Freeport Channel Crossing
Electrical Improvements

Replace and extend the buried portion of critical distribution cables to protect power distribution from floating debris and prevent outages

Cost Estimate: $3,000,000

Key Facts

- Project Type: Utilities
- Recovery Function: Infrastructure
- Project Location/Municipality: Hanse Avenue, Ray Street, South Main Street, South End Place
- Primary Target Area Affected: Industrial Park, boat yards and southern residential streets in South Freeport
- Consistency with NYRCR: Increase resiliency of key assets
- Potential Beneficiaries: 25% of Freeport residents and businesses, two schools, two firehouses, two sewer pump stations, and three flood sirens and Nautical Mile hotels and restaurants.

Project Information

The project would extend the buried portion of the cables beyond the boat yard to protect the lines from freed boats and debris during storm surges. These lines contained with these cables serve as a critical link between Substation 2P and 4F, which supply power to one quarter of Freeport. While the conduits containing the cables are being accessed, the conduits and cables will be replaced.

Benefits: The project will provide greater resilience for Freeport Electric’s power supply and distribution network. As a result, residents and businesses will be provided with greater energy security. Critical community assets such as schools, firehouses, pump stations and flood sirens will have greater energy security. Emergency responders and technicians will be at lower risk of electrocution and electrical fires will be less likely in South Freeport.

Relationship to Disasters: As reported by Freeport Electric staff, marina operators, and CR committee members, boats and other floating debris struck elevated electric cables and their support structures. Tie lines were tripped and an overload of one of the lines delayed system restoration following Superstorm Sandy.
Outage Management System

Install a system upgrade to Freeport Electric’s asset management system to enable safer and faster outage management.

Cost Estimate: $480,000

Key Facts
- Project Type: Utilities
- Recovery Function: Infrastructure
- Project Location/Municipality: Freeport Village
- Primary Target Area Affected: Freeport Electric customers
- Consistency with NYRCR: Increase resiliency of key assets
- Potential Beneficiaries: Emergency responders and technicians will be protected from electrocution, all residents and businesses will benefit from fewer and shorter outages.

Project Information

The Outage Management System would upgrade Freeport Electric’s existing service by creating a web-based reporting and response system for outages or issues with essential services (power, water mains, gas).

The System would link directly to Freeport Electric’s existing systems and enables asset protection before an event, incident mitigation during an event, and faster incident management and service restoration after an event.

Benefits: This upgrade would allow for remote shut-off of buildings/ portions of the grid to enable faster and safer repairs, while allowing for outages to be contained.

If this system had been available during Sandy, electrical fires could have been avoided, blackouts could have been contained better and service could have been restored faster. It is also likely that public expenditures could have been reduced.

Relationship to Disasters: During Hurricane Irene and Superstorm Sandy, network outages occurred yet it was impossible to monitor from a central location forcing staff and emergency responders to conduct field verification. This put responders and technicians in unnecessarily risky situations and delayed system restoration.

Damaged utility lines must be located and repaired individually before power can be restored.

Software such as mPower can be used by utilities to manage outages and monitor the grid.
Protection for Freeport Electric’s Power Plant II
Design and test protection options for Freeport Electric’s Power Plant II

Cost Estimate: $1,350,000

Key Facts
- Project Type: Utilities
- Recovery Function: Infrastructure
- Project Location/Municipality: Freeport Industrial Park
- Primary Target Area Affected: Freeport Village
- Consistency with NYRCP: Address short, medium, and long-term risks
- Potential Beneficiaries: Freeport residents and businesses

Project Information
This project would seek to study protection options (for either critical assets or the entire site), design flood protection, and identify further funding from NYS and US grant programs to implement and construct the design.

A National Fish and Wildlife Foundation (NFWF) grant is currently being sought to restore the coastline and provide a layer of natural protection around Power Plant II. Further analysis will be done to ensure the designed flood protection does not negatively impact the natural system protection, should the NFWF grant be secured.

Benefits: This project would reduce risks to key Freeport Electric power generation assets. If the New York State and Long Island power grids go down during a disaster, the Plant would be the main source of power generation. Freeport and regional residents would be protected from a potential floating hazard, and the bays, marshes, wetlands and wildlife would be protected from contamination.

Relationship to Disasters: Power Plant II is highly vulnerable to coastal surges. Though no major damages were sustained during Sandy and Irene, Power Plant II is vulnerable to coastal surges. During Sandy, floodwaters reached the control center door and fuel tanks were shifted by the large volume of water. A larger storm could destroy all power generation equipment at the Plant and tear fuel storage tanks from their foundations, contaminating waterways and creating floating hazards in the process.
A microgrid is a group of interconnected loads and distributed energy resources within clearly defined electrical boundaries that act as a single controllable entity with respect to the grid and that connects and disconnects from such grid to enable it to operate in both grid-connected or island mode.

