The NY Rising Community Reconstruction Program is helping communities impacted by Hurricane Irene, Tropical Storm Lee, and Superstorm Sandy to rebuild and become more resilient through community-driven plans that consider current damage, future threats to community assets, and the community’s economic future. Residents are here today to participate in a public meeting to learn about the program, share their ideas about resiliency, provide input on Priority Projects, and review the work completed to date.

New York City contains 10 of the 50 communities in New York State undergoing the NY Rising Community Reconstruction process.

More Information:
- info@stormrecovery.ny.gov
- www.stormrecovery.ny.gov/community-reconstruction-program

Red Hook Committee blog:
- http://redhookcrp.wordpress.com/
A Vision for a more resilient Red Hook

Over the past 6 months, hundreds of Red Hook residents have shared input on how to create a more resilient Red Hook

Vision Statement
Empowered by the spirit of unity that helped the Red Hook community survive Hurricane/Superstorm Sandy, our vision for a resilient and thriving future is to work as a holistic community to strengthen the historic waterfront Red Hook peninsula by minimizing differences and maximizing cooperation among all who live and work here. Mindful of the growing climate-related risks to our beloved community and the immediate need for improved emergency preparedness measures, our actions will serve to help to develop measures that will protect our neighborhood from flood inundation, increase the safety of our citizens, and move towards a resilient community. We are committed to maintaining and expanding affordable housing and increased economic activity with an emphasis on local job development, recognizing the importance of their interdependence. Our re-building efforts towards a resilient and sustainable community are focused on a sincere triple bottom line integration of environment, economy, and community, which will require substantial improvement to our long-neglected infrastructure including sewers, transportation, communications, power and energy provision, and education.
**Red Hook Flood Risk**

**Priority Strategies**
At the second public engagement, Red Hook residents indicated that the following strategies are priorities for the community:

**Priority Resiliency Strategies**

1. Increase the physical and economic resiliency of housing
2. Strengthen community capacity to prepare for, respond, and recover from emergencies
3. Improve drainage and reduce flooding from sewer back-up
4. Increase the resiliency of existing businesses and promote opportunities for economic development
5. Strengthen individual economic resiliency & financial stability
6. Increase transit connectivity and ensure redundant transportation/transit options to facilitate evacuation and rebuilding
7. Create opportunities for alternative power generation and distribution
Residents and Committee members brainstormed over 90 possible resiliency projects:

**ECONOMIC DEVELOPMENT**

1. Financial assistance for resiliency improvements for small businesses and industrial/marine businesses
2. Commercial corridor flood protection
3. Merchants Association or Business Improvement District (BID) development
4. Financial assistance to offset commercial insurance costs
5. Grant to restore historic commercial buildings damaged by Sandy
6. Technical assistance/audit program for small businesses and industrial businesses
7. Resiliency and rebuilding information clearinghouse for small businesses and industrial businesses
8. Land use/zoning study to analyze long-term resiliency of industrial and retail uses.
9. Incentive/zoning program for new, resilient affordable market rate housing on vacant/under- utilized sites

