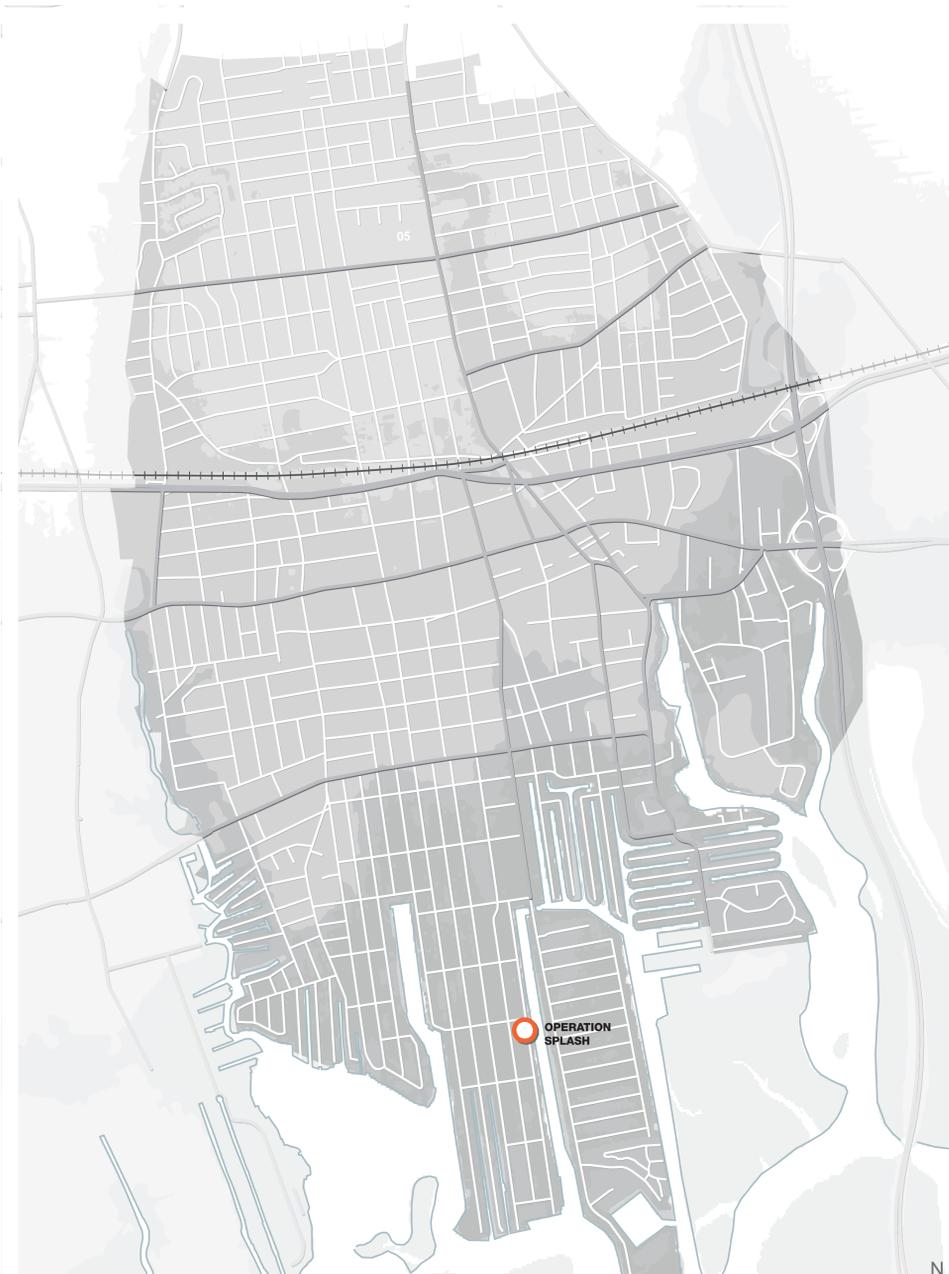


# Operation SPLASH: Resilience Education Center

Protect Operation SPLASH's headquarters from flooding and develop a resilience education center

Cost Estimate: \$1,000,000



## Key Facts

- Project Type: Social and Community Services
- Recovery Function: Community Planning and Capacity Building
- Project Location/Municipality: 202 Woodcleft Avenue
- Primary Target Area Affected: Nautical Mile
- Consistency with NYRCR: Increase resiliency of key assets
- Potential Beneficiaries: Regional and Freeport residents and businesses

## Project Information

This project seeks to fortify and protect Operation SPLASH with innovative flood protection design and infrastructure. In addition, partnership with Nassau County higher education institutions will be sought to raise awareness of climate-related risks to the region and promote environmental stewardship.

