Lower Manhattan Community Reconstruction

Conceptual Plan
November 2013

Front Cover Photo: Lower Manhattan

Back Cover Photo: South Street Seaport

Photo sources:

Flickr, James Willamore (front)

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This document was developed by the Lower Manhattan Planning Committee as part of the New York Rising Community Reconstruction (NYRCR) Program within the Governor's Office of Storm Recovery. The NYRCR Program is supported by NYS Homes and Community Renewal, NYS Department of State, and NYS Department of Transportation. Assistance was provided by the following consulting firms: HR&A Advisors, Parsons Brinckerhoff, Cooper, Robertson, & Partners, Mathews Nielsen Landscape Architects, OpenPlans, and Hammes Company. All photographs were taken by the planning team unless otherwise noted.

Foreword

The New York Rising Community Reconstruction (NYRCR) Program was established by Governor Andrew M. Cuomo to provide additional rebuilding and revitalization assistance to communities damaged by Superstorm Sandy, Hurricane Irene, and Tropical Storm Lee. This program empowers communities to prepare locally-driven recovery plans to identify innovative reconstruction projects and other needed actions to allow each community not only to survive, but also to thrive in an era when natural risks will become increasingly common.

The NYRCR Program is managed by the Governor's Office of Storm Recovery in conjunction with New York State Homes and Community Renewal and the Department of State. The NYRCR Program consists of both planning and implementation phases, to assist communities in making informed recovery decisions.

The development of this conceptual plan is the result of innumerable hours of effort from volunteer planning committee members, members of the public, municipal employees, elected officials, state employees, and planning consultants. Across the state, over 102 communities are working together to build back better and stronger.

This conceptual plan is a snapshot of the current thoughts of the community and planning committee. The plans will evolve as communities analyze the risk to their assets, their needs and opportunities, the potential costs and benefits of projects and actions, and their priorities. As projects are more fully defined, the potential impact on neighboring municipalities or the region as a whole may lead to further modifications.

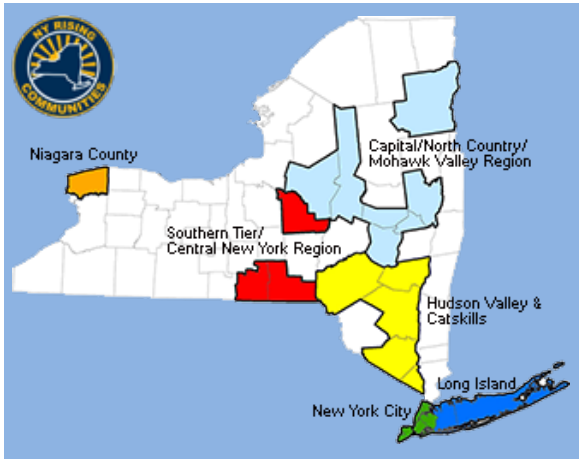
In the months ahead, communities will develop ways to implement additional strategies for economic revitalization, human services, housing, infrastructure, natural and cultural resources, and the community's capacity to implement changes.

Implementation of the proposed projects and actions found in this conceptual plan is subject to applicable federal, state, and local laws and regulations. Inclusion of a project or action in this conceptual plan does not guarantee that a particular project or action will be eligible for Community Development Block Grant – Disaster Recovery (CDBG-DR) funding. Proposed projects or actions may be eligible for other state or federal funding, or could be accomplished with municipal, nonprofit or private investment.

Each NYRCR Community will continue to engage the public as they develop a final plan for community reconstruction. Events will be held to receive feedback on the conceptual plan, to provide an understanding of risk to assets, and to gather additional ideas for strategies, projects and actions.

October 31, 2013

New York Rising Communities



Find out more at:
StormRecovery.ny.gov/Community-Reconstruction-Program

Contents

I. Introduction

New York Rising Community Reconstruction Program

The New York Rising Community Reconstruction (NYRCR) program was established to provide additional rebuilding and revitalization assistance to communities severely damaged by Superstorm Sandy, Hurricane Irene, and Tropical Storm Lee. It will enable communities to identify reconstruction and resiliency projects that address current damage, as well as future threats and economic opportunities. In connection with the program, New York State has allocated funds for community planning in 50 planning areas across the State, ten of which are in New York City.

New York State has allocated up to $25 million to Lower Manhattan in Community Development Block Grant Disaster Recovery (CDBG-DR) funding from the U.S. Department of Housing and Urban Development (HUD). These funds can be used for a wide variety of short- and long-term recovery and resiliency projects, and Lower Manhattan will be eligible to receive additional project funding from federal, state, and local sources.

As shown in the opposite page, this planning process will include 5 steps:

1. Identify **Assets, Risks, Needs and Opportunities**
2. Define **Community Vision**
3. Identify, Evaluate, and Prioritize **Projects and Actions**
4. Identify Funding Sources and Develop an **Implementation Plan**
5. Create **Final Community Reconstruction Plan**

The plan will focus on needs, opportunities, and projects that address six recovery functions: Community Planning and Capacity Building; Housing; Economic; Health and Social Services; Infrastructure Systems; and Natural and Cultural Resources.

Each NYRCR community is led by a Planning Committee made up of community leaders, businesses, and residents. The Planning Committee is taking the lead in developing the content of the plan. Lower Manhattan's Planning Committee consists of: Dan Ackerman (Co-Chair); Catherine McVay-Hughes (Co-Chair); Wellington Chen; Betty Cohen; Hope Cohen; Kerri Culhane; Robin Forst; Timur Galen; Tessa Huxley; Robert Keating; Robert LaValva; Michael Levine; Gigi Li; Sam Miller; Marco Pasanella; and Joseph Simenic.

The State also has provided each NYRCR community with a planning team to help prepare a plan. The New York State planning team for Lower Manhattan includes: Regional Leads Claudia Filomena and Alex Zablocki; NYC Lead Planner Steve Ridler; and Lower Manhattan Community Planners Fred Landa and Ron Rizzotti. The planning consultant team is led by HR&A Advisors (project management, community planning, economic development and housing analysis) and Parsons Brinckerhoff (planning, coastal protection, infrastructure engineering, and natural/coastal management). They are being supported by Cooper, Robertson & Partners (urban design), Mathews Nielsen (landscape architecture), OpenPlans (participatory mapping), and Hammes Company (healthcare).

By the end of the planning process, two deliverables will have been produced for public review:

Conceptual Plan (this document):

- Community Context
- Storm Impacts and Risk
- Rebuilding and Resiliency Planning
- Additional Considerations: Regional Perspectives and Existing Plans
- Preliminary Strategies, Projects, and Actions

NYRCR Work Schedule

Planning Committee Meeting Public Meeting Deliverable Due Date

Deliverables	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Work Plan	●						
Vision, Assets & Risk Assessment	1	●					
Conceptual Plan		2	1	●			
List of Strategies			3	2	●		
List of Priority Projects					●		
Community Reconstruction Plan					4	3	5	4	●

5-Step Process

1. Identify **Assets, Risks, Needs, Opportunities**
2. Define **Community Goals & Vision**
3. Identify, evaluate, and prioritize **Projects and Actions**
4. Identify **Funding Sources** and develop **Implementation Plan**
5. Create **final Community Reconstruction Plan**

NYRCR Communities in New York City

Final Community Reconstruction Plan (Spring 2014) – The second report will include a more in-depth discussion of the scope of contents below:

Overview

- Geographic Scope of Plan
- Description of Storm Damage
- Critical Issues
- Community Vision
- Relationship to Regional Plans

Assessment of Risk and Needs

- Community Assets
- Assessment of Risk to Assets
- Assessment of Risk to Systems
- Assessment of Needs and Opportunities

Reconstruction Strategies

- Community Planning and Capacity Building
- Economic Development
- Health and Social Services
- Housing
- Infrastructure
- Natural and Cultural Resources

Implementation Schedule

- Schedule of Implementation Actions

Appendices

- List of NYRCR Planning Committee Members
- Description of Public Engagement Process
- Description of Priority Projects and their Costs and Benefits
- Inventory of Assets

Approach to Public Outreach

Because NYRCR is a community-driven process, informing people of the program and encouraging maximum involvement is essential. Both outreach and community engagement are critical to identifying needs and priorities, setting direction, and ensuring the success of the final plan.

Outreach

The Lower Manhattan Planning Committee's public outreach strategy focuses on leveraging the networks of the existing community organizations and Community Boards in the area. The Committee has taken the lead in sending out flyers and other outreach materials to community members, with support from the State and the consulting team as needed. To date, Committee members, in concert with Community Boards 1, 2, and 3, have employed digital and social media outreach strategies via placement of multilingual ads on local news websites, in listservs and email announcements, and on Facebook and Twitter. Committee members have supplemented these efforts with public advertising in local newspapers and the distribution of multilingual flyers and palm cards to personal contacts and local institutions.

Maintaining engagement over the eight-month program will require ongoing outreach, and the Committee will continue to evolve its approach to communicate key NYRCR information as broadly as possible. Subsequent phases of outreach will focus on direct outreach to the membership of organizations throughout Lower Manhattan, with Committee and consultant team members attending neighborhood meetings to provide information about NYRCR, solicit input, and invite ongoing involvement. This level of engagement is particularly important in Lower Manhattan, due to the diversity of neighborhoods and constituencies in the area.

Public and Committee Meetings

There will be a total of four public meetings before the finalization of the Community Reconstruction Plan, one of which has been held to date. The meetings covered or will cover the following subjects:

- **Public Meeting #1** (October 30, 2013) – Program Scope, Goals and Timeline; Feedback on Vision, Community Assets, and Needs and Opportunities
- **Public Meeting #2** (December 2, 2013) – Contents of Draft Conceptual Plan; Gather Feedback on Strategies and Projects
- **Public Meeting #3** (January 2014) – Analysis and Prioritization of Strategies, Projects, and Actions
- **Public Meeting #4** (February 2014) – Final Plan

Each public meeting is designed to maximize interaction between members of the public,

the Planning Committee, and the consulting team. There is an effort to hold the meetings in different locations throughout Lower Manhattan over the course of the planning period in order to encourage the most comprehensive public input possible, representative of the diverse populations and constituencies within the planning area. To this end, translators are also available at the meetings to engage the large non-native English-speaking populations within the community. Members of the public are also welcome to attend the five (minimum) Planning Committee meetings that will occur by March 31, 2014.

Online Engagement

The NYRCR homepage is a valuable online resource, located at http://stormrecovery.ny.gov/community-reconstruction-program. Each NYRCR community has a dedicated page, which includes notices for all meetings and posts all meeting materials. It also includes links for visitors to review information about the program, directly contact NYRCR staff, and visit the Program's Facebook page. The Lower Manhattan page is located at: **http://stormrecovery.ny.gov/nyrcr/community/lower-manhattan**.

Residents can submit comments via the website or email: **info@stormrecovery.ny.gov**. Public input will be incorporated into the plan in progress.

The public may also provide input via the online interactive mapping tool, which is now live and can be accessed at **http://nyrisingmap.org/**. Committee members have begun to provide input to the online maps and are distributing flyers and conducting outreach to their communities around using the tool.

Lower Manhattan Public Meeting #1, October 30, 2013

The online map will allow users to click on assets in the community and provide three types of input:

- Confirm important **community assets** and information
- Identify **recovery and resiliency needs**
- Provide ideas for **rebuilding and resiliency**

The Conceptual Plan and final Community Reconstruction Plan will address public input on:

- Community **asset information**
- Analysis of storm **recovery and resiliency needs** identified by the community to help to identify common threats and issues
- Ideas for **projects and actions** for rebuilding and resiliency assessed in order to draft a priority list in the final plan

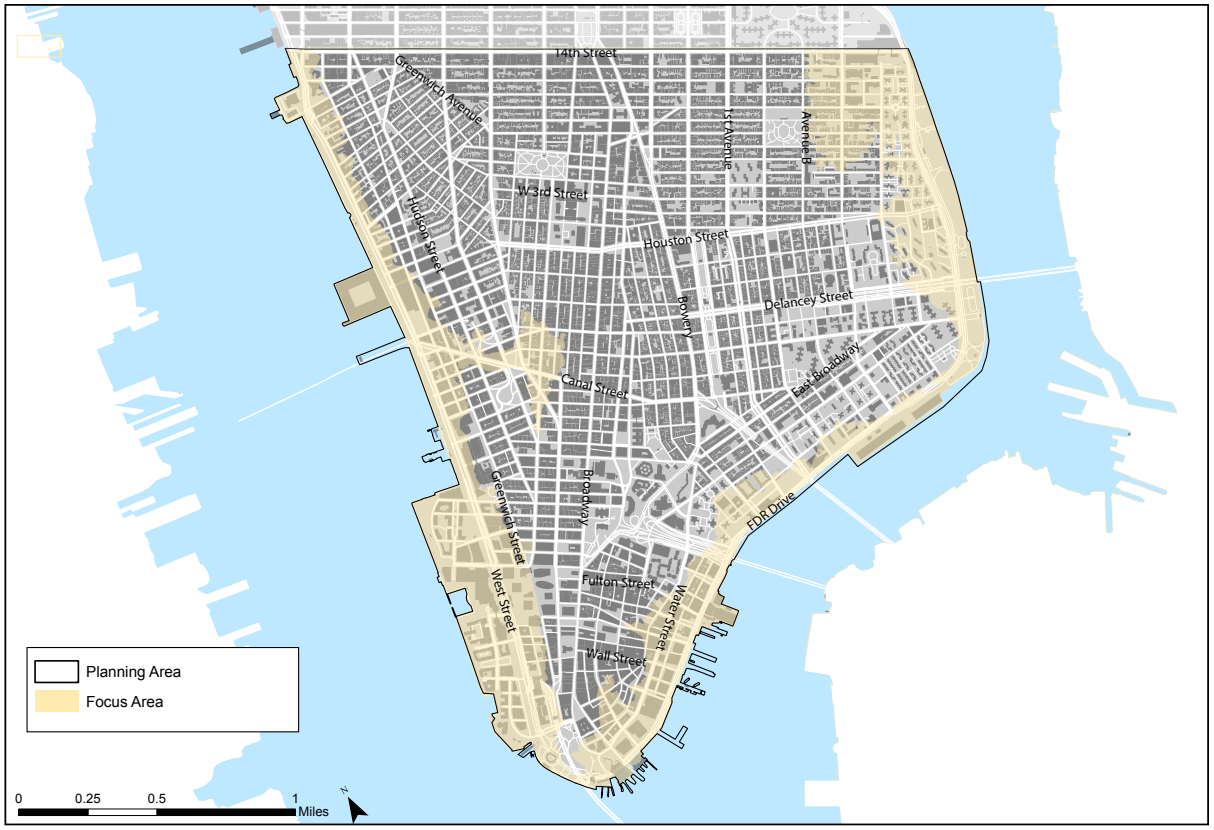
II. Community Context

Geographic Scope

The Planning Committee has defined the Lower Manhattan Planning Area as the area south of 14th Street from the Hudson to the East River. This area includes vibrant mixed-use neighborhoods and an international financial capital, and sustained some of the greatest economic damage from Superstorm Sandy, as well as significant lasting impacts to area residents. This area covers the entireties of Community Districts 1, 2, and 3, including the downtown neighborhoods of the Financial District, South Street Seaport, TriBeCa, Two Bridges, the Lower East Side, Alphabet City, Washington Square, Little Italy, NoLita, Chinatown, East Village, Greenwich Village, West Village, Hudson Square, SoHo, and the Meatpacking District. The map on this page indicates the Planning Area as designated by the Planning Committee.