Benefits: The microgrid in Downtown Freeport will provide energy security to essential services through disaster scenarios, improve energy diversity and increase capacity for TOD redevelopment (to enable relocation of residents and businesses from vulnerable areas). In addition, it will create a more reliable and sustainable energy supply for Freeport.

This project seeks to identify funding and financing methods for the development of the microgrid, including State and Federal grant programs, capital budgeting and contributions from benefiting private entities. In addition, it will explore preliminary engineering feasibility concepts for the development of the microgrid, examine costs and identify necessary construction.

Relationship to Disasters: During Sandy, heavy winds and flooding caused damage to Freeport’s overhead electricity lines, resulting in outages lasting multiple days. Critical facilities that lacked, or did not have sufficient backup power were adversely affected.

Key Facts
- Project Type: Utilities
- Recovery Function: Infrastructure
- Project Location/Municipality: Village of Freeport
- Primary Target Area Affected: Downtown Freeport
- Consistency with NYRCR: Increase resiliency of key assets
- Potential Beneficiaries: Downtown Freeport businesses and residents, all Freeport businesses and residents, Freeport Electric, LIRR, Verizon, potentially neighboring communities

Project Information

A microgrid will provide for community resource centers such as the Freeport Library (above) in a time of crisis.

An independent power source would provide for emergency services clustered in Freeport’s downtown.
Freeport received funding through the Regional Economic Development Council to replace 1,065 linear feet of bulkhead at Waterfront Park, however the funding falls significantly short of the amount required. This project seeks to fund the remainder of that project. It also seeks to reconstruct 200 linear feet of damaged bulkhead at Fairview Park and 75 linear feet of damaged bulkhead at Hampton Place.

Bulkheads will be replaced at an appropriate height and with modern materials that are more resilient to erosion and wind.

Benefits: The reconstruction of the bulkheads will provide coastal protection in public areas, helping to maintain Freeport’s open space and recreational areas. In addition, the bulkheads can help reduce flooding onto local streets and assist in maintaining access during and after flood events.

Relationship to Disasters: Bulkheads in these areas, owned by the Village, were damaged during Hurricane Sandy. According to Freeport’s Hazard Mitigation Plan: Another source of flooding is the system of existing bulkheads that already are or are becoming nonfunctional. Bulkheads have a maximum lifespan, and many in Freeport have exceeded that point. Some older bulkheads are too low, allowing water to pass over them, causing significant flooding to adjoining properties. Many low-lying bulkheads are not being raised to current code requirements since they are not being replaced. (sic)

Key Facts
- Project Type: Protective Measures
- Recovery Function: Infrastructure
- Project Location/Municipality: Waterfront Park, Fairview Park and Hampton Place
- Primary Target Area Affected: Coastal areas
- Consistency with NYRCR: Protect vulnerable populations
- Potential Beneficiaries: Coastal populations, Freeport residents and visitors to recreational areas

Project Information

Provide funding for the repair of bulkheads at Waterfront Park, Fairview Park and Hampton Place.

Cost Estimate: $950,000

Key Facts

- Project Type: Protective Measures
- Recovery Function: Infrastructure
- Project Location/Municipality: Waterfront Park, Fairview Park and Hampton Place
- Primary Target Area Affected: Coastal areas
- Consistency with NYRCR: Protect vulnerable populations
- Potential Beneficiaries: Coastal populations, Freeport residents and visitors to recreational areas
Backup Power for Sewer Lift Stations
Provide backup natural gas generators for three Village sewer lift stations located in a Special Flood Hazard Area (SFHA)

Cost Estimate: $150,000

Project Information
This project seeks to install permanent backup natural gas generators at each of the three sewer lift stations.

This complements the mitigation efforts by the Village of Freeport which involves replacing and raising motors, compressors and electrical panels, bricking over the windows and installing dam doors.

Benefits: While the Village’s improvements certainly increase resilience alone, if the power distribution system is disrupted, the sewage system will be unable to operate and could cause an overflow. Backup power helps ensure that this does not happen in future storms.

Relationship to Disasters: All three pump stations were damaged by Superstorm Sandy. All of the electrical panels, pumps and compressors were submerged and destroyed. Village of Freeport Department of Works recommends the installation of backup generators as a redundancy element.

Key Facts
- Project Type: Emergency Readiness
- Recovery Function: Infrastructure
- Project Location/Municipality: Howard Street, Bayview Avenue, Suffolk Street
- Primary Target Area Affected: South Freeport
- Consistency with NYRCR: Increase resiliency of key assets
- Potential Beneficiaries: Freeport Residents

Lift stations pump wastewater uphill from low-lying areas to the sewer system where it can flow by gravity

Permanent backup generators installed at lift stations can prevent sewage backup during storm events
Lifeline Road Networks
Phase 1: Street Light Retrofit
Provide reliable power for street lights through periods of power loss

Cost Estimate: $4,100,000

Key Facts
- Project Type: Emergency Readiness
- Recovery Function: Infrastructure
- Project Location/Municipality: Guy Lombardo Ave, S Bayview Ave, S Long Beach Ave, S Main St, S Brookside Ave, N Main St, Merrick Rd, Sunrise Hwy
- Primary Target Area Affected: Freeport Village
- Consistency with NYRCR: Coordinate with regional initiatives
- Potential Beneficiaries: Freeport residents and businesses

Project Information
The Lifeline Networks seek to serve as these routes through a suite of incremental improvements.

