Analysis of New York University’s Response to Hurricane Sandy

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Superstorm Research Lab (SRL) is a mutual aid research collective working to understand how New York City policy actors, NGO leaders, activists, volunteers, and residents are thinking about social, economic and environmental issues following Hurricane Sandy. We produce traditional scholarship, but also push the boundaries of what it means to do academic work founded on the need for social change. Members of SRL include: Erin Bergren, Jessica Coffey, Daniel Aldana Cohen, Ned Crowley, Liz Koslov, Max Liboiron, Alexis Merdjanoff, Adam Murphree, and David Wachsmuth. Alumni include: Michael Gould-Wartofsky, Lui Lisa Ng, and Shelly Ronen.

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The research and analysis in this paper are products of collaborative data collection. SRL members pool data in addition to releasing as much data as possible under a creative commons license via www.superstormresearchlab.org. We approach data collection and writing collaboratively, employing consensus-based decision-making and a flat organizational structure.

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Executive Summary
In the last twenty years, New York City has experienced ten coastal storms, including Hurricane Irene and Sandy. Winter “Frankenstorms” and summer heat waves and the accompanying blackouts are a regular part of New York experience. In the near future, extreme weather will become more frequent and more extreme. As such, institutions that house, feed, and employ their constituents, such as New York University, will have to support their full populations during emergencies under conditions similar to, and possibly worse than, those experienced during Hurricane Sandy. This report is an effort to lend academic expertise to NYU’s disaster planning. This report draws from the NYU’s Hurricane Sandy Preparation and Response Performance Review Report to the Community (July 2013), research from a wide range of disciplines engaged in disaster studies, and in-depth interviews with stakeholders and institutional leaders from across New York City, including those at NYU, conducted by Superstorm Research Lab as part of an NYU Green Grant.

Following an overview of recommendations, this report contains the following sections:
1. Issue: Organization and Management for Effective Disaster Response
2. Issue: Identifying Populations in Need
3. Issue: Building social and community resilience
4. Issue: Mitigation and Adaptation for “Next Time”

(Image from Urban Green Council Report, 2012)
Summary of Main Findings

1. Organizational Structures for Effective Emergency Aid
   For instructions whose primary mission is not disaster response, and which have sprawling horizontal chains of command—such as NYU, an ideal organizational structure is a strong, centralized leader and a clear chain of command paired with the empowerment of those on the ground to solve immediate problems as they arise, especially in the case of custodial and building staff.

2. Anticipating Vulnerable Populations
   Institutions for whom disaster response is not a major part of their daily mission tend to use stakeholder categories drawn from their everyday, non-crisis operations during a disaster. This is a barrier to identifying and serving vulnerable populations. For example, NYU’s usual stakeholder categories include undergraduate students, parents, faculty, and administrative staff, among others. Yet, these do not describe vulnerable populations, which include housebound residents, those without access to financial or social resources, and those with mental or physical ailments exacerbated by the storm. Like many other institutions, NYU relied on non-emergency stakeholder groups during Hurricane Sandy and overlooked vulnerable populations.

3. Social Resilience and Organization
   Social resilience refers to the ability of communities to deal with and adapt to acute changes in their environment, and accounts for the cultural, interpersonal, and political aspects of disaster response on-the-ground. It is characterized by the mutual aid residents offer one another during shared emergencies. Social resilience at NYU was low, particularly within faculty housing.

4. Mitigation and Adaptation for “Next Time”
   Given the links of extreme weather to climate change, and the fact that New Yorkers tend to shelter in place rather than evacuate, there have been many discussions of how to merge mitigation of climate change with adaptations to extreme weather events. NYU is in a position to be a leader in this area.

