



Downtown Microgrid Phase 2: Redundant Energy Supply at Power Plant I

Install a new dual-fuel, black-start capable generator at Power Plant I

Cost Estimate: \$25,900,000

Project Information

The Freeport Hazard Mitigation Plan, Village employees and residents all cited the inability to obtain fuel, supplies and food as issues after Superstorm Sandy. Further, Freeport Electric's Power Plant I's main generator is over 50 years old, runs on only one fuel source (diesel) and does not have black start capability (the ability to start without help from an outside source). This is the first phase of a that project seeks to address these issues, provide greater energy resilience and redundancy, create a cleaner energy source for the Village, and provide reliable and renewable energy sources at critical infrastructure sites through the creation of a 'microgrid.'

A microgrid is a group of interconnected loads and distributed energy resources within clearly defined electrical boundaries that acts 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.

Phase 2 includes upgrading energy supply and redundancy at Power Plant I (main power supply for Microgrid area and all of Freeport).

Key Facts

- Project Type: Utilities
- Recovery Function: Infrastructure, Economic
- Project Location/Municipality: Microgrid Precient - loosely bound by S Bayview Ave to the west, S Main St to the east, Smith St to the south, and LIRR rail line to the north
- Primary Target Area Affected: Downtown Freeport
- Consistency with NYRCR: Drive economic growth
- Potential Beneficiaries: Downtown Freeport businesses and residents, all Freeport businesses and residents, Freeport Electric, LIRR, Verizon, potentially neighboring communities



Downtown Microgrid Phase 3: Redundant Distribution Surrounding the Microgrid

Install new circuits under streets bordering the microgrid area to replace outdated circuits, and increase capacity and redundancy

Cost Estimate: \$37,000,000

Project Information

A microgrid is a group of interconnected loads and distributed energy resources within clearly defined electrical boundaries that acts 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.

Developing a central location that can effectively avoid power loss during and after an event (microgrid) is highly valuable. It also provides the opportunity to reduce loads on the existing Freeport Electric grid, increase the use of clean energy, improve redundancy of energy sources and increase capacity for anticipated Downtown/TOD growth.

Phase 3 involves the installation of 4 new underground circuits on the streets the create the boarder of the microgrid, these circuits increase redundancy and replace outdated circuits, while increasing capacity.

Key Facts

- Project Type: Utilities
- Recovery Function: Infrastructure, Health and Social Services
- Project Location/Municipality: Microgrid Precient - loosely bound by S Bayview Ave to the west, S Main St to the east, Smith St to the south, and LIRR rail line to the north
- 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





Protection for Freeport Electric's Power Plant II Phase 2: Construction

Construct the recommended design and protection options identified in the initial Power Plant II study

Cost Estimate: up to \$13,500,000

Project Information

Though no major damages were sustained during Sandy and Irene, Power Plant II is vulnerable to major damages from coastal surges. During Sandy floodwaters crept up to the doorstep of the control center and fuel tanks on the site shifted due to volumes of water moving across certain portions of the area.

According to the Freeport All Hazard Mitigation Plan, A major storm, especially a Category 3 or 4 hurricane, would damage all electrical equipment at the power plant, including generators, motors, station service transformers, cooling tower, oil tanks, diesel engines, and the buildings on-site. - Through the combination of hard and natural protection, a greater level of protection can be provided while limiting impact, and potentially restoring some of the natural coastline. This project would seek to construct the recommended design of protection options from Phase 1, further funding from NYS and US grant programs for construction is required.

Key Facts

- Project Type: Utilities
- Recovery Function: Infrastructure, Natural and Cultural Resources
- Project Location/Municipality: 289 Buffalo Ave Freeport, NY 11520
- Primary Target Area Affected: Freeport Industrial Park
- Consistency with NYRCR: Address short, medium, and long-term risks
- Potential Beneficiaries: Freeport residents and businesses



Convert home heating to natural gas in extreme and high risk areas

Create an incentive program and establish requirements to mitigate damage from fuel oil tanks in flood risk areas

Cost Estimate: Minimal, mainly administrative costs

Project Information

Village staff, CR committee members and Freeport residents explained that home heating oil tanks were torn from their bases and became floating hazards during Superstorm Sandy. In addition, the spilling of heating oil led to environmental damage and permanent damage to homes and businesses. Some residents still complain of heating oil fumes in their homes.

