans. It rose out of the immediate crisis created by Katrina after community members thought "it was immediately clear that government and official relief organizations were abandoning thousands of individuals and families." It operates today as a 501(c)(3), not-for-profit organization. For more on Common Ground Relief, see appendix E. Adapted from: *Volunteer Handbook*, Common Ground Relief (New Orleans, LA: Common Ground Relief, May 25, 2011).

In circumstances of rising public distrust of hierarchical institutions, as is the case in many communities within the United States today, it would not be unusual for horizontal grassroots disaster relief networks with strong affiliations within certain communities to be chosen over professional response organizations that might try to assert control over a complex operating environment in a disaster.

In the next section, we provide a brief overview of the government's role in emergency management following major disasters.

Overview of the Disaster Process & Disaster Aid Programs

> *Government can and will continue to serve disaster survivors. However, we fully recognize that a government-centric approach to disaster management will not be enough to meet the challenges posed by a catastrophic incident. That is why we must fully engage our entire societal capacity...*

> Craig Fugate, FEMA administrator, before the United States House Transportation and Infrastructure Committee, Subcommittee on Economic Development, Public Buildings, and Emergency Management at the Rayburn House Office Building, March 30, 2011[39]

The Disaster Process

Nearly all requests for emergency assistance after disasters begin with local requests for assistance and local responses dispatched to meet that request, whether for a localized event or a multistate disaster. Almost all requests for assistance are managed exclusively with local resources. However, when needs exceed the immediate locality's capacity, initial responders request additional resources. If the local jurisdiction has the capacity, they will send additional resources. However, as no jurisdiction has unlimited resources, communities can become overwhelmed.

States exercise regulatory control over the organization and administration of emergency response functions. Local jurisdictions like cities, towns, counties, and parishes retain the responsibility for delivering emergency services.[40]

When a larger need arises, most jurisdictions have the ability to call on neighboring communities for help, often through prearranged agreements, commonly referred to as mutual aid. The concept of mutual aid assumes that no single community has the resources and capabilities to deal with every disaster. Mutual aid often encompasses multiple types of agreements through which jurisdictions can request assistance from each other. The formality, level of assistance, and mechanisms for request vary widely,

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[39] Adapted from: *A Whole Community Approach to Emergency Management: Principles, Themes, and Pathways for Action*, FDOC 104-008-1 (Washington: FEMA, December 2011).

[40] The National Response Framework emphasizes the idea of local primacy. Local primacy is one of the foundational concepts of U.S. disaster response. It places the responsibility for delivering emergency services following natural and man-made incidents to the county, parish, city, or town affected by an incident.

but the concept is still the same: neighboring communities contributing their resources to assist in a crisis.

In some situations, the size or impact of an incident is so great that local aid agreements are insufficient. When local-area systems are overwhelmed, impacted communities may request additional assistance from the state in which they are located. States have multiple mechanisms for responding to these requests and delivering state or local resources and capabilities where needed.

Depending on the scope of the incident, including the severity or breadth of damage, state resources or capabilities may also be overwhelmed. A state may request assistance from other states through the Emergency Management Assistance Compact as state capabilities are exceeded or strained. The compact is a pre-established mutual aid agreement between all of the states and territories to share state or local resources in the event of a disaster.

Between considering fiscal restraints, transportation or travel time, and maintaining a readiness posture, there are times when the available states resources are insufficient. In these cases, states may request assistance from the federal government. These requests generally take the form of a declaration of a state of emergency by the governor, who then requests that the president declare an emergency or major disaster. Once the president makes such a declaration, FEMA takes the lead role in delivering federal resources and capabilities to help achieve the governor's response and recovery priorities. The Secretary of Homeland Security, in coordination with other federal departments and agencies, initiates response actions, including the establishment of the joint field office. Within the joint field office, senior federal representatives lead coordination efforts and direct staff to share information and establish priorities in delivering aid.[41]

At each level of government, an emergency operations center (EOC) coordinates the requests for and deployment of outside resources. Local governments activate a local EOC to implement a local emergency management plan, state governments activate a state EOC, and, when necessary, the federal government will activate a regional response coordination center (RRCC) or the national response coordination center (NRCC), which operates under the appropriate national-level plans.

Local EOCs communicate with emergency responders in the field and process requests for additional resources. They either find those resources through existing agreements and relationships or request state assistance in finding the necessary resources.

Each center is responsible for activating response agreements with other entities, communicating needs and situational information to other EOCs, and coordinating with other public agencies and private organizations at the appropriate level.

The above sequence of emergency response also helps to describe the response roles that exist at each level. Each response step takes time, as do the requests and declarations. During a disaster, the local emergency responders have very similar roles to those they have ordinarily. The police department, fire department, emergency medical services, and

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[41] FEMA, *Joint Field Office Activation and Operations, Interagency Integrated Standard Operating Procedure*, Version 8.3 (Washington: FEMA, April 28, 2006), iii.

local public works departments continue to try to provide emergency services for their local community. EOCs work as necessary to communicate needs, available resources, and situational information to and from their partners. These partners may include other local government response organizations, local EOCs, the state EOC, local volunteer organizations, and other private sector entities. During a disaster, however, local capabilities may be overwhelmed.

Once a state EOC has been activated, its role includes monitoring the situation, reviewing requests for assistance, and providing available resources to meet requests or requesting additional resources. Requests for additional resources may go to other local governments, other state governments, the RRCC or NRCC, or private sector and non-for-profit organizations.[42]

FEMA's RRCCs and NRCC may be activated in anticipation of or immediately following a serious incident. Each of the 10 FEMA regional offices maintains an RRCC, while FEMA headquarters in Washington, DC, maintains the NRCC. Each RRCC coordinates "Federal response efforts…by maintaining connectivity with State EOCs, State fusion centers, Federal Executive Boards, and other Federal and State operations and coordination centers that have the potential to contribute to development of situational awareness."[43]

Disaster Aid Programs

Following a declaration of a major disaster or emergency, the president appoints a federal coordinating officer (FCO) to implement the relevant types of assistance available under the Stafford Act.[44] The Act allows the federal government to offer direct assistance in the immediate aftermath of a major disaster to provide for the immediate needs of disaster survivors. These may include life-saving assistance, search and rescue missions, evacuations, food and water distribution, and rental payments for temporary housing.[45]

Once immediate lifesaving and sustaining needs are met, other Stafford Act programs begin to help communities recover. The FEMA Public Assistance Grant Program provides funds for debris removal, repair or replacement of public facilities, and hazard mitigation projects. Some of the assistance available to individuals and families through the FEMA Individual Assistance Program includes:

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[42] Emergency Management Institute IS-208a course: State Disaster Management, Unit 3, Federal Emergency Management Agency, accessed September 9, 2013, http://training.fema.gov/EMIWeb/IS/courseOverview.aspx?code=is-208.a.

[43] Emergency Management Institute IS-208a course: State Disaster Management, Unit 1, Federal Emergency Management Agency, accessed September 9, 2013, http://training.fema.gov/EMIWeb/IS/courseOverview.aspx?code=is-208.a.

[44] Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 100-707, signed into law November 23, 1988; amended the Disaster Relief Act of 1974, Public Law 93-288. This act constitutes the statutory authority for most federal disaster response activities.

[45] Ibid, 42 U.S.C. 5170b (2007)

- grants to "repair … owner-occupied private residences, utilities, and residential infrastructure (such as a private access route) damaged by a major disaster to a safe and sanitary living or functioning condition; and eligible hazard mitigation measures"[46]

- grants for other needs assistance including "disaster related medical, dental, child care, and funeral expenses… [and] to address personal property, transportation, and other necessary expenses or serious needs resulting from the major disaster"[47]

- unemployment assistance "for workers who temporarily lost jobs because of the disaster and who did not qualify for State benefits, such as self-employed individuals… farmers, migrant and seasonal workers, and those who have insufficient quarters to qualify for other unemployment compensation"[48]

- additional services not covered by insurance, including temporary housing assistance, legal counseling, and crisis counseling[49]

In all of these examples, assistance is only available to cover losses in excess of any insurance coverage. The Stafford Act limits the amount of direct financial assistance, as discussed in the first two bullets, to $25,000.[50] For needs in excess of this amount, FEMA and the Small Business Administration make low-interest loans for additional residential, personal property, and small business losses not covered by insurance available.[51]

Other federal, state, local, and volunteer agencies offer additional individual assistance based on their mission. For example, the Farm Service Agency offers loans to farmers; the Department of Veterans Affairs offers various benefits to veterans; and the Internal Revenue Service offers tax refunds and excise tax relief.[52]

In addition to the types of assistance discussed, FEMA provides longer-term assistance to states and local communities for creating and executing community recovery plans. This assistance does not consist of grants; instead, it offers expertise needed to coordinate

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[46] Ibid, 42 U.S.C. 5174(c)(2)(a)(i) (2007)

[47] Ibid, 42 U.S.C. 5174(e)(2) (2007)

[48] Kirsten E. Gillibrand, *A Guide to Disaster Assistance and Relief Funding: How to Navigate the Disaster Assistance Process* (Washington, DC: United States Senate, December 2012), 8.

[49] "Individuals and Households Program," DisasterAssistance.gov, first accessed August 26, 2013, http://www.disasterassistance.gov/disaster-assistance/forms-of-assistance/4473/1/805 .

[50] Robert T. Stafford Disaster Relief and Emergency Assistance Act Section, Federal Emergency Management Agency 592, 408 (h), (June 2007).

[51] Gillibrand, *A Guide to Disaster Assistance and Relief Funding,* 8.

[52] Regina Fegan and Michael T. Olexa, "After the Disaster," in *The Disaster Handbook*, ed. Carol J. Lehtola (Florida: University of Florida Institute of Food and Agricultural Sciences Extension, July 2003), 2, accessed August 26, 2013, http://disaster.ifas.ufl.edu/PDFS/CHAP04/D04-32.PDF.

planning which may include Whole Community[53] partnerships that enable cooperative engagements, and additional funding mechanisms for the implementation of recovery and mitigation plans. Immediately following a presidential declaration and a needs determination, FEMA's federal disaster recovery coordinators and their staff coordinate the relationship building required to implement an effective community-based recovery.

Governments at all levels have recognized that during a true disaster, local emergency responders will almost certainly be overwhelmed and unable to respond to calls for assistance from community members. As such, FEMA assists local responders through additional teams that address needs at the community level. The CERT program trains individuals in a community on basic "life-saving skills with emphasis on decision making skills, rescuer safety, and doing the greatest good for the greatest number."[54] The hope is that these CERT-trained individuals will be able to provide some immediate aid to locals when fire departments, emergency medical services, or search and rescue are stretched too thin to be of immediate assistance. Pre event planning is a large part of the CERT mission, with the goal of reducing a community's emergency needs and to manage existing resources until professional assistance becomes available.[55] CERTs are also encouraged to engage all who will be involved in disaster response (e.g., government, volunteer groups, the private sector, schools, community organizations, etc.) in planning and coordinating efforts so that individuals and groups can be prepared to use their capabilities that are needed to support emergency functions in the immediate post-disaster period.[56] FEMA also deploys VALs to coordinate relationships among federal, state, and tribal governments, as well as voluntary faith-based and community organizations, in regions affected by disaster.

As federal responsibilities are completed, the staff demobilizes. Depending on the disaster, search and rescue teams, Disaster Emergency Communications Group, Individual Assistance Group, Public Assistance Group, and the FCO will finalize their on-scene work and return home leaving the federal disaster recovery coordinators (and staff) to continue providing advice and expertise to communities that often have years of work left before them.

Additionally, in major disasters, the National Guard deploys to support the Army Corps of Engineers by facilitating the delivery of services; offering technical assistance and

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[53] The key principles of FEMA's Whole Community approach to emergency management are (a) to understand and meet the actual needs of the whole community; (b) to engage and empower all parts of the community; and (c) to strengthen what works well in communities on a daily basis.

[54] "About Community Emergency Response Team," FEMA, last modified August 8, 2012, accessed 10 September 2013, http://www.fema.gov/community-emergency-response-teams/about-community-emergency-response-team.

[55] FEMA, *Community Emergency Response Team Basic Training Participant Manual* (Washington, DC: FEMA, January 2011), 3.

[56] Ibid.

expertise; and providing construction management, logistics planning, management and sustainment capabilities.[57]

Voluntary Organizations Active in Disaster (VOAD) – Filling the Gaps

People affected by disasters often seek assistance. Sometimes, they may be frustrated by the gaps between what they need to get back on their feet and what government response and recovery entities can provide. Though these gaps may only result from the logical application of government-supported efforts, they can still create serious obstacles to personal and community recovery.

> "Even in small- and medium-sized disasters, which the government is generally effective at managing, significant access and service gaps still exist. In large-scale disasters or catastrophes, government resources and capabilities can be overwhelmed."
>
> — FEMA, *A Whole Community Approach to Emergency Management: Principles, Themes, and Pathways for Action*

The current restraints on the federal system are one reason for local primacy in emergency response. Another is that local jurisdictions are closer to the communities for which they are responsible. It is only natural that they take the primary role in responding to incidents. Since they are local, they are better able to plan and prepare for the needs and the hazards or threats that their community is likely to face.

Local resources are also owned and operated closer to the site of the incidents. When the need for resources exceeds local capabilities, additional resources are literally farther away. This is true whether a fire department is assisting a neighboring county or the federal government is responding to a major disaster declaration. As a result, the federal government recommends that everyone prepare ahead of time so that individuals can care for themselves for at least 72 hours[58] during a complete outage of services. However, not everyone has the ability to prepare to live without utilities or other services for several days. Some are dependent on the assistance of others on a daily basis.

By definition, during the initial stages of large disasters, emergency responders try to understand the scope and scale of the problem fully. During these first few days, community-based groups can have a tremendous impact in helping to meet the immediate survival and life sustaining needs of their neighbors. In fact, at each stage of the process described, there are gaps between the needs of affected individuals and what can be done by traditional government-based response.

In addition to the government-managed entities discussed so far, voluntary organizations play a large role in responding to and recovering from incidents of all sizes. Following a home fire, some families may be experiencing a very localized disaster. Usually the local government response components do not help families with the initial steps to recovery,

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[57] Unit 1: Disaster Management Roles and Responsibilities," State Disaster Management Course—IS 208.a, accessed September 10, 2013, http://training.fema.gov/emiweb/is/IS208A/02_SDM_Unit_01_508.pdf, 1.13 and 1.14.

[58] "Build A Kit," Ready.gov, accessed September 6, 2013, http://www.ready.gov/build-a-kit.

instead the American Red Cross, Salvation Army, or other local disaster relief services do.[59]

Collectively, VOADs provide many types of assistance to people affected by disasters of all sizes. This assistance is tailored to the specific needs of the local survivors of each disaster. A previous HSSAI study[60] compiled a list of the categories of support provided by smaller and less well-known FBOs and other NGOs in the wake of hurricanes Katrina and Rita. The report found that these groups provided the following services:[61]

- **Shelter services**: sheltering evacuees, relief workers, volunteers, and disaster survivors

- **Food services**: preparing meals, serving meals, and distributing prepared or packaged food

- **Medical services**: providing first aid, providing medical care, and assisting with prescription medication

- **Personal hygiene services**: providing toilets and showers, providing toiletry items, and providing laundry facilities

- **Mental health and spiritual support**

- **Physical reconstruction services**: debris, tree, and mud removal; clean-up; and home repair

- **Logistics management services**: assessing community needs and storing, transporting, and distributing supplies

- **Transportation management and services**: evacuee and survivor shuttles, relief worker shuttles, and evacuee and survivor relocation

- **Children's services**: child care services, recreational activities, and educational services

- **Case management and related services**: providing information, referral services, assisting with forms and applications, and financial relief

Large VOADs that operate in the United States include the American Red Cross and the Salvation Army. These organizations are typically the most visible agencies working toward disaster relief alongside FEMA and the National Guard. The Salvation Army operates thousands of hubs in communities across the United States. It provides disaster relief services (e.g., food, warmth, shelter, etc.) adapted to the specific needs of

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[59] "Home Fires," FEMA, last modified April 3, 2013, accessed September 10, 2013, http://www.ready.gov/fires.

[60] Peter Hull, et al., *Heralding Unheard Voices: The Role of Faith-Based Organizations and Nongovernmental Organizations During Disasters* (Falls Church, VA: HSSAI, December 18, 2006).

[61] Ibid.

communities and scalable according to the magnitude of the disaster.[62] The American Red Cross deploys to approximately 70,000 disasters in the United States each year, supporting FEMA and other VOADs by providing shelter, food, health, and mental health services. The Red Cross focuses on helping families and communities recover, and agrees to operate under the FCO advice and direction.[63]

Superstorm Sandy, like Hurricane Katrina, overwhelmed the existing disaster response architecture described above.[64] Such large-scale disasters that strike metropolitan areas will disrupt the lives of millions and create many needs. VOADs step in to compliment the great work of traditional relief organizations. However, as Superstorm Sandy proved, many needs remain. Individuals from within affected communities came together to fill gaps when external assistance was insufficient.

FEMA states in a recently published Strategic Foresight Initiative report that the "forces of global environmental change are expected to bring major challenges and opportunities."[65] If there will be more disasters in the future, and there will be, then there will be more opportunities, opportunities like Occupy Sandy.

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[62] "About Us, The Salvation Army Emergency Disaster Services," Salvation Army Emergency Disaster Services, accessed September 10, 2013, http://disaster.salvationarmyusa.org/aboutus/?ourservices.

[63] The American Red Cross provides support to FEMA through emergency support function-6 Mass Care, Emergency Assistance, Housing, and Human Services. This responsibility includes: manage and coordinate food, shelter, and first aid for victims; provide bulk distribution of relief supplies; operate a system to assist family reunification when state response and recovery needs exceed their capabilities. Adapted from: "Federal Emergency Management Agency, Unit 1: Disaster Management Roles and Responsibilities" Emergency Management Institute State Disaster Management Course—IS 208.a, accessed September 10, 2013, http://training.fema.gov/emiweb/is/IS208A/02_SDM_Unit_01_508.pdf, 1.11; and "What We Do, Red Cross, Disaster Relief, Emergency Management," American Red Cross Disaster Relief, accessed September 15, 2013, http://www.redcross.org/what-we-do.

[64] Hull, et al., *Heralding Unheard Voices*

[65] FEMA, *Toward More Resilient Futures: Putting Foresight Into Practice*. *Highlights from the Strategic Foresight Initiative*, (Washington, DC: FEMA, May 9, 2013), 4.

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CASE STUDY: OCCUPY SANDY

This section addresses basic questions about the formation, operation, and impact of the grassroots disaster relief network called Occupy Sandy.

Specifically, we attempt to answer the following questions about Occupy Sandy:

1. What led to the rapid emergence of Occupy Sandy?

2. What was the scope of services provided by Occupy Sandy?

3. How did Occupy Sandy choose what services to provide?

4. How did Occupy Sandy govern?

5. What philosophies drove Occupy Sandy?

6. How did Occupy Sandy use technology and social media?

7. What is the state of Occupy Sandy today?

A Perfect Storm

Around 7:30 p.m. on Monday, October 29, 2013, Superstorm Sandy—a post-tropical cyclone that mixed with an intense low-pressure system—made landfall near Brigantine, New Jersey.

Superstorm Sandy was no ordinary storm. It took an atypical path toward land, tracking north along the Eastern Seaboard. A mid- and upper-level wind pattern pushed it westward toward the U.S. mainland. It drew from two sources of energy: warm Atlantic Ocean waters and a turbulent mixture of warm and cold air masses.[66] This expanded the storm's category 1 hurricane-strength winds to a radius of 100 nautical miles from the eye, much larger than a typical hurricane. A blocking pattern to the east directed the storm over the country's most populated area. Rain and snow pounded inland areas along the East Coast and record-breaking storm surges inundated coastal areas around New York and New Jersey. The storm surge reached approximately 300,000 homes in New York City's five boroughs;[67] Mayor Michael Bloomberg estimated that the storm caused $19 billion in damages in NYC alone.[68] In addition, more than 376,000 homes in New

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[66] Scott Sistek, "What Makes Superstorm Sandy So Unusual?" KOMO.news.com, October 27, 2012, accessed September 10, 2013, http://www.komonews.com/weather/blogs/scott/What-makes-superstorm-Sandy-so-unusual--176113171.html.

[67] Furman Center for Real Estate and Urban Policy, *Sandy's Effects on Housing in New York City*, Fact brief, March 2012, accessed September 10, 2013, http://furmancenter.org/files/publications/SandysEffectsOnHousingInNYC.pdf, 2.

[68] Office of the Mayor, *Mayor Bloomberg Releases Hurricane Sandy Request*, News from the Blue Room, NYC.gov, November 26, 2013, accessed September 12, 2013, http://www.nyc.gov/portal/site/nycgov/menuitem.c0935b9a57bb4ef3daf2f1c701c789a0/index.jsp?pageID=mayor_press_release&catID=1194&doc_name=http%3A%2F%2Fwww.nyc.gov%2Fhtml%2Fom%2Fhtml%2F2012b%2Fpr443-12.html&cc=unused1978&rc=1194&ndi=1.

Jersey were damaged or destroyed.[69] In the United States, Sandy was associated with 72 deaths and indirectly responsible for at least 75 more (i.e., relating to unsafe or unhealthy conditions).[70]

Occupy Sandy

In early November 2012, amid the fog of the response to Superstorm Sandy, a voice interrupted an invite-only NYC VOAD teleconference, where participant organizations were discussing what services they were providing and what resources they needed.[71]

"Hi this is [name redacted]. This is Occupy." said the voice.