A much larger area of Manhattan, reaching north to the west 40s and east to the 50s, was identified as vulnerable to natural disasters associated with climate change during and after Sandy; however, the area below 14th Street experienced particularly acute effects and is the subject of this planning process. Vulnerable neighborhoods throughout Manhattan could be subject to benefits from programs emerging out of the New York Rising Community Reconstruction Program, as well as from many other initiatives being undertaken

Lower Manhattan Planning Area



Two Bridges Neighborhood

North Cove Marina, Battery Park

Sources: (left) Flickr, Lucius Kwok; (right) Flickr, Patrick Nouhailler.

by public and private entities, many of which are summarized in Section V of this report.

The Planning Committee also has determined a Focus Area along the Lower Manhattan coastal edge. The coastal edge of Lower Manhattan sustained the highest level of damage in the Planning Area from Superstorm Sandy, and continues to experience impacts. These areas remain at the highest risk of future flooding. The Planning Committee will, therefore, devote special attention to these areas, while also recognizing that communities beyond these high-risk areas were also impacted by Sandy and remain vulnerable.

The Planning Area is surrounded by water. The Hudson River borders the Area to the west side, with the East River to the east. Beyond the southern tip of Lower Manhattan is Upper New York Harbor, which leads to Lower New York Harbor and the Atlantic Ocean. Esplanades are located along most of the waterfront, along with numerous piers that remain from the area's historical marine and industrial roots, many of which are being repurposed for other uses. The area tends to have a manmade—rather than natural—coastal edge, with a variety of piers, walls, and bulkheads protecting the shoreline. Major landfill has taken place over the course of centuries, expanding the shoreline significantly from its original contours. The most recent major landfill involved the construction of Battery Park City, using materials excavated from the construction of the original World Trade Center. Lower Manhattan is not directly exposed to the open ocean, but both the East River and Hudson River waterfronts are subject to tidal movement.

Community Overview

The Lower Manhattan Focus Area is extremely diverse and includes the waterfront portions of numerous neighborhoods including: the Financial District, South Street Seaport, TriBeCa, Two Bridges, the Lower East Side, Chinatown, Greenwich Village, Hudson Square, and the Meatpacking District. The Planning Area covers approximately 2,720 acres, with 58,600 feet of coastline, and is home to 314,000 people, according to the 2010 Census. The Focus Area covers approximately 728 acres, features the same amount of coastline, and is home to approximately 102,000 people.

The Focus Area includes a broad mixture of land uses. Residential uses comprise 23% of the total land area, predominantly consisting of high-rise buildings. Commercial uses cover 21% of the land area, the majority concentrated in the Financial District, one of the world's most prominent financial capitals and the fourth-largest central business district in the nation. Public facilities cover 11% of the area, while parking, transportation, and utilities cover almost a quarter of the area. In addition, there is over 100 acres of open space in the Focus Area, comprising about 13% of the area, mostly along the waterfront, which includes 23,730 linear feet of public esplanade. The remaining 8% of land is comprised of vacant and industrial uses. Ownership of land is split roughly evenly between public and private entities.

The Lower Manhattan Planning and Focus Areas are diverse with regard to income and ethnicity. Median income varies throughout the Planning Area, with the highest median incomes in Greenwich Village, Tribeca, and the Financial District, at around $150,000. The Lower East Side, Two Bridges, and Chinatown have some of the lowest median incomes, at approximately $20,000. The median household income of the Planning Area is approximately $64,200, compared with Manhattan's overall median income of $66,800. Within the Planning Area, approximately 60% of residents identify as White, 25% as Asian, 6% as Black, and 6% as American Indian/Pacific Islander/Other races. Sixteen percent report a Hispanic ethnicity. The Focus Area has a similar distribution across racial and ethnic groups with slightly larger proportions of Black, American Indian/Pacific Islander/Other, and Hispanic populations.

The Lower Manhattan Planning and Focus Areas are home to large immigrant populations, who may face particular challenges during emergency events due to language and cultural barriers. Thirteen percent of adults in the Planning Area report speaking English "not well" or "not at all" compared with 9% overall in Manhattan.

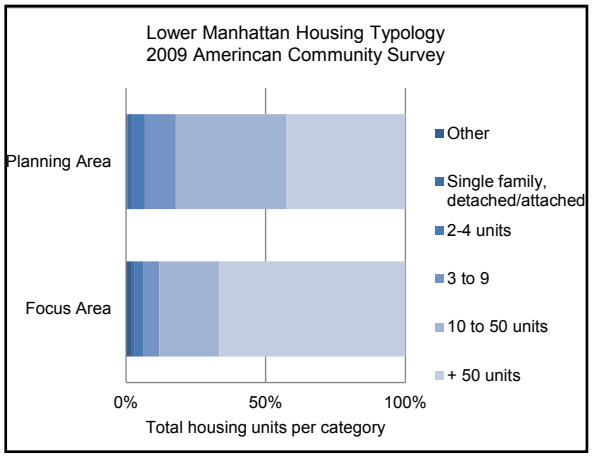
This rate is slightly higher in the Focus Area at approximately 15%.

Many residents have noted the need for increased resources for elderly populations. Approximately 13% of the population in the Planning Area and Focus Area is over 65 years old, similar to the distribution of this age cohort across Manhattan. It is likely that building typology and quality play a large role in how elderly and vulnerable populations are impacted by severe weather events.

The vast majority of residents in the Planning Area are renters living in medium to large apartment buildings. In the Planning Area, 41% of units are in mid-sized apartment buildings of 10 to 50 units, and 44% are in buildings with over 50 units. The Focus Area, by comparison, has a significantly higher proportion of large apartment buildings, with almost 70% of housing units located in high-rise buildings of 50 or more units. These building typologies pose particular challenges for vulnerable populations during power outages, forcing many residents to rely on stairs to move up and down throughout the building, and persevere without heat/cooling, lighting, and/or water in many cases. Ninety percent of residents in the Focus Area are renters, suggesting limited control over resiliency improvements, as landlords are responsible for capital upgrades in their buildings. In cases where rent control and rental subsidies play a role, it is challenging for owners to recoup such capital investments. There are approximately 32 public housing projects in the Planning Area and 15 in the Focus Area. When including Section 8, and other subsidized projects, this number is significantly larger.

The character of the commercial corridors within the Planning Area runs the spectrum. Commercial buildings range from high-density office buildings in the Financial District to numerous low-scale, mixed-use corridors throughout, which offer ground floor retail and restaurants with housing and office space above. The Focus Area has a similar diversity of commercial character.

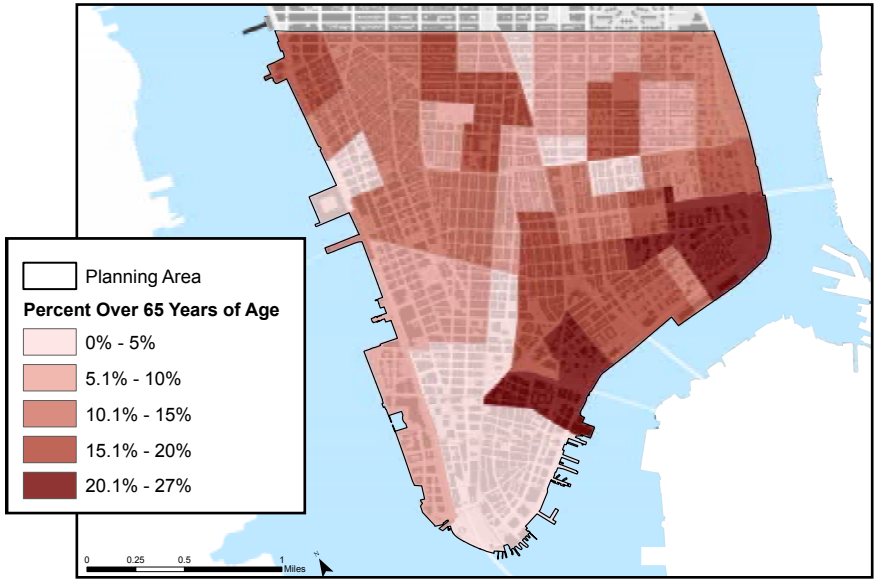
(Community Overview Sources: 2010 U.S. Census; 2005-2009 American Community Survey; NYC Department of City Planning MapPluto 13v1; New York City Housing Authority.)



Data source: 2005-2009 American Community Survey.

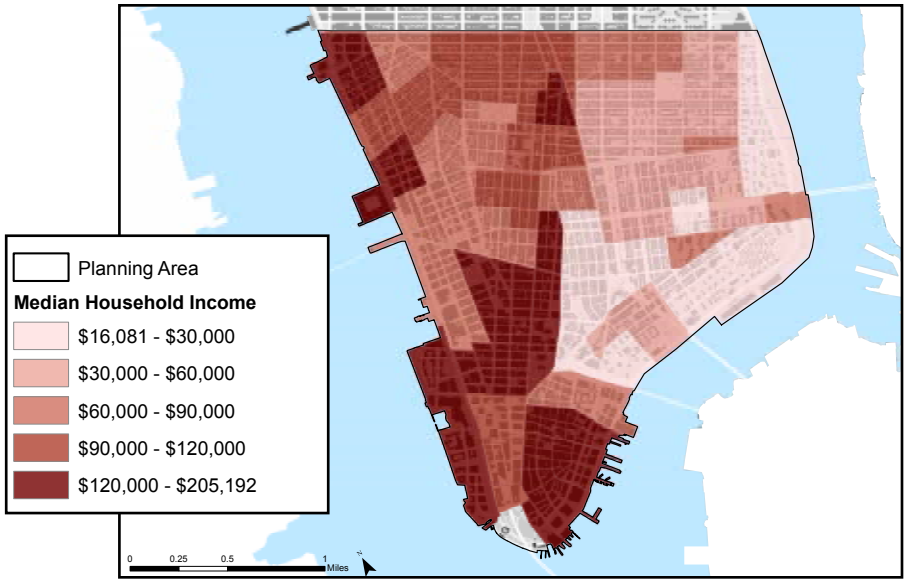
Zuccotti Park, Financial District. Source: Flickr, Baslow.

Percent of Residents over 65 Years of Age



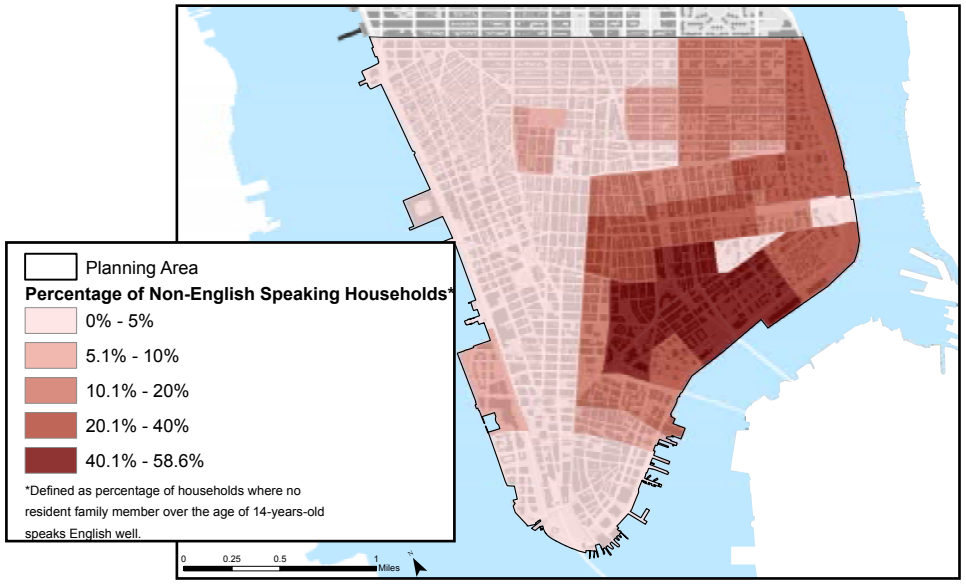
Source: U.S. Census Bureau, 2007-2011 American Community Survey.

Median Household Income



Source: U.S. Census Bureau, 2007-2011 American Community Survey.

Percent of Non-English Speaking Households



Source: U.S. Census Bureau, 2007-2011 American Community Survey.