**HEALTH & HUMAN SERVICES**

50. Mobile healthcare service
51. Emergency healthcare plan

**INFRASTRUCTURE**

52. NYC Department of Environmental Protection (DEP) Green Infrastructure Program expansion
53. Continue to fund the NYC/DEP Green Infrastructure Grant Program or establish a green infrastructure incentive program for Red Hook and its watershed.
54. Van Buren Pump Station repairs
55. Sewer capacity expansion and repairs program
56. NYC DEP Red Hook sewer system maintenance
57. Preliminary feasibility study for a new (sub) Wastewater Treatment plant with anaerobic digester to biogas conversion (to generate biogas for use in neighborhood)
58. Integrated flood protection strategy for Red Hook (multiple individual projects/pilot projects including elevation of the Brooklyn Waterfront Greenway)
59. Shoreline and bulkhead raising in lowest lying areas
60. Community generated coastal protection design principles/guidelines
61. Incentivize or require coastal protection measures for private waterfront development
62. Citywide flood barrier project
63. Floodproof / make resilient buildings and properties outside the proposed integrated flood protection corridor
64. Wave attenuation project
65. Red Hook solar power project
66. Portable emergency back-up solar power
67. Red Hook geothermal power project
68. Red Hook wind power pilot project
69. Red Hook two-way power connection (cold ironing) pilot project
70. Red Hook emergency back-up generators
71. Back-up cell phone tower power
72. Cold ironing power generation feasibility study
73. Buttermilk Channel Tidal Power Project
74. Local solar power incentive program
75. Red Hook Houses Co-generation and Micro-grid project
76. Targeted energy efficiency improvements
77. Electrical grid resiliency improvements
78. Red Hook bikeshare
79. Ferry service enhancement and expansion program
80. Direct bus from Red Hook to Lower Manhattan
81. Direct bus from Red Hook to Downtown Brooklyn
82. Red Hook streetcar
83. BQE underpass pedestrian improvements
84. Board Street pedestrian improvements
85. Expanded bike routes
86. Traffic nuisance mitigation project
87. Pier design and management regulation reform to enhance boat access
88. Study impact of IKEA development on the underground stream at Richards Street

**COMMUNITY PLANNING & CAPACITY BUILDING**

39. Red Hook floodproof relief center/community center
40. Red Hook local emergency preparedness plan
41. Red Hook Houses emergency preparedness and response plan
42. Red Hook volunteer community emergency preparedness team
43. Red Hook maritime recreation center and emergency response team
44. Red Hook community communication network
45. NYCHA/Red Hook Houses community communication network
46. Increased emergency response
47. Inter-agency coordination on emergency response and recovery
48. Create “universal application” for residential, business, and individual assistance
49. Resilient food supply assessment

**NATURAL & CULTURAL RESOURCES**

89. Green stormwater garden pilot site
90. Salt-resistant tree planting program
91. Atlantic Basic water detention pond
92. Enhance public space
In addition to the preliminary Priority Projects being considered for funding with Community Development Block Grant Disaster Recovery (CDBG-DR), the Committee has identified the following additional important recommendations. These projects will be highlighted prominently in the Red Hook Final Community Reconstruction Plan:

- Develop integrated flood protection system
- Implement resiliency improvements to Red Hook Houses
- Reform National Flood Insurance Program (NFIP) policy
- Create Red Hook local emergency preparedness plan
- Citywide information clearinghouse, with tabs for individual neighborhoods
- Connect CERT programs to emergency services career training tracks
- Ensure access to sufficient resilient healthcare resources within and around the neighborhood
- Activate Atlantic Basin
- Study to analyze long-term resiliency economics and land use for industrial and mixed-use
- Establish direct bus from Red Hook to Lower Manhattan
- Complete Van Brunt Pump Station repairs
- Establish collaborative relationship with the Port Authority of New York and New Jersey (PANYNJ) and New York City Housing Authority (NYCHA)
RECOMMENDATIONS

Community Principles for Integrated Flood Protection

On January 7, Vice President Biden and Governor Cuomo announced a commitment, in partnership with New York City, to the installation of an integrated flood protection system for Red Hook that would provide “complete protection” to land within the 100-year flood plain.

While the details of the project are to be determined, the Red Hook New York Rising Community Reconstruction (NYRCR) Program Planning Committee will work to ensure that this important project is in line with the community’s vision and strategies to strengthen and protect the unique and diverse residential, retail and industrial fabric of our community; utilizes sustainable energy, and minimizes impact on the natural environment. To that end, the NYRCR Committee has identified the following principles to guide creation of an integrated flood protection system for Red Hook:

DRAFT PRINCIPLES

<table>
<thead>
<tr>
<th>DRAFT PRINCIPLES</th>
<th>Do You agree?</th>
<th>What does this principle mean to you?</th>
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<tbody>
<tr>
<td>1. Enhance waterfront access.</td>
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<td>2. Preserve/respect the character of the neighborhood.</td>
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<td>3. Maintain maritime capacity and enhance water-based uses.</td>
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<td>5. Maximize protection of building stock.</td>
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<td>6. Address flood protection needs of sites/structures outside, as well as inside, the line of protection, and in the interim while protection is designed and built.</td>
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<td>7. Encourage resilient construction outside of and as a part of community-wide flood protection.</td>
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<td>8. Address flood insurance premiums.</td>
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<td>10. Employ local residents in the implementation/construction of integrated flood protection.</td>
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<td>12. Be flexible to future/changing community needs.</td>
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<td>13. Be informed by ongoing input from the Red Hook community.</td>
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Are we missing any? Let us know!
Help us better understand your drainage problems now!
Do you experience or observe regular drainage and flooding issues in your home, on your block, or anywhere else in the neighborhood? Using the map below, indicate where and what type of flooding or drainage issues you regularly observe in Red Hook. Use the decision tree and description of drainage issues provided to help you define the type of flooding you observe.