This project will develop policy recommendations and an incentive program to convert home heating oil to natural gas in extreme and high risk areas. It would include temporary/intermediary regulations to require proper anchoring requirements based on anticipated inundation levels for risk areas will be incorporated. A deadline for all structures in extreme, high and moderate risk areas to convert to Natural Gas or an alternative heat and hot water supply would be established to ensure that homeowners are in compliance.

Key Facts

- Project Type: Utilities
- Recovery Function: Infrastructure
- Project Location/Municipality: Residential properties with fuel oil tanks south of the Babylon LIRR line
- Primary Target Area Affected: Residential properties with fuel oil tanks in risk areas
- Consistency with NYRCR: Address short, medium, and long-term risks
- Potential Beneficiaries: Freeport residents in risk areas





Regional Stormwater Drainage Cleanout, Survey and Verification

Evaluate Freeport’s drainage system to identify and prioritize critical drainage projects

Cost Estimate: \$ 8,000,000

Project Information

Throughout NYRCR Freeport Committee and Public Engagement meetings it was reported that the often clogged and poorly maintained drainage system in Freeport and across the County exacerbates and causes flooding in across the Village. During storm scenarios, such as Superstorm Sandy, this issue increases the breadth and severity of flooding.

This project seeks to cleanout all storm drains. While they are being accessed, it is recommended that a comprehensive survey is conducted to document and verify of all missing stormwater infrastructure in the GIS within Freeport area.

This project will involve coordination from TOH, NC and NYS.

GIS system to feed into hydraulic and hydrologic model to analyze current drainage system and prioritize critical drainage projects, includes the implementation of green infrastructure program and quantifying the benefits of green infrastructure solutions.

Key Facts

- Project Type: Debris Removal
- Recovery Function: Infrastructure
- Project Location/Municipality: Freeport Village
- Primary Target Area Affected: Freeport Village
- Consistency with NYRCR: Coordinate with regional initiatives
- Potential Beneficiaries: Freeport businesses and residents



Lifeline Network Phase 3: Tree Maintenance and Guidelines

Develop policy recommendations to prioritize tree maintenance along key transportation routes

Cost Estimate: Minimal, mainly administrative costs

Project Information

Downed trees and tree limbs made roads impassable, delayed emergency response and damaged the power distribution system during Superstorm Sandy and Hurricane Irene. The Village and its key transportation routes remain susceptible to downed trees and tree limbs in future hurricanes, tropical and winter storms.

This project seeks to recommend policy changes to prioritize key Freeport “Lifeline” roads for more frequent tree trimming and vegetation maintenance, and updated guidance for tree clearance around critical overhead utility lines.

Key Facts

- Project Type: Legislative/Policy
- Recovery Function: Natural and Cultural Resources
- Project Location/Municipality: Lifeline Networks in Freeport
- Primary Target Area Affected: Freeport Village
- Consistency with NYRCR: Balance costs and benefits
- Potential Beneficiaries: Freeport businesses and residents





Green Infrastructure Plan

Identify and prioritize green infrastructure opportunities to manage stormwater and reduce flash flooding

Cost Estimate: \$750,000

Project Information

During Sandy, the storm surge coming in from the Bay and the stormwater outfalls exacerbated already severe flooding. Additionally, the paved surfaces and roofs that make up a significant portion of Freeport’s total area contribute to stormwater runoff, overwhelming the storm sewer system and increasing the severity of flood damage. Green infrastructure helps to alleviate these issues by diverting or delaying stormwater from entering the drainage system.

It is recommended that a network of green infrastructure systems be developed across Freeport to reduce demands on the drainage system, allow for infiltration, and reduce the level of contaminated runoff that reaches the Bay during rain events.

