Leveraging Partnerships for Long-Term Recovery and Smart Growth Resiliency

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On October 29, 2012, Hurricane Sandy made landfall and caused extraordinary devastation across the northeastern United States (Figure 1). It was the second costliest disaster in the United States at the time and damaged some of the most densely populated areas of the country. The impacted area spanned county, regional, and state boundaries, encompassed entities that did not normally collaborate, and brought issues to light that were typically addressed independently by a variety of government authorities.

With the complexity of the disaster and extent of damage, individuals that were involved in the response and recovery efforts inherently knew that long-term recovery would extend out many years, even decades, into the future and would require an immense amount of coordination and resources. The Federal Emergency Management Agency's (FEMA) New York Joint Field Office (JFO), located in Queens, NY, was the headquarters for disaster coordination for New York during the initial phase of recovery. With the influx of partners and resources, the JFO became a hub of opportunity and fostered the creation of organic partnerships around potential recovery projects. Although it was a very chaotic time, pressure from both the public and the administration to achieve results enabled federal staff at the JFO to cut through red tape and expedite projects that normally took months, and even years, to get off the ground.

On Long Island, there were many challenges associated with the cross-jurisdictional impacts from the hurricane such as flooding, impaired water quality, and a devastated transportation system. These challenges, however, did not keep Long Island communities from immediately starting on the long road to recovery. They defined their new post-disaster "normal" and the help that they would need to rebuild from the destruction that was left behind (e.g., economic analysis, resiliency,[3] information and funding, etc.).

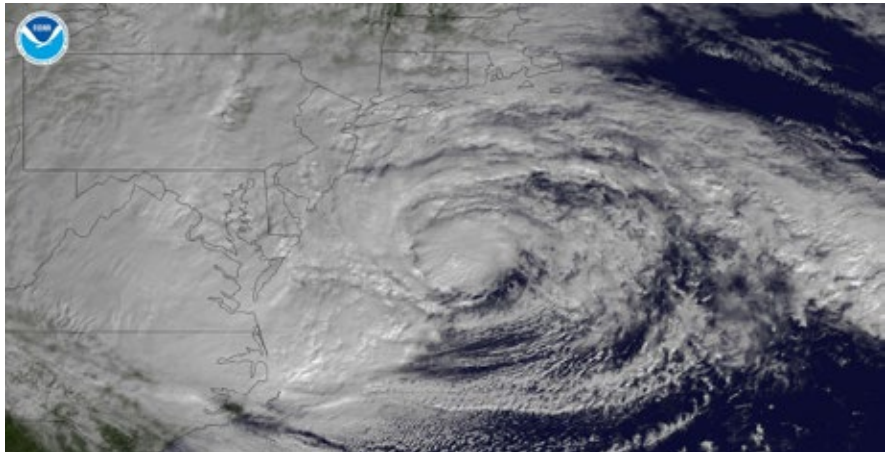

Figure 1: A view of Hurricane Sandy as it approached the northeastern United States.
Image from NOAA.

The Long Island Smart Growth Resiliency Workgroup (Workgroup), an unprecedented collaboration among staff from the U.S. Environmental Protection Agency (EPA), Federal Emergency Management Agency (FEMA), New York State Department of State (NYS DOS), and Suffolk and Nassau Counties of Long Island, NY, emerged as part of the recovery process. Staff from these agencies did not normally work together on disaster recovery even though they had worked together for years, trusted one another, and knew how to work together to get results. Hurricane Sandy provided the opportunity for this ad-hoc group to create a formal structure and convergence of segregated goals and partnerships into one with a focused mission of helping Long Island communities go beyond merely rebuilding by incorporating the principles of resilience, smart growth, and equitable development into their long-term planning and recovery efforts. Each member of the Workgroup acted as a liaison to her or his respective organization to gain additional leverage and support for the mission.

The Workgroup made several decisions that were key to its success: 1) building on already developed plans and projects; 2) keeping the core group small and composed of people who already had well established relationships; and 3) hiring a facilitator to assist with engagement and planning. As the effort grew, each partner leveraged additional relationships for broader local and state support to help identify unmet needs within the impacted communities. The Workgroup knew that they wanted to build on the strengths of each organization and member, in order to provide coordinated, long-term assistance to Long Island communities. The successes and lessons learned throughout this process, and described in this paper, can be a case study for communities impacted by future disasters.