Summary of Recommendations

Continued Support
Things that worked well that should continue or be enhanced in the future:
- Support people on the ground, particularly custodial and building workers, to deal with problems as they arise
- Maintain a clear, centralized chain of command, and ensure those in command are local and available on the ground

Actionable Item
Concrete, immediate changes to current affairs within the domain of Operations or Higher Administration:
- Move towards guides and best practices that deal with worst case scenarios rather than detailed disaster plans
- Define emergency populations in terms of vulnerable groups rather than, or in addition to, non-emergency stakeholders
Create Support
Areas of action outside of Operations or Higher Administration, but which Operations and Higher Administration can make more feasible through concrete interventions:

- To encourage social resilience: Set up systems of word of mouth communication to facilitate electronic and analog means both as a communication tool and as a way to foster social resilience.
- To encourage social resilience: Establish point people in all student and faculty residences who are responsible for regular check-ins and ensure that the identities and contact information of these people is well signposted.
- To encourage social resilience: Use pre-existing natural allies like nurses and student clubs in planned emergency responses, and empower them to conduct aid without orders.
- To encourage social resilience: Publicize NYU staff relief effort programs. Many institutions give staff paid leave of a week or more to do relief work. Apparently such a program existed at NYU several months after the storm, but was never publicized.
- To encourage social resilience: Broaden services, where possible, to anyone in the community who expresses a need (medical prescriptions, electricity, etc).
- Provide the organizational space for ad-hoc and community-based responses.

Considerations
Things for Operations, Higher Administration, and community members to take into account for future emergencies that would affect a wide range of responses:

- Look at invisible vulnerabilities (e.g. mental health, chronic illness, language abilities) during and after the emergency.
- Make climate change mitigation part of all disaster plans and responses.

Long-term & Wide-scale Change
Longer-term changes that require the coordination of multiple bodies and programs within NYU, and even between NYU and NYC:

- Increase social resilience through community-building
- Increase building resilience

1. Issue: Organization and Management for Effective Disaster Response

Continued Support:

- Support people on the ground, particularly custodial and building workers, to deal with problems as they arise
- Maintain a clear, centralized chain of command, and ensure those in command are local to the crisis and available on the ground
- Ensure the chain of command and networks of collaboration are the same as those used in daily operations

Actionable Item:

- Avoid over-planning in advance for future disasters; emphasize guidelines, networks and flexibility that can accommodate a wide range of worst-case scenarios.

Supporting Information
The immediate recovery from Hurricane Sandy in New York City revealed two main trends across institutions whose main mission was not disaster relief, but that had to respond to the storm nonetheless: (1) "silos" of departments and areas of specialty that did not communicate or coordinate with one another, and, (2) problems transferring
decision-making authority between parties during and immediately after a crisis (SRL interviews). However, the aftermath also demonstrated the effectiveness of ad-hoc responses, community self-organization, and other manifestations of what disaster scholars term "emergent organizations" (Oliver-Smith 1996; Solnit 2010).

For the most part, it seems that NYU Operations did not follow these trends. Based on interviews with NYU employees, lines of responsibility and authority were clear within Facilities and Construction Management (FCM) and Operations more generally. NYU took measures to ensure the availability of key decision-making administrators in advance of the storm when it became evident there was potential for major disruption, and this effort was largely successful. At the same time, our research in other areas of NYC shows that custodial and maintenance staff are first responders during any emergency. We understand that custodial staff at NYU have a clause in their contracts that addresses their potential continual presence at work during emergencies, and addresses accommodations and pay. We applaud this contractual assurance of responsibilities and compensation. The pairing of clear, top-down, on-the-scene command with the ability for custodial and building staff on the ground to make decisions and interventions when needed is an ideal organizational structure for hierarchical, large-scale institutions like NYU (Harrald 2006).

Moreover, this chain of command likely worked as well as it did because it relied on networks used during non-emergency times. Disaster research as well as other institutional responses within NYC during Sandy show that people use their normal networks during crisis, rather than readily relying on new or different networks outlined in disaster plans (Knowles 2012; SRL interviews).

Finally, these networks, chains of command, and ability for those on the ground to make decisions are crucial because most disaster plans created before disasters occur are never used (Clark 1999; Liboirion and Wachsmuth 2013). Moreover, disaster plans tend to favour the most recent disaster, rather than disaster conditions in general. Given this trend, which was confirmed in our interviews with other NYC institutions during Hurricane Sandy, guidelines, best practices, and networks are the most important elements to develop during non-emergency times in anticipation of disaster.