III. Storm Impacts and Risks

Summary of Storm Impacts

The combination of high tide, a full moon, and Superstorm Sandy's size and wind dynamics created a massive surge of water that funneled up through the Narrows at the entrance to Upper New York Harbor. This large influx of water led to stillwater flooding of many of the shoreline areas of Lower Manhattan, with significant salt water flooding of building first floors, basements, and underground infrastructure—including transportation, electrical power, and telecommunications. This substantial damage to physical assets was eclipsed only by the impact on human life (including the two lives lost in the area).

The flooding in Lower Manhattan was intensified by the fact that high tide at the Battery occurred at roughly the peak of the Superstorm Sandy storm surge, meaning that the surge was building on top of the highest base water levels. Had the storm surge arrived six hours earlier or six hours later, flooding would still likely have occurred, but would have been significantly less extreme in this location. In addition, the prevailing winds shifted to a direction that pushed more water directly through the Narrows and into the Upper Harbor, increasing the volume of water entering into the constrained topography, leading to yet higher levels of storm surge coming over the various walls and bulkheads at the waterfront edge. However, because the Upper Harbor is relatively sheltered and because the shoreline is generally guarded by those walls, the buildings within Lower Manhattan experienced water flowing in and around them, but did not experience the direct wave action that severely impacted some of the Queens, Brooklyn, and Staten Island neighborhoods that suffered the most structural damage to buildings.

Flooding in the area principally affected the low-lying areas adjacent to the shoreline, typically within two to three blocks off the shore. In certain cases, particularly in the lower-lying areas adjacent to Canal Street on the west side, the flooding extended farther inland once it overtopped the bulkheads, covering adjacent areas based on local topography. Flooding in Battery Park City was more limited, because the neighborhood was constructed at a higher elevation, but water entered from both the north and south along West Street/Route 9A, which led to very significant flooding of the World Trade Center site, including the Port Authority Trans-Hudson (PATH) tunnels into New Jersey. Some other areas hit hardest by flooding include the South Street Seaport area, Water Street, and the high-density housing, including public and subsidized housing, adjacent to the East River between the Brooklyn Bridge and the Manhattan Bridge.

In addition to the direct damage caused by the flooding, which was concentrated at the shoreline, the entire area lost electrical power, due to both preventative shutdowns of certain portions of the electrical grid and the failure of other portions of the grid, due to flooding of critical facilities. One notable exception to this was Battery Park City, which, as noted above, was spared significant flooding due to its higher elevation, and which maintained power because it receives its electrical supply from an area transmission substation in Brooklyn that was not impacted by Sandy.

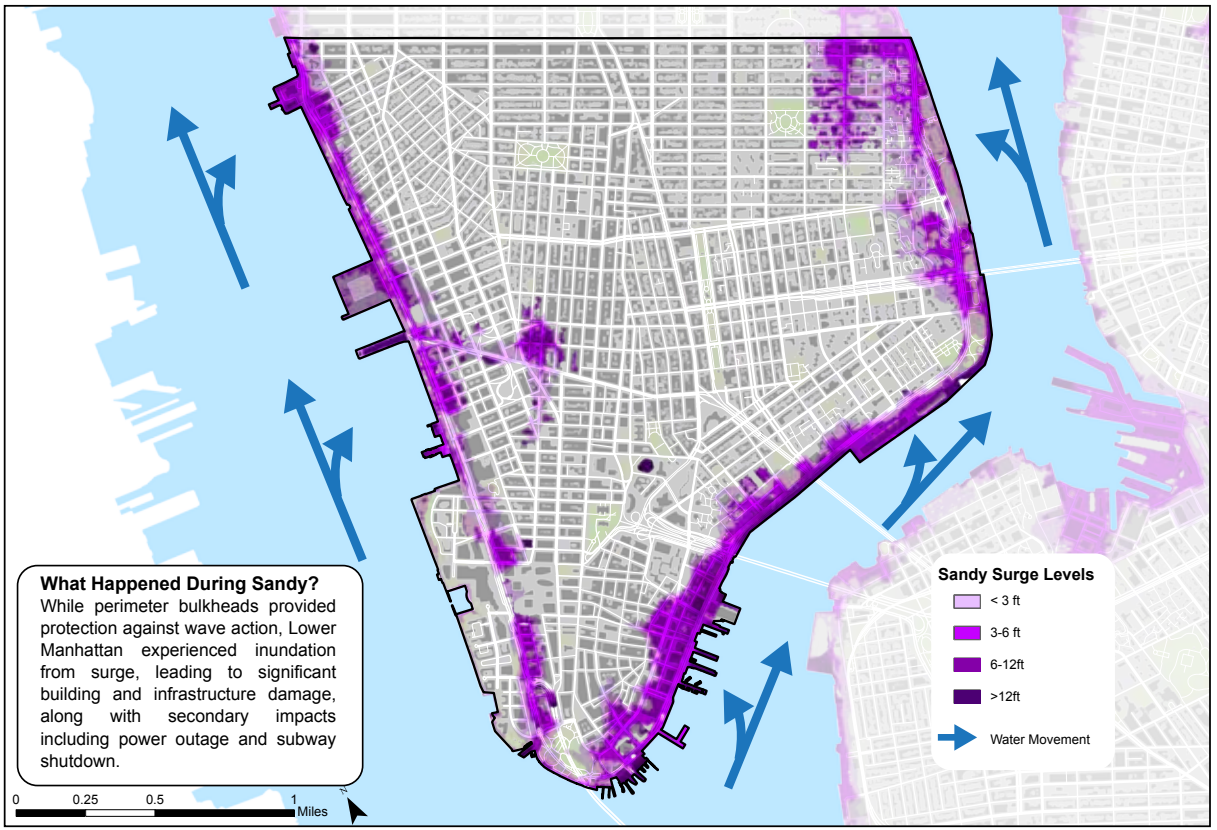
In addition to impacts on electrical systems, Sandy led to major damage to, and shutdown of, the area's steam system (which provides for heating and cooling of many large buildings) and telecommunications systems (including both traditional land line and mobile service). The shutdown of the steam system led to a loss of heat to many buildings, which became critical as the area headed into late fall and winter. This led to the appearance of portable boilers mounted on trailers around Lower Manhattan as commercial and residential buildings were reoccupied. The loss of communications had varying impacts on both residential and office buildings, particularly as many businesses could not move back into their offices until they had phone and internet access, and critical community organizations found it difficult to coordinate relief efforts without reliable communications.

High-rise buildings lost water pressure, elevator service, and security systems, although this fortunately did not result in any major fires or other public safety hazards. In

high- and mid-rise buildings, many residents found themselves trapped during and after the storm due to power outages and flooding that knocked out electrical and mechanical systems. This disproportionately affected vulnerable populations, including seniors and tenants of public housing, who were stranded with limited access to vital services. These outages also forced many people to leave their homes for extended periods of time after the storm, moving in with family or friends or living in shelters.

The damage to other parts of the area's transportation infrastructure also was intense. The entire subway system was shut down in advance of Sandy's arrival, and those shutdowns continued afterwards, due to flooding and the lack of electrical power. Salt water damaged important electrical and communications equipment, including signal relays that prevent train collisions. Among the most severely damaged subway asset was the South Ferry Station, a loss that will require multiple years to repair. Other damaged assets include the World Trade Center PATH station and the Montague Tunnel, which connects the R train to Brooklyn. The Holland Tunnel to New Jersey, the Battery Tunnel under Battery Park, and the Hugh L. Carey Tunnel to Brooklyn were fully flooded, the latter taking over three weeks to fully reopen. Sandy also resulted in temporary shutdowns of the Staten Island Ferry and private ferry services, and damaged the surface—and in certain cases, the underground structure—of many streets in the inundation area, including Water Street, West Street, and the FDR Drive.

What Happened During Sandy?



Sources: NYC Mayor's Office Special Initiative for Rebuilding and Resiliency (SIRR) Report.

Interior of South Ferry Whitehall Street Subway Station.
Source: Flickr, Dan Nguyen.

Recovering from the Storm

Lower Manhattan required significant immediate and long-term recovery efforts, focused both on the physical assets in the area and the people who live there. The most immediate need was to begin restoring power and heat, which would then enable residents whose homes were otherwise undamaged to return. Given that Sandy occurred in late October, heat was a critical issue. Portable electrical generators were introduced by the dozens across the area to provide electrical power to apartment buildings, commercial high rises, medical facilities, and government offices. While these generators helped many buildings to reopen once the immediate flood damage was addressed, they created ongoing noise and pollution.

In addition, much of the damaged infrastructure needed to be restored and repaired; although the majority of the subway system was back in operation within a week or less, many of the long-term repairs have taken weeks and months, and some will stretch out over years. Similarly, repairs to telecommunications systems took several months in certain cases. This was particularly the case as old copper lines were replaced with fiber optic lines, which are more efficient, provide greater bandwidth, and will be more resilient to future storms. As Con Edison restored electrical power and steam supply, many buildings were able to return to normal service. In other cases, significant repairs were required to the internal electrical systems before the buildings could be reoccupied.

Businesses in Lower Manhattan were also profoundly impacted by the storm. Many ground floor small businesses were flooded out of their space, resulting in loss of inventory, equipment, and fixtures, while many larger businesses were forced to evacuate their space due to lack of power, water, and communications. In the case of smaller businesses, their limited capitalization made it challenging to recover from the damage, particularly since it typically took many weeks and months for these businesses to reopen, if they were able to reopen at all. While larger businesses were typically better positioned to survive the loss or suspension of operations, the impact was still substantial given the importance of many financial companies to the regional, national, and global economy.

In the midst of this recovery, a number of community organizations mobilized to help residents—including vulnerable populations such as seniors and public housing tenants—to recover in both the short and long terms. Organizations such as the three Community Boards in the area, the Two Bridges Neighborhood Council, the Committee Against Anti-Asian Violence (CAAAV), the Good Old Lower East Side (GOLES), the Chinatown Partnership, Dewitt Reformed Church, Henry Street Settlement, University Settlement, and many others were critical in helping residents, small businesses, and community facilities to recover. One key lesson learned from Superstorm Sandy was the importance of community organizations in creating and sustaining community resiliency, which was clearly the case in Lower Manhattan.

Future Risk

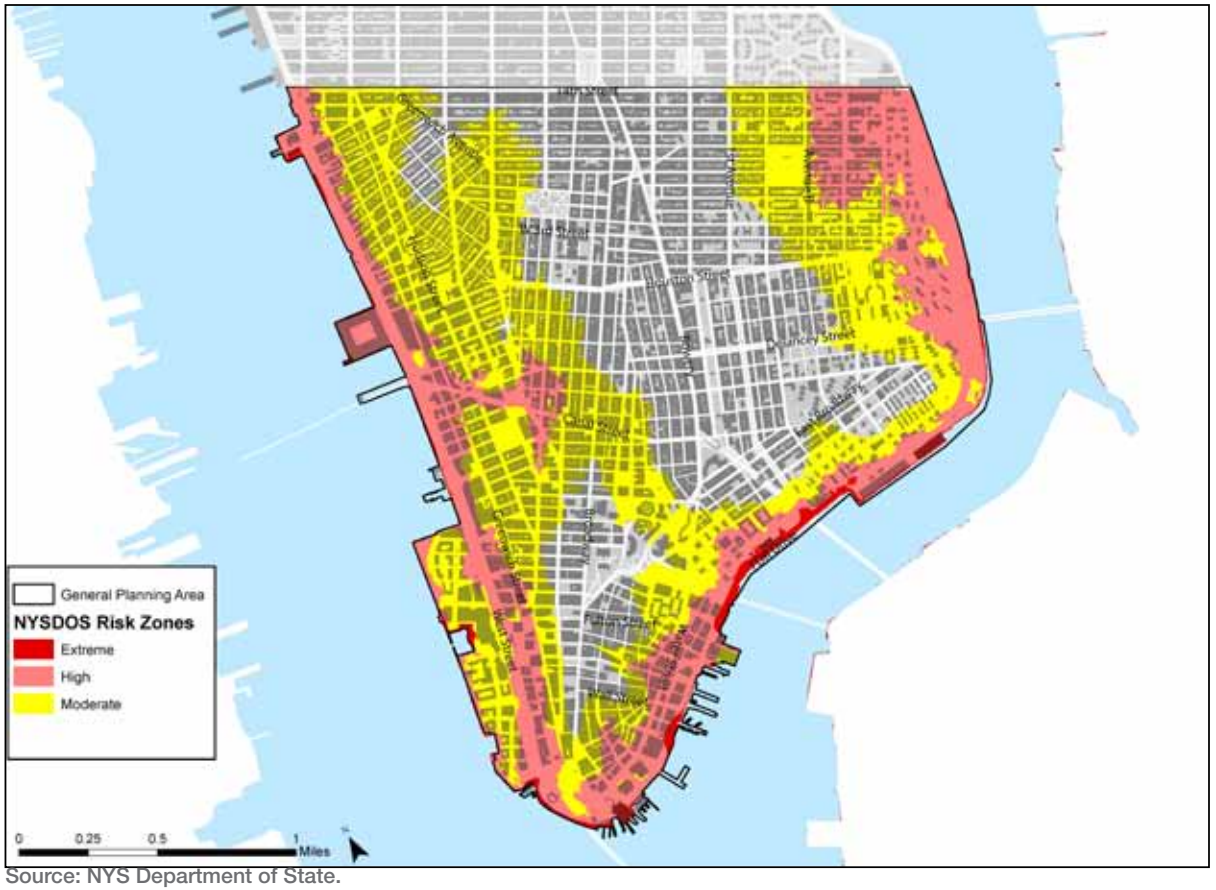
With its location in the Upper Harbor, Lower Manhattan remains at risk from future coastal storms, although a number of factors—tide cycle and wind direction being keys—must be aligned to result in damage and devastation on the order of what occurred during Sandy. Along the east side, this risk is exacerbated by the fact that the East River is not truly a river, but rather a tidal strait that can receive storm surge from either end (Upper New York Bay or Long Island Sound). The risk of coastal flooding will continue to increase with rising sea levels. Significant portions of the Lower Manhattan planning area lie in high-risk zones, according to New York State Department of State (NYS DOS) risk analysis; the area that is at extreme risk is limited because of the general presence of bulkheads and seawalls that limit the direct impact of wind-driven waves. Given its tall buildings, location at the “prow” of Manhattan, and large bridges crossing the East River, the area is also vulnerable to wind damage from storms.