Pre-Hurricane Sandy Coordination

FEMA and EPA began working together on recovery issues after the 2008 flooding in Iowa. It was during this work that the two agencies discovered natural synergies between EPA's sustainable development and FEMA's mitigation programs. Both agencies realized that incorporating key concepts underlying sustainability and mitigation into the delivery of assistance to local governments after a disaster would strengthen the community support of these two federal agencies. A Memorandum of Agreement (MOA), signed in 2010, documented the success of this partnership and enabled the agencies to maximize coordination pre- and post-disaster by outlining areas where their programs were complementary or symbiotic (FEMA 2010). Work between the agencies continued throughout the country and grew with each recovery opportunity.

3. Resilience is our ability to prevent a short-term hazard event from turning into a long-term community-wide disaster. While most communities effectively prepare themselves to respond to emergency situations, many are not adequately prepared to recover in the aftermath. (NOAA 2017).

EPA and FEMA Region 2 used the MOA to expand coordination and partnership to geographic areas with recent disaster impacts, a high density of vulnerable populations, and a low capacity to plan at the local level. One example of this coordination took place in Paterson, NJ, which experienced severe flooding from Hurricane Irene and Tropical Storm Lee in 2011. EPA facilitated the convening of five federal agencies and the local government to discuss how to incorporate sustainability and mitigation measures to increase their resiliency to future events. The discussion focused on how each agency could use existing programs to help the community reach their recovery goals. Some agencies had grants that were providing direct funding to the community; others explored the potential to repurpose existing programs or technical assistance that could be applied to assist the community. While some projects that enhance resilience have been completed, the integration of these concepts into long-term recovery for Paterson continues today.

In addition to the federal partnership identified above, EPA Region 2 and the NYS DOS worked together after Hurricane Irene on strategies for supporting growing New York communities. The goal of this work was to help communities develop in ways that preserve natural lands and critical environmental areas, protect water and air quality, and reuse already-developed land. NYS DOS had also previously committed funding from the State Smart Growth Planning Grant program to the Governor's Long Term Community Recovery initiative, which provided small awards to communities to help them incorporate the principles of smart growth while developing recovery plans. EPA was doing similar work under national Memorandums of Agreement with FEMA and the National Oceanic and Atmospheric Administration (NOAA) (U.S. EPA 2011).

EPA Region 2 and the NYS DOS began working with Suffolk County to support their county-wide development goals, and their work in specific communities such as Wyandanch. In fact, Wyandanch was selected as one of the first communities on which the regional HUD-DOT-EPA Partnership for Sustainable Communities[4] would focus and was also one of the landmark NYS Brownfield Opportunity Areas. Additionally, EPA worked with NYS DOS on a pilot program where EPA provided technical assistance to modify their Clean Water State Revolving Fund program to ensure their state water infrastructure investments are used to promote location-efficient investments. The culmination of these efforts led to strong relationships across the governmental spectrum and became crucial to how partnerships would develop after Hurricane Sandy.

4. The Partnership for Sustainable Communities works to coordinate federal housing, transportation, water, and other infrastructure investments to make neighborhoods more prosperous, allow people to live closer to jobs, save households time and money, and reduce pollution. Partnership for Sustainable Communities is comprised of three federal agencies: Office of Economic Resilience (HUD agency), Office of Transportation Policy (DOT agency), and Office of Sustainable Communities (U.S. EPA). For more information, see https://www.sustainablecommunities.gov/).

On September 23, 2011, FEMA expanded its ability to coordinate with other federal partners by establishing the National Disaster Recovery Framework (NDRF; FEMA 2017b). The NDRF mandated that federal agencies work collaboratively to support disaster-impacted States, Tribes, territories, and local jurisdictions in their recovery process. The NDRF outlines six recovery support functions (RSFs) and identifies federal agencies to lead each functional area (more details in Halfon and McLachlan 2018, this report). These six RSFs were developed to help communities address specific areas of concern during the recovery process. The NDRF not only enabled greater federal coordination, but it also shifted the conversation from response to long-term recovery. Given the history that FEMA and EPA shared on previous events, EPA became a prominent partner in the Community Planning and Capacity Building RSF, the only FEMA-led functional area.

Post-Hurricane Sandy Coordination

Hurricane Sandy made landfall within a year of the National Disaster Recovery Framework being published, and it became the first incident where the structure was fully activated. Because of their past working relationship in Paterson, NJ, FEMA, and EPA Region 2 staff quickly integrated recovery efforts under the Community Planning and Capacity Building RSF and were able to communicate more directly and understand potential programmatic overlap from the start because they already understood each other's protocols and program restrictions. The initial work shifted from introductory discussions regarding agency-specific acronyms and programs to the creation of a common goal and application of programmatic assistance. In fact, EPA and FEMA staff had to work together to assist with the integration and education of the new federal, state and local partners who did not have disaster experience.