This Plan seeks to identify green infrastructure opportunities and prioritize them based on feasibility, level of impact, funding and street reconstruction schedules. Opportunities to manage stormwater on public and private properties will also be identified and recommended.

Key Facts

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



Green Infrastructure Plan Implementation: Main Street Improvements

Ensure that improvements proposed by the “Building a Better Freeport” plan include green infrastructure

Cost Estimate: TBD

Project Information

This project entails the implementation of the Green Infrastructure Plan, and builds on the existing “Building a Better Freeport” plan’s recommendations for street improvement projects along North Main Street. This project would operate in tandem with the Plan’s proposed street improvements, ensuring that any pedestrian improvements incorporate green infrastructure measures such as bioswales or open channel infiltration areas, to the extent possible. It would also recommend the reconstruction of areas along South Main Street that have been improved recently, but missed opportunities to incorporate green infrastructure in the design process.

Key Facts

- Project Type: Protective Measures
- Recovery Function: Infrastructure, Natural and Cultural Resources
- Project Location/Municipality: Main Street, from Atlantic to Seaman Avenue
- 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





Green Infrastructure Plan Implementation: Meadowbrook Corridor Improvements

Implement green infrastructure strategies around the Meadowbrook Corridor area, including Freeport Creek and Merrick Bay

Cost Estimate: TBD

Project Information

The Meadowbrook Corridor is a large tributary system running from Westbury to South Shore Estuaries (Freeport Creek and Merrick Bay). The corridor and system of ponds were originally part of the Brooklyn Water Works reservoir system. The corridor is divided by the Meadowbrook Parkway which is an elevated roadway system. There are over 200 storm water outfalls into the Meadowbrook Corridor and sensitive wetlands downstream.

This project would include a Regenerative Storm Conveyance Retrofit (five outfalls between Washington Ave and Grand Ave) to reconstruct five storm water outfalls currently entering the creek between Babylon Turnpike and Camp Avenue to improve the water quality, aquatic habitat, aesthetics and stability of the Meadowbrook.

This project would also include reconnecting the Freeport Creek with the natural floodplain using, and a daylighting study to determine the potential to uncover the currently culverted (underground) Freeport Creek between East Meadow Pond and the west side of the Industrial Park. An East Meadow Pond floating wetland pilot could explore the use of a modular floating wetlands system to remove excess nutrients from urban stormwater runoff, and a drainage study of the pond would examine flooding issues at the Moxie Rigby Housing Project in Freeport and the potential to utilize the East Meadow Ponds to prevent further flooding.

Key Facts

- Project Type: Planning and Additional Study
- Recovery Function: Infrastructure, Natural and Cultural Resources
- Project Location/Municipality: Meadowbrook State Parkway
- Primary Target Area Affected: Meadowbrook Corridor
- Consistency with NYRCR: Increase resiliency of key assets
- Potential Beneficiaries: Businesses and residents in the Meadowbrook Commons area, all Freeport businesses and residents



Study viability of relocating or protecting the DPW

Evaluate options for relocating or increasing the resilience of Freeport’s Department of Public Works

Cost Estimate: Varied based on option

Project Information

During Superstorm Sandy, the Department of Public Works (DPW) site was inaccessible due to flooding and Village staff were unable to get to vehicles, fuel and equipment needed for the recovery process. Most of the buildings on site sustained significant flood damage.

This project would identify options to move DPW from its current low-lying, extreme risk location, to a safe and accessible site further north, and away from the water. The project would involve the relocation of trucks, equipment, fuel storage/pumps and telecommunication systems. If moving is deemed not possible, mitigation efforts, including lifting and flood proofing select buildings, fuel pumps and access roads, should be undertaken.

Key Facts

- Project Type: Planning and Additional Study
- Recovery Function: Community Planning and Capacity Building
- Project Location/Municipality: 66 Doxsee Dr, Freeport NY 11520
- Primary Target Area Affected: Freeport Industrial Park
- Consistency with NYRCR: Increase resiliency of key assets
- Potential Beneficiaries: Freeport businesses and residents