New York State Department of State Risk Zones

While FEMA's new preliminary flood insurance rate maps incorporate detailed analysis of possible storm scenarios, they do not consider future factors such as sea level rise. In order to map and assess risk, taking into account sea level rise and differences in exposure of the landscape, NYS DOS developed its own Risk Assessment Area mapping tool that takes additional factors into account. In addition to the FEMA flood zones, these factors include: a sea level rise estimate of three feet; areas expected to be inundated by a category 3 hurricane; areas subject to shallow coastal flooding; and areas of the coast subject to shoreline erosion. Considering these factors, the State established three risk assessment areas:

- **Extreme:** Areas currently at risk of frequent inundation and vulnerable to erosion and heavy wave action (in the FEMA V zone, meaning the area is subject to hazards associated with storm-induced waves over 3 feet), subject to shallow coastal flooding (within the National Weather Service's shallow coastal flooding advisory threshold), or likely to be inundated in the future, due to sea level rise (assumption of 3 feet).
- **High:** Areas outside the Extreme Risk Area that are currently at risk of infrequent inundation (in the FEMA A Zone, meaning there is a 1 percent annual chance of flooding), or at future risk of shallow coastal flooding with sea level rise (assumption of 3 feet).

NYS Department of State Risk Zones



Source: NYS Department of State.

- **Moderate:** Areas outside the Extreme and High Risk Areas, but currently at moderate risk of inundation from infrequent events (in the FEMA shaded X zone, meaning there is a 0.2 percent annual chance of flooding), or at risk of being in the 100 year floodplain with sea level rise (assumption of 3 feet), and areas expected to be inundated by a category 3 hurricane.

A more detailed description of the State's Risk Assessment Area mapping methodology can be found on the NYRCR website, as can a link to an online viewer for the risk assessment area maps, at **http://stormrecovery.ny.gov/community-reconstruction-program**.

IV. Rebuilding and Resiliency Planning

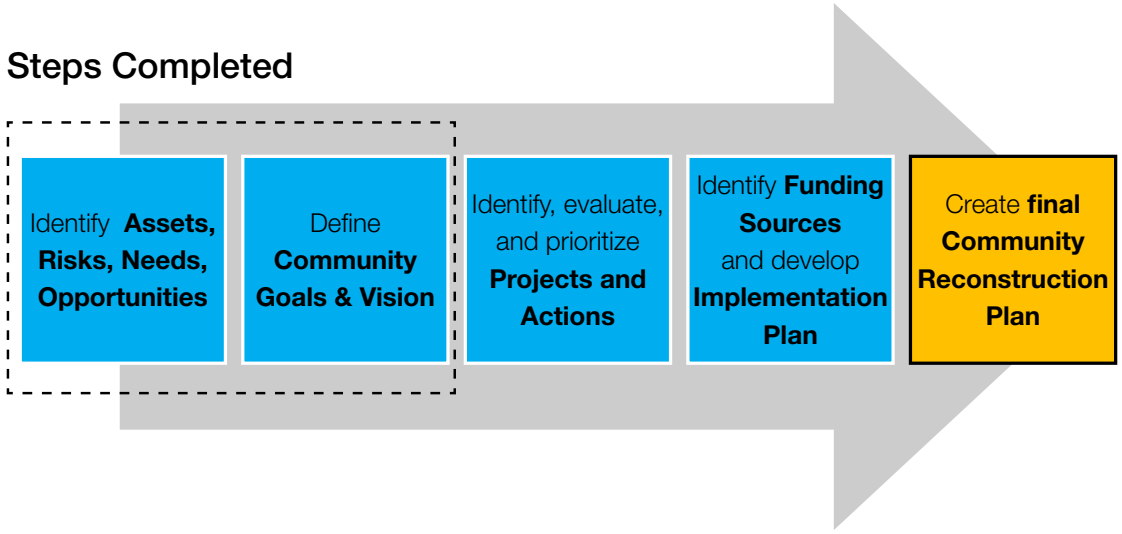
Process Overview

The NYRCR program contains five key steps for rebuilding and resiliency planning. This section summarizes the outcomes of the two steps of the NYRCR program process that have been completed thus far: Identifying Assets, Needs and Opportunities; and Defining a Community Vision.

Through a series of Planning Committee meetings and a Public Meeting, the Lower Manhattan NYRCR community has:

- **Identified community assets and risks,** noting places or resources within the community that residents value and/or deem to be at risk.
- **Defined community needs and opportunities** by evaluating the issues and challenges, as well as the resources presented by the unique landscape, housing, economy, demographics, and services that exist within Lower Manhattan. These recovery and resiliency needs and opportunities may be associated with a specific asset or apply to a community as a whole.
- **Established short- and long-term goals and an overall vision** for resiliency and recovery in the Lower Manhattan community.

The results of this work will support the next steps in the rebuilding and resiliency planning process, starting with drafting strategies and identifying potential projects in November 2013. Content completed in the first two steps will evolve through the process and revised content will be presented in the Final Community Reconstruction Plan delivered at the end of March 2014.



Community Assets

Assets include a variety of places and resources within a community. They may facilitate economic and social activities, or may refer to critical infrastructure required to support those activities. Assets may also be part of the built or natural environment.

The goal of the asset inventory process is to assemble a complete description of the assets located within the community, with particular emphasis on assets whose loss or impairment due to flood and storm events would compromise essential social, economic or environmental functions or critical community facilities. The inventory aims to include sufficient information to assess risk to the assets under current and future conditions.

The asset inventory has been developed based on a combination of publicly available data and input from the Planning Committee and the public. The first draft of an asset inventory was presented at the first Planning Committee meeting. The inventory was initially organized according to the six key NYRCR recovery functions: Health and Social Services; Community Planning and Capacity Building; Economic Development; Housing; Infrastructure; and Natural and Cultural Resources. Given the Planning Committee's focus on vulnerable populations, this Conceptual Plan also profiles Vulnerable Populations as a critical community asset.

The inventory and associated maps were initially generated using publicly available land use and infrastructure data to identify assets within the planning area. (The primary data source used for the initial asset inventory was the New York City Department of City Planning's MapPluto data, release 13v1.) The building class attributes of the MapPluto data were used to identify the assets by the categories and subcategories defined in the NYRCR Program guidance.

Given the breadth and size of the Lower Manhattan Planning Area, the Planning Committee targeted the asset inventory process on assets within the Focus Area – that is, assets with high and extreme risk of future flooding. In cases where assets were essential to emergency response and preparedness (e.g., hospitals, evacuation centers, etc.) or for serving vulnerable populations, the planning team has profiled the entirety of the Planning Area.

The maps were refined with input from the Committee. The revised maps were then presented to the public at the first public meeting, where community members identified any missing assets and identified their priorities. The planning team then further refined the maps into the versions included in this Conceptual Plan.

Additional public input on assets will be captured through an online interactive community asset map located at **http://lowermanhattan.nyrisingmap.org**. This interactive map will serve as an online reference throughout the remainder of the NYRCR Program process.

Recreational space in Chinatown

Stuyvesant High School

Sources: (top) Flickr, Susan NYC; (bottom) Flickr, Harvey Barrison.

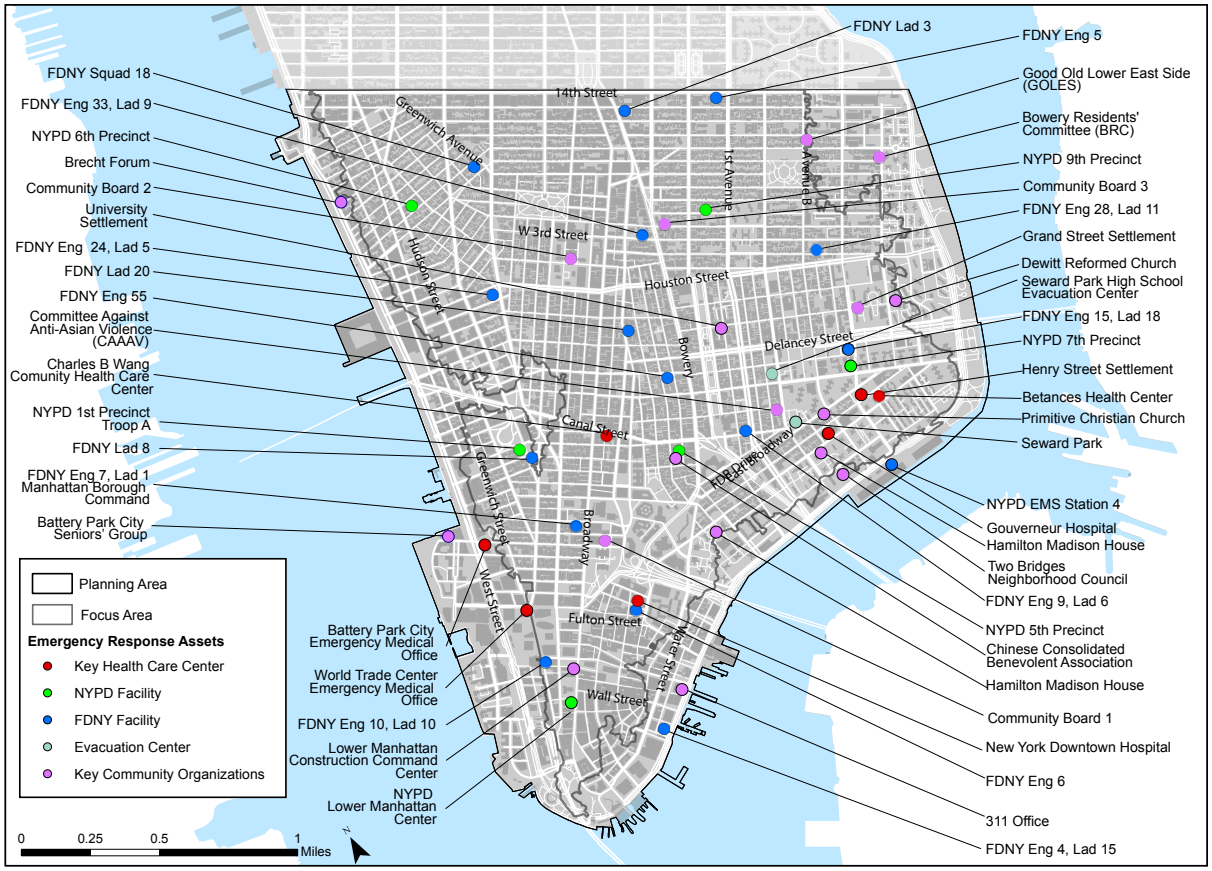
Health and Social Services Assets

The Committee determined health and social service assets that support emergency response to be a priority for Lower Manhattan. This is largely due to the significant responsibilities that community organizations, health care institutions and emergency response facilities have taken on during past emergencies within Lower Manhattan, including 9/11 and Superstorm Sandy. These assets have proven crucial in providing health care, recovery, and emergency response services to the Lower Manhattan population.

Due to the importance of these assets, the Committee decided to inventory and recognize all critical healthcare and emergency response facilities and organizations throughout the Planning Area, and not just the Focus Area.

The Committee identified all FDNY and NYPD facilities, key health care centers, the Seward Park High School evacuation center, Seward Park, and the offices of key community organizations that played a significant role in organizing aid and relief services during the aftermath of Superstorm Sandy. Other organizations and entities were critically important during Sandy's aftermath and are therefore identified as critical assets in this plan. For instance, Dewitt Reformed Church served as a staging area for Sandy recovery, while the Lower Manhattan Construction Command Center helped buildings in Community Board 1 to get their power restored by connecting building managers with city agency representatives.

Health and Social Services Asset Map: Key Emergency Response Assets



Source: NYC Department of City Planning MapPluto, 13v1.

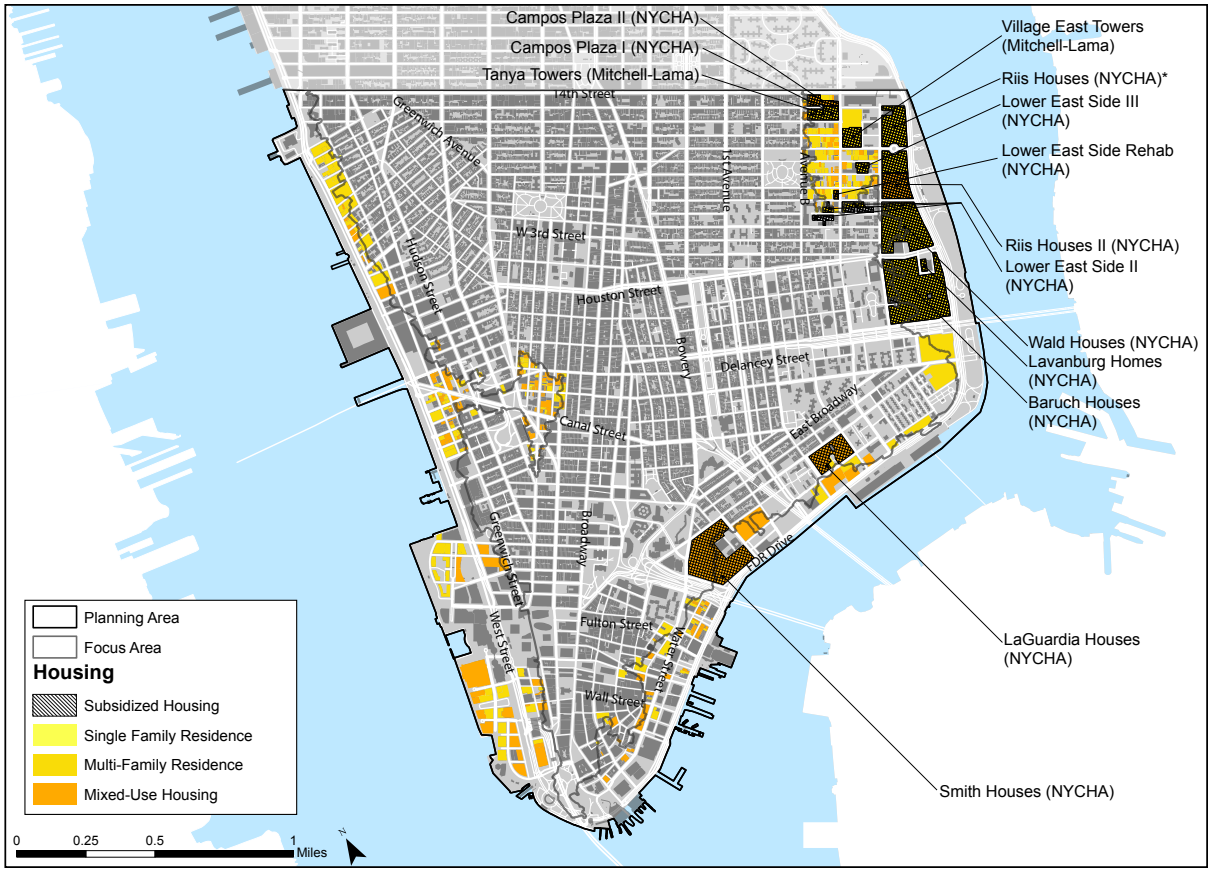
Note: larger versions of asset maps may be found in Appendix III.