Conversation stopped.

An official on that call recalls thinking, "why is [Occupy Wall Street] here?" and expressed that she believed most others on the call—FEMA, the American Red Cross, Salvation Army, and many other voluntary relief organizations—felt the same way. The moderator asked the voice to explain there presence.

The voice explained that it was a representative of "Occupy Sandy," which is a part of Occupy Wall Street but not directly associated with it.

> "If you see a need in your community, work to fill it. We will do everything we can to support your efforts! Find like minded folks, band together, and pool your resources. Start with finding a donation drop off location. Then find a local certified kitchen that will donate their space. Ideal if both are located in the same building. Go door to door. Meet your neighbors. Reach out to local churches, schools, community centers, and businesses. If we can do it, you can too! All Power to the People. Rock on, NYC."
>
> — Occupy Sandy's first Facebook post on November 1, 2012

"At that point, we all became very guarded in what we said," the official told us. Personally, and here she said she could not speak for the group, she perceived that the uninvited caller was a protestor and remembers thinking *we know what we are doing here, they just do not get it.*

In the days, weeks, and months that followed, not only did Occupy Sandy, a humanitarian relief offshoot of the Occupy Wall Street movement, convince this official that they *get it*, but they convinced local communities, the mainstream media, and an estimated 60,000

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[69] Representative Christopher H. Smith (NY), "Floor Remarks on Sandy Supplemental," U.S. House of Representatives (January 2, 2013), accessed September 11, 2013, http://chrissmith.house.gov/uploadedfiles/floor_remarks_on_sandy_jan_2_2013.pdf.

[70] National Weather Service, *Hurricane/Post-Tropical Cyclone Sandy, October 22–29, 2012, Service Assessment* (Silver Spring, MD: U.S. National Oceanic and Atmospheric Administration, May 2013), 10.

[71] Phone interview with Regional Catastrophic Planning Team member, interviewed by Eric Ambinder and David Jennings, July 23, 2013.

volunteers[72]—more than four times the number deployed by the American Red Cross—that they understood what to do.[73]

Seemingly out of nowhere emerged a volunteer army of young, educated, tech-savvy individuals with time and a desire to help others. Unlike traditional disaster response organizations, there were no leaders, no bureaucracy, no regulations to follow, no pre-defined mission, charter, or strategic plan. Most importantly, there was no "no."

What Led to the Rapid Emergence of Occupy Sandy?

A week before Superstorm Sandy made landfall on Monday, October 29, 2012, a small group of Occupy Wall Street[74] (OWS) members had been discussing the storm over social media.[75] The night of the storm, as reports of the storm's damage funneled through social and mainstream media, they began exchanging texts about how they could help and whether there was interest in starting a relief effort.[76]

Unlike OWS, what happened next was neither planned nor expected. Before sunrise the next morning, a small group of Occupiers drove to the devastated Red Hook neighborhood of Brooklyn[77] to canvass for needs and to bring food. Later that evening, they drove to the Rockaways neighborhood of Queens to ask people what they needed.

They turned to social media for help, and things began to mesh.

> We need to make food, we need a kitchen. The Red Hook Initiative has a kitchen but it's too small. Phone calls. There's a church on Fourth Avenue at Fifty-fifth Street, in Sunset Park, St. Jacobi, whose pastor likes Occupy—they have a big kitchen. They also have a hall that can be used as a headquarters to receive donations. Done—meet there. Get in the car.

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[72] FEMA, *Hurricane Sandy: Youthful Energy and Idealism Tackles Real World Disaster Response*.

[73] "Red Cross Recovery Efforts to Help Sandy Survivors," American Red Cross, first published December 19, 2012, accessed September 2, 2013, http://www.redcross.org/news/article/Red-Cross-Recovery-Efforts-to-Help-Sandy-Survivors.

[74] Occupy Wall Street was a planned social movement consisted of social activists who protested income inequality in the United States and the perceived structure behind it, the U.S. financial system. The group garnered national attention in September 2011 by occupying Zuccotti Park in lower Manhattan and for coining the phrase, "We are the 99 percent." The New York Police Department (NYPD) forcibly evicted OWS members from Zuccotti Park on November 15, 2012. Adapted from: R. Milkman, Stephanie Luce, and Penny Lewis, *Changing the Subject: A Bottom-Up Account of Occupy Wall Street* (New York: City University of New York, n.d.), 2.

[75] Esteve Giraud, "Interview with Devin Balkind: Sahana and Occupy Sandy Relief Efforts: Sahana Software Foundation," Sahana Software Foundation, accessed September 3, 2013, http://sahanafoundation.org/interview-with-devin-balkind-sahana-and-occupy-sandy-relief-efforts/.

[76] Sharon Lerner, "How Sandy Saved Occupy," *The American Prospects* (blog) November 27, 2012, accessed September 4, 2013, http://prospect.org/article/how-sandy-saved-occupy; and Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 20, 2012, transcript provided on the Occupy Sandy website.

[77] Larissa MacFarquhar, "Occupy Sandy," *The New Yorker*, November 3, 2012, accessed September 11, 2013, http://www.newyorker.com/online/blogs/newsdesk/2012/11/occupy-sandy.html.

Somebody set up a Web site, there needs to be a short, clear list of what is needed and where to take it. Make sure it stays updated. Phone calls. We need volunteers to sort donations. We need sandwiches made. We need tinfoil to wrap the sandwiches in. We need people to drive out to Zone A to deliver supplies. People are running low on gas, not everyone can get to Sunset Park. Phone calls. Satellite drop-off centers for donations established in Fort Greene, Park Slope, Williamsburg, and Bed-Stuy. Phone calls. Coordinate with people in Manhattan—CAAAV, an Asian-American organization on Hester Street, is asking for volunteers in Chinatown. Can anyone get to Chinatown? The people at Good Old Lower East Side need volunteers to knock on doors in housing projects to see if old or sick people need help—they're doing it between twelve and six every day and they need as many people as they can get (we're sending hundreds). Someone needs to go out to the Rockaways and figure out a distribution center. Maybe St. Francis de Sales. It's on 129th Street. Remember, phones don't work there. Neither do traffic lights.[78]

 "We had the networks in place and so it was easy to reach out to people," recalls an Occupy Sandy organizer who also participated in OWS.[79] The first thing they did to bring attention to the broken situation and ask for help was to set up a Facebook account, a Twitter hashtag[80] (#SandyAid), and a WePay account.[81] At that point, expectations were not much higher than raising a few hundred dollars or mobilizing 40 volunteers.[82]

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[78] Ibid.

[79] Personal interview with Occupy Sandy members, interviewed by Eric Ambinder and David Jennings, Brooklyn, NY, July 16, 2013.

[80] The twitter account @OccupySandy was started on November 6, about a week following the storm.

[81] Sharon Lerner, "How Sandy Saved Occupy." See also: Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 20, 2012.

[82] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 20, 2012, transcript provided on the Occupy Sandy website.

2011

June 9, 2011

Adbusters, a Canadian anti-consumerist and anti-capitalist magazine, registers the domain name 'OccupyWallStreet.org'.[1]

July 13, 2011

Adbusters posts a blog post and sends out a 'tactical email'[2] suggesting that on September 17, 2011, people should "flood into lower Manhattan, set up tents, kitchens, peaceful barricades and occupy Wall Street for a few months." The post includes a hashtag (#OccupyWallStreet) and a logo (a ballerina standing on top of the Wall Street Bull).[3]

September 17, 2011

Nearly 1000 people make their way to Zuccotti Park for a general assembly meeting,[4] since the police have used metal barricades to prevent protesters from staying on Wall Street near the stock exchange.[5] Around 150[6] to 300 of them camp out in the Park and stay overnight.

Mid-September 2011

Occupy Wall Street (OWS) has popularized the term 'the 99 percent'.

October 1, 2011

700 of the protestors are arrested when they march on the Brooklyn Bridge.

October 5, 2011

The Occupy movement has spread to over 50 cities.[7]

Mid-October 2011

Similar rallies are held by supporters in Tokyo, Sydney, Madrid and London.[8]

November 17, 2011

Over 200 people are arrested on the two-month anniversary of the protests.

JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER

2012

September 17, 2012

The protestors continue to camp out in Zuccotti park and an extra 300-400 show up to commemorate the one-year anniversary of the protests. 70 protestors are arrested. By this date, the New York Police Department had made over 1,800 arrests in conjunction with OWS activities.[9]

October 30, 2012

Hurricane Sandy makes landfall in New York and within hours members of OWS decide to help out with response and set up headquarters at St. Jacobi Church.

October 31, 2012

By the morning after the storm's landfall, hundreds had made their way to St. Jacobi with donations and were offering to help out. Occupy Sandy (OS) creates a Facebook page,[10] several websites,[11] a Twitter account,[12] a Flickr account, an Amazon.com wedding registry[13] and a WePay Account.

November 2, 2012

OS opens a Recovery Center at 59th Street in Far Rockaway. OS also creates a Tumblr account for individuals to share their stories.[14]

November 5, 2012

OS' Twitter account has over 5,000 followers.[15]

November 9, 2012

OS and YANA Community Center set up a free medical clinic in Rockway Park.[16]

November 11, 2012

OS has received $100,000 worth of supplies from their Amazon.com wedding registry.[17]

November 17, 2012

OS' Facebook page has over 25,000 'likes'.[18]

November 27, 2012

OS has used its website to raise over $600,000 in cash donations.[19]

November 30, 2012

OS has received more than $700,000 worth of supplies from their Amazon.com wedding registry.[20]

December 3, 2012

OS has raised $544,300 using its WePay account.[21]

December 4, 2012

OS' Twitter account has over 12,000 followers.[22]

December 18, 2012

OS has raised around $700,000 using its WePay account.[23]

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21. "Occupy Sandy Network Assembly Meeting." December 4, 2012.
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Figure 1. Timeline of Occupy Wall Street / Occupy Sandy events

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Occupiers were accustomed to using the Internet and social media to broadcast an opinion or ask for help during times of crises.[83] So they asked the team that built www.occupywallstreet.net to set up a website. Interoccupy[84]—the string that connects the Occupy movements globally[85]—pitched in to coordinate the formation. It developed an "Interoccupy Hub," which consolidated a few initial Occupy Sandy social media feeds, the WePay account, and other resources to make the network's two-way exchange of information available to the public.[86]

The need for physical space grew as word spread across the Occupy network. A coalition of neighborhood volunteers, community organizers, OWS-affiliated individuals, a representative working for councilwoman Christine Quinn and a local nonprofit, Red Hook Initiative, set up an operations hub and storage space in the Red Hook neighborhood of Brooklyn on Tuesday, October 30. Organizers would acknowledge that securing these first spaces signified the official start of Occupy Sandy.[87] Also on that Tuesday, OccupySandy.net published information on how to receive updates from the network, how to volunteer, where to donate goods, and provided links to volunteer sign-up forms and mutual support sites and a list of emergency shelters.[88]

Donations continued to flow in for processing, and space was running out. On Wednesday the 31st, Red Hook sites were overwhelmed with donations and volunteers. In search of more space, members reached out to a pastor at St. Jacobi Evangelical Lutheran Church in the Sunset Park neighborhood of Brooklyn.[89] Overnight, the St. Jacobi church became Occupy Sandy's first main distribution hub.

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[83] Phone interview with Occupy Sandy internal operations member, interviewed by Eric Ambinder and David Jennings, 16 July 2013.

[84] InterOccupy seeks to foster communication between individuals, working groups, and local general assemblies across the movement. It does this in the "spirit of the Occupy Movement and general assemblies, which use direct democratic and horizontal decision-making processes in service to the interests of the 99%." Adapted from "InterOccupy Mission," InterOccupy, accessed September 15, 2013, http://interoccupy.net/about/mission.

[85] Phone interview with Occupy Sandy internal operations member, interviewed by Ambinder and Jennings, July 16, 2013.

[86] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 20, 2012, transcript provided on the Occupy Sandy website.

[87] Ibid.

[88] "Hurricane Sandy Survivors in NYC Need Your Immediate Support," Occupy Sandy Recovery, accessed September 10, 2013, http://occupysandy.net/2012/10/hurricane-sandy-survivors-in-nyc-need-your-immediate-support/.

[89] Alan Feuer, "The Aftermath: A Movement Moves to Relief," *New York Times*, November 9, 2012, accessed August 14, 2013, http://www.nytimes.com/2012/11/11/nyregion/where-fema-fell-short-occupy-sandy-was-there.html?_r=0; Peter Rugh, "Occupy Sandy's Collective Recovery, *Dissident Voice,* February 2, 2013, accessed August 14, 2013, http://dissidentvoice.org/2013/02/mi-lucha-es-tu-lucha-occupy-sandys-collective-recovery/.

Occupy Sandy continued to identify more needs and therefore required more space. On Saturday, November 3rd, organizers tapped the Occupy network to secure a second main hub at the St. Luke and St. Matthew Church in Clinton Hill, Brooklyn. There they opened up a kitchen, a distribution center, and a large volunteer intake and training operation. Shortly thereafter, Occupy Sandy opened smaller distribution hubs at three locations in the Rockaways, one in Coney Island, and another in Staten Island.[90]

Figure 2. The St. Luke and St. Matthew Church in Brooklyn served as a main distribution hub for Occupy Sandy until arsonists set it on fire two days before Christmas 2012. As of the publication of this report, the NYPD has not made an arrest.

While organizers set up the Jacobi and Clinton Hill sites and groups of volunteers deployed to various hard-hit areas across NYC, tech-savvy volunteers diligently consolidated Google Docs, populated Facebook, sent out Tweets (@OccupySandy), managed the WePay account, and updated the Occupy Sandy webpage.

Each main hub then set up their own Facebook and Twitter pages just to keep up with the influx of in-kind donations and requests to volunteer.[91] About a week after the storm, Occupy Sandy had amassed 700 volunteers and was serving approximately 20,000 meals a day.[92] It had by then accumulated 10,000 likes on its Facebook page[93] and had more than 5,000 Twitter followers.[94] Three weeks after the storm, 15 volunteers were dedicated solely to managing Facebook operations.[95]

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[90] "Jacobi Distribution Hub is Closing," Occupy Sandy Recovery, accessed August 21, 2013, http://occupysandy.net/2012/11/jacobi-closing/.

[91] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 20, 2012, transcript provided on the Occupy Sandy website.

[92] Occupy Sandy's Facebook page, November 3, 2012, accessed September 11, 2013, https://www.facebook.com/OccupySandyReliefNyc.

[93] Ibid.

[94] Comment on Occupy Sandy, "OWS resurfaces with Occupy Sandy hurricane relief efforts," *Metro, New York*, November 11, 2012, accessed August 22, 2013, http://www.metro.us/newyork/news/local/2012/11/05/ows-resurfaces-with-occupy-sandy-hurricane-relief-efforts.

[95] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 20, 2012, transcript provided on the Occupy Sandy website.

At its peak, Occupy Sandy, a network with no prior disaster relief experience, had attracted more than 60.000 volunteers.[96]

What Attracted Volunteers to Occupy Sandy?

In most cases after major disasters, volunteers who want to do more than provide financial support must wait a period of time before they can *do* anything. Typically, traditional relief organizations that offer volunteer opportunities require newcomers to pledge to a minimum time commitment, attend orientations and trainings, pass a background check, and, in some cases, hold professional certifications. The unaffiliated volunteer who wants to offer immediate assistance may be inclined to volunteer with relief groups that do not have such requirements.

The media made volunteering with Occupy Sandy look easy and attractive. *New York Magazine* told readers that to get involved with Occupy Sandy, "just show and sign up."[97] Less than 10 days following the storm, *The Huffington Post* labeled Occupy Sandy as "a relief organization of the 21st century, mastering social networks."[98] In addition to the media attention, Occupy Sandy had built a stirring online presence replete with anecdotes, videos, and pictures; offered an opportunity to volunteer immediately; and was affiliated with a social movement that appealed to a large number of young, educated New York and New Jersey residents. Many joined because there was not much else to do—no television to watch or Internet to browse, no work to go to, and little gas to get anywhere.

Another appealing aspect was that Occupy Sandy let volunteers choose how to help, without any creative restriction. Chefs cooked food. Web designers worked on network websites. Lawyers made up the legal team. Occupy Sandy gave volunteers a purpose, which was something many of them had been looking for. "We took a let's-throw-people-with-their-existing-skill-sets-at-the-problem approach," said an Occupy Sandy member. "The only barrier to entry was a person thinking it was not a worthy cause."[99]

The initial wave of volunteers consisted mostly of OWS members. Over time, people with no prior affiliation to the Occupy movement diluted the corps. Newcomers found Occupy Sandy in a variety of ways, mostly through existing peer relationships or finding out about it through social networks. Others called the Occupy Sandy hotline, e-mailed

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[96] FEMA, *Hurricane Sandy FEMA After-Action Report* (Washington: FEMA, July 1, 2013), 29.

[97] Matthew Giles, "After the Storm; It's Been Three Weeks Since Sandy Battered the East Coast, But Relief is Still Badly Needed. Here's How to Lend a Hand in Some of the Hardest Hit Areas," *New York Magazine*, November 26, 2012, accessed September 2, 2013, http://nymag.com/guides/holidays/gifts/2012/hurricane-sandy-volunteer-opportunities/.

[98] Lucas Kavner, "Occupy Sandy Emerges as Relief Organization for 21st Century, Mastering Social Networks," *Huffington Post*, accessed September 8, 2013, http://www.huffingtonpost.com/2012/11/05/occupy-sandy-relief-efforts_n_2079308.html?utm_hp_ref=tw.

[99] Personal interview with Occupy Sandy members, interviewed by Ambinder and Jennings, Brooklyn, NY, July 16, 2013.

the group, or signed up for volunteer updates on their cell phones.[100] An Occupy Sandy finance team member who was a former managing director at Merrill Lynch told us what brought him to volunteer with Occupy Sandy over other traditional relief groups:

> When Sandy hit I was with my parents in Huntington, Long Island. After the storm I had some extra time and went to the Armory in Park Slope, run by [a traditional response organization]. They fit about three nursing homes worth of people in the Armory. They tried to make it comfy but it was somewhat of a dehumanizing situation. They were essentially being warehoused. One time food wasn't delivered on time and so I suggested they order pizza. They couldn't order pizza because it was against protocol. There may not have been a better way to do it given the emergency but it was a sad sight. After that experience, I went home and googled "Hurricane Sandy relief" and found Occupy Sandy. I liked the fact they were mutual aid and not a charity that just throws crumbs to those in need. The next day I went to the [520 Clinton] hub, went through orientation, and hopped in a van toward Brighton Beach. There, we broke out into groups of four to gather situational awareness, asking people what they needed. We used worksheets to gather data, and then provided aid.[101]

Occupy Sandy attracted a diverse range of volunteers, many from communities hit hard by the storm. Many were white, middle-class, and highly educated. Many were unemployed or underemployed and were eager to use their skills.

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[100] "Volunteer to Join the Relief Effort," Occupy Sandy Recovery, accessed September 15, 2013, http://occupysandy.net/volunteer/volunteer-signup/.

[101] Phone interview with Occupy Sandy finance team member, August 5, 2012.

0 to 45 Min: Occupy Sandy Volunteer Processing

It's a few days after Superstorm Sandy. Your power is still out, there is no work, and you want to volunteer. You have no discernible skill except that you want to help. So, you venture to one of Occupy Sandy's main hubs.

Newcomers to a major hub—the Church of St. Jacobi in Sunset Park or the Church of St. Luke and St. Matthew in Clinton Hill were greeted by at least one volunteer managing traffic outside of each hub. That volunteer was in constant communication with those inside so that they could all coordinate supply arrivals and departures. Another set of volunteers, near the entrances, greeted newcomers and directed them inside to register.

Inside, new volunteers were asked to write their names on pre-cut pieces of tape and to wear that tape in a prominent place throughout their participation in Occupy Sandy's volunteer efforts. Next, they were asked to fill out information for the Occupy Sandy database. Information in the database included contact information, availability and specialized skill sets. After registration, volunteers were asked to attend a short orientation.

The orientation explained the core beliefs and mindset of the Occupy Movement, behavior that would not be tolerated, and the importance of offering "mutual aid" and not "charity" to survivors. After orientation, the new volunteers were encouraged to begin to help out at either one of the churches, or out in the field. To ensure that people in the field were well prepared, those who wanted to help out at recovery sites were asked to first take part in subsequent trainings, typically "field orientation" or "driver orientation," depending on skills and interests. The whole process, including orientations, took, on average, about 45 minutes.[102]

Just-in-Time Volunteer Training

Many types of specialized trainings were made available to volunteers. The network partnered with area professional organizations and individuals to hold a variety of trainings at regular intervals. Examples include trainings on mold cleanup, mucking out homes, demolition and simple reconstruction work, understanding legal issues, public health training about vaccinations and environmental risks,[103] and community engagement training[104] meant to educate locals about community sustainability.[105]

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[102] Adapted from Adam Greenfield, "A Diagram of Occupy Sandy." *Urban Omnibus.* http://urbanomnibus.net/2013/02/a-diagram-of-occupy-sandy/ (accessed July 29, 2013).

[103] Ibid.

[104] Ibid.

[105] "Calendar," December 2012 and January 2013 calendars, Occupy Sandy Recovery, accessed September 15, 2013, http://occupysandy.net/calendar/action:month/.