The project will create a full-time position at Operation SPLASH to offer education and outreach programs related to coastal and community resilience and environmental protection.

**Benefits:** Flood protection will protect the critical community functions that SPLASH provides, and serve as a model for resilient design to other buildings in high and extreme risk areas. The educational component will enable SPLASH to widely broadcast the importance of resilient design, the responsibilities that come with living in a coastal region and the important role that ecosystems have in storm protection, pollution mitigation and quality of life. Linking with educational institutions and schools will enable SPLASH to offer the most contemporary and innovative education to a wide audience.

**Relationship to Disasters:** SPLASH was inundated with 16" and 4.5' in Irene and Sandy, respectively, and sustained building damages in both storms. Their continued operation during and after storms is an essential community need due to their commitment to storm cleanup, debris removal and community education and awareness.



Operation SPLASH is committed to improving the quality of life along Long Island shores



Operation SPLASH assisted the Town of Hempstead in clearing marine debris left after Sandy



# Nautical Mile Buoyant Architecture Demonstration

Identify and reconstruct a building on the Nautical Mile using buoyant architecture to provide a local example of flood resilient design

Cost Estimate: \$160,000



## Key Facts

- Project Type: Economic Development (Capital)
- Recovery Function: Economic
- Project Location/Municipality: Nautical Mile
- Primary Target Area Affected: Nautical Mile
- Consistency with NYRCR: Drive economic growth
- Potential Beneficiaries: Nautical Mile and waterfront businesses within Freeport and the region

## Project Information

Buoyant Architecture is the use of alternative foundation systems which allow buildings to 'float' when inundation occurs. This is a commonly used technique for resilient waterfront buildings in New Orleans and the Pacific Northwest, but has not yet been implemented on the East Coast.

This project will design and construct a buoyant building along the Nautical Mile to demonstrate the ability to economically and resiliently maintain a coastal economy.

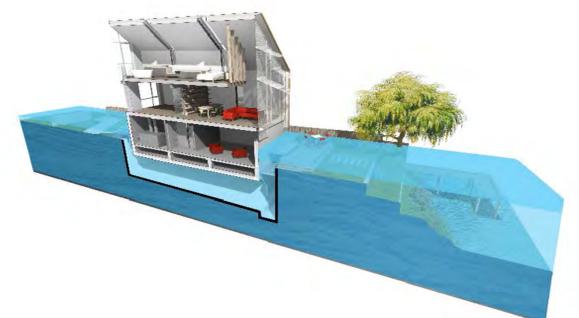
**Benefits:** Freeport is committed to being on the Shore and sustaining the Nautical Mile. Developing a proof of concept for buoyant architecture on the Nautical Mile would allow the Village to maintain this vision while reducing risk to the businesses on the Mile and mitigating future storm damage.

In addition to improving resilience of coastal structures, this would maintain the character of local buildings and neighborhoods, retain access for elderly and disabled populations, prepare for sea level rise and in some cases reduce the cost of construction to comply with new building elevation requirements.

**Relationship to Disasters:** The Nautical Mile is identified in the NYRCR Freeport Conceptual Plan as the heart of the community and an important piece of the community's economy. The Nautical Mile sustained widespread damage during Sandy as homes and businesses were underwater.



Freeport's Nautical Mile hosts a number of bars, restaurants and retail services



Buoyant buildings rest on a concrete hull, which rises and falls with the water along vertical guideposts

# Modernize the Industrial Park Study

Identify and develop strategies to transform the Industrial Park into a modern, resilient and business-friendly industrial zone

Cost Estimate: \$500,000



## Key Facts

- Project Type: Economic Development (Assistance)
- Recovery Function: Economic
- Project Location/Municipality: Freeport Industrial Park
- Primary Target Area Affected: Freeport Industrial Park
- Consistency with NYRCR: Drive economic growth
- Potential Beneficiaries: Industrial Park residents, regional industrial businesses, and hopeful entrepreneurs

## Project Information

This project seeks to form a local nonprofit development authority that is committed to transforming the Industrial Park into a modern, environmentally conscious and resilient business center.