Partnering with State and Local Governments after the Event

Simultaneously, NYS DOS and EPA Region 2 were trying to organize an inter-governmental/interstate dialogue around salient and timely smart growth topics (e.g., home rule in NYS and Connecticut). When Hurricane Sandy made landfall, EPA and NYS DOS decided that the topic of mutual interest would be the confluence of smart growth, sustainability, and resiliency on Long Island resulting in the current bottom-up, capacity-building effort encompassed in the Workgroup. Given that all recovery efforts are locally driven, the federal and state partners knew that the integration of the local government was essential. Since Long Island faces many unique challenges (e.g., a single-source aquifer for drinking water), it was imperative to get cooperation

from both Nassau and Suffolk County.

The inclusion of Suffolk County was expedited because of the previous partnership and work that had been completed with EPA Region 2 and NYS DOS. However, none of the partners had preexisting relationships with Nassau County. In addition, the initial Workgroup was trying to balance developing a strategy with Suffolk County and the Federal Recovery Support Strategy, which FEMA and EPA were required to complete under the NRDF, so additional time and resources for outreach were limited. In mid-2013, due to the nature of high staff turnover during a disaster, staffing changes brought in a new lead FEMA Community Planner under the Community Planning and Capacity Building RSF. The planner had previously spent 4 years as an urban planner in the Comprehensive Planning Division of the Nassau County Planning Commission and helped the partnership identify the most appropriate Nassau County staff to invite into the Workgroup. This past relationship proved critical because it engendered trust and credibility between the Workgroup and Nassau County. These established relationships are key when discussing partnerships associated with disasters. Often, partners will cycle in and out of an event quickly, making it difficult to build trust between individuals and gain access to their network. With the addition of Nassau County, the Workgroup was ready to proceed more effectively with specific planning and project initiatives.

The Work

The first step for the Workgroup was to define the roles, responsibilities, and expectations of the group and to capture the collective recovery challenges that needed to be resolved. The Workgroup agreed that the membership should remain small and limited to the key individuals that had been identified. Discussions around expanding the group led to the identification of additional potential challenges. For instance, if more agencies and staff were involved, there would be more competing priorities that would have to be considered, and it would be harder to focus and get things done in a timely fashion. Therefore, the five core members of the Workgroup established the main recovery issues that encompassed all agency perspectives and points of view.

A facilitator was brought in to assist the Workgroup with understanding and overcoming issues around competing priorities, equity in recovery, the availability and management of the influx of resources, the complexity of the problems, the constraints of the federal agencies, and how the shift in group dynamic with new partners (and personalities) impacted their ability to develop and implement a central mission. After many conversations about the disaster impacts and recovery challenges, the Workgroup developed a set

of regional goals to incorporate smart growth, environmental justice, resiliency and hazard mitigation concepts, health indicators, and the inclusion of science and data into the recovery process in the Long Island counties of Suffolk and Nassau. In addition, the Workgroup needed to build on existing local efforts, align with existing New York State policies and programs, and establish strong intergovernmental coordination.

The group created three white papers (topics: environmental justice,[5] brownfields,[6] and smart growth) with an understanding of existing regional priorities, an analysis of the storm's immediate impacts and anticipated future needs based on best available data. The white papers were key in gaining support from leadership and leveraging available resources that would make this partnership a success.

The initial focus was to encourage economically, environmentally, and socially sustainable development in low risk areas away from flood zones and along transit corridors in Nassau and Suffolk Counties. At the urging of the Suffolk County Executive, the Workgroup shifted its focus to include water quality so that Long Island's sole-source aquifer and coastal aquatic ecosystems are enhanced and protected. This change took effect after months of facilitated discussions between both Suffolk and Nassau counties; the partners wanted to make sure that both counties agreed to the change.