Occupy Sandy partnered with a local organization called Respond and Rebuild[106] to offer "assessment training," which trained volunteers how to assess damage to a structure and develop a work plan for a group of volunteers to come and fix that space, and "team leader training," which taught members how to lead teams of unskilled volunteers into homes. They also taught workshops on mold remediation, demolition, construction, plumbing, and basic electrical skills.[107] The network also offered political education training to help frame the larger politics of the work they were doing.[108] They even offered an internship program for 16 to 18 year olds that allowed them to shadow organizers and to set up a mutual aid network for students.[109]

> "Many of the skills that are proving so valuable in Occupy Sandy's relief efforts were honed on the streets, in occupied public spaces and on social media sites during Occupy Wall Street's fall/winter 2011-2012 flowering. The first few Occupy Sandy organizers were veterans of Occupy Wall Street's two-month occupation of Zuccotti Park in lower Manhattan, but as the word spread the group became a mix of seasoned OWS vets and fresh-faced newcomers."
>
> — Alan Feuer, "Where FEMA Fell Short, Occupy Sandy Was There," *The New York Times*

The Occupy Sandy tech team trained organizers on a relief management software developed by the Sahana Software Foundation.[110] They used Sahana software to manage location-specific data, volunteer requests, donations, and on-the-ground canvassing.[111] Specifically, it was used to log and dispatch assistance requests, print out waybills for and track the fulfillment of shipments, and track work orders for homes.[112]

What Was the Scope of Service Occupy Sandy Provided?

Occupy Sandy managed capabilities, capital (e.g., people, goods, services, and ideas), and decisions differently than traditional disaster relief organizations. Traditional relief organizations like FEMA relinquish regulatory control and administration of emergency response functions to state jurisdictions and the responsibility to deliver services to towns, counties, and parishes. In stark contrast, Occupy Sandy's governance structure and way of organizing was rooted in anarchical political philosophy, which advocates for horizontal organizing and decentralized authority. There were no regulatory requirements

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[106] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 27, 2012, transcript provided on the Occupy Sandy website.

[107] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 20, 2012, transcript provided on the Occupy Sandy website.

[108] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, December 4, 2012, transcript provided on the Occupy Sandy website.

[109] Ibid.

[110] "Occupy Sandy Conference Coordinators Call Minutes," November 14, 2012, accessed August 22, 2013, http://occupysandy.net/2012/11/coordinators-call-minutes-111412-2/.

[111] "Tech Tools," Occupy Sandy Coordination, accessed August 23, 2013, https://sites.google.com/site/occupysandydocs/tools/tech-tools.

[112] Esteve Giraud, "Interview with Devin Balkind: Sahana and Occupy Sandy Relief Efforts: Sahana Software Foundation."

to follow, very few controls on operations, and members acted with almost complete autonomy. This setup had a profound influence on the types of services the network provided and its geographic reach across New York and New Jersey.

Types of Services

If members of Occupy Sandy became aware of a need, they tried to fill it. Incoming requests for assistance dictated services, not a charter or a strategic plan. This allowed Occupy Sandy to mold its capabilities to the actual, real-time needs of communities.

Occupy Sandy developed basic capabilities first, like providing survivors with food, water, and warm clothing. Very quickly, it evolved advanced capabilities to meet emerging needs. For example, the medical team formed to canvass for dead bodies and to distribute prescriptions and medical equipment. The construction and clean out team formed to remove water, mud, debris, and mold from homes; to sanitize them; and to rebuild them. The housing team formed to connect displaced survivors with families willing to host them. The legal team formed to advise survivors on landlord-tenant issues, insurance issues, and applying for loans. The tech team developed systems to manage disaster relief operations. The "Kitchen" made and served meals to thousands. The communications team managed social media platforms. The "incubation" team selected new recovery and rebuilding projects and managed the network's finances. The training team identified what types of training to conduct and managed and coordinated trainings.

The only official record of the scope of the network's self-reported activities, other than notes taken during network-wide meetings, was its response to a New York State Office of Attorney General Charities Bureau request for information about Sandy-related fundraising and relief activities. The network reported that it conducted the following relief functions:[113]

- direct aid (food, water, warmth)

- medical care

- mold remediation

- resource distribution

- canvassing

- rebuilding

- psychological help

- community building

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[113] NYC Office of the Inspector General made this request to approximately 90 charities raising funds in the NYC area. See: State of New York Attorney General Office, *Charitable Response to Hurricane Sandy Interim Report*, CharitiesNYS.com, July 13, 2013, accessed on September 15, 2013 from: http://www.charitiesnys.com/fundraising_and_spending.jsp?d-16544-p=3.

- legal assistance

- media documentation

- funding

In addition, the following recovery services were listed: case management, community building, mold remediation, advocacy, and medical support.[114]

Fundraising was a small part of Occupy Sandy's focus. Traditional fundraising efforts made members uncomfortable; some felt it conflicted with a major ideology of the Occupy movement: growing income inequality. Initial fundraising goals were to raise around $10,000 to purchase blankets, but the network collected $1,377,433.57[115] as of July 31, 2013.[116] A significant portion of the money raised has been allocated to specific recovery projects, though no project has received more than $10,000.[117] To date, no individual has received a stipend for his or her service. Alliance for Global Justice (AFGJ)[118] acts as a fiscal sponsor for Occupy Sandy, making all donations tax-deductible.[119]

Geographic Reach

The best way to imagine the flow of physical resources through Occupy Sandy is to think about a network of interconnected nodes. Each node represents a physical hub. The hubs coordinated through social media to the extent that they could of but each operated independently. Between November 2012 and January 2013, Occupy Sandy established three main distribution hubs: "Jacobi" in Queens, "Clinton" in Brooklyn, and "Red Hook" in Brooklyn. At distribution hubs, the network stored resources, conducted volunteer trainings, and coordinated regional operations. Occupy Sandy also set up main "recovery" hubs in the Rockaways, the lower east side of Manhattan, Staten Island, Coney Island, and Red Hook. In addition, it ran smaller recovery sites in the Rockaways, Canarsie, Sheepshead Bay, Bay Ridge, Gerritsen Beach, Long Island, and across New

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[114] State of New York Attorney General Office, "Charitable Response to Hurricane Sandy Interim Report."

[115] "Occupy Sandy Relief NYC Fund," Occupy Sandy Recovery, accessed August 23, 2013, http://occupysandy.net/funds/. View the "Income and Expenditures Spreadsheet."

[116] Ibid.

[117] Ibid.

[118] The Alliance for Global Justice is a tax-exempt nonprofit under section 501(c)(3) of the IRS Code. As such, donations to projects of the AFGJ are fully tax-deductible on the donor's federal income tax. For an administrative fee of 7 percent, the AFGJ offers fiscal sponsorship for grassroots nonprofits that agree with its vision and mission statements but do not have their own 501(c)(3) statuses, thus making donations to those projects tax-deductible to the donor as well. Adapted from "Fiscal Sponsorship," Alliance for Global Justice, accessed August 24, 2013, http://afgj.org/sponsored-projects/fiscally-sponsored-projects.

[119] According to the AFGJ webpage, it "offers fiscal sponsorship services as a service to the progressive movement so that it might grow and gain more influence." Services include completion of all federal tax forms, collection of credit card donations, and processing donated checks. Adapted from "Fiscal Sponsorship," Alliance for Global Justice.

Jersey. It also operated a 50,000-square-foot warehouse in Coney Island.[120] Occupy Sandy even set up a virtual hub on the Interoccupy website to assist Haitian communities still dealing with the effects of the 2010 earthquake.[121]

The network's physical presence spread so quickly across New York and New Jersey because members had the autonomy to establish and operate a new hub. New hubs were set up simply because a member identified enough needs in a particular area and took initiative. Typically, religious institutions or shop owners donated space and volunteers from within a community populated it with resources and skills. For example, Occupy Sandy members and Rockaway community members rebuilt You Are Never Alone (YANA), a community service center, which had been open for two weeks before it was destroyed by the storm. They rebuilt the space using sustainable techniques and turned it into a relief hub providing meals, medical treatment, legal counseling, and housing advocacy.[122] YANA is a poster example of building community capacity: a space built by the community that created jobs for community members with a mission to serve the community by training people and helping them find jobs.

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[120] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 20, 2012, transcript provided on the Occupy Sandy website. See also Occupy Sandy Space Meeting, St. Jacobi Church, Brooklyn, NY, December 30, 2012, transcript provided on the Occupy Sandy website.

[121] Members set up an Occupy Sandy Haitian Relief fund with fiscal sponsorship from Give Love. They also set up a Facebook page, Twitter account, and a WePay account. Adapted from Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 20, 2012.

[122] "Phase 1 of the Restore Yana Project Completed," Occupy Sandy Recovery, accessed September 15, 2013, http://occupysandy.net/2013/01/phase-1-of-the-restore-yana-project-completed/.
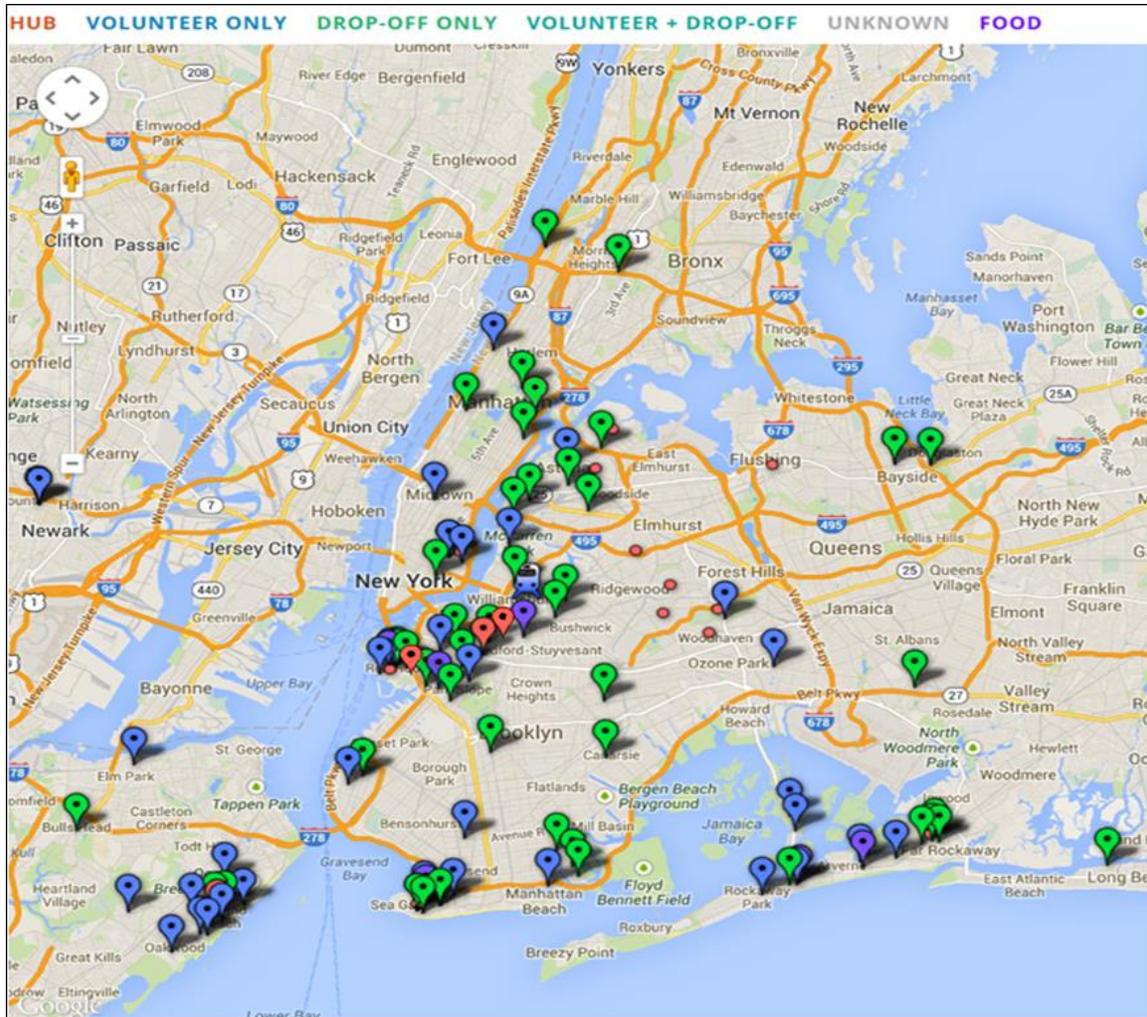
Figure 3. Occupy Sandy relief sites across New York City and New Jersey. Source: http://interoccupy.net/sandystaging/map/

How Did Occupy Sandy Choose What Services to Provide?

Occupy Sandy did not choose what to do and where to do it; those things chose Occupy Sandy.

In the days that followed Superstorm Sandy's landfall, the network became aware that needs from particular communities continued to pile up. The network focused most of its efforts on communities that "they figured official response organizations wouldn't go."[123] These communities included the Rockaways, Staten Island, Red Hook, Coney Island, and other neighborhoods where many of New York City's low-income and immigrant populations live. They also sought to help populations that traditionally shy away from contact with official relief workers: the homeless, undocumented aliens, residents living in New York City Housing Authority (NYCHA) housing, the elderly, and the disabled.

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[123] Personal interview with Occupy Sandy tech team member, interviewed by Ambinder and Jennings, Brooklyn, NY, July 16, 2013.

Typically, following a disaster, marginalized individuals who need assistance are not comfortable evacuating to an area where they have to be in contact with a uniformed responder. Moreover, they may be reluctant to offer information about needs that may require documentation, such as applying for state or federal financial assistance. In most cases, these

> "Occupy Sandy was doing things that the Red Cross was not set up to do; Occupy Sandy was doing things that a neighborhood-based organization should do."
>
> — A FEMA VAL

individuals are not aware of their rights or fully understand eligibility requirements for disaster assistance.[124] According to a study conducted by the non-profit Make the Road New York, 78 percent of immigrants living in New York-area disaster zones did not apply for disaster relief.[125]

Frustration with Traditional Disaster Response Organizations

Many of the subjects we interviewed who participated in relief efforts following Superstorm Sandy said that many members of Occupy Sandy and the communities they aided were frustrated with traditional relief organizations; specifically, there appeared to be a disconnect between the type of aid major traditional relief groups offered and the needs of the communities. A professor from NYU who studied the Occupy movement and volunteered with Occupy Sandy said, for example, that survivors expected FEMA to give them what they needed but instead discovered that FEMA was there to supply them with loans.[126] "[These] people had already taken out loans and were not in a position to take out another loan and FEMA was asking for more loans. This indicated to us it was a structural problem with the way government responds to disaster."[127] Over time, the network and communities became frustrated over the structural limitations of traditional response organizations.

To ease the frustration, a FEMA VAL met with Occupy Sandy to discuss FEMA's role in disaster management.[128] He told us that the first question Occupy Sandy asked was why FEMA did not bring trailers. He took the Stafford Act out of his briefcase. The meeting lasted for five hours.

The FEMA VAL told us that, at first, Occupy Sandy did not quite understand the "ecology" of response and the role that neighborhood-based organizations should play during a disaster. He said that Occupy Sandy kept saying "we sure beat the Red Cross";

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[124] Personal interview with a FEMA VAL, interviewed by Ambinder and Jennings, Queens, NY, August 14, 2013.

[125] *Unmet Needs: Superstorm Sandy and Immigrant Communities in the Metro New York Area* (New York: Make the Road New York, December 2012), 9, accessed on September 15, 2013 from: http://www.maketheroad.org/report.php?ID=2550.

[126] Phone interview with a professor at a New York university, interviewed by Ambinder and Jennings, August 15, 2013.

[127] Ibid.

[128] Personal interview with a FEMA VAL, interviewed by Ambinder and Jennings, Queens, NY, August 14, 2013.

but he made the case to them that Occupy Sandy was doing things that the Red Cross was not set up to do and that Occupy Sandy was doing things that a neighborhood-based organization should do.

Determined to build trust with the network, this same FEMA VAL brought a few Occupy Sandy members to the FEMA joint field office in Queens and into a FEMA call center. "We did this to create a solid ground of trust between the organizations,"[129] he said. In addition, the FEMA VAL provided several Occupy Sandy members with N95 masks, tyvex suits, and other supplies so that they could conduct mold suppression safely.[130] FEMA also provided Occupy Sandy access to a warehouse[131] and invited them to participate in VOAD conference calls.[132]

At weekly network-wide assembly meetings, Occupy Sandy members would discuss encountering traditional relief organizations in the field, particularly FEMA and the American Red Cross.[133] According to meeting notes available on Occupy Sandy's website, experiences were both positive and negative. Specific examples include:

- FEMA and the American Red Cross working in the Rockaways initially approached Occupy Sandy with an "ok we have it [from here] attitude" but then came back to Occupy Sandy volunteers to gather situational awareness.[134]

- Occupy Sandy described the American Red Cross as "being our lifeline for hot meals."[135] A member commented, "If we can work closely with them in that way to tell them where to go, that could be really helpful. They can't hand-deliver meals, but we can."[136]

- An Occupy Sandy member that was canvassing high-rise apartment buildings remarked that the American Red Cross was more interested in asking him about resident needs after he had come out of the high-rises, rather than entering the high-rises themselves.[137]

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[129] Ibid.

[130] Mold suppression means to clean away mold and to let wood surfaces dry properly before reapplying drywall.

[131] Personal interview with a FEMA VAL, interviewed by Eric Ambinder and David Jennings, Queens, NY, August 14, 2013.

[132] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 20, 2012, transcript provided on the Occupy Sandy website.

[133] The meetings in which these comments were made took place on November 20, 2012, November 27, 2012, and December 4, 2012.

[134] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 20, 2012, transcript provided on the Occupy Sandy website.

[135] Ibid.

[136] Ibid.

[137] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 20, 2012, transcript provided on the Occupy Sandy website.

- An Occupy Sandy member praised the American Red Cross for distributing meals in Brighton Beach to long lines of residents.[138]

- Occupy Sandy members reported that FEMA was slow to offer housing to people and that the American Red Cross was trying to set up more shelters for people but was hindered by local NYC laws.[139]

At the November 27, 2012, network assembly meeting, an Occupy Sandy member who acted as a liaison to government and other volunteer groups stated that the two biggest issues they faced working with traditional relief organizations were:[140]

1. accepting resources from city, state, and federal sources without "getting caught in the strings [of accepting aid],"[141] and

2. compiling data collected by various organizations and coordinating the use of that data.

Case Study: Occupy Sandy tackles disaster response

Occupy Sandy is a grassroots volunteer disaster relief movement which provided innovative support to Sandy recovery efforts. Within four months, Occupy Sandy amassed 60,000 volunteers, collected nearly $1 million in donations for Sandy survivors, and distributed food, clothing, medical supplies, and construction materials. Occupy Sandy impacted thousands of survivors in New York and New Jersey. Some of Occupy Sandy's notable accomplishments included:

- Establishing food distribution centers in Brooklyn and other hubs, such as Coney Island;

- Setting up online donation and volunteer social media sites;

- Serving nearly 10,000 meals a day in the week after Sandy made landfall, through 15,000 volunteers recruited via social media sites; and

- Coordinating motor pools to transport construction teams and medical committees to survivors in the field.

FEMA's Innovation Team worked closely with Occupy Sandy to support survivors and develop solutions to challenges in the affected areas.

Figure 4. FEMA acknowledges Occupy Sandy successes in its Hurricane Sandy After-Action Report[142]

Filling the Gaps

At times, especially in the first few days and weeks following the storm, urgency dictated the actions of Occupy Sandy members. Many were actions that traditional relief organizations would not take because of liability risks. This includes entering residential

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[138] Ibid.

[139] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 27, 2012, transcript provided on the Occupy Sandy website.

[140] Ibid.

[141] Ibid.

[142] FEMA, *Hurricane Sandy FEMA After-Action Report* (Washington: FEMA, July 1, 2013), 29.

buildings without permission to check on the elderly, stopping traffic to request use of vehicles, or prescribing medication to individuals trapped in their homes.

For example, Occupy Sandy's medical clinic consisted of doctors from NYU and Mount Sinai hospitals,[143] who, within days of the storm, canvassed neighborhoods like Belle Harbor, New Jersey, and the Rockaways delivering medications and writing prescriptions for patients trapped in their homes. Many of these patients had grave illnesses, such as cancer and acquired immunodeficiency syndrome, or required psychiatric medication.[144] One member of the Occupy Sandy medical team acknowledged to *The Guardian* that this type of mobile aid makes it difficult for doctors to ensure the right medication is going to the right patient. Doctors who write prescriptions under such circumstances are fully aware that they are personally liable if anything bad happens.[145,146]

Once officials from traditional relief organizations were able to see the impact Occupy Sandy was having on many communities, they began to forge informal partnerships with the network to provide aid, and in some cases, turned to it for help. According to an Occupy Sandy member:[147]

> The night before Christmas, FEMA guys called requesting that someone go to a house of an older woman that had no power, heat, etc. They thought it was life or death but wanted Occupy Sandy to help because they said they did not have the ability to. Five Occupy Sandy members came to winterize her house, and (were able to get the heat running).

She remembered another instance:[148]

> A mentally ill person requested aid from FEMA, but a FEMA guy mentioned to Occupy Sandy that this person would likely fall through the cracks if someone did not advocate on their behalf. Occupy Sandy took on the case and made sure he got a hotel room and food. A volunteer followed up and made sure the man had food throughout the response effort.