Where does flooding happen?
What type of flooding?
The objective of this map-based questionnaire is to identify the type and location of various drainage-related problems you have described as occurring throughout the neighborhood. Your feedback will help us:
1. Better understand the type and extent of drainage issues
2. Identify likely cause(s) of these problems
3. Suggest potential location-specific solutions
4. Identify where additional information or study may be needed

Using the dots and the map provided, please indicate where you experience the following types of flooding following a storm or rain event:

Flooding in your home or business:
- Sewer Backup in Building (through Toilet, Sink Drain, Bathtub Drain)
- Water Entering Basement/Below-Grade (through Foundation and/or Walls)
- Water Entering Basement/Below-Grade (through Window Wells)

Flooding in street/yards/parks:
- Ponding in Streets/Yards - Clogged/flooded catch basin
- Ponding in Streets/Yards - No catch basin present

Known Sources of flooding:
- Ponding in Streets/Yards - water coming from overflowing manhole
- Ponding in Streets/Yards - water coming from nearby waterbody

Possible solutions:
- Inadequate drainage. Further study required to determine root cause.
- New catchbasin
- Possible solutions: See above
- New catchbasin
- Possible solutions: See above

Have a specific complaint?
Know when and where it occurred?
Want to tell the City?
Report it to 311!
http://www1.nyc.gov/311/

Drainage issues decision tree:

Red Hook
NY Rising Community Reconstruction Plan
A key goal of the Red Hook NY Rising Open House is to get your input on which Priority Projects to fund with Red Hook’s $3M Community Development Block Grant Disaster Recovery (CDBG-DR) allocation

Your input is needed!
Around the gallery there are boards on 8 preliminary Priority Projects. Please review these boards and feel free to ask questions of Planning Committee members and staff to help you decide which projects should be recommended for CDBG-DR* funding. Then vote at the Priority Projects voting board located by the door.

Background
Red Hook has been allocated $3M in CDBG-DR funds and the public and Planning Committee may recommend which projects should be funded with this allocation.
The Red Hook Planning Committee has incorporated community input from 2 public meetings, 12 committee meetings, and other outreach events, to identify 8 preliminary Priority Projects. The Committee now needs your feedback.

Priority Project selection process
The Committee began with a list of over 90 possible resiliency projects generated through committee and public meetings (this list is on display). From this list, the Committee honed in on 8 preliminary Priority Projects.
The 8 preliminary Priority Projects were chosen based on the following criteria:
• Public benefits
• Potential for job creation
• Contribution to equity/integration
• Public support
• Risk-reduction
• Time frame
• Cost
• Feasibility
• CDBG-DR eligibility

Next Steps
With your input, the Red Hook Committee will recommend a set of Proposed Priority Project(s) to be funded with the CDBG-DR allocation. NY State officials will confirm the eligibility of these projects for funding and determine final allocations. Initial announcement of project implementation will begin in April or May.

Recovery Functions considered:

Economic Development
Housing
Community Planning & Capacity Building
Health & Human Services
Infrastructure
Natural & Cultural Resources
**Resiliency construction workforce training**

**Project**: Program to train and connect Red Hook youth/adults to employment opportunities in the construction of infrastructure and/or building improvements to support resiliency. Program could be administered through an existing workforce development organization and add on to existing license and training programs.

**Rationale**: An unemployment rate of 24% in Red Hook, and 75% among 18-24 year-olds in Red Hook Houses, suggests a need to supplement existing education and employment placement opportunities. Building repair and resiliency work is occurring across the city. Connecting Red Hook youth to employment opportunities in this sector would result in direct benefits to neighborhood residents and enhance the resiliency of the community.