Housing Assets

All housing in high and extreme risk zones is particularly vulnerable to the effects of hurricanes and other extreme weather events and is therefore deemed critical in this plan. The regulated and subsidized housing along the east side of the planning area, for instance, experienced severe flooding during Superstorm Sandy, leaving the residents of these particularly flood-prone areas in need of immediate assistance. The Planning Committee believes that these vulnerable homes should be at the forefront of any protection strategy.

The range of housing types within the Focus Area helps to define Lower Manhattan's diversity of residents and the breadth of building typologies in which they reside. As such, various types of housing are identified to inform the development of strategies for emergency response and preparedness measures.

Housing Assets Map



Source: NYC Department of City Planning MapPluto, 13v1

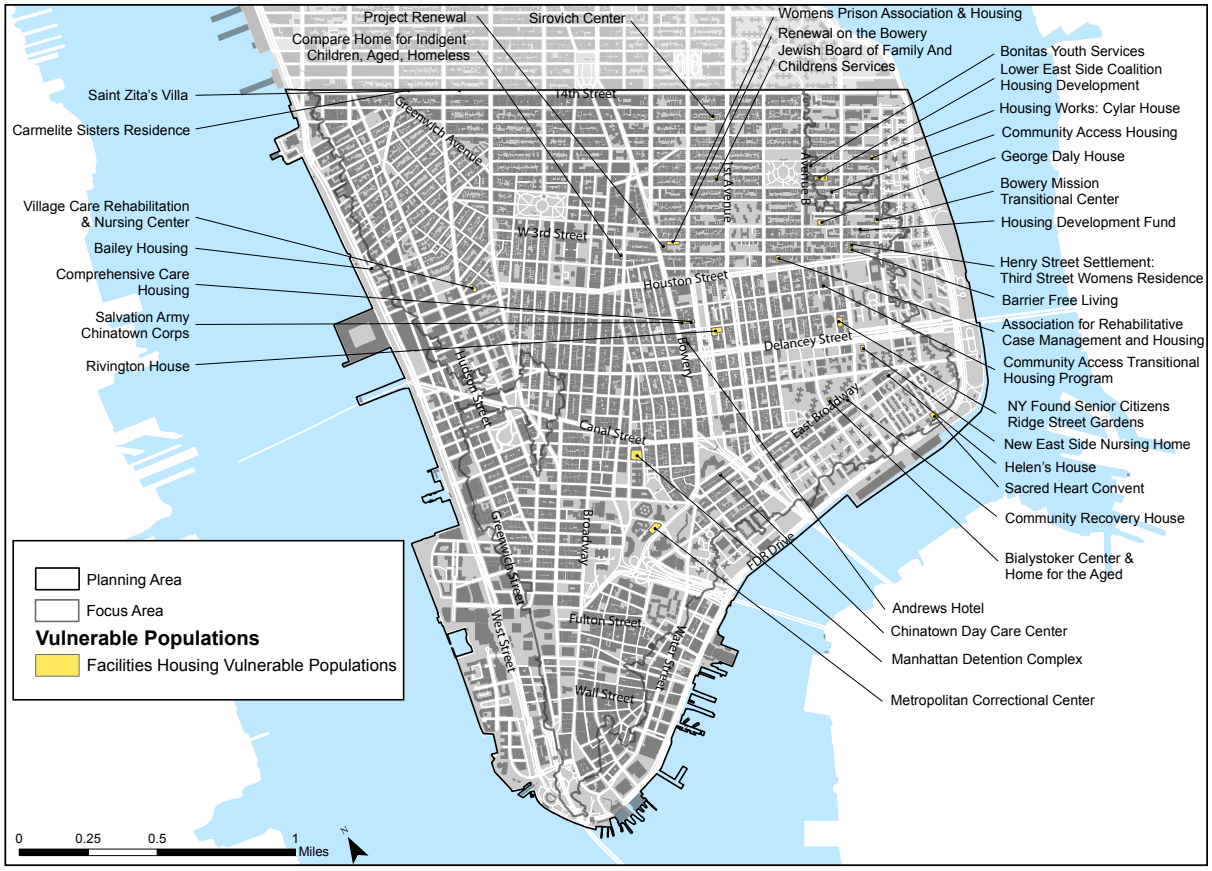
*NYCHA: New York City Housing Authority

Vulnerable Populations

The Committee determined vulnerable populations to be one of the most important asset categories for this community. While concerned with place-based assets and hard infrastructure, the Planning Committee views the people of its community as its most critical asset and therefore has prioritized vulnerable populations and those facilities and organizations that serve them. These populations were particularly affected by the impacts of Superstorm Sandy, as many were unable to leave their homes or obtain critical support.

Given the diversity of the Lower Manhattan Planning Area, the identification and tracking of vulnerable populations is challenging. The Planning Committee has expressed an interest in developing a means to do so, and ensuring that there is ongoing capacity to track vulnerable populations. The map on this page provides a first look at the locations of potential vulnerable populations, including the distribution of elderly populations and those living in nursing homes, prisons, mental health facilities, or other similar spaces.

Vulnerable Populations Map



Source: NYC Department of City Planning MapPluto, 13v1

Economic Assets

Lower Manhattan is a global center for finance, a growing hub for the technology and creative sectors, and an economic engine for the region. Wall Street is home to the New York Stock Exchange and some of the world's largest and most influential banks. The reconstructed World Trade Center will fully restore and expand upon a vital center for global business. Lower Manhattan is not simply a center of finance, however; with a rapidly diversifying economy driving leasing and job growth, an increasing number of technology and creative companies have moved into the area in recent years. The zone south of Chambers Street is now home to 600 technology companies, up from 500 only a year ago. Key economic corridors such as Water Street, Fulton Street, and Broadway house businesses both big and small. The largest commercial building in New York City, 55 Water Street, is also located in the area. The area also boasts economic drivers in the form of tourist destinations, which include the National September 11 Memorial and Museum, Wall Street, the Brooklyn Bridge and a multitude of other assets.

Many businesses still struggle to recover from the flooding and damage that Superstorm Sandy visited on the neighborhood. The South Street Seaport Historic District has been particularly challenged by Sandy's flooding. Some of its small businesses were forced to shutter their doors and have still not reopened. The Planning Committee has identified small business as a key asset to be addressed under the Conceptual Plan, as many remain challenged to both recover and prepare for future potential severe weather events.

Economic Assets Map

Source: NYC Department of City Planning MapPluto, 13v1

Infrastructure Systems Assets

Lower Manhattan's critical infrastructure systems serve not only the residents and visitors of the community, but the New York City metropolitan region as a whole. With many systems located near bulkhead lines in the Focus Area, critical infrastructure systems assets at high or extreme risk to flooding are numerous. This risk is magnified when considering that these assets are either responsible for transporting people in and out of Manhattan or providing the Lower Manhattan community with running water and electrical power.

Key transportation assets include ferry terminals, intersections of numerous subway lines and the PATH, and regional bridges and tunnels. New York City's new bicycle sharing system, with stations throughout the Planning Area, is also a transportation asset. Additionally, the Planning Area houses numerous substations that are critical to providing power to the Lower Manhattan community. For example, the well-documented failure of the 13th Street substation during Superstorm Sandy gave way to power loss for the entire Planning Area, save Battery Park City. While the City of New York and its respective agencies and organizations have numerous plans and financial resources in place to protect these critical infrastructure systems assets, they are nonetheless recognized in this plan as key assets to the Lower Manhattan community.

Infrastructure Systems Asset Map

Source: NYC Department of City Planning MapPluto, 13v1

Natural and Cultural Assets

Lower Manhattan features a wealth of parks, open spaces, privately-owned public spaces, and cultural facilities, many of which are located in the Focus Area. Battery Park, in the Focus Area, served as a key staging ground for recovery services during the aftermath of Superstorm Sandy, providing ample room for agencies such as FEMA and the Army Corps of Engineers to tend to and provide services for those in need. The various park space within Battery Park City is also a natural and cultural asset during post-emergency situations. An estimated 40,000 to 50,000 people passed through these open spaces to evacuate Lower Manhattan during the aftermath of September 11 while many other open spaces in the area were heavily damaged by dust and debris. Today, the nearby National September 11 Memorial and Museum is one of the largest and most visited public spaces in Lower Manhattan.

Other parks are essential community assets, providing open space, recreational activity and light and air. These include East River Park, Hudson River Park, the ball fields within Battery Park City, and the East River Esplanade, all of which were heavily affected by Superstorm Sandy. The quality of life in the community was directly impacted by the damage caused to these public spaces and the duration of their closures. Additionally, numerous performing arts centers, museums, and other arts centers exist within the Focus Area. These facilities serve as assets not only for their public facilities (theaters, galleries, or studios) and their role within the community, but also for their potential capacity to serve as a gathering space or community hub in the event of an emergency.

Natural and Cultural Assets Map

Source: NYC Department of City Planning MapPluto, 13v1

Needs and Opportunities

This section identifies Lower Manhattan's needs and opportunities. This includes what the community needs in order to be safe and thrive in the face of extreme events, emergencies, and the impacts of climate change. This section also identifies opportunities that exist within the community that can be taken advantage of to better address its resiliency goals, such as underutilized assets community organizations, or other existing resources.

Identifying these needs and opportunities is an important part of the NYRCR process, as the list reflects the community's opinions regarding known or discovered risks, issues or challenges, unmet demands, as well as untapped potential or resources across the neighborhoods and networks of the community.

The Planning Committee drafted an initial list of needs and opportunities based on identified risks, the asset inventory, and firsthand experience. The list, categorized by the six recovery functions, was then vetted and updated by community members at Public Meeting #1. The table on the opposite page presents a resulting preliminary summary of needs and opportunities for Lower Manhattan, categorized by asset type, noting the number of times each was mentioned by the public. Detailed suggestions from the Committee and the community are as follows:

Improving Knowledge and Capacity around Emergency Preparedness, Response, and Recovery

Lower Manhattan community members identified improving knowledge and capacity around emergency preparedness, response, and recovery, as their primary priority. Community members emphasized a need for better coordination among local, state, and federal emergency response entities and community organizations, and for more resources to be readily available for emergency response and immediate recovery. During Sandy, volunteers with NYC Office of Emergency Management's (OEM) Community Emergency Response Team (CERT) for Lower Manhattan also needed to evacuate, and community members indicated that CERTs from lower-risk areas should be mobilized to address a potential shortage of volunteers. There is an opportunity for CERTs to provide needed supplies and services throughout the area, including emergency lighting equipment, food, water, and first aid.

Other needs included more accessible, comprehensive information and outreach on preparedness, response, and recovery procedures, such as in the form of power-resilient information hubs providing resources on where to go before, during, and after an emergency event, potentially also connected to tenants, landlords, and property managers. Community members indicated difficulties in tracking down relatives, friends, and pets amidst the power outage, and information hubs should have dedicated space for locating loved ones. It is also important that such information is easily accessible to community members who may not have computers or cellphones.

Protecting Vulnerable Populations

Another critical need repeatedly cited by the public and the Committee is the need to protect vulnerable populations throughout Lower Manhattan. This includes the large senior population in the area, which may face particular challenges related to limited mobility and information access. There is a need to identify the locations of seniors and track their medication requirements, in order to be able to monitor and dispense special assistance and any needed medications to them before, during, and after emergency events. There may be potential for CERTs to provide some of these functions. Some cited an opportunity to encourage (or mandate) landlords and management companies to keep up-to-date records of vulnerable populations in their buildings. Others referenced the need to bolster current efforts in state and city government to develop an online registry of vulnerable individuals. At the state level, a disaster preparedness commission has recommended the creation of special needs registries that would allow emergency responders to find those most in need of aid immediately during and after a disaster. There are also ongoing efforts at the city level to develop registries of vulnerable individuals. New York State law recommends that cities and counties develop voluntary registries of people with disabilities as part of disaster preparedness plans, and since Hurricane Katrina, New York City has discussed developing an online registry.

Needs and Opportunities Summary

Recovery Function	Need	Times Mentioned
COMMUNITY PLANNING & CAPACITY BUILDING	Improved knowledge around preparedness, response, and recovery	18
	Protection of vulnerable populations	11
	Strengthened community organizations	6
INFRASTRUCTURE	Resilient power supply	8
	Coastal flood protection	7
	Resilient and redundant transportation options	4
	Improved drainage	3
	Resilient telecommunications	1
HEALTH & HUMAN SERVICES	Improved and expanded evacuation center(s)	8
	Ensured access to quality healthcare and medicine	3
	Ensured food supply	2
HOUSING	Resilient residential buildings	8
	Resilient affordable housing	1
ECONOMIC DEVELOPMENT	Resilient small business operations	4
	Resilient groundfloor businesses and retail	1
NATURAL & CULTURAL RESOURCES	Resilient public realm	2

Community members emphasized that building resiliency measures, such as permanent, flood-resistant backup generators, are particularly important in buildings with elderly and/or disabled tenants, where medications may require refrigeration and physical disabilities may make climbing stairs difficult during a power outage. Other vulnerable populations mentioned by the community include non-native English speakers, who face barriers in access to information about evacuation and recovery resources. There is an opportunity to provide strategic outreach to these populations via community-based organizations.