"[Occupy Sandy] contributed a tremendous amount," an American Red Cross volunteer coordinator who has been deployed to over 24 disasters, including Katrina, told us. "They

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[143] Sachi Fujimori, "Lending a Hand in Cleanup," *The Record* (Bergen County, NJ), December 2, 2012, sec. Local.

[144] Ryan Devereaux, "Nor'easter's Snow Complicates Sandy Recovery in New York City's Rockaways," *The Guardian*, November 8, 2012, accessed August 16, 2013, http://www.theguardian.com/world/2012/nov/08/noreaster-snow-sandy-new-york-rockaways.

[145] Ibid.

[146] See appendix D for a discussion of legal liability and spontaneous volunteerism.

[147] Phone interview with Occupy Sandy member, interviewed by Ambinder and Jennings, August 23, 2013.

[148] Ibid.

did a lot of things American Red Cross could not do because of the lack of manpower."[149]

Applying the Occupy Sandy Model in Oklahoma: OpOK Relief

Central to Occupy Sandy's (OS) ability to rapidly mobilize a volunteer base and identify community needs in the wake of Superstorm Sandy was its familiarity and comfort with social networking tools and its wired connection to Occupy sympathizers. The successes of OS encouraged those involved to share best practices with communities hit by subsequent disasters.

On May 19, 2013, the first[150] of several large tornadoes hit areas in and around Oklahoma City, Oklahoma,[151] killing 51 people[152]. Three thousand homes and an estimated 200,000 people were in the path of the tornadoes.[153] The day after the disaster, a group called Anonymous partnered with Oklahoma-based Occupy groups[154] to launch Operation Oklahoma (#OpOK) Relief to help devastated communities clean up and recover.[155]

A team of Occupy Sandy members provided strategic counsel to OpOK relief organizers. This network leveraged Occupy Oklahoma's social networks to communicate with each other and the larger public, to identify community needs and to monitor the status of relief efforts.[156] This included immediately establishing Twitter hashtags that survivors could use to try to locate missing family members (#OKMISSING) and pets (#okpets). They also developed a web presence through interoccupy.net, OpOKRelief.net and a Facebook page, all of which helped coordinate supplies, volunteers and information. Based on the experience of OS, OpOK set up a wedding registry on Amazon.com requesting the supplies they needed. Using this form of outreach, OpOK managed to deliver $40,000 worth of goods from corporate sponsors in a little over a week.[157] OpOK also, like OS, emphasized the 'mutual aid' aspect of the work, encouraging locals to take the lead in helping to rebuild.[158] The focus of their work has now transitioned to long-term relief and recovery.

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[149] Phone interview with a volunteer coordinator for a disaster relief organization, interviewed by Ambinder and Jennings, August 23, 2013.

[150] "Occupy OKC Facebook Page." Last modified August 8, 2013. https://www.facebook.com/OccupyOKCOfficialPage.

[151] Faulk, Mark. "OpOK Relief Servers Forgotten Tornado Victims." Occupy Wall Street: Live From the Occupations of New York City. May 31, 2013. http://occupywallstreet.net/story/opok-relief-serves-forgotten-tornado-victims.

[152] "After the Tornado, Anonymous and Occupy Coordinate Relief Efforts in Oklahoma." *Mintpress News*. May 29, 2013. http://www.mintpressnews.com/after-the-tornado-anonymous-and-occupy-coordinate-relief-efforts-in-oklahoma/161953/ .

[153] "OpOK." May 21, 2013. http://interoccupy.net/blog/opok-update-oklahoma-relief/ .

[154] Anonymous partnered with local members of Occupy OKC, Occupy Norman, Occupy Tulsa, and Occupy Shawnee, and Anonymous as well as seasoned OS volunteers. Faulk, Mark. "OpOK Relief Servers Forgotten Tornado Victims." *Occupy Wall Street: Live From the Occupations of New York City*. May 31, 2013. http://occupywallstreet.net/story/opok-relief-serves-forgotten-tornado-victims. Murphy, Lorraine. "Anonymous Launches #OpOK Initiative for Tornado Victims." The Daily Dot. May 21, 2013. http://www.dailydot.com/news/anonymous-opok-moore-oklahoma-tornado/.

How Was Occupy Sandy Governed and Managed?

In this section, we briefly discuss the main aspects of the network's governance and management: horizontal organizing and consensus-based decision making.

Horizontal Organizing

Occupy Sandy used what members referred to as a "horizontal" approach to disaster relief rather than the more-typical hierarchical approach used by traditional response organizations. "Horizontal," in this environment, referred to the notion that no one person was in charge of anyone else, so members were free to make decisions. Effectively, Occupy Sandy was "leaderful"[159] (i.e., every member was a leader). According to an Occupy Sandy member, the key to becoming a "leader" in Occupy Sandy was simple: "One, show up. Two, get stuff done. And three, show up again. If you show up continuously, we know you will be there tomorrow to implement."[160]

The lack of traditional leadership coupled with lateral organizing allowed the group to immediately mobilize its members in the area to connect with community leaders.[161] This proved to be a very effective operating environment, especially during the first few weeks following the disaster, because it allowed members to get work done quickly. In addition, it incubated an environment where the best ideas happened. There was no bureaucracy to filter ideas through or authority to seek approval from before taking action. In the absence of regulations, ideas could be quickly tested and adapted to existing conditions in the field. By removing barriers between resources and survivors, the network could more efficiently address needs.

As with any collective of individuals, informal leaders did emerge. These members built social capital by *contributing*, which could mean consistently showing up or developing good ideas.

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[155] Lorraine Murphy. "Anonymous Launches #OpOK Initiative for Tornado Victims." The Daily Dot. May 21, 2013. http://www.dailydot.com/news/anonymous-opok-moore-oklahoma-tornado/

[156] "Occupy OKC Facebook Page." Last modified August 8, 2013. https://www.facebook.com/OccupyOKCOfficialPage.

[157] Zakk Flash. "The People's Response: How OpOK Relief is Rebuilding Oklahoma." Occupy.com, June 5, 2013. http://www.occupy.com/article/peoples-response-how-opok-relief-rebuilding-oklahoma .

[158] Ibid.

[159] "Leaderful" is a term that means every member could become a leader. Adapted from Jerry Ashton, "Trouble in Paradise? Occupy Confronts the 'Two D's—Dissension and Departures,'" *Huffington Post*, May 9, 2013, accessed September 15, 2013, http://www.huffingtonpost.com/jerry-ashton/rolling-jubilee_b_3237625.html.

[160] Personal interview with Occupy Sandy members, interviewed by Ambinder and Jennings, Brooklyn, NY, July 16, 2013.

[161] Lerner, "How Sandy Saved Occupy"; and Brett Wilkins, "Where FEMA Fails, Occupy Sandy Delivers Storm Relief," *Digital Journal*, November 12, 2012, accessed August 23, 2013, http://www.digitaljournal.com/article/336715.

One of Occupy Sandy's most noteworthy successes occurred when a new volunteer realized too many items were being donated that were not needed. This member had an idea to fix the problem. Without asking anyone for permission, he set up an Amazon.com gift registry and began fielding requests from the various hubs for items.[162] This allowed people around the world to participate in relief efforts in real time with no intermediary. Eventually, Occupy Sandy started gift registries for many local businesses in New York and New Jersey. "What resulted was a true meritocracy, where members were trusted to make the right decisions but also had to be willing to let the best idea not be their own,"[163] said an Occupy Sandy member.

There was no need to seek permission to do something. If a member could locate a resource and had the means to bring it directly to a survivor, they just did it. They embraced this freedom early on and relished it as they perceived traditional response organizations were not filling needs that continued to pop up across many NYC and New Jersey neighborhoods.

An excerpt from a November 20, 2012, network assembly sums it up well:[164]

> I've been on the phone all day with the Red Cross; got the Red Cross out there to deliver cleaning supplies. But the only people who've been out there have been, you know, some mothers' groups, and then calling Occupy Sandy, who's been delivering stuff off and on, but it's been hit-or-miss. We really need people; we really need volunteers. There's not a lot of people out there—we really need people to help to go into some of these apartments in the projects, help people clean their apartments… help them so that they can then get their kids to doctors. We've set up a little medical center inside this afterschool program, and it's really been an exhausting, Herculean task with very few people, trying to support—you know, officially there are 10,000 people living in the projects—if you look at the stats, that's, like, 2.5, 2.3 per apartment. The apartments we go into there are 14 people living in there. So there are a few people who are really trying to support the needs of a small city. And this small city still doesn't have heat; it still doesn't have electricity in all the units. There are children who are really, really sick … but that's what's going on in the Far Rockaways.

There were certainly drawbacks to implementing a horizontal organizing structure in this context. Without leaders, there was less oversight. For example, during a mold task force meeting in late 2012, an Occupy member represented herself as a microbiologist and

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[162] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 20, 2012, transcript provided on the Occupy Sandy website.

[163] Personal interview with Occupy Sandy members, interviewed by Eric Ambinder and David Jennings, Brooklyn, NY, July 16, 2013.

[164] Ibid.

began dispensing advice before it was revealed that she had not graduated college.[165] The movement also has been criticized as of late for not allocating a portion of the $1.37 million it raised, causing some community activists to wonder about the network's plans to allocate available money.[166] Just like with most organizations, there have been a few instances where resources have gone missing. In addition, it was not uncommon for individuals to make a disparaging remark about traditional relief organizations in public settings, which did besmirch the network's reputation. These things happened, but according to the various individuals we spoke with, they occurred with much less frequency than one might expect.

In addition, without managers, there was less accountability. This made it difficult for some organizations to partner with Occupy Sandy if doing so required making and enforcing promises. A promise to a survivor is just that; there was no mechanism that held the network accountable for the promises of its members. A president of a major NYC relief organization that worked closely with Occupy Sandy throughout the response phase of the disaster characterized his group's relationship as "a partnership with the Occupy individual more than the movement." He continued, "I partnered with individuals in Occupy to get the job done ... [We] took advantage of their capabilities."[167] He went on to say that he would never formally partner with Occupy Sandy and would recommend the same to all other disaster relief organizations.[168] However, a president of a national organization that coordinates many of the nation's faith-based and secular disaster relief groups said he would welcome Occupy Sandy into his consortium, and, in fact, said Occupy Sandy was invited to and attended several meetings.[169]

As Occupy members described it to us, mistakes were tolerated and even welcomed as it meant being one step closer to the solution. If something did not work, it was scrapped. If two things worked, whichever worked better was adopted.

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[165] Personal interview with the president of a New York nonprofit relief organization, interviewed by Eric Ambinder and David Jennings, New York, NY, August 15, 2013.

[166] James West, "What Happened to the Money That Occupy Sandy Raised?" *Mother Jones*, June 18, 2013, accessed September 15, 2013, http://www.motherjones.com/environment/2013/06/occupy-sandy-once-welcomed-now-questioned.

[167] Personal interview with the president of a national relief organization, interviewed by Ambinder and Jennings, Arlington, VA, August 7, 2013.

[168] Ibid.

[169] Ibid.

Horizontal Governance in Practice: Valve Corporation

Horizontal or "flat" organizational structures are becoming a more attractive option for businesses that want to become more "agile" in how they serve customers. For example, the highly respected and successful software company Valve, for which Forbes Magazine has dubbed "A Workplace of the Future" uses, according to its "Handbook for New Employees" a hybrid horizontal governance structure. Gabe Newell, the co-founder and managing director of video game development at Valve is a spoke above a series of flat, connected nodes (see Diag. 1) depicting all other employees. Valve has purposefully organized in this way to remove barriers between the work they do and the customer enjoying that work.
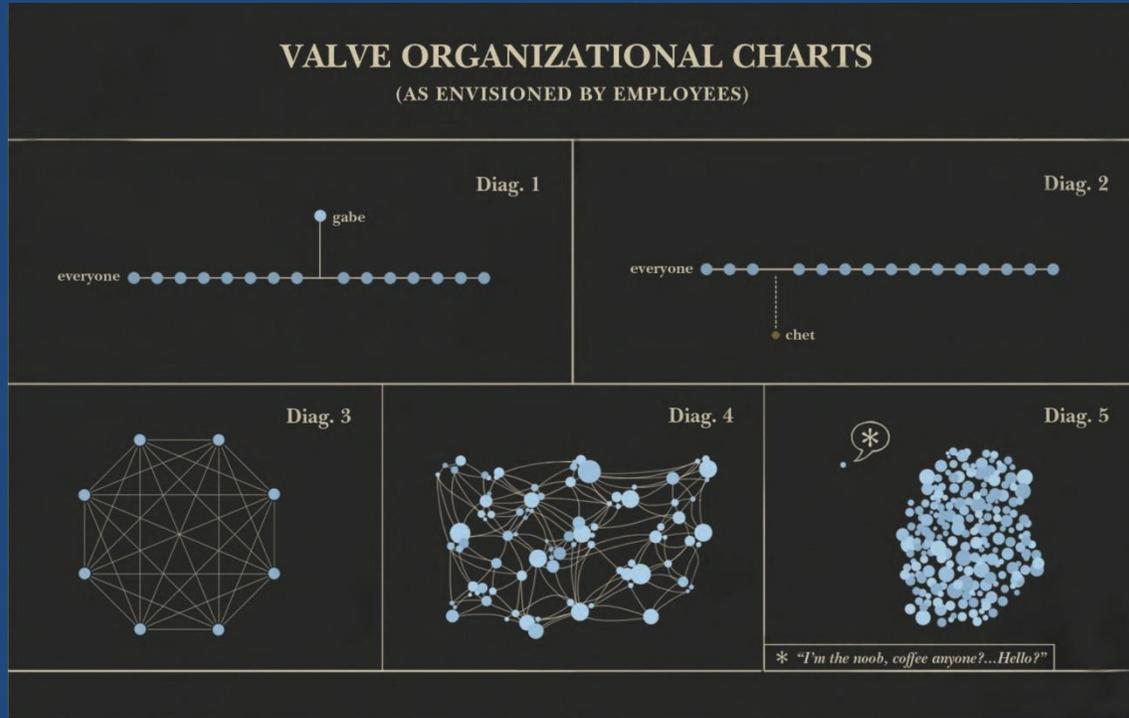
At Valve, there is no hierarchy (middle managers), just employees and Gabe. Valve believes that while hierarchy is useful for ensuring predictability, it stifles innovation and creativity. Any employee has the autonomy to begin a new project and the collective will decide which ideas deserve time and energy. This allows the company to constantly test its own assumptions and decisions and to learn from them in a way that encourages individuals to continue proposing new ideas and methods. Any other necessary structure happens naturally based on the needs of the group. Even personnel evaluations and compensation are determined by groups of employees. Reliance on a horizontal structure ensures that everyone at the company is equally invested in and responsible for decisions made by the company.

At Valve, the employee is the CEO, which is why hiring is the company's most important objective. As a flat organization it lacks the checks-and-balances of middle-management and so Valve prioritizes the recruitment of suitable candidates. This creates a competitive but fair working environment where the best ideas emerge.

Figure 5. Valve Corporation, "a Workplace of the Future," uses horizontal organizing to serve customers.[170]

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[170] Adapted from: *Valve Handbook for New Employees*. Valve (Bellevue, WA: Valve, April 2012), 4. Access the handbook at http://newcdn.flamehaus.com/Valve_Handbook_LowRes.pdf

Consensus-Based Decision Making

An Occupy Sandy member and PhD student studying Occupy's rhetoric, who worked Internal Operations for Occupy Sandy while on sabbatical in New York, said the time and environment determined the course of how Occupy Sandy responded and operated. Functionally, two types of decision-making processes occurred: (1) decisions concerning fundraising and supporting projects and (2) all other decisions. Decisions that had to be made quickly because of the circumstance were made quickly.

Into early December, as the relief stage of the disaster began to shift into recovery, Occupy Sandy organizers kicked off a December 4th general assembly meeting[171] explaining consensus building to the group. They explained that a consensus decision-making process is a process where everyone in a group comes together to find collective solutions. It is not a process in which you bring a polished proposal, present it, and then the group votes. Instead, it is a process where everyone refines a good idea, the group shapes and changes the idea, and, in the end, it may look entirely different. Ultimately, what goes through is something that everyone can live with.[172] Consensus building also means allowing marginalized voices to be heard first over the opinions of groups that are perceived to have their voices heard; it is "listening with the intent of having your own perspective changed."[173] Consensus is not necessarily unanimous agreement; it involves allowing the decision to go forward—"it's a decision in solidarity."[174]

Generally, this means that ideas successfully implemented come to the group partially formed. The proposals are then completed through group discussion and proposal, ensuring that all parties involved support the proposal.[175]

A decision-making body called the Occupy Sandy Project Spokescouncil was responsible for managing the network's resources, as well as for allocating funds for specific recovery projects.[176] To date, a little less than half of the $1,377,433.57 funds collected have been allocated to recovery projects.[177] All spokescouncil meetings were open to the public and anyone could request funding for an idea.

However, all projects must meet the following criteria:

- The project addresses issues of relief, recovery, or resilience in communities affected by Superstorm Sandy.

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[171] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, December 4, 2012, transcript provided on the Occupy Sandy website.

[172] Ibid.

[173] Ibid.

[174] Ibid.

[175] Ibid.

[176] "Occupy Sandy Project Spokescouncil," Occupy Sandy Recovery, accessed September 15, 2013, http://occupysandy.net/occupy-sandy-project-spokescouncil/.

[177] "Occupy Sandy Relief NYC Fund," Occupy Sandy Recovery, accessed August 23, 2013, http://occupysandy.net/funds/. View the "Income and Expenditures Spreadsheet."

- The project commits to following the spokes documentation guidelines.

- The project is aligned with the NYC General Assembly Principles of Solidarity.

- The project publicly aligns itself with Occupy Sandy.

- The project is accepted by the spokescouncil.[178]

The council funded projects, not individuals. In addition, the proposals could only pass if there was a consensus, which was set at 85 percent of participating members. Often, ideas for projects were subject to heated debates, but these encouraged members to tweak proposals to gain consensus. Project meetings take place every two weeks and a revolving representative from a project team, called the "spoke," is allowed to speak during the meeting. If a spoke for a particular project misses two meetings in a row, the project will have its funding and access to network resources suspended.[179] All projects receiving funds were required to keep extensive documentation.[180]

A professor at a New York university who studies the Occupy movement told us that forming such working groups creates an identity and often results in the mobilization of independent groups that break away from the parent affiliation.[181] For example, an Occupy working group that formed to bring attention to the way that debt is used as a commodity by people formed a coalition called Strike Debt. The working group formed Strike Debt to purchase debt off the secondary debt market at significant discounts to pay off the debt of strangers.

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[178] "Occupy Sandy Project Spokescouncil," Occupy Sandy Recovery, accessed September 15, 2013, http://occupysandy.net/occupy-sandy-project-spokescouncil/.

[179] Ibid.

[180] Ibid.

[181] Interview with a professor at a New York university, interviewed by Ambinder and Jennings, Arlington, VA, August 15, 2013.

Applying the Occupy Sandy model in Colorado: Boulder Flood Relief

Over a four-day period in early September 2013, so much rain fell in and around Boulder, Colorado, that rainfall passed the 1000-year recurrence threshold, meaning the amount experienced had a 0.1% chance of occurring at any point during a year.[182] Flooding washed away more than 200 miles of state highways and more than 50 bridges, disconnecting some communities from key supply routes[183] destroying thousands of acres of land and has resulted in eight deaths[184].

Boulder Flood Relief, an all-volunteer locally based organization devoted to facilitating and organizing relief for displaced and in-need individuals, emerged in the wake of the Boulder flood. The organization was inspired by Occupy Sandy,[185] and organized by Occupy Sandy veterans [186] and Occupy members in Colorado.[187] Despite its affiliation with Occupy, it chose to exclude the "Occupy" moniker from the title, though an organizer told us this occurred because the title "Occupy Boulder Flood Relief" was too wordy.[188] Had the Boulder rainfall event been given a name like Superstorm Sandy, they would have used Occupy in the title.[189]

The group started a Facebook page on September 14th, and by September 15, had built a database that contained over 500 people.[190] By September 22nd that database had grown to over 1,500 people[191] and the group had raised over $2,000 and established relationships with a dozen other organizations.[192] Like Occupy Sandy, Boulder Flood Relief is organized horizontally and has used a variety of social media and other tools to share information about volunteer opportunities, including Google Docs, a Facebook account, a Twitter feed, a Tumblr feed,[193] and a Google Plus Account [194], and cel.ly loops,[195] to organize volunteers. @Boulder Flood Relief currently has 1,155 followers on Twitter.[196]

"The first thing we tell people that work with us is that we are affiliated with Occupy," a Boulder Flood Relief member said. "There is some hesitation because they are less familiar with Occupy around here. But when I talk to FEMA, they know about Occupy Sandy and always say how positive we were."[197]

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[182] Bob Henson. "Inside the Colorado Deluge: How much rain fell on the Front Range, and how historic was it?" September 14, 2013. NCAR UCAR AtmosNews. http://www2.ucar.edu/atmosnews/opinion/10250/inside-colorado-deluge

[183] Solomoan Banda. "Colorado races to replace roads washed away by floodwaters before winter descends on Rockies," Associated Press. September 20, 2013. http://www.washingtonpost.com/business/colorado-races-to-replace-roads-washed-away-by-floodwaters-before-winter-descends-on-rockies/2013/09/20/daa0619a-2259-11e3-ad1a-1a919f2ed890_story.html

[184] Sophia Rosenbaum. "Colorado flood death toll rises to 8; Biden tours damage," NBCnews.com. September 23, 2013. http://usnews.nbcnews.com/_news/2013/09/23/20662588-colorado-flood-death-toll-rises-to-8-biden-tours-damage?lite

[185] "Contact," Boulder Flood Relief, last modified 2013. Last accessed September 23, 2013. http://boulderfloodrelief.org/contact/; "Occupy Boulder Flood Relief," Occupy Wall Street, September 19, 2013. http://occupywallst.org/article/occupy-boulder-flood-relief/.