The study will outline implementation steps for the creation of the development authority. It will also propose design guidelines for safe, affordable and environmentally conscious light-industrial and commercial development. Short-term and long-term goals, strategies, actions and design concepts will be developed.

**Benefits:** Freeport lost nearly 2,000 jobs during and after the national economic recession and industrial employment opportunities are decreasing across the nation. However, industrial jobs pay comparatively higher salaries than other sectors in Freeport.

This project will create a roadmap to long-term economic growth and resilience; attracting jobs to Freeport and creating a steady stream of tax revenue to invest in Freeport's residents and improve quality of life.

Strategies on how to grow an industrial economy while maintaining and improving the local ecosystem will ensure environmental quality and stewardship are at the forefront of the modernization of the Industrial Park.

**Relationship to Disasters:** The Industrial Park is largely located in high and extreme risk areas. This, coupled with the risk of explosions from chemical/hazardous materials, makes the Industrial Park essential to protect from future disasters. Even during non-storm scenarios, minor flooding can result in environmental damage.



Freeport's Industrial Park could bring additional jobs and tax revenue to the community



The Industrial Park could be transformed into a modern, environmentally conscious, resilient business center

# Regional Transit Oriented Development, Access and Parking Study

Identify and develop opportunities for economic development and relocation to lower risk areas

Cost Estimate: \$500,000



## Key Facts

- Project Type: Planning and Additional Study
- Recovery Function: Economic
- Project Location/Municipality: Downtown Freeport
- Primary Target Area Affected: Downtown Freeport
- Consistency with NYRCR: Drive economic growth
- Potential Beneficiaries: Downtown Freeport businesses, businesses and residents in coastal areas wishing to relocate to lower risk areas

## Project Information

This study will identify opportunities to combine parking areas and develop structured parking facilities in key areas. Through the process of agglomerating parking, development opportunities may arise. The study will analyze these areas and provide recommendations on their best use based on community need. Guidelines for the design of resilient, sustainable and aesthetically pleasing parking structures will be identified. Strategies for financing parking structures and attracting and retaining businesses will also be identified.

Local transportation access is also an important element of a resilient community. This study will also develop a concept for local public transportation that connects Freeport's key business, retail and recreational areas. This service can also serve as a form of transportation for socially vulnerable populations and post-disaster circulation, when private vehicle and fuel access may be limited.

**Benefits:** Freeport will benefit from having a more robust and diversified economy, attracting tax revenue for community building and infrastructure projects. Diversified housing and business locations will provide opportunities for waterfront landowners to relocate within Freeport, while offering opportunities to prospective residents and business owners. Public safety and emergency response will be improved through safe vehicle storage and access.

**Relationship to Disasters:** NYRCR Freeport Committee Members identified the Nautical Mile and Industrial Park as key economic assets. However, they also recognize the importance of Downtown Freeport and the area around the LIRR station, as these places can provide an opportunity for new economic development and housing in less vulnerable areas.

Identifying opportunities to agglomerate parking into parking structures is important storage of private and emergency vehicles before, during and after storms – a need mentioned during previous public engagement meetings.



Development opportunities in Freeport's downtown could attract new businesses



Local transportation access is an important part of building a resilient community