To garner broader community support, the Workgroup organized a conference, "Accepting the Tide: A Roundtable on Integrating Resilience and Smart Growth on a Post-Sandy Long Island," which took place in May 2014 and brought together a variety of stakeholders (Figure 2) including two especially crucial stakeholders: Jamie Rubin, Director of the Governor's Office of Storm Recovery, and Steve Bellone, Suffolk County Executive. Both were leaders and agents of change for the recovery process at their respective level of government. More than 90 local elected officials, municipal employees, nonprofit workers, and people affiliated with the designated New York Rising Community Reconstruction[7] areas, attended the conference. Through the conference, the team was able to identify community needs and stakeholder resources that would expedite the recovery process. This led to additional partnerships with academics and local nonprofits.

As an outgrowth of this conference, the Workgroup began focusing on projects that would address issues raised by participants: 1) a health impact assessment, 2)

5. Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. (https://www.epa.gov/environmentaljustice)

6. A brownfield is a property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. (https://www.epa.gov/brownfields/overview-brownfields-program)

7. The NY Rising Community Reconstruction Program is a recovery and resiliency initiative established to provide assistance to communities impacted by Hurricane Sandy, Hurricane Irene, and Tropical Storm Lee (https://stormrecovery.ny.gov/community-reconstruction-program).

Figure 2: Following Hurricane Sandy, the Suffolk County Department of Economic Development and Planning and Nassau County Department of Public Works have been collaborating with FEMA, EPA, the New York State Department of State to examine recovery options that will help Long Island recover smarter, stronger, and more resilient. Suffolk County Executive Steve Bellone (2nd from left) greets Antonius Agelink of GoDutch consortium.
Photo by Kenneth Wilsey, used with permission.

CommunityViz training, 3) an ecosystem services assessment, and 4) technical assistance provision.

The health impact assessment provided information to local governments to highlight the positive and negative impacts on public health from a particular project, plan, or policy. An assessment for Suffolk County is currently being finalized on a local ordinance change that would impact on-site sewage systems and nearby wetlands. Understanding the health impacts associated with flooding of these septic systems is crucial in planning for resilience in these communities. EPA's commitment of resources (full-time employees and contractor hours), along with funding from FEMA, made the assessment possible. The assessment team launched the project in December 2014 and held stakeholder meetings in March 2015.

Second, in January 2015, the Workgroup hosted a week-long workshop for community planners and geographic information systems (GIS) staff on CommunityViz, a GIS-based, participatory scenario-planning tool for planning and decisionmaking. FEMA recovery funds and EPA's mission contract made the workshop possible, with the latter expediting access to recovery funds. The training integrated data from NOAA's sea-level rise tool, EPA's EJScreen Screening and Mapping tool, FEMA's Hazus,[8] the U.S. Census Bureau, and local land-use data. Participants quickly realized the power of this tool to support their work (Figure 3). In fact, one planner proclaimed

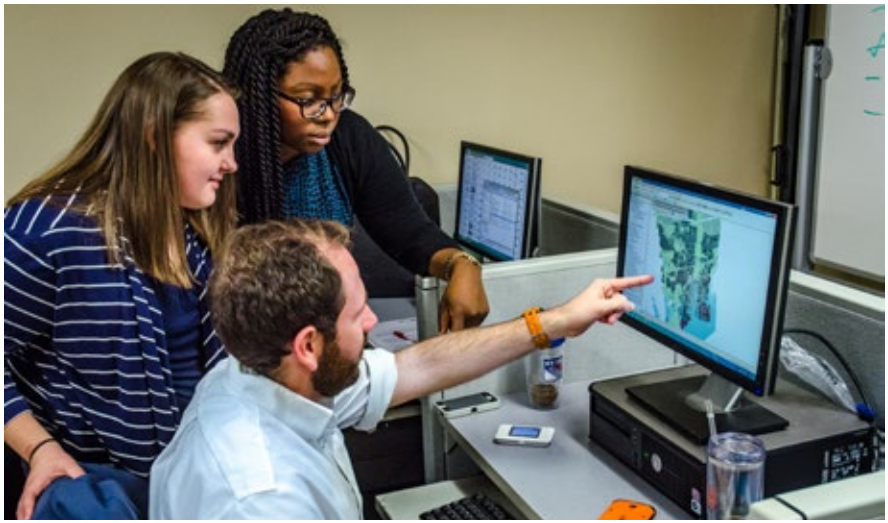

Figure 3: FEMA held a week-long training session using CommunityViz, a tool for evaluating the cumulative effects of community development decisions using a geographically-based analytic platform.The program can help governments or organizations conduct a comprehensive recovery planning process that engages local stakeholders.
Photo by Kenneth Wilsey, used with permission.

that CommunityViz can help them do work in a few days that would normally take a few weeks.