[186] Interview with Boulder Flood Relief member. Interview by Ambinder and Jennings. Phone interview. September 26, 2013

[187] Christopher Mandel, "Observations from Boulder Flood Relief," OpEdNews.Com, September 18, 2013. http://www.opednews.com/articles/Observations-from-Boulder-by-Christopher-Mandel-Colorado-Flood-130918-109.html

[188] Interview with Boulder Flood Relief member. Interview by Ambinder and Jennings. Phone interview. September 26, 2013

What Philosophical Principles Influenced Occupy Sandy?

The following key philosophical principles had a major impact on the network: mutual aid, risk taking, and the "Occupy ideology."

Mutual Aid

Survivors of disasters who require or request assistance are at their most vulnerable. Therefore, it is common for them to feel subordinate to the giver.[198] Charity, the act of providing free material goods or services to someone less fortunate, establishes a relationship of power between the benefactor and the receiver. Many benefactors engage in charity to make themselves feel better

> "Once a population is shocked, there is an opening for a transformation that is real, which can be turned into a positive, if the right stuff is put into place."
>
> — Occupy Sandy member who volunteered in the Rockaways for three months following the storm

without considering the feelings of a survivor. After all, no interpersonal connection is established by writing a check. Here, there is no empowerment of the survivor, only the giver.

Occupy Sandy tried hard not to provide just charity. Instead, it encouraged members to engage survivors at a very humane level anytime an interaction took place. They purposely tried to establish an egalitarian footing. Offering support in this manner conveyed the notion that *your struggle is my struggle*. This is called practicing "mutual aid" and it is one of Occupy Sandy's main tenets.

In practice, mutual aid involves discussion. During this discussion, a back-and-forth emerges where important needs are identified—not just needs of the individual but needs of others known to the individual—and a relationship is established. For example, if a

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[189] Interview with Boulder Flood Relief member. Interview by Ambinder, Eric and Jennings, David. Phone interview. September 26, 2013

[190] "Boulder Flood Relief Timeline," Facebook, last modified September 23, 2013. https://www.facebook.com/boulderfloodrelief

[191] "@ Boulder Flood Relief," Twitter, September 23, 2013. https://twitter.com/BoulderFlood

[192] Mandel, "Observations from Boulder Flood Relief."

[193] "Boulder Flood Relief," Boulder Flood Relief, last modified 2013. Last accessed September 23, 2013. http://boulderfloodrelief.org/

[194] Nicolette Touissant, "Volunteers Lift Spirits as Boulder's Floods Recede," Living in Comfort and Joy: A Weblog Devoted to Architecture, Interior Design, and the Visual Arts, September 19, 2013. http://nicolettet.wordpress.com/2013/09/19/volunteers-lift-spirits-as-boulders-floods-recede/

[195] "@ Boulder Flood Relief," Twitter, September 23, 2013. https://twitter.com/BoulderFlood

[196] Ibid.

[197] Interview with Boulder Flood Relief member. Interview by Ambinder and Jennings. Phone interview. September 26, 2013

[198] Interview with Occupy Sandy finance team member, interviewed by Ambinder and Jennings, Brooklyn, New York, July 16, 2013.

survivor reveals that there is no supermarket open near a particular block, Occupy Sandy knew it should dispense food to that area. Typical "charity" work is more passive and may not allow for this information to be uncovered.

The rationale behind providing mutual aid is that vulnerable populations become empowered when they feel less like a victim and more as a valuable community member with capabilities to help fellow survivors. As community members feel empowered and begin to assist neighbors, they strengthen the social, ecological, and physical infrastructure of their community. The establishment of the YANA community center by Rockaway residents is a prime example of mutual aid's direct benefit to a community. This practice also helped Occupy Sandy members develop relationships with and gain the trust of community leaders and residents.

Another reason to engage in mutual aid is that it does not foster a dependence on aid, as charity often does. In the immediate aftermath, an Occupy Sandy member who worked tirelessly in the Rockaways said she observed firsthand the natural reactions of survivors—from those without power to those whose homes had just been destroyed— who wanted to help neighbors with immediate needs. "People's differences went by the wayside," said the Occupy volunteer, who spent three months after the storm in the hardest-hit areas of the Rockaways. "Helping others became a major coping mechanism for many people. It's much better to have them empowered rather than having these people stand in a line to beg for aid."[199]

Risk Taking

During the relief phase of a disaster, spontaneous unaffiliated volunteers can engage in risky activities. The most common types are attempting rescues or entering heavily damaged structures. During the recovery phase, some engage in demolition work where there is a high risk of exposure to hazardous substances, demolish areas that are not structurally sound, or enter an environment without proper protection (e.g., footwear, gloves, masks, etc.). A volunteer working in this type of environment can injure themself or someone else.

Occupy Sandy volunteers were well aware that they could be held liable for the risks they took, but many said they pushed forward anyway because of the urgency of the need or because they felt that no other group would do the work. A FEMA VAL when we spoke to said any risky behavior the network engaged in was "foolish exuberance" and that individual volunteers were lucky that no lawsuits were ever brought.[200] An Occupy Sandy New Jersey member and former Army tactical operations officer, who is presently providing case management services without formal training to survivors across New

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[199] Phone interview with Occupy Sandy member, interviewed by Ambinder and Jennings, August 23, 2013.

[200] Phone interview with a FEMA VAL, interviewed by Ambinder and Jennings, Arlington, VA, August 2, 2013.

Jersey and Pennsylvania, told us he is doing the work because "if we weren't doing it, it would not get done."[201]

Political Ideology

What does it mean to "occupy"? According to occupy.net, occupying means spotlighting a particular issue and encouraging people to investigate, understand, act, and change something.[202] The greater Occupy movement is about bringing attention to the growing income inequality around the world and solidifying the relationship between multinationals and the state.

When it first started, the Occupy movement was a claim to assemble in a public space. Through Occupy Sandy, it then became about the right to highlight issues by *doing*, with hopes of making change. How social movements achieves their goal is often just as important as achieving the goal itself. For Occupy Sandy, progress came from the ground up through iterative processes of mistakes, meritocracy, and consensus building. These tactics ensured that the network remained focused on the interests of the community.

Occupy Sandy's actions spoke much louder than its words, primarily because the urgency of the situation did not leave much time for politicizing. At the early stages of the movement, very little oppositional political ideology existed in the day-to-day work. From day 1, the focus had been on providing humanitarian aid and members worked tirelessly to do so. Some ideological discussions did creep in during orientation sessions where organizers talked about mutual aid.[203] However, most Occupy Sandy members we spoke to said that very little politicizing occurred, especially early on. They also said that the politicizing that did occur was overwhelmingly to promote peaceful action and discourse.

As relief efforts progressed, and as outsiders began to praise the group, some members of Occupy Sandy became concerned about its association with the Occupy movement. Some saw Occupy Sandy as addressing issues of income inequality through relief work and effectuating the change they wanted to see. Others felt the focus of Occupy had shifted away from bringing attention to political and societal issues.

Externally, the association with the Occupy movement did not deter volunteers, but it raised red flags for other traditional relief organizations and, according to New York City officials we spoke to, the New York Police Department (NYPD). They said the use of Occupy was an issue that was initially problematic for the NYPD.[204] The NYPD was aware that the founding members of Occupy Sandy were part of OWS and it was aware that some members of Occupy Sandy had been arrested in Zuccotti Park in November

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[201] Interview with Occupy Sandy New Jersey member, interviewed by Ambinder and Jennings, Keansburg, NJ, August 16, 2013.

[202] "The Occupy Network," Occupy.net, accessed August 15, 2013, http://www.occupy.net/.

[203] Adam Greenfield, "Urban Omnibus: A Diagram of Occupy Sandy," Urban Omnibus, February 6, 2013, accessed August 15, 2013, http://urbanomnibus.net/2013/02/a-diagram-of-occupy-sandy/.

[204] Interview with officials from the New York City Office of Emergency Management, interviewed by Ambinder and Jennings, Brooklyn, NY, June 28, 2013.

2011. The NYPD knew the OWS movement primarily as an oppositional force and had kept it under constant police surveillance. This perception did not change as Occupy Sandy emerged. The NYPD closely monitored areas where Occupy Sandy initially established, but we were told by Occupy Sandy members that relations between the two groups was one of mutual indifference—they largely stayed out of each other's way.[205] A FEMA VAL we spoke to said that following the disaster, the NYPD recognized Occupy Sandy as positive contributors to communities, which alleviated the tension. He cited an example where an Occupy Sandy vehicle ran out of gas and NYPD officers stopped to fill it.[206]

FEMA VALs worked with particular Occupy Sandy members throughout the relief efforts. "One of the questions early on was whether or not we could even talk to them," a FEMA VAL told us. There was a question sent to the Federal Coordinating Officer and the response was, "[if they weren't breaking any laws], yes."[207] The American Red Cross was more hesitant. A chief of volunteer coordination who oversaw 25 field workers in New York said he was told not to work with Occupy Sandy because of the affiliation with OWS.[208]

How Did Occupy Sandy Use Technology and Social Media?

Occupy Sandy's innovative use of social media and technology was considered by many who were directly involved to be the engine that accelerated the movement.

> "From all of the research we've done, all the people we've talked to, Hurricane Sandy really was a coming out party for social media in disaster relief."
>
> — An aide for the House Homeland Security Subcommittee on Emergency Preparedness, Response and Communications.

The president of a prominent disaster relief organization in New York who worked closely with Occupy Sandy throughout the response phase following the disaster credited much of the network's success to the individuals from the technology and communications teams. "They were masterful in the way they used social media. Why wasn't our social media effort as effective as theirs?" he asked.[209] Another leader of a national organization that organizes volunteer groups echoed: "[we] would love to understand how to use social media correctly as a lot of members have requested

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[205] Personal interview with Occupy Sandy members, interviewed by Ambinder and Jennings, Brooklyn, NY, July 16, 2013.

[206] Personal interview with a FEMA VAL, interviewed by Ambinder and Jennings, Brooklyn, NY, July 17, 2013.

[207] Personal interview with a FEMA VAL, interviewed by Ambinder and Jennings, Queens, NY, August 14, 2013.

[208] Phone interview with a volunteer coordinator of a disaster relief organization, interviewed by Ambinder and Jennings, August 23, 2013.

[209] Personal interview with the president of a New York nonprofit relief organization, interviewed by Ambinder and Jennings, New York, NY, August 15, 2013.

assistance in this area. We would love to learn from [Occupy Sandy]."[210] A member of the American Red Cross told us that when he was working in New York following Sandy, he would stop at almost any location where he saw grassroots relief groups working to ask where they are getting their volunteers and supplies. The overwhelming response, he said, was "the Internet."[211]
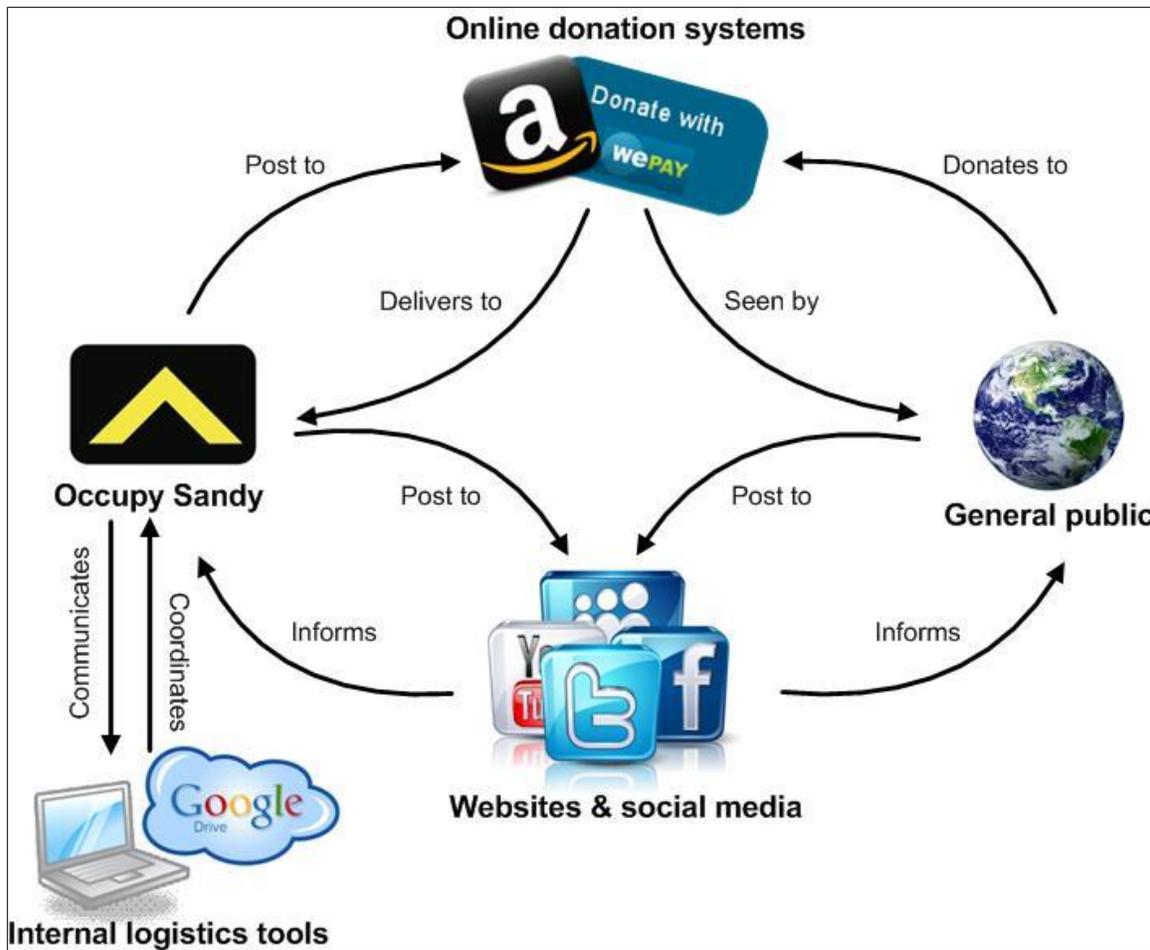
Figure 6. Occupy Sandy used computer-based software and social media platforms to attract volunteers and address community needs. Social media sites like Facebook and Twitter and Occupy websites pushed and pulled information between volunteers and community members across the greater New York area. People around the world donated to survivors through WePay or registries hosted by Amazon.com or local businesses. Additionally, the network coordinated internal operations using Google Drive documents stored in the cloud.

Below are the most common social media platforms and technologies Occupy Sandy used, as well as a short description of their application.

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[210] Personal interview with the president of national relief organization, interviewed by Ambinder and Jennings, Arlington, VA, August 7, 2013.

[211] Phone interview with the volunteer coordinator of disaster relief organization, interviewed by Ambinder and Jennings, August 23, 2013.

Facebook

Within hours of the storm's landfall, Occupy Sandy and InterOccupy[212] set up a Facebook page.[213] The group operating the Facebook page came up with a set of best practices regarding what information to post.[214] Members would update the page with survivor stories, messages, volunteer opportunities, and donation requests.[215] It also served as a repository to receive requests directly from community members[216] and linked to the Occupy Sandy website and Twitter account. By November 17, the page had over 25,000 "likes."[217] In early December 2012, the network had 15 managers dedicated to maintaining affiliated Facebook pages[218] and an admin group that vetted all posts before they were published.[219]

Twitter

Occupy Sandy relied heavily on Twitter. The morning after the storm hit, Occupy Sandy set up an account with the name "@occupysandy."[220] Interoccupy helped manage the effort, setting up additional Twitter accounts that could aid with different efforts.[221] The purpose of the first Twitter account was to bring more attention to the group's fundraising efforts using the group's WePay account and the hashtag #SandyAid to raise awareness.[222] Eventually, the Twitter accounts would be used to announce initiatives,[223]

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[212] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 20, 2012, transcript provided on the Occupy Sandy website.

[213] "AP's Barr Fawns Over Occupiers Sandy Aid Efforts As If No Other Charitable Group Exists," *BizzyBlog* (blog), November 11, 2012.

[214] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 20, 2012, transcript provided on the Occupy Sandy website.

[215] Feuer, "The Aftermath: A Movement Moves to Relief." See also: Kyle Drennen, "NBC Uses Hurricane Sandy Aftermath to Promote Occupy Wall Street," *Newsbusters.org*, November 14, 2012, accessed August 7, 2013, http://newsbusters.org/blogs/kyle-drennen/2012/11/14/nbc-uses-hurricane-sandy-aftermath-promote-occupy-wall-street; Peter Rough, "Occupy Sandy Relief Turns to Protest," Dissident Voice, accessed September 15, 2013, http://dissidentvoice.org/2012/12/occupy-sandy-relief-turns-to-protest/.

[216] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 20, 2012.

[217] Ellen Killoran, "Occupy Sandy: Occupy Wall Street Finds New Purpose in NY Hurricane; Old Tensions Remain."

[218] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 20, 2012, transcript provided on the Occupy Sandy website.

[219] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, December 4, 2012, transcript provided on the Occupy Sandy website.

[220] Sharon Lerner, "How Sandy Saved Occupy," *The American Prospect* (blog), November 27, 2012, accessed August 7, 2013, http://prospect.org/article/how-sandy-saved-occupy.

[221] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 20, 2012, transcript provided on the Occupy Sandy website.

[222] Phone interview with Occupy Sandy internal operations member, interviewed by Ambinder and Jennings, July 16, 2013.

make requests, such as for specific items on their Amazon wedding registry list,[224] bring more attention to particular local initiatives,[225] or re-tweet relief requests.[226] By November 5, the "@occupysandy" account had over 5,000 followers,[227] and by December 4, the main account had over 12,000 followers.[228] At night, while the local Occupy Sandy crew slept, a secondary tech unit in London updated the Twitter feed and other Web services.[229]

Websites

Soon after they formed Occupy Sandy, members of Occupy Sandy and InterOccupy[230] set up a website at interoccupy.net/occupysandy that they used to organize and document their relief efforts.[231] They used the website for everything from coordinating groups of volunteers to raising money. The website also displayed maps that detailed volunteer meet-up locations,[232] team leader trainings,[233] donation drop-off points,[234] and

[223] Steph Goralnick, "Let's Not Forget Superstorm Sandy's Victims," *CNN Wire*, November 25, 2012, accessed date, http://www.cnn.com/2012/11/25/opinion/goralnick-superstorm-sandy/.

[224] Chloe Albanesius, "Local Groups Turn to Amazon Wish Lists for Sandy Relief," *PC Magazine*, November 5, 2012, accessed August 7, 2013, http://www.pcmag.com/article2/0,2817,2411747,00.asp.

[225] Goralnick, "Let's Not Forget Superstorm Sandy's Victims."

[226] Killoran, "Occupy Sandy: Occupy Wall Street Finds New Purpose in NY Hurricane; Old Tensions Remain," *International Business Times- U.S. ed.*, November 17, 2012; accessed August 7, 2013, http://www.ibtimes.com/occupy-sandy-occupy-wall-street-finds-new-purpose-nyc-hurricane-old-tensions-remain-887124; and Cassandra Garrison, "OWS Resurfaces with Occupy Sandy Hurricane Relief Efforts," *Metro—New York*, November 5, 2012, accessed August 8, 2013, http://www.metro.us/newyork/news/local/2012/11/05/ows-resurfaces-with-occupy-sandy-hurricane-relief-efforts/.

[227] Garrison, "OWS Resurfaces with Occupy Sandy Hurricane Relief Efforts."

[228] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, December 4, 2012, transcript provided on the Occupy Sandy website.

[229] Feuer, "The Aftermath: A Movement Moves to Relief."

[230] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 20, 2012, transcript provided on the Occupy Sandy website.

[231] Kristen Fleming and Tim Donnelly, "You've Seen the Devastated Neighborhoods. But Now It's Time to Help Your Fellow New Yorkers, and Kick Sandy's Butt! Join the Surge of Volunteers," *The New York Post*, November 10, 2012.

[232] Matthew Giles, "After the Storm; It's Been Three Weeks Since Sandy Battered the East Coast, But Relief is Still Badly Needed. Here's How to Lend a Hand in Some of the Hardest Hit Areas," *New York Magazine*, November 26, 2012. See also: Killoran, "Occupy Sandy: Occupy Wall Street Finds New Purpose in NY Hurricane; Old Tensions Remain"; Garrison, "OWS Resurfaces with Occupy Sandy Hurricane Relief Efforts"; and "Here You Come to Save the Day: A Quick and Easy Guide to Sandy Relief Efforts," *Gawker*, November 5, 2012, accessed August 8, 2013, http://gawker.com/5957711/how-can-you-help-the-sandy-relief-efforts-a-quick-and-easy-guide.

[233] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 20, 2012, transcript provided on the Occupy Sandy website.