Strengthening Community Organizations

Community organizations played a large role in the Sandy recovery effort. Many of these organizations have a long history in Lower Manhattan, particularly in the neighborhoods of the Lower East Side and Chinatown. With extensive, neighborhood-based service networks, many of these organizations deliver vital outreach, educational programming and health and social services to the community. Several organizations in Lower Manhattan provided critical food, water, and medical aid during Superstorm Sandy. There is a need to ensure that community organizations have sufficient funding, trained labor, supplies, and effective communciations systems to serve constituents during and following emergency events. Community members also cited a need for improved communications and coordination among organizations in the distribution of food, water and health services, calling for better supply and demand matching among organizations and the establishment of a pre-designated network of locations where supplies can be picked up. There is a further need to better deliver supplies and other resources to area churches, recognizing the critical role that religious institutions can and have played in emergency response and recovery.

Improved and Expanded Evacuation Center(s)

Community members noted that more accessible, high-quality evacuation centers are needed. The Seward Park Evacuation Center, the only designated evacuation center for Lower Manhattan, could use facility upgrades to improve quality, comfort and safety and handicapped accessibility. Efforts could also be made to expand its capacity or add additional evacuation center capacity. With this center located in the Lower East Side, community members further specified that any new evacuation centers should be sited in other areas farther downtown and on the westside of Lower Manhattan, in order to increase shelter accessibility for all.

Ensuring Access to Quality Healthcare and Medicine

Members of the public and Planning Committee identified a need for quality healthcare services and access to medicine throughout disasters. The number of urgent care facilities has dropped in recent years in Lower Manhattan, and there is only one hospital, New York Downtown Hospital, to serve the entire area. Community members noted that efforts should be made to ensure that healthcare facilities have backup power and that critical patients can be easily transferred to other facilities in less floodprone areas as a precautionary measure. Additionally, there should be a plan in place to coordinate backup pharmacy pick-up points in the event of pharmacy closures, as well as the quick reopening of pharmacies after emergency events.

Increasing Small Business Resiliency

Members of the public and Planning Committee identified a need to preserve, expand, and increase the resiliency of the diverse commercial uses located in Lower Manhattan. This includes efforts to ensure both operational and structural resiliency for small businesses and their commercial spaces. Many small businesses rely on credit card machines and other electricity-dependent equipment, and there is a need for more power-resilient alternatives to keep operations functioning during and after an emergency. Many small businesses are additionally located at ground level, putting them at greater risk of flooding. Identifying and leveraging funding opportunities to rehabilitate and increase the resiliency of ground floor commercial uses is an important component of ensuring the long-term resiliency of Lower Manhattan. Businesses need clearer information about which rehabilitation options are available to them, along with financial support to pursue capital-intensive resiliency measures. Increases in the cost of flood insurance are a significant and pervasive concern among small business owners, who may also be facing rent increases.

Strengthening Infrastructure

There are many ongoing initiatives, led by federal, state and local government agencies, to protect the infrastructure of Lower Manhattan. Community members particularly voiced a need for improving drainage and reducing flooding from sewer backup, as well as for providing better coastal flood protection, particularly in low-lying areas. They also cited a need for more resilient steam heating systems in buildings, which are vulnerable to flood damage and meant many buildings lost heat during and after Superstorm Sandy. Additional infrastructure needs include redundant transportation options in the event of an emergency, such as expanded bus service if subway or ferry service is disrupted. Increasing the resiliency of telecommunications infrastructure in Lower Manhattan is also vital, and community members suggested exploring alternative energy sources to power equipment like cellphone towers. In the short term, residents indicated it would be helpful if there were a network of pre-designated charging stations for cellphones and laptop computers in the area.

Increasing the Resiliency of the Public Realm

Community members indicated a need for the quick reopening of parks and ballfields after emergency events, as well as for the expansion of green space in the area. Residents reported playgrounds not being properly and quickly cleaned after Superstorm Sandy, and voiced a desire for such amenities to be able to weather storms better through more resilient design, and to be reopened as soon as possible after disasters. There is also a need for additional park space, not only for recreational purposes, but as part of a stormwater strategy. Lower Manhattan is lacking in permeable surfaces, and greater natural groundcover would help to absorb rainwater and mitigate flooding.

Needs and Opportunities Community Comments

COMMUNITY PLANNING & CAPACITY BUILDING

Improved knowledge around preparedness, response, and recovery

- "Create info hub for emergency assistance aftermath," "Online clearinghouse for evacuees - before, during, after storm resources & information" "Online clearinghouse for tenants and buildings to communicate before, during, after an evacuation/during power loss"
- "Increase awareness of post storm risks – what will flood, other dangers"
- "I didn't know I could collect unemployment insurance after storm temporarily", "More assistance with setting up a plan getting insurance claims after disaster"
- "Communicate available services before an incident"
- "Identify water/food battery distribution points prior to storm", "Local supply depots, CERT [Community Emergency Response Team] deliver to seniors"
- "Immediate response needed. Emergency equipment that doesn't need power"
- "Improve knowledge around preparedness, response & recovery", "Review lessons learned post-9/11 from social svcs [services] sector", "Make OEM provide CERT courses in high school," "Agencies with representatives to communicate temporary solutions to loss of water"
- "Create 'shelter in place' strategies", "Teach everyone to have a go-bag & a stay bag – CERT"
- "Better communication among all residents", "Communication for local community in a crisis"
- "Con Ed installed a transformer for the elevator in my building to transform the DC to AC. I feel this is very dangerous when there is future flooding. How can I find out how to protect myself?"

Protection of vulnerable populations

- "Community boards to have info of comm. groups w/ vulnerable residents tracked"
- "Database of citizens w/ disability, prescriptions requiring electricity (e.g., insulin needs refrigeration)", "List of vulnerable populations & how to contact and people to do contacting"
- "Understanding vulnerable population"
- "CERT teams shd[should] visit vulnerable tenants BEFORE the storms to make sure they have filled bath tubs for a water source, have radios (crank), batteries, & food"
- "PTSD [Post-Traumatic Stress Disorder] issues in L. Man & how they impact behavior pre & post storm"
- "Train CERT seniors to shelter in place & to ID themselves"
- "Mulberry St. lift that gets people down from apartments or brings supplies up. Singapore has these – helps disabled people"
- "Require landlords who have lists of residents - to keep them up to date and identify vulnerable," "Responsibility should be w/ landlords because they have info"

Strengthened community organizations

- "Use churches as hubs"
- "Strengthen coordination among organizations/entities involved in response & recovery", "Improve coordination of public & private sectors in response & recovery"
- "Need many supplies now"
- "Local churches were not included in receiving resources"

Note: Comments are direct quotes from Committee members and the public.

Needs and Opportunities Community Comments

ECONOMIC DEVELOPMENT

Resilient small business operations

- "Many businesses saw no path forward & closed"
- "Work with chamber of commerce to create disaster recovery plan for small biz."
- "We need a better plan/process for small business recovery/protection"
- "Mom & pop stores being priced out by landlords"

Resilient ground-floor businesses and retail

- "Increase resiliency of ground floor businesses and retail"

NATURAL & CULTURAL RESOURCES

Resilient public realm

- "More landscaping shrubbery trees etc. along South St. under FDR"
- "Water Street median design for flooding - remediation"

HEALTH & HUMAN SERVICES

Improved and expanded evacuation center(s)

- "Create more realistic shelter options"
- "Shelter options for families with pets," "Place to leave animals or evacuation center that allows animals"
- "Evacuation centers that do not mix kids with permant [permanently] homeless"
- "New evacuation center, not Seward HS (which flooded)", "Go to shelter at Seward on LES was under water"
- "The emergency number said to go to Seward Park. I went there…and they wanted to bus me to 49th St., where conditions were also poor"
- "More & better shelters located closer"

Ensured access to quality healthcare and medicine

- "Tribeca has no health services!!"
- Ability to distribute critical drugs - heart meds, insulin…"
- "Assess availability of health care access in Lower Manhattan – we only have one hospital"

Ensured food supply

- "After the storm there was no place in Tribeca to buy food…"
- "The emergency # said to go to Seward Park. I went there – they only had a tiny box of Cheerio's"

Note: Comments are direct quotes from Committee members and the public.

Needs and Opportunities Community Comments

INFRASTRUCTURE

Resilient power supply

- "Backup generators in new buildings!! Or co-generators that'd be better," "Backup generator system – Gateway Plaza"
- "Assistance for funding for generators"
- "Redundancy of electrical grid," "Ensure resilient power supply - solar technology"
- "More green power"
- "More resilient/distributed power system"
- "Need gas reserves"

Coastal flood protection

- "Wetlands build up embankments all around Lower Manhattan as public space that incorporates height & natural drainage," "Wetlands barrier around rim of LoMa," "Wetlands protection," "Wetlands barrier"
- "Coastal flood protection"
- "Barriers against rising sea levels"
- "Protect Canal St., Greenwich St., and Washington St. from flooding (2 of the 44 people who died in the storm died there!!!)"

Resilient and redundant transportation options

- "Beef up frequency of bus service if power and/or gas/and/or subways are disrupted"
- "Transport to evacuate"
- "Harden tunnel, roadway, subway, and ferry infrastructure"
- "Well-marked bus stops when they have to be displaced due to… generators"

Improved drainage

- "Improve drainage", "Street design that allows for heavy drainage (mid-road, sides of road, sloping, etc.)"
- "Green stormwater management"

Resilient telecommunications

- "Temporary cell towers & charging stations"

HOUSING

Resilient residential buildings

- "How to protect individual buildings? I have PTSD just from seeing the images of flooding tonight!"
- "Help basement apartments/lofts in Tribeca be more resilient to flooding"
- "Secure the entrances to parking garages that are underground (walls that can go up fast)"
- "Secure (via building code) flood defenses for the doors of buildings in flood zones (deployable sea-walls - see Prague)," "Ensure sub-street level parking garages or other property prepare for potential flooding to limit damage to mechanical and HVAC systems affecting rest of building"
- "Change building code to require bldng [building] systems in high risk zones to be located outside of basements"
- "Mandate generator lighting in stairwells in all high-rise buildings"
- "Provide one working elevator in residential high-rise"

Resilient affordable housing

- "Focus on vulnerable populations – enhance resiliency of affordable housing"

Note: Comments are direct quotes from Committee members and the public.

Community Goals and Vision

The final key objective in this stage of the New York Rising Community Reconstruction process has been to establish overarching short-term and long-term resiliency and recovery goals for Lower Manhattan. Setting targets and aspirations for the future helps to think beyond the current state and begins to paint the picture of a more resilient, sustainable community. By looking at assets and needs, and then setting goals and a vision, the community can then begin to devise strategies to reach those goals.

Goals help define particular objectives that the community hopes to achieve over the short and long term. They can range from small, simple goals to much more complex multi-pronged ambitions. Overall, they are action-oriented and aspirational in nature.

The community vision is an overarching umbrella statement that encapsulates a collective sense of purpose and direction and maximum potential for the future.

Much like the determination of assets and needs, the preliminary goals and vision were established from Planning Committee discussion and input at the first public meeting. This feedback has been organized to create a consolidated summary of goals and a draft vision statement.

Vision Statement

The Planning Committee prepared the following preliminary vision statement, which will continue to be refined throughout the NYRCR process:

Through the New York Rising Community Reconstruction Plan, the Lower Manhattan community aims to improve the **capacity and readiness** of all community members to **prepare** for, **respond** to, and **quickly recover** from severe weather-related events; to **address needs currently unmet** by existing rebuilding and resiliency efforts; and to **support the vital and diverse character and history** of Lower Manhattan.

Short-Term	Long-Term
• Improve coordination and communication among community organizations and agencies involved in emergency preparedness, response, and recovery • Ensure effective delivery of information around emergency preparedness, response, and recovery • Increase capacity to meet the needs of vulnerable populations in the area • Improve the area's evacuation center • Increase operational resiliency of small businesses • Incorporate resilient design into existing open space and make resiliency upgrades to recreational facilities • Repair and reopen open space and recreational facilities quickly after emergency events	• Ensure effective coordination and communication systems in emergency preparedness, response, and recovery are in place • Meet the needs of vulnerable populations in the area • Develop a comprehensive network of resilient evacuation and supply distribution centers • Increase access to local, resilient and high-quality healthcare options and access to pharmacies • Sustain the mixed-use, live/work character of Lower Manhattan • Make existing residential and commercial buildings more resilient • Increase structural resiliency of ground floor small businesses • Expand affordable housing stock and increase its resiliency • Increase the resiliency and redundancy of the area's transportation, energy, and telecommunications infrastructure • Strengthen the area's coastal flood protection • Expand the open space and recreational facilities in the area

V. Additional Considerations

Regional Perspectives

Lower Manhattan Infrastructure

Lower Manhattan plays a critical role in the region's infrastructure, particularly in terms of transportation, so the failure of infrastructure systems in this area has a regional impact on mobility and economic activity. Transportation infrastructure in Lower Manhattan creates important connections between Manhattan, Brooklyn, Queens, Staten Island, and New Jersey. Transit assets in the area include 19 of the City's 22 subway lines, the PATH Train to New Jersey, and ferry service to Queens, Brooklyn, Staten Island, New Jersey, and Westchester. Major road infrastructure includes major highways such as West Street and FDR Drive, and tunnels and bridges including the Hugh L. Carey Tunnel (formerly the Brooklyn Battery Tunnel), the Holland Tunnel, the Brooklyn Bridge, and the Manhattan Bridge.