**PROJECT OVERVIEW**

**Benefits**
- **Risk Reduction**: By expanding expertise in construction to support resiliency and repair, information about building resiliency can be shared and recovery efforts can be launched quickly and locally.
- **Economic Development & Equity**: Reducing the unemployment rate in Red Hook would result in a variety of economic benefits and help create a more equitable community.

**Considerations**
- Career prep and job placement would be an important component of the program.
- Program administrators could explore mechanisms to place graduates in Red Hook.
- Program could target youth but be available to adults as well.
- Allocation would cover costs of program operations and full tuition for a set number of Red Hook residents.

**Cost**

**$500K - $1M**

The cost of the program could vary substantially depending on the duration of the program and the number of applicants targeted.

**Timeline**

**1-3 years**

**PRECEDESNTS**

- **BrooklynWorks - Brooklyn Workforce Innovations**: BrooklynWorks is run in partnership with New York City District Council of Carpenters. It provides a pre-apprenticeship skills training program in construction/environmental remediation, enabling participants to earn multiple licenses, and helping to place graduates into employment.

- **YouthBuild USA**: YouthBuild USA is a national program that operates throughout NYC in partnership with local organizations. The program trains youth in building trades through construction of low-income housing and provides GED/high school diploma classes.

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**NY Rising Community Reconstruction Program**
Drainage study

Project Description: Undertake a study of existing sewer/groundwater conditions in Red Hook to better understand the type, extent, and cause of recurring drainage problems, and to identify potential targeted solutions. The Planning Committee has identified two project alternatives:

A. A door-to-door survey to identify the type and location of drainage-related problems throughout the Red Hook planning area by soliciting input from residents, employees, and business owners in the neighborhood.

B. A hydrologic study by professional engineers and hydrologists to analyze existing drainage and groundwater conditions.

Background/Rationale: Many Red Hook residents and business owners experience regular and recurring flooding during heavy rain events. Flooding of properties and buildings creates recurring costs and inconvenience for property owners, businesses, and residents. Throughout the duration of the NY Rising process, the Planning Committee and other concerned members of the Red Hook community have consistently voiced a strong desire to solve drainage problems, but the specifics of the nature, location, and frequency of the problems have not yet been clearly defined.

Benefits
• Enhance the community’s understanding of causes of reoccurring flooding following rain events;
• Help prioritize locations for drainage improvement projects;
• Provide the community with information/data to support requests and recommendations to agencies such as the NYC Department of Environmental Protection, property owners, and organizations working to improve drainage conditions in the neighborhood.

Considerations
• Identification of local champion/lead organization(s) to write Request(s) for Proposals and manage the study process
• Coordination with NYC Department of Environmental Protection, which maintains the city’s sewer system

Cost
Option 1: TBD / Option 2: TBD
Costs are based on engineer experience with projects of similar scope and scale. Costs have not been adapted to specific local conditions and will likely vary as project is further developed/refined. Conceptual estimate of probable cost - not for reliance - work-in-progress.

Timeline
Option 1: 6 months / Option 2: TBD
**PRIORITY PROJECT CANDIDATE**

**Partner locally to provide financial assistance for housing and business retrofits**

**Project:** Loan and/or grant fund administered through an existing local Community Development Financial Institution (CDFI) or other partner to provide loans and/or grants to Red Hook small businesses and homeowners/tenants seeking to implement resiliency upgrades, and to entrepreneurs seeking to start micro-businesses.

**Rationale:** Red Hook residents unable to acquire loans and/or grants from traditional banks need access to local financial alternatives. Currently there is no CDFI in the area that provides financial tools for resiliency and there is potentially interest in piloting resiliency loan and/or grant programs in Red Hook.

**PROJECT OVERVIEW**

**Benefits**
- **Risk Reduction** By providing businesses or homeowners the financing needed to undertake resiliency improvements, vulnerability is reduced
- **Economic Development** - Numerous economic benefits result including keeping businesses open and possibly reducing insurance premiums
- **Equity** - CDFIs are able to increase financial literacy and provide financing to a broader range of individuals thereby increasing equity

**Considerations & Challenges**
- Financial tools could include loan, micro-loan, matching grant program
- The lending rates and terms of a loan fund will depend on market conditions, the administering entity, the size of the loan, credit rate of the borrower, and other factors

**Cost**

**$500K - $1M**

According to industry leaders, a loan fund of this type would likely need to be seeded with approximately $500K initial loan pool. Such a pool could service approximately 10-35 buildings to take out loans from $15K - $50K which could cover basic resiliency upgrades.