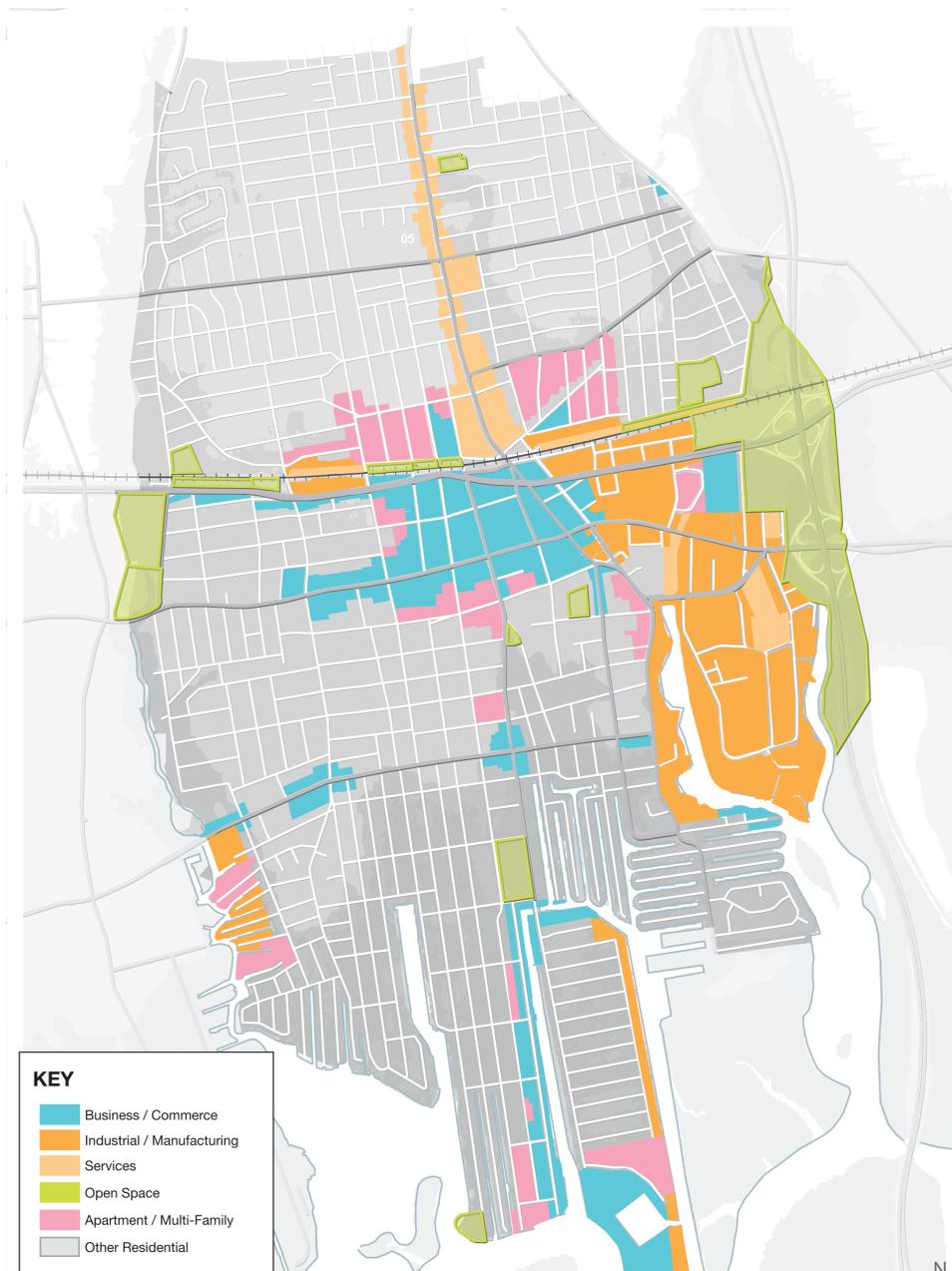


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# Revise Zoning and Building Codes for Resilience

Recommend changes and updates to local zoning and building codes to incorporate resilient design

Cost Estimate: \$250,000



## Project Information

This project seeks to undertake a planning study and make recommendations to revise Freeport zoning, planning and building code regulations for resilient design.

The study will work with Freeport planning and building agencies to ensure that needs specific to the community's rebuilding efforts are not omitted or overlooked.

**Benefits:** Resilient design standards can help prevent such catastrophic economic losses in the future. In addition, more resilient housing design will help Freeport's coastal areas recover decreases in home values that have been documented since Superstorm Sandy.

**Relationship to Disasters:** Superstorm Sandy resulted in heavy damage to 3,500 housing units in Freeport. In addition, there are 3,900 homes in high and extreme risk flooding areas. 234 businesses applied for disaster management assistance, accounting for roughly 27.6 million dollars in damages. Only 8.4% of Freeport businesses and 26.7% of houses are located outside of the risk zones. In total, 65.4 million dollars of damage was assessed by FEMA. Yet many of these homes and businesses are not designed to reflect that risk.