Because most of the City's subway lines travel through this area, the flooding and loss of electricity that led to the shutdown of the subway system after Sandy had major impacts on mobility throughout the region. In particular, residents of Brooklyn and Queens were unable to reach employment centers in Lower and Midtown Manhattan, as well as other key destinations. This led to the deployment of the "bus bridges," with dedicated, non-stop routes connecting Downtown Brooklyn and the Williamsburg Bridge Bus Plaza to Midtown Manhattan until subway service was restored. Similarly, the shutdown of the two tunnels connecting Lower Manhattan to New Jersey and Brooklyn inhibited the movement of people and goods, not only within this Planning Area, but also throughout the region. Ensuring a resilient, secure and dependable transportation network is essential to sustaining Lower Manhattan's ability to serve as an economic engine and hub for the region.

Global Business Hub

As the home of the United States' financial industry and a highly diversified employment center, Lower Manhattan plays a critical role in the local, regional, national, and global economy. In addition to the well-known financial services and banking firms that are headquartered in Lower Manhattan, there are myriad other business entities and employers here, including those that help support the global financial industry, municipal, state, and federal offices, and a diverse range of other businesses, not-for-profit organizations, and cultural institutions. More than half a million workers living throughout the Tri-State region commute to Lower Manhattan, the fourth-largest central business district in the country.

Planning for the resiliency of Lower Manhattan is therefore critical to both the regional and global economy. As seen in the aftermath of both 9/11 and Superstorm Sandy, the suspension of business operations in Lower Manhattan can have substantial impacts on economic activity, as well as the sustained employment of residents in the region. Some Lower Manhattan businesses were able to reopen within a week of the storm once power and subway service were restored, but others had to wait far longer due to more extensive building damage. After 9/11, some businesses had developed emergency plans and were in a better position to handle the impacts of Sandy through backup data centers and alternative employee reporting locations. Nonetheless, comprehensive resiliency planning for the area as a whole is critical to economic resiliency.

Scalable Solutions for the Region

The Planning Committee and public have emphasized a strong interest in pursuing projects and strategies through the NYRCR process that are scalable and applicable to surrounding areas. The density and diversity of the Lower Manhattan Planning Area represent common conditions in other parts of New York City, in particular Manhattan. As such, resiliency challenges and solutions that are explored for the Lower Manhattan Planning Area have regional relevance; there is great potential for Lower Manhattan resiliency strategies and lessons to be broadly replicable, which is an important point that will underlie much of the future discussion and analysis of needs and strategies. For instance, efforts to strengthen community emergency response coordination may serve as a

model for densely-populated locations throughout urban centers, building upon the lessons learned and strategies established as part of the Lower Manhattan Conceptual Plan.

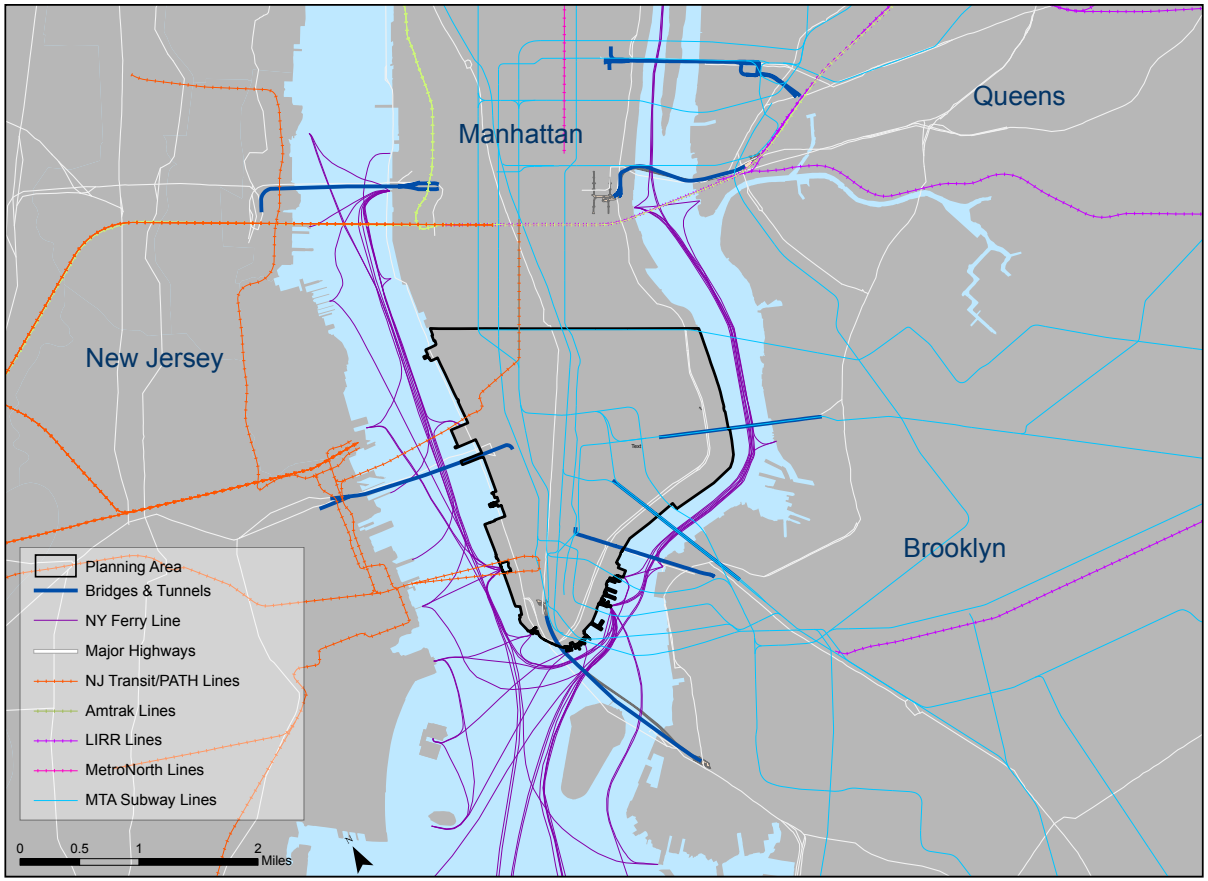
Existing Plans, Studies, and Projects

In order to avoid duplication of plans and to identify how the New York Rising Community Reconstruction Program may best fill existing gaps, the planning team has reviewed past and ongoing plans, studies, projects and programs in Lower Manhattan and surrounding areas. The Planning Committee has expressed an explicit interest in using the NYRCR process to fill gaps and address needs that are currently missed in existing recovery and planning work. The NYRCR team has reviewed the numerous plans and studies that have been undertaken and are underway in Lower Manhattan, with an emphasis on the Focus Area.

Profiled plans include resiliency and Sandy recovery plans, as well as other plans around waterfront access, corridor and neighborhood improvement, sustainability, and hazard mitigation (see Appendix I). The analysis and recommendations included in these plans can contribute valuable information and ideas to the NYRCR planning process.

Key takeaways from review of existing plans, studies, and projects that specifically address Lower Manhattan include:

Lower Manhattan: Regional Transportation Hub



Source: NYC Department of City Planning MapPluto, 13v1

- The public agencies and private companies responsible for the area's infrastructure are making significant investments to restore and upgrade their assets, including entities such as Con Edison, Verizon, the MTA, and the Port Authority of New York and New Jersey. At the same time, capital projects underway continue to have service impacts on the area, including short- and long-term shutdown of systems for upgrades (such as the ongoing suspension of R train service under the East River), increases in rates (as Con Edison amortizes the costs of system upgrades), and changes in service (e.g., loss of copper wire phone service due to fiber optic upgrades).

- Many owners of larger private buildings in Lower Manhattan have begun to upgrade their buildings' resiliency independent of any public planning efforts. Multiple buildings along the Water Street corridor have begun to install flood wall systems that can be deployed in the event of a flood risk, and many buildings have begun to move building mechanical systems out of basements and onto higher floors, or to waterproof systems in place, particularly as they replace systems damaged by Sandy.
- The New York City Housing Authority is actively planning to increase the resiliency of the numerous public housing projects in the area, particularly those that have apartments located on the first floor. These plans aim to better protect vulnerable populations from future damage and disruption.
- Waterfront access and development of waterfront recreational trails along both the East and Hudson Rivers have been extensively studied with considerable resources currently going toward these efforts. These amenities contribute to the livability and character of the Planning Area, can serve as critical transportation routes after emergency events, and may present opportunities for increasing resiliency through green infrastructure.
- Numerous corridor plans and studies have been undertaken aiming to improve the streetscape, connectivity, and economic activity in key retail and commercial corridors in the Focus Area, including Water Street, and in the greater Planning Area, such as the Fulton Street corridor.
- Many of the commercial districts (e.g., Chinatown and the Financial District) in the Focus Area have BIDs and other organized entities that are actively engaged in economic development and organizational activity in support of small businesses in these areas.

Based on review of existing plans and initial engagement, existing gaps in planning include:

- Plans focused on increasing community resiliency and supporting existing or new community organizations that could provide support in future emergencies.
- Additional support for small businesses that may not have the financial resources to weather even short-term shutdowns.
- Cohesive plans and initiatives for the northern portions of the Planning Area, such as Alphabet City, particularly those that fall outside the more traditionally-defined Lower Manhattan neighborhood that was most impacted by 9/11.
- Comprehensive study of the vulnerability of affordable housing and the potential for increasing its resiliency.
- Effective community organization coordination with government agencies in the identification and tracking of vulnerable populations, and crafting of emergency response protocols for addressing the needs of vulnerable populations.
- Means to deliver distributed backup power generation to residential buildings and small businesses, and provision of telecommunications redundancy for emergency scenarios.

Major existing plans, studies, and projects in Lower Manhattan and citywide are described below. Relevant plans are also described in more detail in the matrix located in Appendix I, indicating the organization leading the planning process, key analysis and proposed initiatives, the Recovery Functions these initiatives address, and the status of the plan, study, or project.

Lower Manhattan Initiatives

Below are a sampling of major planning initiatives and projects planned and underway throughout the Lower Manhattan Planning Area.

The Lower Manhattan Development Corporation (LMDC). Formed in the immediate aftermath of 9/11, this organization has a number of plans and initiatives in place that are relevant to post-Sandy planning:

- LMDC's Plan for Lower Manhattan lays out a range of plans for improving the area following 9/11, including rebuilding the World Trade Center site, improving waterfront access and open spaces, and supporting businesses and cultural organizations within the area.
- LMDC has pursued improvements on various corridors and in various sub-areas of Lower

Manhattan, including Fulton Street and the area surrounding the World Trade Center.

- LMDC also has incentive programs in place to support businesses in and around Lower Manhattan. One such program distributes the New York City Economic Development Corporation's Job Creation and Retention Program funds, which the City of New York's Special Initiative for Rebuilding and Resiliency proposes to expand to 2017.

The Alliance for Downtown New York (ADNY). This organization has various plans and policies in place to assist residents and businesses:

- ADNY has developed a vision plan for improvements on Water Street, focusing on privately-owned public spaces, which has led to initial improvements implemented by the New York City Department of Transportation and additional improvements being pursued by the New York City Economic Development Corporation.
- ADNY's 2009 Greenwich Street South plan laid out key strategies for improving the 41 acres south of the World Trade Center, between Broadway and West Street.
- ADNY also has created programs around recovery after emergency events. Offering immediate assistance after Superstorm Sandy, ADNY created a Back to Business small grant program for groundlevel retailers located in Flood Zone A. Through the Back to Business program, ADNY assigned nearly $1.6 million in grants to 105 Lower Manhattan businesses.

Additional significant projects and plans in Lower Manhattan include:

- Hudson River Park improvements and expansion, including various recreational amenities, infrastructure improvements, and expansion and conversion of piers for mixed-uses and open space.
- East River Waterfront improvements and expansion, providing waterfront access and recreational amenities for community residents.
- The East River Blueway Plan, a community-based waterfront initiative for the East River that plans for redevelopment of recreational amenities, connecting neighborhoods to the waterfront, and integration of storm surge resiliency measures into design.
- Proposal to pursue a special zoning district to preserve Chinatown and the Lower East Side.

Citywide Resiliency Initiatives

Special Initiative for Rebuilding and Resiliency (SIRR). On June 11th, 2013, New York City Mayor Michael Bloomberg announced the release of "A Stronger, More Resilient New York" (the SIRR Report), forming New York City's plan for rebuilding post-Sandy and ensuring resiliency into the future. The plan contains actionable recommendations both for rebuilding communities in the City that were impacted by Sandy and for increasing the resiliency of buildings and infrastructure citywide. All NYRCR communities within the City will need to coordinate their proposed projects with the initiatives proposed in the City's plan. Broadly, the plan lays out numerous citywide initiatives to improve resiliency for systems, including coastal protection, buildings, insurance, utilities, liquid fuels, healthcare, telecommunications, transportation, parks, water and wastewater and other critical networks. Specific proposed initiatives include: Seaport City, a multi-purpose levee in the South Street Seaport area; and an integrated flood protection system along the coastal edge, with a first phase targeted for the Lower East Side and Chinatown.

Future Updates to the Building and Zoning Code. The City's Building Resiliency Task force identified 33 recommendations to the City Council. Many of these recommendations are still in various stages of review by the Council, but five initiatives have been passed. In addition, the Department of City Planning's Flood Resilience Zoning Text Amendment was approved by the City Council on October 9th. The report and latest updates on implementation can be found on the SIRR website: **http://www.nyc.gov/html/sirr/**.

NYC Recovery Program. In addition to those focused on resiliency, the City has launched several initiatives to help residents across the five boroughs recover from the damage caused by Superstorm Sandy. The City's "Build it Back" program seeks to assist homeowners, landlords, and tenants, whose homes were damaged by Superstorm Sandy. The

NYC Recovery Program is also offering business loans and grants to small business owners whose spaces were damaged by Superstorm Sandy. Most of these recovery programs support resiliency investments and will help improve homes and businesses in the communities within southern Manhattan. More information on the NYC Recovery program can be found here: **http://www.nyc.gov/html/recovery/**.

