

Environmental Education and Resiliency Center

Location: The Environmental Education and Resiliency Center (The Center) is located along the western side of Hempstead Lake between Parking Field #1 and Eagle Avenue.

Background/Challenges:

- Lack of educational component within the park
- Providing an operational hub for dam controls, sluice gates and water level monitoring
- Hub for emergency response (community and infrastructure)

Proposed Interventions:

- The Center will provide flexible classroom space, wet labs and hands-on learning
- Centralize monitoring for Dam sluice gates and water levels
- Education and training center for NCPD Explorer program
- Designed as a community resource center
- Designed with high LEED Standards with a goal of net-zero energy solution

Intended Effects/Improvements:

- Emergency coordination center for state and local agencies
- Designed to be used as a coordination center to respond to and recover from emergencies and storm events
- Information center for local residents after a storm event to provide direction for access to community services
- Education and interpretative center for school and other groups as well as the neighborhood NCPD Explorer program
- Hub and gateway to the greenway
- Educational wet lab for hands-on learning for local students
- Provide education regarding the impacts of climate change
- State Parks has a transportation grant program to reimburse schools (focused specifically on Title 1 schools for field trips to the park)

RBD principle(s):

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| • Coastal Environment- Cultural Resources | • Hazards – Flood Risk and Vulnerability |
| • Coastal Environment-Environmental Concerns | • Hazards – Sea Level Rise |
| • Coastal Environment- Natural Resources | • Hazards – Storm Risk |
| • Demographic Trends | • Infrastructure – Critical Infrastructure |
| • Economic Trends | • Infrastructure – Housing |
| • Hazards-Climate Trends | • Land Surface – Land Cover |
| | • Land Surface – Topography, and Public Health |

Northwest and Northeast Ponds

Location: The Northwest and Northeast Ponds are located in the northern portion of Hempstead Lake State Park. The ponds are separated from Hempstead lake by the Southern State Parkway.

Background/Challenges:

- Unregulated flow into Hempstead Lake and the Mill River Watershed
- Reduced water storage capacity
- Oil and pollutants in the first flush
- Limited opportunity for water filtration
- Floatables into the ponds, Hempstead Lake and downstream
- Siltation of the ponds
- Increase in water velocity due to sediment loads
- Limited access to ponds

Proposed Interventions:

- Dredging to increase water capacity
- Existing wetland restoration and new wetland creation
- Floatable catchment
- Sediment forays and “first flush” filtration
- Water velocity reduction

Intended Effects/Improvements:

- Enhanced stormwater management capabilities
- Mitigate against unrestricted flows
- Collect floatables and debris at park entrance points
- Flow control to better absorb “first flush” runoff
- Improve water filtration and ecological enhancement through wetland development
- Trap soils from runoff in sediment basins prior to entering wetlands & ponds
- Stabilize shorelines to reduce erosion and bank collapse
- Incorporate operationally sustainable design components
- Interconnect the enhancements to improve storm resiliency and ecological habitats
- Increased stormwater mitigation
- Improved water quality of storm runoff downstream
- Restoration and enhancement of ecosystems and biodiversity
- Increased opportunities for partnership development and program delivery
- Create opportunities for stormwater education

RBD principle(s):

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| <ul style="list-style-type: none">• Coastal Environment- Cultural Resources• Coastal Environment-Environmental Concerns• Coastal Environment- Natural Resources• Demographic Trends• Economic Trends• Hazards-Climate Trends | <ul style="list-style-type: none">• Hazards – Flood Risk and Vulnerability• Hazards – Sea Level Rise• Hazards – Storm Risk• Infrastructure – Critical Infrastructure• Land Surface – Land Cover• Land Surface – Topography, and Public Health |
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Greenway, Gateways and Waterfront Access

Location: The proposed greenway runs from the northern end of the parks to the southern end and weaves its way along the western side of the ponds and lakes. Gateways are located along the perimeter of the park in strategic locations. The Waterfront access can be found informally through the use of the trails system or formally in the form of docks and piers located along the western side of Hempstead Lake.

Background/Challenges:

- Access to and from the adjacent low to moderate income neighborhoods
- Limited access to waterfront (including ADA)
- Undefined or restricted gateways
- Inadequate Shodack Brook connectivity
- Current trail layout and surfacing for multiple user groups
- Limited connection from Hempstead High School

Proposed Interventions:

- New and expanded trails with educational components
- Opening view sheds through vegetation and invasive clearing
- Opening up of existing gateways to improve access and safety
- Increase the number of gateways to surrounding neighborhoods
- New multi-use greenway from north to south
- Green infrastructure as components of improvements
- Piers and kayak launches providing direct access to water

Intended Effects/Improvements:

- Increased access to improve emergency response
- New and enhanced gateways along the periphery for neighborhood access
- Additional parking for patrons
- Additional connections to multi-use path, trails and Greenway for greater public access to the river and waterways and view shed
- Piers and docks placed along the corridor will provide direct access to the waterways
- Interpretative signage throughout to educate on the park history, flora and fauna and the role the park plays in the overall resiliency
- On-water access for greater personal interaction with the water
- Expanded recreational, social and community connection opportunities in and around the park
- New trails for access to the parks various ecosystems

RBD principle(s):

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Dams, Gatehouse and Bridges

Location: The work locations for these component is located in the existing Dam located at the south end of the Northwest Pond, Hempstead Lake Dam, Gatehouse and Pipe Arch is located at the southern end of Hempstead Lake along Eagle Avenue and the South Pond Dam and Outlet Weir are located at the southernmost end South Pond and of the park.

Background/Challenges:

- Current lack of flood and water level control
- Breached NW Pond Dam
- Unrestricted flow into Hempstead lake and Mill River Watershed
- Lack of flow control through the Mill River Corridor
- Limited Dam monitoring and maintenance access
- Limited Shodack Brook connectivity
- Public safety

Proposed Interventions:

- Bringing the flow control structures (dams) into compliance with current regulatory requirements.
- Dam replacement.
- New fully operational sluice gates with operational plan.
- Design of pedestrian bridges that are part of the adjacent shared-use path system that increase access and connectivity throughout the Park.
- Historic structure restoration

Intended Effects/Improvements:

- Improve and update flood control structures
- Flow-control is key to flood protection for the overall watershed during surge events (Sandy) and rain events (Irene)
- Provide storage and attenuate peak flows
- Modeling indicates removal of existing limitations (which can cause unplanned impoundment if blocked) will enhance flows
- Water level control will enrich ecosystems and recreation
- New and enhanced access paths and bridges
- Provide emergency access & reduced response time
- Expand public access to natural ecosystems and trails
- Connect multi-use paths, trails and Greenway for greater public access to the river and waterways and view shed
- Interpretative signage about the historical nature of the Dams, educational opportunities to observe and monitor water level and flows, gate operations and overall park and watershed management

RBD principle(s):

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