[234] Garrison, "OWS Resurfaces with Occupy Sandy Hurricane Relief Efforts"; and Killoran, "Occupy Sandy: Occupy Wall Street Finds New Purpose in NY Hurricane; Old Tensions Remain."

information on what work the group had already done. Occupy Sandy also maintained an intranet that was, during off hours, staffed by a second volunteer team in London.[235] The site contains a number of subsites and hubs, including a coordinators' hub that hosts links to request forms, e-mail templates, and other resources.[236]

Amazon.com

Shortly after response efforts ramped up, a small group of new volunteers observed that hubs were receiving many items that were not needed. They also observed that there were a number of items that they needed, but which had not been donated. In response, they set up an online space for donations using wedding registries on Amazon.com and began listing items that reflected the actual needs of area communities and Occupy Sandy volunteers.[237] Using the registry was faster than asking for the items online, guaranteed that the group received the number of each type of item required, and ensured that the supplies requested would be sent directly to Occupy Sandy headquarters in New York[238] at the Church of St. Luke and St. Matthew in Brooklyn.[239] In some cases, special items like construction tools were delivered directly to service sites.[240] Occupy Sandy regularly updated the registry to reflect emerging needs. People across the country purchased basic supplies like cleaning aids, batteries, dehumidifiers, and hygiene products, but also purchased big-ticket items like space heaters, generators, and computers. Items were bought almost as quickly as they were listed.[241] As of November 11, they had received $100,000 worth of supplies.[242] A month after the storm, they had received more than

[235] Feuer, "The Aftermath: A Movement Moves to Relief."

[236] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, December 4, 2012, , transcript provided on the Occupy Sandy website.

[237] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 20, 2012, , transcript provided on the Occupy Sandy website. See also Tiffany Yannetta, "How to Help: Occupy Sandy Using Amazon's Wedding Registry for Donations," *Racked*, November 5, 2012, accessed August 8, 2013, http://ny.racked.com/archives/2012/11/05/occupy_sandy_using_amazons_wedding_registry_for_donations.php; Chloe Albanesius, "Local Groups Turn to Amazon Wish Lists for Sandy Relief"; Margot Adler, "Disaster Donations Surge, But What About Tomorrow?" *National Public Radio*, November 25, 2012.

[238] "Here You Come to Save the Day: A Quick and Easy Guide to Sandy Relief Efforts," *Gawker.*

[239] Yannetta, "How to Help: Occupy Sandy Using Amazon's Wedding Registry for Donations."

[240] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 20, 2012, transcript provided on the Occupy Sandy website.

[241] Felix Salmon, "The Problem with the Red Cross," *Felixsalmon.com* (blog), November 12, 2012, accessed August 30, 2013, http://blogs.reuters.com/felix-salmon/2012/11/12/the-problem-with-the-red-cross/.

[242] Feuer, "The Aftermath: A Movement Moves to Relief."

$700,000 worth of supplies.[243] Eventually, the group set up registries with local stores so that resources could be purchased directly from local businesses.[244]

This type of fundraising allows a donor to address the direct needs of the community and shows the donor his or her donation is being used. This provides a measure of impact and heightens the emotional connection between the donor and subjects. Due to the success of this method, many nonprofits are now using registries to solicit direct needs.[245]

Flickr

Occupy Sandy set up a Flickr account to share pictures and videos from its relief efforts. The Flickr account allowed those in the field to share their efforts with online volunteers. Members were encouraged to contribute to the account.[246] These contributions were added to an Occupy project called Sandy Storyline, a participatory documentary of over 150 stories that connects individual stories into a community narrative of the disaster.[247]

Celly and Text Loops

Celly loops and text loops are a type of short message service (SMS) text message. These loops can send a single message to any number of recipients and enable the recipients to reply directly to the sender, without replying to all recipients. For this reason, Celly and text loops were used in conjunction with cell phones to send out frequent Occupy Sandy updates. These loops were particularly useful for regular participants who wanted to know what was needed and to read recent announcements.[248] The organization constructed several loops, including "@OccupySandy," which was open to everyone, and "@OccupySandyAid," which was only used by organizers, though it included 1,500 people.[249] Occupy Sandy used cell loops to convey short updates on situations, as well as to identify volunteers with given capabilities or resources, such as those with access to a generator or a vehicle.[250]

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[243] Lerner, "How Sandy Saved Occupy."

[244] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, December 4, 2012, transcript provided on the Occupy Sandy website.

[245] Raymond Flandez, "Charities Use Amazon's Wish List for Needed Goods," *The Chronicle of Philanthropy*, July 1, 2011, accessed August 12, 2013, http://philanthropy.com/blogs/prospecting/charities-use-amazons-wish-list-for-needed-goods/30565.

[246] Ibid.

[247] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, December 4, 2012, transcript provided on the Occupy Sandy website. Also see Sandy Storyline: http://www.sandystoryline.com/about/.

[248] Personal interview with Occupy Sandy finance team member, interviewed by Ambinder and Jennings, Brooklyn, NY, July 16, 2013; and phone interview with Occupy Sandy internal operations member, interviewed by Ambinder and Jennings, 16 July 2013.

[249] Call minutes of the Occupy Sandy meeting, October 31, 2012.

[250] Admin call minutes of the Occupy Sandy, November 1, 2012.

Sahana

Sahana was the open-source software used by Occupy Sandy to manage its internal inventory.[251] The Sahana Foundation, creators of the software, worked with Occupy Sandy to help implement the software.[252] Volunteers were trained to use Sahana[253] to help manage sites, volunteers, and requests between sites. The software works by allowing users to type in requests, which were filed and tracked in a centralized database that everyone could see at the various hubs and distribution centers,[254] such as the kitchen and the church at 520 Clinton Street.[255] The software was used by Occupy Sandy by the third week after the hurricane, though at that point use shifted based on the changing needs of Occupy Sandy.[256]

Google Products

Various collaborative Google products were used by Occupy Sandy members. These included Google Docs, Google Groups, an offshoot of Google Plus, and Google Drives. Originally, it took three days to put together a Google Doc system that could sort through the incoming inventory requests and highlight all filed requests.[257] Another part of the group set up a Google form for people who were willing to host evacuees that would match the people willing to host with individuals who needed somewhere to stay.[258] In addition, members of Occupy Sandy set up listservs through Google groups to coordinate their efforts and offer another opportunity for communication.[259]

Occupy Sandy set up Google Voice hotlines to communicate with each other across New York and New Jersey. Google Voice was used as a communication channel because calls could be easily forwarded to other phones or computers, did not require cellular reception, and could be easily transcribed to e-mail, unlike a landline or cell phone. Members in the field used the service to report needs, and organizers at the three main

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[251] Personal interview with Occupy Sandy finance team member, interviewed by Ambinder and Jennings, Brooklyn, NY, July 16, 2013.

[252] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, December 4, 2012, transcript provided on the Occupy Sandy website.

[253] Call minutes of the Occupy Sandy meeting, November 14, 2012, transcript provided on the Occupy Sandy website.

[254] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 27, 2012, transcript provided on the Occupy Sandy website.

[255] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, December 4, 2012, transcript provided on the Occupy Sandy website.

[256] Phone interview with Occupy Sandy internal operations member, interviewed by Ambinder and Jennings, July 16, 2013.

[257] Personal interview with Occupy Sandy finance team member, interviewed by Ambinder and Jennings, Brooklyn, NY, July 16, 2013.

[258] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 20, 2012, transcript provided on the Occupy Sandy website.

[259] Call minutes for the Occupy Sandy meeting, October 31, 2012, , transcript provided on the Occupy Sandy website.

hubs in Red Hook, Brooklyn, and St. Jacobi could call the number to identify what items were needed and where they could send them.[260] Having a hotline was an essential capability for Occupy Sandy, and Google Voice supplied that.[261]

WePay

WePay was the main fundraising software used by Occupy Sandy. Originally, the account was set up in the name of a single individual, though shortly afterward the Alliance for Global Justice became a fiscal sponsor for the network. They decided to split the funds raised so that 30 percent was allocated to short-term efforts and 70 percent for long-term work.[262] By December 3, they had raised $544,300, after fees.[263] By December 18, they had raised roughly $700,000.[264]

Mappler

Mappler is an app that compiles geographic information systems into interactive web and mobile-supported maps. After Superstorm Sandy hit, Dr. Wansoo Im and students at Franklin High School compiled a map that showed which of the city's gas stations had run out of gasoline or power. Uploading that information into Mappler allowed anyone with a phone or Internet connection to verify or change that information.[265] Members of Occupy Sandy started using and contributing to Mappler maps as a way to further share data about the ongoing situation.[266]

Occupy SMS

In addition to the other technologies it used, Occupy Sandy members put together their own online SMS network, known as "Occupy SMS." It was accessible via the Occupy Sandy website, at OccupySMS.org, and allowed members and volunteers to create or respond to direct requests for assistance, thereby avoiding crowded distribution hubs.[267]

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[260] Occupy Sandy communications meeting, November 3, 2012, transcript provided on the Occupy Sandy website.

[261] Personal interview with Occupy Sandy, interviewed by Ambinder and Jennings, Brooklyn, NY, July 16, 2013.

[262] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 20, 2012, transcript provided on the Occupy Sandy website.

[263] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, December 4, 2012, transcript provided on the Occupy Sandy website.

[264] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, December 18, 2012, transcript provided on the Occupy Sandy website.

[265] "Hurricane Sandy," Mappler, accessed August 16, 2013, http://www.mappler.net/home/hurricane-sandy/.

[266] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 27, 2012, transcript provided on the Occupy Sandy website.

[267] Ibid.

Constituent Relationship Management (CRM)

Occupy Sandy also used a CRM system to keep track of the people volunteering with Occupy Sandy. The CRM relied on an online database that kept track of individuals, e-mail addresses, skill-sets, and availability. It was used to find people with various capacities and to send e-mails asking for their help when the need arose.[268]

Analog information sharing

In areas without Internet connection or power, Occupy Sandy used analog techniques to share information. Poster-boards and sticky-notes were the primary communication tools. For example, "way-signs" were posted in the neighborhoods without power to direct people to distribution sites and flyers were distributed with additional information on how to receive aid. Organizers stated that simple analog communication strategies coupled with the more sophisticated digital communication approach proved to be a huge success in areas that was without power.

Please see appendix B for a discussion on social media use during Hurricane Katrina.

What Is the State of Occupy Sandy Today?

Ten months later, Occupy Sandy has scaled down considerably in terms of volunteers and the type of work being done. A member still intimately involved with internal operations told us that there are about 30 to 40 people actively engaged on a daily basis.[269]Every member we talked to was confident that if another disaster were to strike the New York area relatively soon, they could mobilize quickly. The network maintains a database of contact information for tens of thousands of volunteers.

Though many New York and New Jersey residents are still living in unsafe conditions, these days the demand for relief work has subsided. Most of the network's remaining members are busy engaging in community-based recovery projects that focus on social issues that existed prior to the storm (e.g., projects that improve community sustainability, support after-school programs, and serve traditionally underserved community members).[270]

If another disaster does not strike soon, a member admitted, "[Occupy Sandy] may fade like Occupy Wall Street."[271] But that might be okay. "It could happen again but it should be spontaneous," said a response official that worked closely with Occupy Sandy and other emergent response groups following Superstorm Sandy. "If they're told to do

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[268] Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, NY, November 27, 2012, transcript provided on the Occupy Sandy website.

[269] Personal interview with Occupy Sandy members, interviewed by Ambinder and Jennings, Brooklyn, NY, July 16, 2013.

[270] Phone interview with Occupy Sandy finance team member, interviewed by Ambinder and Jennings, August 5, 2013.

[271] Personal interview with Occupy Sandy members, interviewed by Ambinder and Jennings, Brooklyn, NY, July 16, 2013.

something, it likely would not happen the same."[272] One potential downside of sharing best practices is that others will not make the same mistakes as Occupy Sandy members did, and therefore may not go through the same learning process. "This can happen again," an Occupy Sandy member said. "If you put capable, competent people in a room and just don't say no."[273]

Some of the more talented members of Occupy Sandy have been hired by official relief organizations, such as FEMA and the American Red Cross.[274]

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[272] Phone interview with a volunteer coordinator of a disaster relief organization, interviewed by Ambinder and Jennings, August 23, 2013.

[273] Personal interview with Occupy Sandy members, interviewed by Ambinder and Jennings, Brooklyn, NY, July 16, 2013.

[274] Personal interview with president of the national relief organization, interviewed by Ambinder and Jennings, Arlington, VA, August 7, 2013.

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FINDINGS

Occupy Sandy Success Drivers

FEMA acknowledged Occupy Sandy's innovative practices and positive contributions to the Sandy response in its Sandy after action report.[275] While the report did not describe the network's activities as part of FEMA's whole community approach, Occupy Sandy operationalized many of the "pathways for action" stated within Whole Community concepts for operation. For example, using mutual aid Occupy Sandy improved their understanding of the community's unique needs and used existing technology platforms to better share information to respond to those needs quickly. They also identified community stakeholders (e.g., churches, community centers, etc.) early in the response phase to build relationships and share information, such as immediate relief needs.

This section of the report identifies several key drivers of Occupy Sandy's positive contributions. They offer key considerations that other groups can draw from for future disaster relief activities. These considerations were based on numerous discussions with Occupy Sandy organizers and other government, NGO, and FBO relief partners.

1. The horizontal structure of Occupy Sandy enabled the response functionality to be agile.

The network's organizational structure promoted rapid decision making and idea incubation, information sharing, frequency of stakeholder interaction, and it empowered volunteers to become leaders in the community. These aspects of agility allowed the Occupy Sandy network to focus and converge on a common goal, and it allowed the network to be scalable to the needs of the disaster.

One of the main attractions to the network was that newcomers could offer their own skill sets or ideas to help solve problems. There was no bureaucracy to filter ideas through or authority to seek approval from before taking action. In the absence of regulations, ideas could be quickly tested and adapted to existing conditions in the field. By removing barriers between resources and survivors, the network could more efficiently address needs.

Both trust and individual initiative are required for a horizontal structure to function properly. Occupy Sandy members trusted each other to make the right decisions, and were also willing to let the best idea emerge. This was true when similar efforts were being conducted in parallel and one eventually was seen as being more effective.

Although horizontal organizing has benefits, it also has several key limitations. Increased autonomy without structural controls decreases oversight and accountability. Without defined leadership or codes of conduct, any member can speak or act on its behalf without any vetting of the message. Additionally, it was never known whether a volunteer would show up or follow through on a promise made to a survivor. There were no expectations or mechanisms in place to enforce participation or follow-through. In

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[275] FEMA, *Hurricane Sandy FEMA After-Action Report* (FEMA, July 1, 2013), 29.

addition, there was always a risk that individuals were providing services or advice to those in the community that they were not qualified to give. Also, membership was fluid and tended to scale with the needs of the disaster. In the absence of an existing trust relationship, the open membership policy made it difficult to gauge a new person's motivates.

Horizontalism is often criticized for leading to disorder, however, shared belief in consensus building helped limit disorganization. In fact, members from Occupy Sandy stated that in moments of chaos the network learned its greatest lessons and improved operations.

2. Occupy Sandy used social media as the primary means to attract and mobilize a large volunteer corps, identify real-time community needs, and share information. Open-source software tools were used to coordinate rapid relief services.

Occupy Sandy used a variety of familiar social media tools to access a wide audience. It populated Facebook pages with updates, requests for assistance, and compelling stories on a regular basis. Multiple Twitter feeds pushed massive amounts of information to the general public and media. This created a narrative that forged an emotional connection with users across New York and around the world, attracting a large volunteer force and an international donor network.

Occupy Sandy used open-source tools, such as Google docs, Celly loops, SMS messaging, and other software to coordinate internal logistics and connect resources to community needs. They used free open-source software platforms because they were familiar and accessible. The small learning curve and minimal training kept the network running efficiently, and made it easier for existing and potential volunteers to maintain situational awareness. These tools enabled rapid communication across a complex system.

3. Occupy Sandy leveraged the Occupy Wall Street infrastructure to emerge within days of the storm.

To rapidly establish itself, Occupy Sandy incorporated the "Occupy" meme into the network's title and broadcasted through Occupy's social media platforms. This enabled Occupy Sandy to spread quickly over a culturally diverse region of the country and to accumulate as many as 60,000 volunteers.

A significant number of volunteers who identified with Occupy's philosophies were skilled in a variety of technical disciplines and were willing to contribute. For example, Occupy's tech-savvy members designed state-of-the-art websites, modified existing disaster management software, compelled users to participate through social media, and designed logos and promotional materials. Volunteers developed Occupy swag and displayed the Occupy Sandy logo at sites across New York City and New Jersey. All of this was part of Occupy Sandy's strategic appeal, which attracted resources and media attention. In the weeks following the storm, media outlets and blogs compared Occupy Sandy with other relief organizations such as FEMA and the American Red Cross, characterizing Occupy Sandy as a comeback for the Occupy social movement.

4. Occupy Sandy leveraged existing community infrastructure to address needs, establish trust relationships, and build local capacity.

Occupy Sandy used capabilities and resources from affected communities to address needs, build local capacity, and improve infrastructure. A large majority of in-kind donations came from individuals that lived in New York City and New Jersey.

Most Occupy Sandy volunteers lived in nearby areas so they had a vested interest in improving the community. Occupy Sandy embedded in the community to improve capacity. For example, private residents opened their homes to host meetings and store donations. Area businesses donated resources (e.g., restaurants donated high-quality, healthy food). Houses of worship, community centers, and local shops served as main hubs. This strategy forged trust relationships within communities, and also opened up new revenue streams for local businesses.

5. Transparent practices increased trust among Occupy Sandy members and the general public.

Occupy Sandy took steps to ensure transparency, which built trust among members and externally with the public, media, and other disaster relief organizations.

Operations to raise funds, receive in-kind donations, and collect data from the public were open and transparent. The network made a wide variety of information available to the general public, including internal meeting notes, organizing members' contact information, the income and balance statements, and conference call information.

These efforts enhanced trust among members and with the community, including the media and other relief organizations. It also helped to diffuse hesitation in working with a network affiliated with the Occupy movement.

Limitations of Traditional Relief Efforts

In the immediate aftermath of a disaster, all agencies must work to save lives, stabilize infrastructure and establish security—these missions must move forward unhampered by thousands of pages of compliance requirements, and command-and-control across local, state, non-profit, unaffiliated entities, and federal boundaries.

As is the case with major disasters, Superstorm Sandy's impact exceeded the capacity of traditional relief organizations and exposed inadequacies in disaster relief processes. As such, we identified the following limitations through the course of our research and analysis on Occupy Sandy.

1. Emergent grassroots entities, such as Occupy Sandy, were not sufficiently integrated into FEMA's Whole Community approach.

Based on the perspectives of Occupy Sandy members and community leaders in the affected areas, the key goals of the "whole community" approach—(a) to understand and meet the actual needs of the whole community; (b) to engage and empower all parts of the community; and (c) to strengthen what works well in communities on a daily basis—

were not adequately achieved during response efforts. FEMA did not provide enough support to or communicate effectively with grassroots relief entities at the local level. Primary support from FEMA to grassroots entities occurred on an ad-hoc basis between individuals, and institutional assistance was minimal.[276] As of the publication date of this report, many communities across New Jersey and New York continue to suffer from unmet needs and remain vulnerable to future disasters.

2. Disaster relief entities (e.g., local, state, federal, NGO, unaffiliated entities) lacked a common operating picture to coordinate response efforts during and after Superstorm Sandy.[277]

Despite providing significant assistance, VOADs and emergent entities were not adequately integrated into the greater response operations. There was no common platform from which government, VOAD, and emergent entities could view, share, and coordinate information. As a result, there was a low level of shared awareness across all disaster relief entities.

During the response to Superstorm Sandy, many responders wasted precious time trying to understand each other's capabilities and resources. Such groups lacked answers to basic questions, such as:

- Who needs help?

- How do we plug into the response?

- What is currently being done?

- What resources and capabilities are on the way?

- How can we get more resources?

Having a source that consolidates and shares this information increases the agility to address needs and the ability to synchronize toward a common goal.[278]

During all major disasters, government agencies and NGOs develop critical partnerships as they work together providing direct aid and relief services. Relief entities come to depend on each other and offer complementary capabilities to the disaster environment. The lack of a common platform remains one of the major shortfalls that needs to be addressed to ensure the best use of limited resources across response efforts.

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[276] Occupy Sandy was invited to participate in VOAD conference calls and the network stated this inclusion was particularly helpful in that it provided information about local relief hotlines and support services. From: Occupy Sandy Network Assembly Meeting, St. Jacobi Church, Brooklyn, New York, NY.: November 20, 2012, transcript provided on the Occupy Sandy website.

[277] Please see appendix A for a proposed solution to this limitation.

[278] Adapted from David Alberts, Reiner K. Huber, and James Moffat. "NATO NEC C2 Maturity Model." Department of Defense, Center for Advanced Concepts and Technology. (February 2010), 27.

3. CERT training materials do not address how to use social media to help communities prepare for and respond to disasters.

A major success factor of Occupy Sandy was its innovative use of social media to identify needs and coordinate response efforts at the hyper-local level. These tools connected community members in real time with volunteers who could supply necessary information and resources. Not only did Occupy Sandy connect directly with those affected through social media but a significant number of individuals across New York and New Jersey used sites like Facebook and Twitter to post needs and resources.

FEMA Community Emergency Response Team (CERT) training materials lack information on how individuals or communities can use social media to prepare for and respond to disasters. The only mention of social media in any CERT training material on the FEMA.gov website is in the context of suggesting that CERT organizers use Facebook and Twitter to recruit college students. The primary use of social media is to allow individuals and social groups to communicate almost instantaneously across large geographic distances. Since a majority of Americans communicate through social media it can be a great resource for FEMA to connect with the public to meet the principles of Whole Community.