The third project is an ecosystem services assessment, identifying the value Long Island communities derive from the goods and services provided by nature, which will help guide them as they make recovery and redevelopment decisions and implement projects identified through the New York Rising Community Reconstruction plans. Ecosystem services valuation is a very useful tool because it can help communities better understand the economic benefits of restoring wetlands to prevent impacts from future storms, for example. It should be noted that the Workgroup expanded its members to include Stony Brook University and The Nature Conservancy for this project.

Lastly, the Workgroup is providing technical assistance to two NY Rising communities—Long Beach and Mastic Beach—to integrate smart growth practices into their community resilience efforts. The Workgroup will help the communities assess their existing land-use and building laws/codes; identify gaps that prevent resiliency efforts; and identify concrete strategies to address the gaps (e.g., options for existing law/code updates, land use study, etc.). More specifically, Long Beach received technical assistance from Global Green, which was funded through a grant from EPA's Building Blocks Sustainable

8. A nationally applicable standardized methodology that contains models for estimating potential losses from earthquakes, floods, and hurricanes. Hazus uses GIS technology to estimate physical, economic, and social impacts of disasters (FEMA 2017a).

Communities program. The Workgroup also helped to secure law students from Tuoro's Land Use and Sustainability Institute to assist Long Beach in implementing some of the recommendations from both the Global Green technical assistance and a New York University study on green infrastructure and stormwater management.

Unifying Themes and Lessons Learned

The combination of formal and informal coordination mechanisms and relationships are what made this partnership unique and successful, and the process of developing this Workgroup helped capture how the integration of program areas can drive a community to become more resilient. The implication of these effective partnerships became apparent, and as a result, the Workgroup is providing a structure and process of engagement to recovery experts at all levels of government to help inform future recovery efforts.

Some of the unifying themes that helped drive the Workgroup forward are as follows:

- Building off of existing projects or partnerships creates leverage and momentum for opportunities after a disaster.

- Federal interagency coordination in the field facilitates effective engagement with state and local partners. A symposium or development of "thought pieces," such as white papers, can bring stakeholders together around broad concepts before diving into specific solutions where existing equities may be on the line.

- Using a facilitator can help to streamline the ability to organize a group of new partners with varying and/or competing interests.

- State and local governments are key partners in any recovery effort as are local universities, community-based organizations and nonprofits. Without their assistance, recovery goals can be detached from local efforts and create tension around resources.

- Federal agencies have distinct assets and can be of far more assistance when they partner to share those assets with communities. A new Memorandum of Agreement, led by the U.S. Office of Management and Budget and signed by 16 federal agencies, is ready to be implemented for this purpose.

- Outcomes are most readily achieved when each entity is willing to allow others to take credit for the collective work needs dictate. This enables each partner to play to their strengths and gain additional support in a more strategic manner.

- Understanding and respecting each organization's priorities is critical.

- Recovery and mitigation planning is a cycle; what is done in recovery planning should feed into the mitigation plan and vice versa. Planners and emergency managers can be most effective when they are partners from the outset; planning requires whole community participation.

- Science and data are key components to a recovery process that is looking toward resiliency and sustainability.

- Bringing science based, data driven, digital tools to the community and teaching stakeholders how to use the tools is an efficient way to build capacity and generate buy-in for best-practice solutions.

- Relationships outside of the work are just as important as in the office because it helps to build trust and respect that is needed to work through challenges.

The successes and lessons learned that were part of this process were analyzed and used to update several formal documents that were the foundation of this partnership. EPA and FEMA integrated the data and subject matter experts into the revision of the Memorandum of Agreement[9] and the National Disaster Recovery Framework in 2016. As a result, EPA now has Sustainability Advisors that will be deployed during a disaster and help recovery personnel at all levels to navigate EPA programs and tools that can help inform the recovery process. Dialogue between FEMA and the EPA has also enabled FEMA to incorporate sustainable development and resilience as part of mitigation and recovery planning processes. Using this example to inform national disaster recovery policies will help to enhance the recovery efforts in the future.

Furthermore, the lessons learned and successes of this experience can inform the next disaster, which could result in an expedited recovery process for communities nationwide. Without documenting and communicating

9. The FEMA and EPA MOA was expanded to promote additional coordination opportunities and to provide a collaborative framework for policy work related to both hazard mitigation planning and sustainable development (U.S. EPA 2016).

what was learned, it is likely that future efforts will encounter the same issues and a delayed recovery process.

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