**Timeline**

1-2 years

**Possible loan fund recipients**

- **Homeowners**
  - Approx. 610 owner-occupied housing units*

- **Renters**
  - Approx. 4,690 rental units*

- **Small businesses**
  - Approx. 120 manufacturing/warehousing businesses***

- **Entrepreneurs/Micro-businesses**
  - Approx. 9,400 people over age of 18*

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**TECHNICAL CONSIDERATIONS**

**Basic Resiliency Improvements**

A wide range of improvements can be used to improve the resiliency of homes and businesses. Options range in cost and optimal interventions vary widely depending on building use, location, construction, and other elements. Possible low-cost interventions include:

- **Dry flood-proof basement**
  - Approx. Cost: $500 - $10,000*
  - *Estimate from SBIDC report and FEMA memo

- **Deployable flood barrier**
  - Approx. Cost: $1K - $4K per door*
  - *Estimate from Presray, varies by door size

- **Elevate mechanical systems**
  - Approx. Cost: $500 - $2K
  - *Assumes simple elevation of equipment on platform

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**PROJECT OVERVIEW**

**Benefits**
- **Risk Reduction** By providing businesses or homeowners the financing needed to undertake resiliency improvements, vulnerability is reduced
- **Economic Development** - Numerous economic benefits result including keeping businesses open and possibly reducing insurance premiums
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**Timeline**

1-2 years

**Possible loan fund recipients**

- **Homeowners**
  - Approx. 610 owner-occupied housing units*

- **Renters**
  - Approx. 4,690 rental units*

- **Small businesses**
  - Approx. 50-60 retail/food/trade businesses**

- **Entrepreneurs/Micro-businesses**
  - Approx. 120 manufacturing/warehousing businesses***

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**Red Hook**

NY Rising Community Reconstruction Program
**Project Description:** This project would purchase and install solar panels (with backup batteries) on the roofs of Red Hook Houses buildings to provide an alternative power source for the stairwell lights in the event of an emergency that results in a power outage.

**Background/Rationale:** Following Superstorm Sandy, the Red Hook Houses were afflicted by prolonged power outages, and lack of light in the stairwells amounted to a safety issue for residents. NYCHA provided lanterns in the stairwells, but many were removed. In the future, the provision of a resilient power source for lighting of shared spaces at the Red Hook Houses will be critical in an emergency for both evacuation and returning to life as normal.

**Solar-powered emergency lights for Red Hook Houses stairwells**

More than a week after Superstorm Sandy, the Red Hook Houses development was still without power because the utility companies could not restore electricity until NYCHA staff finished pumping out water from the flooded basements. As a result, many Red Hook Houses tenants were faced with the dangerous task of navigating unlit stairwells—or stairwells temporarily mitigated with lanterns—using flashlights for days.

**Benefits**

- **Risk Reduction Benefits** – Decreased vulnerability to power loss for Red Hook Houses stairwells.
- **Economic Benefits** – Job creation (and training) for solar panel installation, operations, and maintenance.
- **Environmental Benefits** – Use of a renewable, clean, and efficient energy source.
- **Health and Social Benefits** – Serving a socially-vulnerable population.

**Considerations**

- Space requirements for panel siting
- Protection of outdoor equipment during/after a storm
- Upgrades to existing electrical equipment
- Battery backup system size and (protected) location
- Energy efficiency measures: type of lightbulbs (i.e., incandescent, linear fluorescent, LED); use of motion sensors
- Regulatory/agency review requirements: NYCDOB permitting; FDNY space restrictions; Con Edison/National Grid coordination; Bureau of Electrical Control (BEC) coordination

**Cost**

- **Approx. $20,000/building***

  **Assumptions:**
  - Representative 6-story building with 3 stairwells
  - 20W/linear fluorescent
  - $5/W for solar panels
  - $1,000/kwh for backup battery
  - Backup battery would power the solar panels for 12 hours