2. Issue: Identifying Populations in Need

*Continued Support:*
- Support people reliant on NYU housing and food services

*Actionable Item:*
- Use vulnerability as the main variable for determining populations in need, rather than stakeholder groups used in daily operations. Vulnerable populations may include, but are not limited to:
  - Home bound residents in student and faculty housing, including new or expectant mothers, elderly residents (faculty, parents of students, or NYU affiliates), people with mobility disabilities (including children of faculty)
  - Very young children in faculty housing
  - NYU community members with non-visible disabilities, including psychiatric disabilities
  - International students and scholars with limited social ties, understandings of local institutional norms, and/or facility with the English language
All low-income members of any community, as a lack of resources directly impacts resilience (IFRC 2013). This may include those whose employment is interrupted during emergencies.

Those in need of regular medication

Develop partnerships with local social service providers to maximize the effectiveness of identification of vulnerability before emergencies and delivery of aid to these populations during an emergency.

Considerations

Given that some vulnerabilities may not become apparent until a crisis arises, allow flexibility and ongoing vigilance, as well as evolving concepts of vulnerability before, during, and after emergencies.

Emphasize face-to-face communication and outreach when providing aid to, and assessing the needs of, vulnerable populations.

Create Support

In many disaster responses, local individuals or specialty groups know the locations and needs of vulnerable populations better than institutional leaders. Enable an interface between such groups and/or empower community members on the ground to identify and aid vulnerable people.

Supporting Information

Many institutions, including NYU, categorized populations during the storm according to their relationship to the institution in non-emergency situations. NYU’s response varied according to whether affiliates were undergraduates, faculty, staff, and so on, with the greatest concern applied to undergraduate students in NYU housing. While this approach is understandable given NYU’s duty of care to undergraduate students, it meant that some groups with particular vulnerabilities, such as NYU affiliates in faculty housing, were overlooked and under-resourced during the early stage of the crisis.

Some community member’s quality of life is directly affected by emergency situations; they have particular (and sometimes critical) needs with regards to communication and assistance in any situation where food, medication, electricity, or water become scarce or unavailable. The very old, very young, and those with disabilities are particularly vulnerable to extremes of temperature and thus dependent upon the availability of climate control (Adger 2006; Cutter, Emrich, Webb, & Morath 2009; Moser, Kasterson, Yohe, & Agyeman 2008; United States National Climate Assessment 2012).

Defining crisis response on the basis of non-crisis situations can lead to a misdistribution of resources favoring those who are already socially resilient and overlooking those with the greatest vulnerability. It can also simply ignore vulnerabilities that arise during crisis but are less significant during non-emergency times. Importantly, it can also lead to systemic or institutional responses, which, by ignoring unequal vulnerabilities, simply retrench that inequality, or -- worse -- aggravate it (Cutter & Emrich 2006; Klinenberg 1999). Identifying groups according to vulnerability, rather than stakeholder status, can reduce the effects of these hazards.

3. Issue: Building Social and Community Resilience

Continued Support

Publicize and expand NYU staff relief effort program. NYU gave staff paid leave of a week or more to do relief work several months after the storm, but this was not widely publicized.
**Actionable Item**
- Use pre-existing natural allies like nurses and student clubs in planned emergency responses, trainings, and networks, and empower them to conduct aid without orders
- Broaden services, where possible, to anyone who expresses a need (medical prescriptions, electricity, etc), regardless of their NYU or non NYU status

**Create Support**
- Provide the organizational space for ad-hoc and community-based responses
- Communicate to residents and others that they are able, and even expected to, take initiative in emergencies within their capabilities. Offer support to residents who wish to be proactive in terms of emergency preparedness

**Considerations**
- Employ face-to-face communication to facilitate transmission of information in an emergency
  - For example, establish point people in all residences (ideally floor-by-floor) who are emergency coordinators. These people could receive special training\(^1\) and should be critical points of information in crisis. Most importantly, they should also circulate and be part of local networks during non-emergency times.
- Think of NYU as part of the local NYC community, and how to express this in concrete terms so that reciprocity of aid develops during emergencies