4. FEMA VALs were constrained by factors that limited their ability to build community resilience.

A FEMA voluntary agency liaison's main responsibility is to develop relationships with emergency responders in the community so that they can share information and coordinate local response efforts. FEMA VALs faced the following constraints responding to Superstorm Sandy:

- Community needs exceeded their capacity to perform mission-critical functions.

- Larger voluntary relief agencies tended to dominate FEMA VAL's time and attention, at times excluding grassroots relief networks from the larger response operation.

- FEMA VALs deployed to affected areas after the incident had little time to develop relationships with community leaders and relief partners, and faced a steep learning curve when integrating with local agencies.

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RECOMMENDATIONS

Certain actions can be taken to minimize unmet needs and to improve relief structures before the next disaster occurs. Based on our analysis of Occupy Sandy and its role as a grassroots network, we have identified several considerations for the broader DHS response community. We recommend the following:

1. Determine how FEMA can coordinate response activities and capabilities with grassroots entities operating at the local level as a way to further operationalize the Whole Community approach to prepare for, respond to, and recover from disasters.

2. Develop capability requirements to increase information sharing across all entities responding to a disaster, including VOADs and emergent relief entities, so the collective can achieve a high degree of shared awareness and understanding of available information.

3. Include guidelines on how to use social media to prepare for and respond to disasters in CERT training materials.[279, 280]

4. Conduct research on the FEMA VAL program to determine whether it adequately aligns with the Whole Community approach (e.g., is the program adequately resourced for large disasters and what improvements need to be made to achieve mission success).[281]

Concluding Thoughts

The scope of Occupy Sandy's efforts should be taken in the context of the total response and recovery effort to Superstorm Sandy. Multiple public and private organizations at the neighborhood, local, state, regional, and federal level conducted massive efforts. However, it is clear from our research that the Occupy movement complemented these

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[279] The advance identification of available social media, and the selection of specific systems for use by all involved agencies, needs to be accomplished in the planning cycle to insure these communication capabilities are part of documented communication planning. All agencies must be trained in their use to maximize their capabilities.

[280] Most studies on the use of social media in disasters have focused on surveillance (e.g., monitoring Twitter feeds to identify trends) or persuasion (e.g., advertising what to do during an emergency). Studies should be conducted to determine how communities can collect data responsibly (evidence-based data) to identify mission critical gaps.

[281] The FEMA VAL program's mission should incorporate the following principles of community resilience: (1) keep locus of control within the community, (2) provide aid that will empower the community to help itself, and (3) support local value chains. Locus of control means control of decision-making about addressing mission critical functions remains with community members. Community capacity building means lessening the community's reliance on dependency aid by investing in community infrastructure and systems with low overhead costs. Support local value chains by injecting resources into community value systems to strengthen the social, ecological, and infrastructure resilience system.

efforts and in some cases filled critical gaps. We can learn lessons from Occupy Sandy's successes to ensure a ready and resilient nation.

APPENDIX A. A SOLUTION IN SOFTWARE

The following information was developed as a potential solution for limitation number two.

Problem Statement

Disaster aid entities are dependent upon one another. Government needs nongovernmental organizations, or NGOs, to act as service providers. NGOs need government for access, information, coordination and some of the higher order elements of response, relief, and recovery (e.g., helicopter evacuation). The private sector can assist greatly in many facets. The diverse nature and speed of the private sector can provide direct services, provide resources, or amplify the actions of government and nongovernmental entities. Individuals too, acting alone or in coordination with other emergent groups, can make a difference. This report has demonstrated the extraordinary impact of the Occupy Sandy volunteers.

But these dependent entities face a challenge. The problem is that there is neither a system nor a tool that allows for shared situation awareness and information sharing. FEMA has used the term "common operational picture (COP)" when describing the situational awareness needed to be shared by government and others.

Technology can enhance disaster response, relief, and recovery through collaboration and portals wherein decision makers from multiple entities can engage in multifaceted decision making.

Background

Consider the following questions when thinking about the roles and activities of volunteers in response and recovery:

- Who is available and willing to help? What is the best way to reach them, to coordinate with them?

- Where are they located and how will they get to the area where they will work? What are their skill sets? How does one know that a volunteer claiming to have a particular skillset actually has the skills to perform those tasks safely, without engendering themselves or others?

- What areas of the disaster site are safe and ready for volunteer assistance? Where are volunteers most needed? What should those volunteers do? What is the priority? What resources should they bring with them and what resources are already there?

- If a volunteer is hurt while volunteering, what then? Do they have medical insurance? In the worst case scenario, who knows the next of kin of each volunteer? How may those next of kin be reached?

- If a volunteer does harm to someone or to something else, who is liable? Who is responsible? How does one know that the volunteer was operating within the bounds of their reasonable skills (i.e., are protected by Good Samaritan laws)?

- How may the activities of these volunteers be coordinated with the activities of government (e.g., FEMA disaster relief, NGOs, and FBOs)?

These questions point to an information management need. It is a well-established lesson of history that human group activity is most effective when it is orchestrated by someone or some group that has an overarching understanding of certain information.

What Information?

Sun Tzu, writing in *The Art of War*, suggested the following axiom when discussing armies and war: "Know yourself and be victorious in 50 battles. Know the enemy and be victorious in 50 battles. Know yourself and know the enemy and be victorious in 100 battles."[282]

This is a fitting analogy for disaster response and recovery. When Sun Tzu referred to knowing yourself, he was referring, in large part, to knowing an army—its strengths, weaknesses, resources, disposition, capabilities, etc. Following a disaster, it is an army of paid employees (e.g., from utility companies) and volunteers who form "the army." The enemy in this analogy is the disaster and its consequences. Floodwaters, damaged infrastructure, compromised buildings, deaths, injuries and illnesses, debris, wet and molding drywall, the trauma and loss felt by the victims—those are the enemy.

Thus, following a disaster, who has situational awareness of the enemy—who knows what is what in the disaster area? Who knows the army?

Volunteer Affiliations

Before we can answer those questions, we have to discuss the types of volunteers which may comprise the army.

For years, the emergency management community has classified volunteers as "affiliated" and "unaffiliated." Together, these two groups make up the army that has provided response and recovery capabilities. However, they are very different.

Affiliated volunteers are those connected in some fashion to an existing hierarchical NGO or FBO. For example, consider the volunteers from Operation Blessing who provided meals following Hurricane Katrina. In general, Operation Blessing staff assigned volunteers to tasks (e.g., prepare food, distribute food, and serve food) and coordinated the activities of a large number of such volunteers to achieve efficiencies and in so doing, responded to where the need was greatest. The staff, like that of other NGOs and FBOs, also coordinated with government officials. As the response and recovery effort settled into a rhythm, this coordination allowed the government (e.g., FEMA)

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[282] Tzu, Sun, and Samuel B. Griffith. *The Art of War*. London: Oxford University Press, 1971.

visibility into the situation. This coordination also allowed the government to direct, or influence, efforts in such a way as to hopefully expedite response and recovery. Affiliated volunteers have often completed some form of certification or training program designed to prepare them to serve in a disaster. The American Red Cross offers many such courses and is an excellent training source for those wishing to serve the next time a disaster touches their community.

Being affiliated with a known NGO or FBO, these volunteers are afforded special rights and privileges intended to enable them to serve.[283] For example, following Hurricane Katrina, affiliated volunteers serving as part of an NGO or FBO that had successfully coordinated with government authorities, were granted entrée into the disaster area. Those wishing to help, but not affiliated with a recognized NGO or FBO, were not given the same access to the area.

Non-affiliated (or also called "unaffiliated") volunteers refers to those volunteers not operating under the auspices of an NGO or FBO known to FEMA. Following analysis of the Hurricane Katrina response, HSSAI observed that unaffiliated volunteer activities appeared to be "frowned upon" by government, NGOs, and FBOs. The image sometimes presented in emergency management workshops and conferences is that of a "well-meaning mob": well intentioned, but disorganized and uncoordinated.

Coordination is critical in disaster response and recovery. Victims are waiting for delivery of food and water. They may be without shelter and are waiting for transportation for a shelter. They may be seeking medical care. The list of functions provided by organizations following a disaster is presented in our discussion of Hurricane Katrina. The bottom line is that the emergency management community has learned that poor coordination by those engaged in response and recovery always translates into prolonged suffering. Sometimes, it translates into wasted resources.

Grassroots Disaster Relief Networks

Occupy Sandy, and similar social media-coordinated efforts that we may see in the future, add a third element to the army. In the traditional sense, they are neither affiliated volunteers nor non-affiliated volunteers. At the start of the event, they were mostly non-affiliated and they coalesced and integrated horizontally thanks to social media. Later in the event, they were operating similarly to a traditional affiliated organization (e.g., they had training, screening, assignments, etc.).

Thus, Occupy Sandy seems to create a new category: the grassroots disaster relief network. This is a collective of volunteers using social media to coordinate with each other, but who do not have the same connectivity to the greater response and recovery effort as do the affiliated volunteers of established NGOs and FBOs.

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[283] Following Hurricane Katrina, FEMA engaged in an effort to determine the best method for credentialing volunteers, both in terms of their skill set, e.g., doctors, and their affiliation, to which organization did they report.

Among the characteristics of established NGOs and FBOs is a close connection, particularly in the field, with FEMA. This connection may include a path to information sharing and management through the VOAD, through the VAL, or through the FEMA center set up to deal with the disaster. Many times, the path to information sharing is through the laborious, but time-tested, technique of conference calls. These calls may have tens or hundreds of participants. In addition, the calls may be specialized according to emergency support function. In other words, everyone involved in shelter, for example, gets on the conference line once or twice or more often per day to give a status update to FEMA, seek resources, identify issues and problems, and update government's understanding of the situation. In addition, there are broader calls which look at the bigger picture. These are often coordinated by FEMA headquarters and include all of the elements of government power and the whole of community of responders.

Through these paths, the efforts of volunteers are coordinated by, and included in, the broader government information management effort. A COP evolves that integrates the FBOs and NGOs efforts and ultimately paints that picture at the highest level of disaster response recovery coordination—the NRCC.

Established NGOs and FBOs also manage information internally—many have their own information management systems for tracking volunteers, assigning them to tasks, ensuring they have the right capabilities and skills, assessing what is needed, and tracking progress on various tasks and activities.

However, this is not the case for volunteers coordinated via social media. For them, there is no software system that coordinates their activities and shares that information with the broader government response.

For affiliated responders, the government knows the "disposition of forces"—they know who is where and what they are doing because their information is tied to FEMA through connections (e.g., the VAL), through systems managed by or for FEMA, and through voice reporting over conference calls. But this may or may not be the case for the volunteer mobilized by social media.

Capability Gap

Occupy Sandy has set a precedent: future disasters may see non-affiliated volunteers mobilized by social media and somehow coordinated by those who mobilized them. Somewhere in that process, a need is identified and a call for help to deal with that need is issued. This may be done through a traditional hierarchical relationship or simply through the sharing of social media. But how does FEMA know that volunteers mobilized by social media are headed to a location to fill sandbags? How does FEMA know that those volunteers are clearing debris away from the streets in a certain area? An information management system that integrates requirements, resources, and activities—all the complex tapestry of human response to disaster—is needed.

What Might Be Characteristics of Such a System?

To answer that question, we recommend a thorough capability gap analysis. That analysis would identify operational and technical requirements and make recommendations. Such an effort is beyond the scope of this research.

However, during interviews with those who responded to Superstorm Sandy and in the HSSAI research of previous disasters, some common requirements and desired characteristics have emerged. They have identified the need for a potential solution.

Potential Solution

One proposal may be for a software system that allows government, traditional established NGOs and FBOs, and non-affiliated volunteers to coordinate their activities in virtual space.

The system would include capabilities for mapping, situational awareness, and resource tracking. These capabilities would allow anyone with access to identify what is needed and what they may be able to do to respond and to track their activity and de-conflict with others' activities. In effect, such a capability becomes a virtual emergency operations center. Only in this case, instead of just a few people seeing the overall picture, everyone with access can see it. Instead of reporting through laborious conference calls, activity reporting is online, continuous, and shared.

The system would also include tools more typically associated with social media. For example, a shared community blog, or bulletin board, or calendar—all of which allow anyone to gain situational awareness.

Another unique aspect would be that volunteers could "log in," find a need, indicate they were going to fill the need, and report on their status.

Impact

Current disaster relief efforts appear to suffer from duplications of efforts and holes in aid provision because of a lack of situational awareness. This is particularly true as one looks at entities other than federal and state. On a spectrum of response, with federal government at one extreme and neighbor helping neighbor at the other extreme, situational awareness becomes more problematic as one moves away from the traditional government entities and towards the individual.

A collaborative system, such as a web and smart phone based platform, would enable coordination and shared situational awareness. Theoretically, it appears that this tool could exist without the hierarchical oversight and structure, which some have referred to as "command and control." It is technologically feasible to create such a tool.

By having this digital common meeting place, all disaster relief entities could work off of the same situational awareness. This is truly "whole of community" engagement. Such a tool could be collaborative. It would allow for organizations with specializations to

maximize their efforts to the hardest hit areas or to communities with lowest socioeconomic status or access to resources.

Ultimately, any effort that reduces inefficiencies could decrease the suffering of survivors post disaster and perhaps, by the more efficient allocation of resources, decrease recovery costs.

A Revolutionary Advancement

Such a system would not represent a subtle evolution in the management of disaster response and recovery in the United States; it would be rather revolutionary. Until now, FEMA has directed governmental resources and has coordinated with affiliated FBOs and NGOs. In both cases, communications carrying orders to those who implement and report back so that leadership may have situational awareness have followed traditional hierarchical pathways.

Not so with this proposal. Now, for the first time, the government—those who are ultimately responsible for the welfare of the nation's citizens—has the opportunity to coordinate directly with the individual volunteer. Groups who are interested in one specific area (e.g., sheltering and care of pets) may arise through social media and government could coordinate their activities along with the activities of the traditional affiliated organizations.

Such a system would truly be "whole of community" in that it could reach past levels of government and organizations and, instead, communicate directly with each individual wishing to serve.

System Challenges

Improvements and change face challenges. This idea—a more collaborative information sharing approach which then changes how we respond and recover—would also face hurdles.

One of the challenges of such a system would be filtering. Those who coordinate disaster response and recovery activities already find themselves awash in a sea of reporting and details. This proposed system would have to include sophisticated techniques for filtering and sorting information so that it does not overwhelm those who need to find specific elements of information.

Validity and verity are also challenges. In such an open-access architecture, how does one determine the validity of an observation or a call for resources?

A third challenge is more subtle: it is perception. Trained and experienced disaster responders, such as FEMA's disaster assistance employees, have years of working disasters. Consequently, we assume their judgment as reported in assessments is "wiser." In contrast, reporting from a volunteer, responding for the first time to a call for volunteers issued via social media, may lack the discernment that comes from experience.

There will be many more challenges. How do you ensure the qualification of someone responding? How do you keep out criminals who might use the system to gain access to the area for looting, etc.?

Desired Next Steps

So now what? If such a capability is needed and if we wish to integrate the capabilities of horizontally-motivated volunteer groups such as Occupy Sandy, what should happen now?

Several actions would seem prudent:

1. **Review related efforts**. Compare and contrast those efforts and ensure that this initiative is not duplicating work already underway.

2. **Develop an operational requirements justification**. This would be a document that focuses on "why this capability is needed." It would identify the existing gaps. It would also take into consideration the emergence of phenomena such as Occupy Sandy.

3. **Determine desired characteristics of such a system**. As a minimum, what should it be able to do? For example, such a platform could include a mapping section, a community bulletin board, a virtual EOC, and important laws, regulations, and policies.

4. **Conduct a technical evaluation**. What can be done with existing technology? What could be done with imminent advances in technology? How may this technology be merged with existing social media technology?

5. **Engage stakeholders**. Such an initiative would require support from a large number of stakeholders. Government (federal, state, and local), industry, the emergency response community (e.g., the International Association of Emergency Managers), the NGO community, technologists, and the social media all would be relevant to the discussion.

6. **Find a champion**. Efforts such as this fare best when championed by an advocate who is positioned strategically to advance the cause. Should this be an initiative of FEMA? Should the champion come from the National Security Staff? Is NVOAD the right champion? These are important questions: with advocacy comes implied ownership and responsibility. While a virtual system may be shared equally, ultimately someone is responsible for content, technical management, and ongoing improvement.

7. **Test and evaluation**. In this step, we recommend test and evaluation of the system. Initially, this could be performed as a technical test and evaluation. However, eventually, one would want to test and evaluate the system in an operational—real life—environment.

8. **Design, procure, and deploy**. Because this is a network solution, the "design, procure, and deploy" aspect of this may be different from a traditional

procurement of equipment from a manufacturer and supplier. However, someone will own the code and whoever hosts the system may demand compensation.

Each of these steps could be completed; none are beyond technological feasibility. Tied together they form a "campaign." That campaign, based on the success of Occupy Sandy, will move the needle of the emergency management community closer to the desired characteristic of resilience. Thanks to such a capability, more volunteers will be able to respond more smartly and more effectively.

APPENDIX B. THE 2005 HURRICANES: A POTENTIAL COMPARISON?

In the summer of 2005, Hurricane Katrina struck the Gulf Coast with devastating consequences. A perfect storm of things went wrong. The geographic scale, intensity, and duration of the hurricane and its subsequent affects quickly overwhelmed existing disaster response resources. The levees broke. Federal, state, and local governments failed to respond expeditiously and effectively. The floodwaters remained, stealing the city of New Orleans of critically needed electricity, telecommunications, and transportation infrastructure. Evacuees waited for rescue on rooftops while others waited in an oppressively hot and fetid mass refuge of last resort. The swath of the harm seemed unprecedented; an entire region, from Texas to Alabama, had stories of suffering to tell. For days, the American public watched the tragedy unfold with disbelief. For weeks and months, the stories continued as America watched the faltering recovery effort.

Hurricane Katrina had such a horrific impact on the American psyche, particularly in regard to public confidence in government to respond, that it has become a benchmark in emergency management. It is the storm against which others are measured.

Given that, we wondered if a comparison between the role of social media in the response and recovery efforts of Hurricane Katrina and Superstorm Sandy might be insightful. However, while there are some similarities between the summer of 2005 and Superstorm Sandy, there are also many differences which may make it impractical to draw useful conclusions regarding the role of social media and the actions of those mobilized by social media, such as Occupy Sandy. Those similarities and differences are discussed below.

Heralding Unheard Voices

Immediately following Hurricane Katrina, HSSAI conducted a thorough study of the role of FBOs and NGOs in the wake of the Hurricane Katrina. The breadth of this study was soon expanded to cover lessons learned from Hurricane Rita. The product of this research is an analysis published under the titled *Heralding Unheard Voices: The Role of Faith-Based and Non-Governmental Organizations During Disasters*.

Methodology

HSSAI collected data from February through June 2006. From a methodological perspective, the time frame for collecting data was appropriate. Earlier attempts at collection revealed that organizations were still too engaged and thus too busy to partake in discussion. HSSAI therefore delayed start of collection until February 2006. Collection much later than this period would have run the risk that lessons learned were being forgotten to time.

HSSAI analyzed the data using two techniques: historical analysis and quantitative analysis. The historical analysis drew upon extensive interviews with staff and volunteers

from organizations, most of which are (or were at the time) located in the region directly affected.

- HSSAI contacted 1,082 FBOs and NGOs. The initial list of organizations to contact was provided by FEMA headquarters, the Louisiana Family Assistance Center, and some of the organizations on the ground in the area. As HSSAI spoke with each organization, they would often advise us of other organizations or individuals in the area to contact; therefore, HSSAI expanded the list to include those organizations.

- HSSAI conducted 252 phone interviews. Phone interviews ranged in length from 15 minutes to several hours. It is important to note that telephone interviews were open ended: HSSAI did not seek specific answers to specific questions. Rather, in each interview, HSSAI team members encouraged interviewees to simply tell their story. The task team felt it was important to explore the background and issues associated with the response to the hurricanes; an "open topic" interview approach seemed to encourage the type of dialogue sought by the task team.

- HSSAI conducted 46 in-person, in-depth interviews. Most of these were conducted by the task team during several trips to Louisiana and one trip to Texas. These interviews helped deepen the task team's understanding of the issues faced by organizations, the functions they performed, and the tools they used.

- HSSAI visited New Orleans, Baton Rouge, Houston, and other affected areas. During these visits, task team members met with those who had first-hand local knowledge of how their community was impacted and how it responded.

- HSSAI hosted a one-day conference at the River Center in Baton Rouge, Louisiana on June 7, 2006. The conference was open to any FBO or NGO that provided services during or after Hurricanes Katrina or Rita. A total of 233 participants attended, ranging from national directors of large organizations to first-time volunteers, as well as DHS, FEMA, and city and state government representatives. The conference included breakout sessions that allowed HSSAI to gather comments from attendees. The conference validated the task team's initial findings.

The quantitative analysis drew upon a survey that HSSAI sent to 694 individuals and organizations. These were the organizations that the task team believed to have been most active in the response. HSSAI received 153 responses from 127 organizations. The survey asked binary questions (yes or no) about 41 different relief and recovery activities that were performed. The results of the survey allowed the task team to quantify, with some limitations, the functions performed by NGOs and FBOs.