Transportation improvements. In recent weeks and months, NYCDOT, the MTA, and the Port Authority have released updated and more detailed plans for upgrading the resiliency of their networks, including roads, subways, vehicular tunnels, and communications. Examples include retrofitting subway entrances and vent grates with closure mechanisms, installing flood gates and closures of tunnel entrances, and installing emergency generators designed to withstand flooding and other hazards. A number of major projects are already in design or construction, including the reconstruction of the new South Ferry Terminal on the 1 train, the complete rehabilitation of the Montague tube on the R train, and major retrofits to the four key vehicular tunnels that serve Lower Manhattan. While these plans and initiatives are very costly, federal appropriations for Sandy provide significant financial support for design and construction of these vital improvements.

FEMA Flood Maps and Flood Risk Assessment. The Federal Emergency Management Agency (FEMA) describes its assessment of flood risk through flood maps referred to as Flood Insurance Rate Maps (FIRMs). These maps are used by the National Flood Insurance Program (NFIP) to set flood insurance rates. When Superstorm Sandy hit New York City, the FIRMs in use were based on information from 1983. Sandy inundation extended well beyond what these maps estimated would be the 100 year floodplain, calling attention to the fact that an update to these maps was needed. In fact, before Superstorm Sandy, FEMA had begun a coastal flood study to update FIRMs for portions of New York and New Jersey, using improved methods and data to better reflect coastal flood risk.

After Superstorm Sandy, FEMA first released Advisory Base Flood Elevation (ABFE) maps based on the partially completed flood study for certain communities, which were designed to help in rebuilding and recovery efforts. In June of 2013, FEMA released preliminary work maps for New York City, including the full results of the coastal flood study. The preliminary work maps are based on the same underlying data as the earlier ABFE maps, but include the results of a more refined analysis of shoreline conditions, including the effects of erosion and wave run-up. The maps are a “draft” product that FEMA shared in advance of the preliminary FIRMs, which are expected to be released by the end of 2013. The final updated FIRMs are anticipated to be released in 2015. These final FIRMs will guide new Flood Insurance rates for homeowners and businesses in the floodplain.

FEMA’s flood maps do not take into account future conditions and thus do not factor in potential sea level rise. The New York City Panel on Climate Change (NPCC) is continuing to analyze potential climate change impacts on New York City, namely sea level rise. The NPCC released a report “Climate Risk Information 2013: Observations, Climate Change Projections, and Maps” in conjunction with the SIRR Report and provides New York City’s estimates for sea level rise over various time frames. They are expected to update these estimates in the near future. In addition, New York City has hired the Stevens Institute of Technology to map flood zones with added sea level rise for future decades. This is being done within the NPCC framework and will be reported and released through NPCC this winter.

VI. Preliminary Strategies and Projects

Preliminary Strategies, Projects, and Actions

Lower Manhattan is a diverse area with large-scale, complex resiliency needs. There are also myriad plans and projects underway to support the long-term resiliency, economic development and neighborhood quality of the area. The strategies proposed here address needs currently unmet by current planning and recovery efforts and align with the ideas generated through the NYRCR process.

As outlined in the preceding sections, the major needs and goals of the Lower Manhattan communities include: **improving emergency preparedness, response, and recovery; strengthening community organizations; protecting vulnerable populations; improving the evacuation center; ensuring access to quality healthcare and medicine; making buildings and utility systems more resilient; increasing small business resiliency; strengthening infrastructure; and making the public realm more resilient.**

Based on the above, the Planning Committee has begun to discuss strategies and potential initiatives to meet its short- and long-term goals and overall vision for the Lower Manhattan communities. **Strategies and initiatives in Lower Manhattan may include:**

1. Improve emergency preparedness, response, and recovery capacity. Projects may entail identifying food, water, and supply distribution points and establishing neighborhood (and even building-specific) information portals in which to share this and other relevant information regarding evacuation procedures and recovery mechanisms. On a more macro level, the community could establish a public-private-civic working group of the various organizations and entities involved in preparedness, response, and recovery to set up proper mechanisms for promoting greater coordination among these actors in the long-term.

2. Expand and improve human services facilities, including evacuation centers and healthcare facilities. Short-term potential projects to address this need could include expanding the bed capacity and overall quality of the Seward Park High School evacuation center, or positioning with other existing, resilient buildings to serve as evacuation centers. Additionally, increasing the resiliency of existing healthcare facilities and expanding access to healthcare in Lower Manhattan is important – not only during emergency events, but under routine conditions as well. This could potentially be achieved through the expansion and improvement of the existing hospital in the area, as well as the development of new urgent care facilities. A short-term project to encourage the resiliency of healthcare facilities could involve the purchasing of backup generators and refinement of contingency plans for transferring critical patients to areas with full power during a power outage

3. Protect vulnerable populations through strategic monitoring and assistance throughout all stages of an emergency event. Efforts are already underway by the City, State, New York City Housing Authority, and community organizations in the Lower East Side to develop online registries of vulnerable individuals in flood-prone areas. Additional projects to help protect vulnerable populations could include targeted delivery of supplies to buildings with largely senior and disabled populations. For reaching populations of non-native English speakers, a short-term project may entail the development and delivery of educational materials and technical assistance workshops on emergency preparedness, response, and recovery procedures in the languages spoken in the given community.

4. Encourage resiliency of building systems and utilities through establishing guidelines and providing technical assistance and funding for improvements. Projects to address this need on a short-term basis could include establishing building resiliency guidelines and technical resources to assist building owners through the process of making upgrades. Such upgrades are often capital-intensive, and should be accompanied by funding programs or incentives

to assist in making resiliency improvements. Free or subsidized technical assistance may also be a useful tool for helping residential owners and managers advance resiliency planning.

5. Strengthen community organizations through increased funding and expanded capacity. Community-based organizations often need financial help in order to maintain and expand their response efforts and essential year-round services. Potential projects to strengthen community organizations may include establishing grant programs to provide financial assistance to organizations specifically for building emergency preparedness, response, and recovery capacity, such as for hiring and training staff with expertise in these areas, maintaining stockpiles of food and other supplies, and undertaking building resiliency capital improvements. As part of a larger matrix of entities involved in emergency preparedness, response, and recovery in Lower Manhattan, community organizations additionally would benefit from involvement in a public-private-civic working group, supporting a variety of initiatives described throughout this section, in which roles could be clarified and mechanisms for coordination and financing established.

6. Increase small business resiliency through structural and operational upgrades. Small business owners need both technical and financial assistance to carry out capital and operational improvements to increase resiliency. Potential initiatives could include the development of technical literature, outlining best practices in small business resiliency, and the delivery of workshops on these topics in areas with a high concentration of small businesses in Lower Manhattan. Resiliency improvements to operating systems and commercial spaces are capital-intensive, and any technical assistance on small business resiliency should be matched with grant programs and financial incentives that can assist small business owners in undertaking these changes.

7. Strengthen infrastructure through upgrading existing infrastructure and developing new projects to enhance the area's overall resiliency. There are already many projects underway in Lower Manhattan, including several focused on strengthening the area's transportation infrastructure. With many community members having experienced considerable flooding in their buildings, projects of particular interest to the community include those that increase coastal surge protection. Sewer backflow is also an issue, and there should be a well-maintained system of backwater check valves in place. Additionally, community members referenced lack of street lighting and cellphone connectivity due to power outages as major issues during Sandy and suggested initiatives to increase use of alternative energy sources and energy independence, such as through the development of a microgrid.

8. Increase the resiliency of the public realm. Projects to address this need could include incorporating resilient design features into existing open space, including increasing the amount of permeable surfaces like natural groundcover, and expanding the amount of open space in the area. Additionally, plans should be developed to promote the quick repair and reopening of open space after emergency events.

Over the next two months, the Planning Committee will explore potential strategies and projects, evaluate their financial and regulatory feasibility, and prioritize a final list of projects to propose for funding. The following table highlights and organizes these preliminary strategies and initiatives in order to share the ideas generated thus far by the Planning Committee, incorporating public input. This is not a set of formal proposals, nor is the table ordered in any particular hierarchy. Strategies and projects will evolve and will be further refined as work continues with the Lower Manhattan community.

Preliminary Strategies and Projects

Need	Strategy	Potential Initiatives
Improve emergency preparedness, response, and recovery	Increase ability to respond to and recover from future disasters through improving immediate preparedness, response, and recovery procedures, supplies, and information delivery	• Assess and improve emergency communications networks • Identify and develop network of food, water, and supply distribution points • Develop neighborhood- and building-specific web and outreach materials that identify food/water/supply distribution points, and evacuation and recovery procedures and resources • Expand CERT program and mobilize to provide critical outreach and assistance before, during, and after emergency events
Strengthen community organizations	Empower community organizations to better serve constituents throughout emergency events through increased grant funding and administrative/operational support	• Create grant programs to help finance supplies, hiring and training of skilled staff, development of educational and outreach programs • Review work of current coalitions in area and potential for scaling-up • Provide funding to support expansion of facilities in order to store supplies, and serve large populations

Preliminary Strategies and Projects

Need	Strategy	Potential Initiatives
Protect vulnerable populations	Enable vulnerable individuals to better endure severe weather-related events through strategic monitoring of, and assistance to, these populations before, during, and after emergency events	• Identify locations and needs of vulnerable populations in area • Review current efforts of organizations and agencies to serve vulnerable populations • Review existing efforts to establish online registries of vulnerable individuals and bolster and/or scale up • Produce multilingual workshops and educational materials on emergency preparedness, response, and recovery in areas with non-native English-speaking populations
Expand and improve evacuation centers	Ensure the capacity, access and improved quality of experience for area evacuation centers	• Review ideal capacity of evacuation centers: if under-capacity, expand Seward Park HS bed capacity and/ or contract with resilient buildings in other areas of Lower Manhattan to develop more centers • Improve the general quality of the Seward Park HS evacuation center • Establish and execute plans for improving the comfort, quality and safety of area evacuation center(s)
Ensure access to quality healthcare and medicine	Mitigate any negative health impacts caused by emergency events through maintaining access to quality healthcare services and medicine	• Obtain and maintain backup energy sources for facilities • Review and develop plans for transfer of critical patients to other facilities in event of power outage • Establish mobile pharmacy pick-up stations • Expand number of urgent care facilities in area

Preliminary Strategies and Projects

Need	Strategy	Potential Initiatives
Increase resiliency of buildings and utilities	Enable buildings and utilities to maintain structural integrity and high service quality throughout emergency events through structural and system resiliency upgrades	• Establish guidelines for resiliency upgrades • Develop technical training materials and workshops on resiliency upgrading best practices for building owners and property and utility managers • Develop grant programs, financial incentives and subsidized technical assistance to encourage property owners to undertake upgrades to buildings and utility systems • Support purchase of backup generators for large residential and commercial developments
Increase resiliency of small businesses	Enable small business owners to recover from the damage of Superstorm Sandy and better prepare for future events through structural and operational upgrades	• Create online resources and workshops on different types of upgrades and how to best recover from Sandy and prepare for future events, learn from best practices, etc. • Develop financing programs and subsidized technical assistance for small business owners to undertake improvements to their commercial spaces and administrative/operating systems
Strengthen area's infrastructure	Improve the area's resiliencythrough expanding its infrastructure and making existing infrastructure more weatherproof	• Support plans for integrated flood protection system • Install solar-powered celltowers • Expand bus service to make up for subway and ferry service disruptions during emergency events
Increase resiliency of public realm	Enhance the resiliency of the area and its public realm assets through resiliency upgrades to and expansion of open space	• Incorporate resilient design measures in open space • Increase amount of open space, and specifically natural groundcover, in area • Develop plans for quick repair and reopening of open space and recreational facilities after emergency events

Next Steps

The next steps in this planning process will be to develop a more comprehensive list of strategies and potential projects and actions. The Planning Committee and public will then, using the technical expertise of their consulting team, begin to evaluate and prioritize projects and actions. This will depend on consideration of risk assessment, the combined benefits of a project or action, cost and availability of resources, value to the community, timing in coordination with other construction or capital improvements, and availability of funding. Next steps include:

Identification of strategies by November 30, 2013:

- Identify comprehensive list of potential strategies to achieve rebuilding, resilience, and economic growth
- Conducted through Planning Committee, public meetings, and online outreach

Identification of projects and actions by January 2014:

- Conducted through Planning Committee, public meetings, and online outreach

Alternatives evaluation and prioritized list by March 31, 2014:

- Assess feasibility, cost, risk reduction, co-benefits, funding availability, and degree of public support, and conduct cost-benefit analysis

Final Community Reconstruction Plan by Spring 2014:

- Provide in-depth analysis of assessment of risks and needs, reconstruction strategies, projects, actions, and implementation schedule

Implementation Planning

After defining priority projects and actions, the Committee will utilize the expertise of its planning team to identify a path towards implementation.

The goal for the implementation plan will be to achieve actionable results for the community which focus on four core components: **regulation, funding, complementary programs, and building capacity to implement.**

The plan will identify:

- Order-of-magnitude project costs associated with implementing an infrastructure resiliency project
- Potential funding sources for projects
- Detailed work plan outlining activities to implement proposed actions including regulatory actions and program development, as well as infrastructure investment
- Responsible parties for each of the activities to be conducted in accordance with the recommended project
- Target goals, timelines and project budget for each responsible party
- Process for amending the work plan should timeline lapse or costs exceed projected budgets

To accomplish certain infrastructure resiliency projects, regulatory and legislative changes may be required. In these instances, the plan will include the process for which these changes can be achieved. Regulatory and legislative changes could include changes to current zoning and/or permitted uses in a specific area. The implementation plan will identify the regulatory and legislative entities that will be engaged to initiate the changes as well as the community representative who will champion and push for the appropriate regulatory or legislative change.

The implementation plan will consider Lower Manhattan's resources and identify if implementation can be achieved with existing resources, or if additional staff will be required, and if so, the mechanisms for securing and managing the additional resources.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