  *Includes cost of solar panels and backup battery; based on engineer experience with projects of similar scope and scale. Costs have not been adapted to specific local conditions and will likely vary as the project is further developed/refined. Conceptual estimate of probable cost—not for reliance

**Timeline**

- **6 months - 1 year**

**An Important Consideration: Battery Backup Power for Solar Panels**

There are several components of solar power: a panel for generation; a connection to grid; smart inverters; a meter; a fossil generator for hybrid system; and, importantly, a battery for storage and smoothing fluctuation. The cost of the necessary backup battery depends upon not only the instantaneous load for powering the stairwell lights, but also the number of hours that the lights would remain on in a given day. The use of motion sensors could reduce the cost of the backup battery.
**Project Description:** Purchase and install fixed generators for select health and social service providers in Red Hook. Potential locations for the generators include the Joseph P. Addabbo Family Health Center, one or several future resilience center(s) (i.e., a relief hub with satellite locations), and/or other sites identified.

**Background/Rationale:** Power outage was a critical issue following Superstorm Sandy, which caused hardship for residents and businesses alike in the Red Hook community and slowed the pace of recovery. Permanent standby generators can provide a resilient power source for key facilities in the community during and after emergencies, providing back-up power in the event of larger grid failure.

**Why Do We Need Back-up Generators?**

Most electrical outages during Superstorm Sandy were caused by damage to the electricity distribution system.

**Where do we need Back-up Generators?**

Example: The Joseph P. Addabbo Family Health Center

As a result of Sandy, the Joseph P. Addabbo Family Health Center—the only medical clinic in Red Hook—experienced significant damage, with the first floor and pharmacy destroyed by floodwaters. After slightly more than a week, the health center reopened, as staff received a shipment of medicines and supplies and they set up exam rooms on the second floor, but it would not have been possible without a temporary generator funded by Brooklyn Borough President Marty Markowitz. Power did not return to the health center and much of the surrounding neighborhood for several additional days.

**Could Power...**

- **This Generator...**
  - a 10,000 SF building (e.g., The Red Hook Public Library)
    - Lighting (1.2 W/SF)
    - Cooling (6 W/SF)
  - Miscellaneous (3 W/SF)
    - Cooking
    - Cell Phones
    - Water Pressure Pumps
    - Sump Pumps

**PROJECT OVERVIEW**

**Benefits**

If funded, this project could result in:

- **Risk Reduction Benefits** - Decreasing the vulnerability to power loss in buildings where the generators will be installed
- **Economic Benefits** - Job creation (and training) for ongoing maintenance of the generators
- **Environmental Benefits** - Clean energy source if hybrid/dual generators are purchased that include solar power in addition to another fuel source
- **Health and Social Benefits** - Ensuring that select health and social service providers have backup power to continue offering services during and after emergencies

**Considerations**

The following factors should be considered in selecting the right backup generator for your location and activity:

- Size of building/space needed to power during an emergency
- What/how much you need to power: The activities and uses to accommodate during an emergency
- Number of people to accommodate during emergency
- Fuel sources available
- Age and current kilowatt load of building
- Space available for generator and fuel storage

**Cost**

**Approx. $200,000** (for 100 kw generator)

Cost is approximate and includes generator and installation. Actual installed cost would vary depending on site- and building-specific conditions. Conceptual estimate of probable cost—not for reliance—work-in-progress.

**Timeline**

**Less than 6 months**

If funded, the proposed purchase and installation of generators could take place as soon as the specifications are defined for the identified buildings.

**Red Hook**

NY Rising Community Reconstruction Program
**Red Hook Houses microgrid/cogeneration feasibility study**

**Project Description:** Evaluate the suitability of creating a microgrid powered by a local energy source to ensure power resiliency for the Red Hook Houses property. The expected outcome of the study is a detailed cost estimate and site identification for a cogeneration/solar/wind facility to serve the Red Hook Houses, as well as an assessment of the feasibility of establishing a microgrid tie-in to the electric distribution system.