For two years following publication of the report, HSSAI presented its findings at seven workshops convened across the country at the behest of the DHS Office of Faith-Based and Community Initiatives. In addition, the findings were presented at a break-out session of the annual meeting of International Association of Emergency Managers. Feedback received from these sessions suggested that the findings were valid.

Study Findings

HSSAI found that FBOs and secular NGOs stepped in to fill the gaps when the hurricanes overwhelmed the existing disaster response resources. FBOs and NGOs undertook a surprisingly large, varied, and demanding set of activities with extraordinary effectiveness.

FBOs and NGOs performed at least 10 major services and 33 subfunctions. Those 10 services are:

1. **Shelter services**. Seventy-nine percent provided shelter to evacuees, relief workers and volunteers, or both. Sixty-five percent provided shelter to just evacuees. Fifty-one percent provided shelter to just relief workers and volunteers.

2. **Food services**. Eighty-five percent provided some type of food service. Sixty-five percent prepared meals that they served or that they provided to other organizations for serving. Sixty-nine percent served meals that they either prepared themselves or received from others. Forty-three percent distributed prepared food to other communities or organizations.

3. **Medical services**. Sixty-two percent performed some type of medical service. Thirty-five percent provided advanced medical care. Forty-three percent provided basic medical care or first aid. Thirty percent assisted with medical prescriptions.

4. **Personal hygiene services**. Eighty-eight percent provided some type of personal hygiene service. Eighty percent assembled or distributed supply kits, including toiletries and cleanup supplies. Fifty percent provided laundry services. Fifty-five percent provided showers and other hygiene services.

5. **Mental health and spiritual support**. Eighty-seven percent provided some form of mental or spiritual counseling and care services. Fifty-eight percent provided mental counseling and care services. Eighty-one percent provided spiritual counseling and care services.

6. **Physical reconstruction services**. Fifty-four percent were involved in some form of physical reconstructions services. Forty-three percent removed debris or trees. Thirty-four percent removed mud or cleaned up homes. Forty-seven percent provided home repair services such as interior gutting or roof repair.

7. **Logistics management and services**. Eighty percent provided some form of logistics management and services. Fifty-three percent conducted assessments of community needs. Seventy-two percent transported or distributed supplies. Fifty-three percent warehoused supplies.

8. **Transportation management and services**. Sixty-one percent provided some form of transportation management and services. Forty-two percent shuttled evacuees. Thirty-eight percent shuttled relief workers and volunteers. Thirty-seven percent evacuated or relocated evacuees.

9. **Children's services**. Fifty percent provided child care or educational services. Twenty-four percent established a formal child care center or program. Forty-six percent provided educational services.

10. **Case management services**. Ninety-two percent provided some form of case management or related service. Seventy-nine percent provided information to evacuees. Eighty-seven percent provided referral services. Sixty-three percent assisted evacuees in completing forms and applications. Seventy-one percent provided direct financial relief to evacuees.

Where Was Social Media?

HSSAI's methodology, which included extensive first-hand data collection and findings, are chronicled above to relate to this current task of exploring the role of social media in response and recovery. We believe that report captured a complete and exhaustive understanding of the role of FBOs and NGOs in response and recovery during the summer of 2005 hurricanes. More specifically, HSSAI gained a comprehensive understanding of all their major functions and an understanding of the tools they used to perform those functions. Perhaps most importantly, there were literally hundreds of opportunities for FBOs and NGOs to mention their use of social media.

Given all that, what did we learn about social media and its role in Hurricanes Katrina and Rita? Simply put, it was not there. Interviewees, participants in the conference, and attendees at subsequent workshops never once mentioned the use of social media. This may seem surprising. However, when one looks at the similarities and the differences between the hurricanes of 2005 and Superstorm Sandy, it becomes less surprising.

Two Very Different Events

For victims of any tragedy, pain and suffering are personal and real. Thus, in comparing Hurricane Katrina to Superstorm Sandy, we do not intend to minimize the human experience felt by those touched by either disaster. However, comparing the two storms enabled us to ask the question, what was different? Why was social media present in response and recovery efforts for Sandy but absent in Katrina? To answer those questions, we have to characterize the two events and describe them in terms of relative measures. We hope these characterizations do not lead those harmed by either storm to feel that those characterizations minimize their experience.

Traditional Comparisons

By some traditional measures, Superstorm Sandy was a greater disaster than Hurricane Katrina. For example, "There is a metric that quantifies the energy of a storm based on how far out tropical-storm force winds extend from the center, known as Integrated Kinetic Energy or IKE," wrote Brian McNoldy, a senior researcher at the University of Miami's Rosentiel School of Marine and Atmospheric Science. McNoldy continues, "In modern records, Sandy's IKE ranks second among all hurricanes at landfall, higher than devastating storms like Hurricane Katrina, Andrew, and Hugo, and second only to

Hurricane Isabel in 2003."[284] In addition, the population in New Jersey and New York is greater than the Gulf Coast and the population density is denser; in other words, there are more people who can be harmed. For example, Superstorm Sandy affected more states. This means that more state and local governments were involved. With that come the bureaucratic difficulties of coordination, jurisdiction, authorities, etc.

But by other traditional measures, Hurricane Katrina was more devastating. For example, and perhaps most dramatically, Katrina caused 1,833 deaths compared to 125 deaths caused by Sandy.[285] Hurricane Katrina was a Category 3 (120 mph) hurricane at landfall in New Orleans. Superstorm Sandy was a Category 1 (80 mph) storm when it struck New Jersey. The levees, which separated populated land areas from water, in New Orleans broke; this allowed continuous flooding after the hurricane's passage. Flood waters remained until multiple emergency levee repairs could be constructed and several weeks of pumping could be completed. In addition, the horrific suffering in the Superdome has been well chronicled. To date, Hurricane Katrina remains the standard against which other disasters in the United States have been and will be measured.

In the aftermath of both Katrina and Sandy, much has been written on traditional impact measures such as storm surge, total rainfall, number of days without electricity, number of persons evacuated, etc. But are these the right measures for comparing the two events when one is trying to understand why social media has played a role in the latter event and not the earlier one?

A Different Set of Measures

Perhaps a different way of looking at the two events would be more revealing. When evaluating the potential for social media to support response and recovery in various disasters, we suggest that the following seven factors—rather than traditional measures of a storm—may be more useful.

1. **Telecommunications infrastructure**. All social media rely upon some communications pathways to transmit and receive signals. These may be cell towers that communicate with cell phones and handheld PDAs. Or they may be hard wired landlines (e.g., TV service providers such as Comcast) who provide communications links which may be accessed by desktop devices or Wi-Fi systems. Telecommunications infrastructure may be damaged or denied because of the primary effects of the storm (e.g., wind, flooding, etc.), or by secondary effects (e.g., loss of electrical power).

2. **Electrical power**. Telecommunications infrastructure relies upon electrical power. Telecommunications providers typically have backup sources of power.

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[284] McNoldy, Brian. "Superstorm Sandy packed more total energy than Hurricane Katrina at landfall" *The Washington Post.* Capitol Weather Gang. http://www.washingtonpost.com/blogs/capital-weather-gang/post/sandy-packed-more-total-energy-than-katrina-at-landfall/2012/11/02/baa4e3c4-24f4-11e2-ac85-e669876c6a24_blog.html (accessed August 29, 2013).

[285] Peter Hull, et al., *Heralding Unheard Voices: The Role of Faith-Based Organizations and Nongovernmental Organizations During Disasters* (Falls Church, VA: HSSAI, December 18, 2006).

This infrastructure may use diesel-powered backup generators; their ability to provide power is dependent upon the amount of fuel they have on hand or may be delivered to them. In addition, the users of social media have to be able to power their devices (e.g., recharge the batteries of handheld devices).

3. **Transportation infrastructure**. Crews need to be able to reach telecommunications and electrical facilities using roads to reach and then service, or refuel, those facilities following a storm. For example, persistent floodwaters, as was experienced following Katrina, make it impossible for crews to get to the facilities requiring service. Likewise, debris, as is experienced following tornados and other high wind events, can block roads.

4. **Site safety**. Those engaged in response and recovery activities need to be able to do so safely. Structurally compromised buildings, downed power lines, persistent floodwaters, displaced wildlife (e.g., snakes), dangerous debris, and other hazards need to be remedied before authorities will allow volunteer responders into the area.

5. **Safe haven**. Those engaged in response and recovery activities need to be able to retreat to safe havens, areas where they may rest, eat, rehydrate, change out their clothes, shower, etc. Our opinion is that without the ability to "recharge" frequently, responders lose effectiveness. It is in these safe havens that teams of responders can coordinate and plan their activities for when they return to the areas of devastation.

6. **Social media culture**. Is the population social media-savvy? Are there significant numbers who are connected? Is it part of the culture? For example, an event near California's Silicon Valley may have the potential to reach a greater percentage of social media users than an event in a nation less technologically advanced.

7. **Population to support use**. Does a population remain to set up social networks? What percentage of citizens evacuates an area prior to a notice event? What is the condition of the population that remains following any type of event?

We are only suggesting these measures here; it is outside the scope of this paper to undertake a thorough analysis of what measures should be used when comparing the social media "readiness" of a community to respond and recover using social media as one of its coordinating tools. We believe that could be the topic of a much more substantial investigation that would look at other disasters as well, such as the Japanese tsunami and the U.S. western states' fires of 2013. Such an analysis would give government the means to anticipate, using some form of a calculus from these measures, their communities' ability to employ social media in response and recovery. Such an understanding would be empowering.

"A Rough Comparison"

This paper only starts the process of vetting these new measures: what are the characteristics that will give government a sense of its communities' readiness to respond and recover using social media as one of its tools?

While these measures have not been vetted, and while we believe this will generate some discussion that will eventually sharpen our focus over time, we wanted to conduct an informal test of these measures by asking the question: "why was social media so present, and so seemingly effective, following Superstorm Sandy but not following Hurricane Katrina?" In other words, can we draw a rough comparison?

Without conducting a thorough analysis using these measures, here are our initial perceptions:

1. **Telecommunications infrastructure**. Following Hurricane Katrina, normal telecommunications were unavailable in the area of devastation for days or weeks depending upon location. Because Hurricane Katrina's swath of destruction was so wide and the duration of effects so long, neighboring communities suffered widespread and prolonged telecommunications outages. Following Superstorm Sandy, telecommunications were impacted in the immediate area, but neighboring areas remained operational. Relatively quickly, cell phone coverage was restored.

2. **Electrical power**. Hurricane Katrina took out electricity for a large area for a long period of time—days or sometimes weeks. In addition, the flooding and debris damaged electrical infrastructure. Even the Superdome, the mass shelter for evacuees, was without power. Deliveries of emergency generators could not reach many areas and in those areas with emergency generators, fuel became exhausted. In contrast, Superstorm Sandy compromised electrical power in the immediate area, but neighboring states and communities sustained less damage than neighboring states and communities did in Louisiana. Also, the response by the power companies to Superstorm Sandy was staggering in scale.

3. **Transportation infrastructure**. Following Hurricane Katrina, access to the devastated area via roads was impossible until the floodwaters receded. Once the floodwaters receded, debris fully or partially blocked roads across much of southern Louisiana. In addition, because of the absence of civil authorities (i.e., law enforcement) in some communities, large areas were cordoned off by National Guard and other law enforcement. Even NGO and FBO truck convoys carrying food had difficulties passing these checkpoints and into the devastated area. In contrast, in Superstorm Sandy, civil authority did not break down. While homeowners there were kept out of the area for a period of time, a well-established emergency management technique designed to stop looting, no one was trapped "inside" the cordon sanitaire needing assistance. Also, the road infrastructure adjacent to the impact area was quickly restored.

4. **Site safety**. Tales of the dangers remaining following Hurricane Katrina became part of the nightly news steady diet. For weeks after the event, Americans

learned about snakes and alligators, structurally compromised buildings, the threat of lawlessness, chemical and sewage spills, and most disturbingly, deceased victims. Even a graveyard gave up its dead as coffins floated to the surface. All of these hazards posed a threat to those in the response and recovery effort. Superstorm Sandy also, of course, had structurally compromised buildings. But other hazards seemed to rapidly dissipate or were not endemic to that region.

5. **Safe haven**. In the Gulf Coast, there was no safe haven; in the first days and even weeks following Hurricane Katrina, responders could not retreat easily out of the area of devastation to locations with usual telecommunications, electricity, and other support resources. In contrast, one could drive from the area impacted by Superstorm Sandy to areas relatively untouched easily. This led to a very different response and recovery; mutual aid and other tenants of emergency response in the United States rest upon the concept that the nearby communities are untouched and thus able to help. Not so in Katrina. In fact, following Hurricane Katrina, one of the concerns was that responders themselves were becoming victims: traumatized, exhausted, prone to accidents and injuries, and fatigued to the part of serious harm. Over 80 percent of the first responders lost their homes and all of their dependents were evacuated and unable to return until cruise ships were contracted to serve as first responder housing.

6. **Social media culture**. The two regions are dramatically different. There are stark cultural and economic differences between the Gulf Coast in 2005 and New York and New Jersey in 2012. Population density, relative wealth of the population, technological savvy, and something that might be called social media cultural sophistication all favor New York and New Jersey. This area is home to Wall Street and to a highly educated workforce that commutes into Manhattan to high paying jobs. The Gulf Coast states, in contrast, had large rural areas that were relatively less financially secure. Stories of the poverty in the wards most directly affected by the levees were often highlighted in news reports.

7. **Population to support use**. Ninety percent of the New Orleans-area population evacuated under a mandatory evacuation order prior to the storm; most of the remaining individuals were evacuated in the week following the storm. Only security forces, utility agencies, contractors, and government personnel remained in the city. Citizens were not permitted to re-enter until specific areas were deemed safe. There was no pool of citizens to form an "Occupy" organization. By contrast, relatively few evacuated prior to Sandy. Millions of New York and New Jersey residents rode out the storm in their homes.

These seven measures paint two very different pictures. Not only were the impacts of the storms different, but the communities affected were also very different. Given that, we are not surprised that social media was not referenced in our earlier Hurricane Katrina data collection.

However, there is one factor we did not mention above. It may be the most significant factor.

Coming of Age

In the seven years from Hurricane Katrina to Superstorm Sandy, social media came of age. It matured, spread in its usage, and became a much greater part of the cultural landscape of the United States. During this period, the number of users of social media increased, it became more widely accepted, and it became an integral part of daily life for many Americans. This is particularly true for those who are younger and may be more physically able to volunteer for response activities.

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APPENDIX C. RCPT SERVICE MATRIX

Voluntary relief organizations working together during a disaster attempt to gather as much information as possible to understand the dynamic environment. Because organizations plug into the collective response at various times, regular communication between them occurs to maintain shared awareness. During Sandy, these entities communicated through conference calls. Although the calls were helpful to participants, they spent a lot of time sharing information that had already been shared on previous calls.

To save time, a volunteer preparedness coordinator for the regional catastrophic planning team (RCPT), a regional planning initiative for jurisdictions across New York, New Jersey, Connecticut, and Pennsylvania that is funded by DHS, developed a "service matrix."

The service matrix below was used by voluntary organizations across the northeast in the wake of Superstorm Sandy. It allowed for a more efficient exchange of information during VOAD calls, which saved time for more important conversations. This figure may also be adaptable for use by other emergency management and disaster relief organizations in the absence of an electronic platform that serves similar purposes.

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Voluntary Organization: Service Matrix

NJ Long Term Recovery

A spreadsheet for Volunteer based Organizations; capabilites, developed with the goal of enhancing collaboration

REGIONAL CATASTROPHIC PLANNING TEAM
New York   New Jersey   Connecticut   Pennsylvania

Voluntary Organizations

Column group headers: Preparedness Initiatives | Life Safety | Public Safety | Incident Stabilization | Food | Volunteer Management | Property Preservation | LTR

Organizations listed (rows):
- AC Revive - Atlantic County Long Term Recovery Group
- American Red Cross
- Beach Haven West Community Association
- Bergen County VOAD
- Bergen VOAD/LTRG
- Break a Difference
- Coastal Habitat for Humanity
- Disaster Preparedness and Recovery Commission
- Dress for Success Mercer County
- Episcopal Diocese of New Jersey/EpiscopalRelief and Development
- First Presbyterian Church of Red Bank
- Governor's Office on Volunteerism
- Habitat for Humanity of Bergen County
- Hudson County Long Term Recovery Group
- Jehovah's Witnesses Disaster Relief
- Jersey Cares
- Jersey City Relief
- Jersey City Sandy Recovery
- Jersey Shore Work Camp Non-Profit
- Linden/Rohway Unmet Needs Committee (Union County)
- Lutheran Social Ministries of NJ Lutheran Disaster Response
- Monmouth County Long Term Recovery
- Morris County LTR
- New Jersey Institute of Technology
- New Jersey Institute of Technology - Resilient Design and Volunteer Connections
- New Jersey Work Environment Council
- North Carolina Baptist Men
- Occupy Sandy NJ
- Ocean County Long Term Recovery Group
- Office of the Secretary of Higher Education
- Operation Hope; Hope Coalition America
- Presbytery of Elizabeth: Disaster Preparedness Recovery Commission
- Presbytery of Monmouth
- Point Pleasant Presbyterian Church (PPPC)
- Rebuilding Together
- The Salvation Army - NJ Division
- Samaritan's Purse
- SRB Help Center
- United Methodist Church Greater New Jersey
- United Way of Greater Phildelphia & Southern NJ
- United Way of Middlesex County
- United Way of Monmouth County
- West Jersey Presbytery Presbyterian Disaster Assistance

KEY
*1	"Some do [background checks], depends on the organization and the project"
*2	Background checks are done by thrid party organizations
	Background Checks
	Jurisdictions Organizations are active in
	Life Safety Services
	First Responder Services
	Incident Stabilization Services
	Food Services
	Property Preservation Services
	Long Term Recovery
	Data Not Collected

Indicates a minimum training requirement

As of July 31, 2013

Figure 7. A "service matrix" used during Superstorm Sandy to coordinate volunteer group activity.

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APPENDIX D. LEGAL LIABILITY AND SPONTANEOUS VOLUNTEERS

Many volunteers embark on tasks that require significant training, such as debris removal, which could potentially endanger their lives and the lives of those around them. The volunteer vetting process is often not completed because of the urgency to act, yet it is difficult to discern an individual's motivation to help without proper evaluation. Not only can this endanger victims, but it is also an impediment for established organizations to forge partnerships with grassroots disaster relief networks or emergent response groups because they do not want to assume the added liability.

The legal concept of *respondeat superior*, where a principal is liable for the negligent actions or omissions of an agent for acts committed under the scope of "employment," applies to volunteers and volunteer organizations.[286] To mitigate the risk of liability, relief organizations vet candidates on a variety of factors and train them not to engage in risky behavior. To encourage volunteerism despite the threat of personal liability, Congress enacted the Volunteer Protection Act (VPA) of 1997. The act shelters the volunteer from negligence lawsuits and provides protections against punitive damages.[287] VPA protections extend only to volunteers responsible to eligible entities—nonprofits or government entities. It is not entirely clear if VPA protections cover emergent response groups. Protection would rest on whether a court treats the volunteers as a nonprofit entity. To determine liability, the initial inquiry would be to determine which duties lay within the scope of employment for a volunteer and which do not.[288] This can be difficult to determine when the volunteer's activities are not clearly defined but depend on the organization's needs at the time.[289]

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[286] J. M. Martinez, "Liability and Volunteer Organizations: A Survey of the Law," *Nonprofit Management and Leadership* 14 (2003):154.

[287] Michael K. Lindell, Ronald W. Perry, Carla Prater, and William C. Nicholson, *Fundamentals of Emergency Management* (FEMA, U.S. Army Corps of Engineers, 2006), 410.

[288] Martinez, "Liability and Volunteer Organizations: A Survey of the Law."

[289] Ibid.

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APPENDIX E. COMMON GROUND RELIEF

Common Ground Relief is an organization that formed to provide short-term relief and to assist in long-term recovery post-Hurricane Katrina. Started by community volunteers to provide basic needs for residents, it became a health clinic and a women's shelter, rebuilt flood damaged homes, conducted soil testing, assisted wetlands restoration, established a tree farm, provided a job training program, and offered legal services. The program has allowed nearly 45,000 people to volunteer.[290]

The organization is a nonprofit overseen by a board of directors and an onsite director of operations. It is run by long-term volunteer coordinators but has continued to accept help from skilled individuals.[291] Coordinators, who are appointed by the onsite director of operations, facilitate projects. All decisions are made within the parameters set out by the board. However, there are also volunteer meetings at which volunteers can reach consensus about communal life related-topics, though any decisions reached there must adhere to the policies set out by the board.[292]

Like Occupy Sandy, Common Ground was founded shortly after Hurricane Katrina by community organizers who wanted to help people in New Orleans help themselves. They operated quickly and opened up the area's first emergency clinic after the hurricane.[293] Members practice mutual aid and offer solidarity to those immersed in struggle instead of providing charity.[294] A key part of these philosophies focus on holistic community support. Specifically, Common Ground has worked to prevent the gentrification of rebuilt neighborhoods and to ensure that the black communities who lived in these areas can return.[295]

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[290] "About Us," Common Ground Relief, accessed September 10, 2013, http://www.commongroundrelief.org/about.

[291] "Volunteer," Common Ground Relief, accessed September 16, 2013, http://www.commongroundrelief.org/volunteer.

[292] *Volunteer Handbook*, Common Ground Relief (New Orleans, LA: Common Ground Relief, May 25, 2011).

[293] Ibid., 4.

[294] Ibid., 5.

[295] Ibid., 6.