**Long-term & Wide-scale Change**
- Foster community and strong networks within and between community groups at NYU

**Supporting Information**
Social and community resilience have a number of meanings, but “all definitions of social resilience concern social entities - be they individuals, organizations, or communities - and their abilities or capacities to tolerate, absorb, cope with and adjust to environmental and social threats of various kinds” (Keck & Sakdapolrak 2013). Resilience requires some degree of social connection, trust, and mutual solidarity under emergency conditions based on relationships developed outside of crisis situations. The response to Hurricane Sandy at NYU was split into two sections in this respect: the administrative response, which we have mainly covered above, and the response within the wider, more diverse NYU community. In the second case, NYU exhibited lower social resilience than many other communities with which SRL interacted. The social aspects of resilience -- i.e. the ability of a community to self-organize and adapt to stress -- did not manifest as a strong response to hardship within NYU, particularly, though not exclusively, within faculty housing.

One main way to deal with this problem is a shift in the overall culture of NYU so community members feel like part of a functional community, rather than employees or clients of an institution. There are also things that can be done by higher administration to foster the type of community relations that can increase social resilience, including a move away from individual preparedness (e.g. kits) towards community preparedness (e.g. networks and empowerment). People use their preexisting networks during emergencies, whether they include family, friends, coworkers, or neighbors. Fostering strong, diverse networks outside of crises ensures higher resilience during disasters. Empowerment refers to the ability to feel that you are genuinely part of, and thus

\(^1\) See, for example the [Community Emergency Response Team (CERT) curriculum](https://www.fema.gov) supported by FEMA, which is particularly advantageous in terms of its scalability.
responsible for, your network. There are many texts available about how to build community resilience (see Norris et al 2008, Pasteur 2011, as well as publications by Research and Development Corporation (RAND) and International Federation of Red Cross and Red Crescent Societies (IFRC)).

Finally, an important part of social resiliency is being part of a broader community. NYU was fairly steadfast in its inward-looking mandate, re-marking lines between NYU and the surrounding community. While we understand why this decision might have been made, we want to point out that it enacts a town and gown division, and fails to meet the larger meaning of social resilience. Moreover, if NYU was a part of the wider NYC community, the possibility for reciprocal aid would emerge—that is, the wider community would be able to support NYU in times of crisis.

4. Issue: Mitigation and Adaptation for “Next Time”

Actionable Items

- Make mitigation of climate change part of disaster plans; recognize the interdependent nature of mitigation and adaptation strategies.
- Design future buildings to facilitate long-term residence during disasters; incorporate recommendations of the Building Resiliency Task Force Report into future building projects.

Supporting Information

How do we “build back better” while ensuring “next time” happens as rarely as possible? Within the context of climate change, there have been many discussions of how to merge mitigation of climate change with adaptations to extreme weather events (Urban Green Council 2013). A range of weather-related crises, including heat waves and extreme precipitation, can be expected in the coming decades. Thus, climate mitigation and emergency response are part of the same core issue. The most robust responses to climate change and extreme weather will balance mitigation and adaptation as twin modes of address.

NYU is a national leader in higher education and in NYC more broadly in its commitment to greenhouse gas reduction and climate change mitigation. The co-generation plant, which allowed NYU to be as functional as it was during the storm, is also the highlight of NYU’s Climate Action Plan. We encourage NYU to continue its trend towards zero emissions, as outlined in the Climate Action Plan.

We have identified building resiliency as a particular area where NYU can further combine adaptation and mitigation come together, especially given NYU’s dedication to LEED certification and the planned expansion and remodeling outlined in the NYU2031 plan. The NYC tendency to shelter in place and stay in buildings for as long as possible, rather than evacuate, points to the need for building resiliency, which refers to the livability of buildings despite reduced services. Thus, building for long-term inhabitation despite crisis is a central part of disaster adaptation. For example, building light wells or windows into critical public spaces, common areas, and emergency exits would increase building resilience in the future. As an example of including mitigation in building resilience, ensuring a tight heat envelope on a building means that less energy is used to heat or cool a building (climate change mitigation), and also allows the temperature to stay relatively stable when heat or AC is discounted during an emergency (adaptation). We recommend NYC Building Resiliency Task Force Report, managed in part by former NYU employee Cecil Scheib, for a detailed explanation of such measures.
References