**Background/Rationale:** The Red Hook Houses suffered prolonged power loss following Superstorm Sandy due to disturbances to the regional power distribution system and vulnerability of on-site equipment to flooding. Pending the findings of the proposed feasibility study, a microgrid with cogeneration could enable the Red Hook Houses to continue having power in the event of an emergency that compromises the electrical grid.

**What is a Microgrid?**

A microgrid is a small portion of the larger electrical grid that can be disconnected from the rest of the grid during an emergency, providing there is enough local power generation to meet necessary loads. The microgrid can therefore act as a self-sufficient unit when the larger grid is compromised.

**What is Cogeneration?**

The most established and commonly used power source for a microgrid is cogeneration, which uses a fossil fuel-powered engine to simultaneously produce electricity and heat. This is more efficient than purchasing grid power and natural gas/oil separately.

**Cogeneration in Red Hook?**

The NYCHA Red Hook Houses development is potentially a strong candidate for the implementation of cogeneration, as 16 individual buildings within the development are metered as a single unit (i.e., 110 Columbia Street, according to the NYC 2012 Energy and Water Data Disclosure), and the presence of net metering is an important siting consideration for cogeneration.

**PROJECT OVERVIEW**

**Benefits**

- Risk Reduction Benefits – Decreased vulnerability to power loss for Red Hook Houses.
- Economic Benefits – Job creation (and training) for cogeneration facility operations/maintenance; financial savings for New York City Housing Authority (NYCHA) due to possible lower power costs for cogeneration; revenue generation for NYCHA through sale of excess power back to utilities.
- Environmental Benefits – Increased energy efficiency through the use of cogeneration.
- Health and Social Benefits – Serving a socially vulnerable population.

**Considerations**

The proposed feasibility study would analyze:

- Site suitability assessment for microgrid.
- Existing rates of electric and gas.
- Preliminary sizing of equipment for cogeneration.
- Potential role of alternative energy (solar/wind).
- Detailed cost estimate.
- Feasibility of establishing microgrid tie-in to the electric distribution system.
- Locations/site identification for cogeneration facility.

**Cost**

$300,000

*Based on engineering experience with projects of similar scope and scale. Conceptual estimate of probable cost—not for reliance—work in progress.

**Timeline**

6 months – 1 year

If funded, the proposed study could be completed within one year, at which time the focus could shift to potential implementation, pending the findings from the study.

**Precedents**

- *Starrett City (Spring Creek Towers)*: The development, which contains nearly 6,000 apartments and was developed under the Mitchell-Lama Housing Program to provide affordable apartments to middle-income residents, has a cogeneration facility.
- *Rochdale Village Housing Complex*: This complex, comprising 20 buildings in southeastern Queens, similarly has a cogeneration facility that generates power for the entire development.
Network of resilient community centers

Project:
Establish a network of resilient community centers in Red Hook. Funds would go toward hardening 2-4 existing centers to ensure their resilience, and equipping them to provide relief after an emergency. Sites would be selected based on defined criteria including building capacity, organizational capacity, proposed services, and potential to provide a cohesive network of support in conjunction with other selected sites and with evolving emergency preparedness plans for Red Hook.

Illustrative resilient community center locations
Actual siting to be determined through solicitation process.

Rationale:
In conjunction with emergency preparedness planning, it is essential that entities responsible for providing required services be clearly defined and supported. A resilient community center network could balance the need for service redundancy at multiple locations while avoiding duplication of programs and efforts.

Selection Criteria:
Required Improvements/ Program Components
Community centers participating in the resiliency/relief network would implement a set of required programs and may be able to use a percentage of funds for a set of discretionary resiliency programs as well.

Possible required components across all sites:
- Back-up generator
- Electricity, heat/AC, light, charging stations
- Flood-proof and resiliency improvements to the facility
- First aid supplies
- Identified staff person to coordinate relief efforts
- Restrooms (and potentially showers)

Ideas for discretionary programming, differing by site:
- Creation and management of signage system to communicate during emergencies
- Coordination with Red Hook Initiative WiFi Network to ensure internet access and education maintained
- Coordination of health services resources
- One center to serve as central coordination hub

PROJECT OVERVIEW

Benefits
Community Capacity: By developing a coordinated and decentralized resiliency network, the capacity and resiliency of organizations would be increased.