This first phase seeks to provide solar powered lighting with backup power, to ensure these roads always stay lit in the event of a power outage and residents can follow these lit streets toward safer areas and critical resources.

Benefits: Lifeline Road Network lighting would secure local access routes to evacuation routes, critical facilities and Community Resource Centers (see P-6: Community Resource Centers). They would also reduce the cost of power supply to the existing streetlight network.

Relationship to Disasters: NYCR Freeport Committee Co-chairs, members of the public, and the Village of Freeport reported that there was a lack of clarity on which routes to use and which streets would provide access to evacuation routes, critical facilities, relief services and information centers during and after Sandy and other recent storms.
Lifeline Road Networks
Phase 2: Lifeline Signage

Design and install Lifeline signage along key local routes to provide orientation and destination signage

Cost Estimate: $180,000

Key Facts
- Project Type: Emergency Readiness
- Recovery Function: Infrastructure
- Project Location/Municipality: Guy Lombardo Ave, S Bayview Ave, S Long Beach Ave, S Main St, S Brookside Ave, N Main St, Merrick Rd, Sunrise Hwy
- Primary Target Area Affected: Freeport Village
- Consistency with NYRCR: Coordinate with regional initiatives
- Potential Beneficiaries: Freeport residents and businesses

Project Information

This second phase of Lifeline Road Networks seeks to complement Lifeline Road Network lighting with wayfinding and destination signage, directing people toward evacuation routes, safer areas and Community Resource Centers (see P-9: Community Resource Centers). This will enhance route clarity and orient residents toward streets that should be used during and after future emergencies.

Benefits: Lifeline Road Network signage would secure local access routes to evacuation routes, critical facilities and Community Resource Centers (see P-9: Community Resource Centers).

Relationship to Disasters: NYRCR Freeport Committee Co-chairs, members of the public, and the Village of Freeport reported that there was a lack of clarity on which routes to use and which streets would provide access to evacuation routes, critical facilities, relief services and information centers during and after Sandy and other recent storms.
Community Resource Centers seek to provide locations all across Freeport that can remain open and have backup power through storms and directly after storms. They will be fitted with backup power through Natural Gas generators.

They will create a network of locations for complementary public resiliency information and education. They will be staffed with a Local Disaster Recovery Manager. Directional signage will orient residents from Lifeline Road Networks (see P-7 and P-8) to the Resource Centers. Digital signage will broadcast emergency information. Finally, they will stockpile emergency and recovery supplies.

**Benefits:**
Community Resource Centers will provide backup power to critical community assets so they may stay open and provide resources and information to residents and businesses during and after storms. Providing information and educational material year-round will result in a more informed and prepared public in the face of disaster preparation and recovery. Information will be conveyed in a format that is accessible to all residents and businesses, helping to reduce the burden on socially vulnerable populations.

**Relationship to Disasters:** During Sandy and other storms, there was a lack of clarity on where to go for information, comfort, and relief services. Freeport residents expressed frustration with lack of information on how and where to go for help. Further, residents were unable to access even the most basic resources. Many emergency support services provided by nonprofit groups and hosted by the Town of Hempstead did not distribute resources in Freeport.

It was cited that the Freeport Library was overstressed as a resource center. In addition, lack of safety, displacement from homes, access to drinking water, communication access, social isolation and food access were cited as major concerns which hampered community recovery.

**Key Facts**
- **Project Type:** Emergency Readiness
- **Recovery Function:** Health and Social Services
- **Project Location/Municipality:** Freeport Library, Freeport Recreation Center, Archer Street School, Bayview Ave School, JW Dodd School, Atkinson School, and Giblyn School
- **Primary Target Area Affected:** Freeport Village
- **Consistency with NYRCR:** Protect vulnerable populations
- **Potential Beneficiaries:** Freeport residents and businesses

**Project Information**
Community Resource Centers seek to provide locations all across Freeport that can remain open and have backup power through storms and directly after storms. They will be fitted with backup power through Natural Gas generators.

They will create a network of locations for complementary public resiliency information and education. They will be staffed with a Local Disaster Recovery Manager. Directional signage will orient residents from Lifeline Road Networks (see P-7 and P-8) to the Resource Centers. Digital signage will broadcast emergency information. Finally, they will stockpile emergency and recovery supplies.

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**Cost Estimate:** $2,800,000