## Key Facts

- Project Type: Planning and Additional Study
- Recovery Function: Housing
- Project Location/Municipality: Freeport Village
- Primary Target Area Affected: Freeport Village
- Consistency with NYRCR: Address short, medium, and long-term risks
- Potential Beneficiaries: Residents living in high flood risk areas or in areas susceptible to storm damage



Resilient design standards can help prevent economic losses from storm damage



Planning and building code regulations should support and provide a guide for resilient housing design





# Integrated Communication Network

A regionally-coordinated, one stop shop for disaster and emergency information, communication and training

Cost Estimate: (Phase 1) \$20,000 - \$100,000 per CR Area

## Project Information

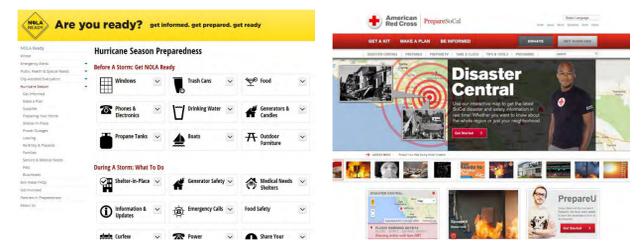
Create a single source for comprehensive information and emergency assistance and establish a communication network that more effectively links the local government with emergency management agencies, faith-based groups, and non-profit organizations to direct aid and recovery efforts to the community's socially vulnerable populations.

**Benefits:** Phase 1 of this project would evaluate existing emergency communication systems and determine additional needs, with an emphasis on coordination across multiple jurisdictions. Phase 2 would establish a centralized location (such as a website) with consistent "branding" to make disaster information identifiable, and regular updates to keep information current. Phase 3 would include the creation of an educational component, using the website to promote educational seminars on disaster planning. Both Phase 2 and 3 have the potential for private and nonprofit sponsorships and partnerships.

**Relationship to Disasters:** During and after Superstorm Sandy many residents did not know where to look for emergency information. Some community members did not understand the severity of the storm and were unable to evacuate after conditions became unsafe, putting themselves and emergency responders at risk. Following the storm, power outages and lack of cellphone service left residents unable to communicate with friends and family members, and without a means to find emergency resource information.

## Key Facts

- Project Type: Emergency Readiness
- Recovery Function: Community Planning and Capacity Building
- Project Location/Municipality: Nassau County
- Primary Target Area Affected: Nassau County
- Consistency with NYRCR: Coordinate with regional initiatives
- Potential Beneficiaries: All Nassau County residents impacted by future disasters



# Business Continuity Program

Establish a business continuity program to ensure that businesses can maintain essential functions during and after emergency events

Cost Estimate: \$35,000 - \$40,000 per CR Area

## Project Information

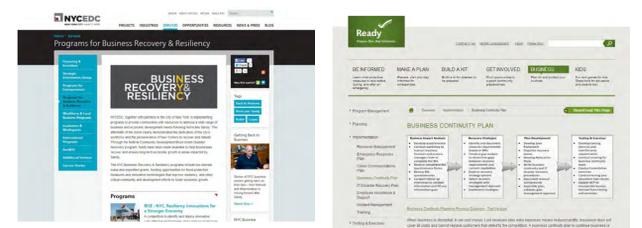
Business continuity planning ensures that businesses have the capability to maintain essential functions during a range of potential emergencies. The assistance provided by a Business Continuity Program would include planning assistance, access to alternative spaces or facilities, communications provisions, and provisions for vital records backup and management.

**Benefits:** The Business Continuity Program would help small businesses to create their own plans for continuing operations under adverse conditions, such as a major storm. The program would work with Adelphi University and the Business Continuity Institute to lead training sessions for local business owners. Training sessions will include assisting business owners to create a database to store, update and/or view temporary emergency power requirements for their establishments. This data will help owners procure emergency power generation supplies before a disaster, and prioritize temporary power requirements.

**Relationship to Disasters:** A total of 234 businesses applied for disaster management assistance, accounting for roughly 27.6 million dollars in damages. Only 8.4% of Freeport businesses and 26.7% of houses are located outside of the risk zones. In total, 65.4 million dollars of damage was assessed by FEMA. Many Village businesses are smaller businesses without the corporate resources and support needed to quickly and effectively recover from a disaster.