Risk Reduction: A resilient community center network would provide services before and after emergency events that could serve the whole neighborhood, particularly benefiting vulnerable populations.

Cost
$1M - $3M*
Illustrative building upgrade costs per site:
- Gas-powered generator: ~$200K+
- Solar-powered battery: ~$45K+
- Flood barrier for doors: ~$10K+

* Based on approximate costs for 2-4 sites. Costs for resiliency interventions and programming highly variable. Estimates above based on a 10,000 SF building. Installation costs are not included. Centers likely to have additional resiliency components. Additional details on generators included on "Emergency Back-up Generators" Board.

Timeline
2 - 3 years
**Ferry enhancements**

**Project Description:** Enhance water-based transportation options for Red Hook through (one or both):
- A. Ferry service enhancements: contribute to an operating subsidy to bring regular commuter ferry service to Red Hook.
- B. A new ferry landing at Atlantic Basin.

**Route Options**
1. Add morning service to IKEA route
2. Extend the East River Ferry to Red Hook
3. Add a stop in Red Hook on the existing Rockaways-Sunset Park-Manhattan route
4. Break the current Rockaway route into a Rockaways-Manhattan route and a Sunset Park-Red Hook-Manhattan route
5. New route - NYCEDC Comprehensive Citywide Ferry Study, Route 1
6. New route - NYCEDC Comprehensive Citywide Ferry Study, Route 1b

**Landing Options**
The Planning Committee has identified a number of potential landing options associated with the proposed ferry enhancements. The options include a range of locations and call for either using an existing landing as is, improving an existing landing, or constructing a new landing. The following graphics depict 1/4-mile radii overlaid on aerials of the respective sites that have been suggested.

**Background/Rationale:** Enhanced passenger ferry service would add necessary redundancy to the transportation system by providing an additional modal option for travelers—a vital resource during and after emergencies should other transportation modes be compromised. More-frequent ferry service would also support access to job opportunities for Red Hook residents, aiding in the long-term recovery of Red Hook.

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**PROJECT OVERVIEW**

**Benefits**
If implemented, this project could result in:
- **Risk Reduction Benefits** - Providing an additional evacuation and supply delivery option prior to and following disasters, thereby reducing vulnerability for the residents and workers of Red Hook.
- **Economic Benefits** - Reduced travel time for commuters to and from Red Hook; job creation for the operations and maintenance of ferries for enhanced service and/or the construction of new ferry landing; contribution to the New York City Regional Economic Development Council’s Strategic Plan, which cites ferry service as an important intra-city transit option.

**Considerations**
- Route options, including peak-period headways
- Landing options, including infrastructure needs
- Operating subsidy
- Ridership potential and market catchment area
- Acceptable fare

**Cost**
- **Route:** varies by option
- **Landing:** $750K-$1M*  
  *Landing costs are for a 30x60’ spuid barge with 50-60’ of ramp. Costs exclude potential costs for ADA compliance and onland infrastructure improvements (shelters, benches, bike rack, and ticketing machines).

**Timeline**
- varies by option
Red Hook
NY Rising Community Reconstruction Plan

Have a Say! Priority Projects Voting

Vote on which Priority Projects you think are the highest priority for funding

**Green**: Project(s) highly recommended for funding with CDBG-DR
Please take 3 green dots. Cast all 3 on one project, or spread 3 across multiple projects

**Yellow**: Project(s) you are neutral about funding with CDBG-DR
Please take 2 yellow dots. Cast 2 on one project or spread 2 across multiple projects

**Red**: Project that should not be funded with CDBG-DR
Please take 1 red dot if there is a project you do not support. If you support all, do not cast a vote.

### Priority Projects Voting

- **Resiliency construction**
- **workforce training**
- **Partner locally to provide financial assistance for housing and business retrofits**
- **Red Hook Houses microgrid/cogeneration feasibility study**
- **Solar-powered emergency lights for Red Hook Houses stairwells**
- **Emergency back-up generators**
- **Network of resilient community centers**
- **Ferry enhancements**
- **Drainage study**
Comments? Thoughts?

Do you have comments on the proposed Priority Projects, the Additional Resiliency Recommendations, or even the original list of 90+ potential projects generated from past public and Committee meetings? Please share your thoughts with us below!