## Key Facts

- Project Type: Emergency Readiness
- Recovery Function: Economic, Community Planning and Capacity Building
- Project Location/Municipality: Nassau County
- Primary Target Area Affected: Nassau County
- Consistency with NYRCR: Drive economic growth
- Potential Beneficiaries: Nassau County businesses impacted by future disasters



Shared Projects include more than one NYRCR Community and require financial support from each Community





# South Shore Stormwater System Modeling and Analysis

Evaluate condition and ownership of stormwater drainage systems and identify solutions for stormwater management

Cost Estimate: \$500,000 - \$600,000 per CR Area

## Project Information

This project would document the condition and ownership of stormwater drainage systems in the region, and use hydraulic and hydrologic modeling to study surface and subsurface stormwater drainage patterns. A study of the Sunrise Highway Conduit would also be performed to address drainage issues in upland areas.

**Benefits:** Modeling and analysis is necessary to help identify and prioritize solutions for stormwater management. This includes capital projects, updated maintenance requirements, regulatory improvements, public awareness programs, and other property-owner assistance measures. These initiatives would increase the capacity of the stormwater system and reduce flooding issues in the region.

**Relationship to Disasters:** Rain and storm surge during Sandy overwhelmed the stormwater drainage system and exacerbated flooding. Additionally, localized flooding is frequently observed during heavy rainfall or high tides.

## Key Facts

- Project Type: Planning and Additional Study
- Recovery Function: Infrastructure
- Project Location/Municipality: Nassau County
- Primary Target Area Affected: Nassau County
- Consistency with NYRCR: Increase resiliency of key assets
- Potential Beneficiaries: Nassau County residents and businesses



# South Shore Shoreline Conditions Analysis and Restoration Program

Analyze shoreline conditions and incentivize coordinated improvements to reduce erosion and mitigate flooding

Cost Estimate: \$100,000 - \$200,000 per CR Area

## Project Information

Develop a program to incentivize and provide support for coordinated and continuous shoreline improvements along private waterfront properties, including measures to reduce erosion and provide protection against tidal action and storm surge. This program would include the creation of a digital inventory to assess shoreline conditions, and analyze potential strategies to restore shorelines to pre-Irene and pre-Sandy conditions. Pilot projects should be implemented and monitored at a local level.

**Benefits:** Shoreline improvements such as hard or hybrid structures, living shorelines, wave attenuation measures such as oyster reefs, and other natural solutions can help mitigate shoreline erosion and protect coastal properties from flooding and degradation.

**Relationship to Disasters:** Irene and Sandy caused widespread damage to Long Island's southern coastline. Many protective coastal features were affected, compromising their ability to control erosion and flooding.

## Key Facts

- Project Type: Protective Measures
- Recovery Function: Natural and Cultural Resources, Infrastructure
- Project Location/Municipality: Nassau County
- Primary Target Area Affected: Nassau County
- Consistency with NYRCR: Increase resiliency of key assets
- Potential Beneficiaries: Nassau County residents



# Regional Energy Action Plan

Evaluate options for distributed generation and microgrid implementation, and smart grid technology integration

Cost Estimate: (Initial study) \$1,000,000

## Project Information

Perform a study to identify opportunities for distributed generation and microgrid deployment, and smart grid integration into the existing electricity distribution system. Potential projects should incorporate community-driven planning and design, and leverage public-private partnerships for funding resources.

**Benefits:** Distributed generation resources can lower energy costs, and combined with a microgrid system can enhance grid reliability for all electric customers. Smart grid technology can help utilities identify service faults and outages faster, and allows for more efficient and reliable operation. These technologies also create new opportunities for jobs in clean energy industries, and overall contribution to a cleaner environment.

**Relationship to Disasters:** During Sandy, Irene, and many other minor storms damage to overhead utility lines resulted in power outages, which lasted for days in some parts of the region.

## Key Facts

- Project Type: Utilities
- Recovery Function: Infrastructure
- Project Location/Municipality: Nassau County
- Primary Target Area Affected: Nassau County
- Consistency with NYRCR: Coordinate with regional initiatives
- Potential Beneficiaries: Nassau County residents and businesses

