

New York Power Authority Energy Services & Technology



Energy Management & Funding Sources At Wastewater Infrastructure Facilities

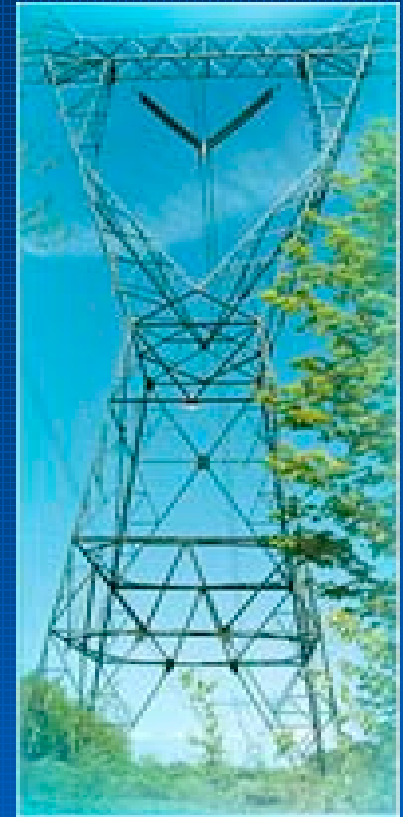
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NYPA Energy Services Profile

- NYPA has offered Energy Services since the mid-1980's
- NYPA's Formula: Provide turn key services including audit, design, implementation, construction management and complete project closeout
- NYPA provides up front financing with recovery from participants usually within 10 years through energy savings
- To date, over \$1.3B has been invested with improvements in over 3,300 public and not for profit facilities

Services Provided

- Initial Site Inspection
- Feasibility Study
- Life Cycle Cost Analysis
- Engineering Design
- Equipment Procurement
- Construction Bid Procurement for Material & Labor
- Environmental (Abatement)
- Construction Management
- Project closeout



Program Participants

- The NYC Department of Environmental Protection (DEP)
- Municipal Waste Water & Sewer Facilities
- Westchester County and local municipalities
- NYS Office of General Services (OGS)
- State University of New York (SUNY)

Waste Water Treatment Plant Typical Energy Conservation Measures

- Centrifuge replacement
- Boiler plants and auxiliary equipment replacement
- ADG (Anaerobic Digester Gas) system improvement
- Fuel cell installations
- Aeration system upgrades
- Sludge thickening and handling systems
- VFD installations
- Sludge gasification
- Geothermal pumps
- Instrumentation and automated process controls
- Electrical disinfections (ozone & UV)



***Current Project
Highlights***

North River Wastewater Treatment Plant

- Boiler plant and hot water piping replacement project at the 1.2M square foot facility on the West Side of Manhattan
- Distribution piping leaks resulting in a loss of 30,000 gallons of hot water per day
- Install 4 new low pressure steam boilers (3-800 BHP, 1-200 BHP) and replace 25,000 linear feet of hot water distribution piping
- Cost: \$37M
- Annual Savings: \$1.6 M



Bowery Bay WPCP

- Aeration system upgrade project
- Upgrade of approximately 67,000 fine bubble membrane diffusers
- Piping repairs where needed to reduce the losses caused by the escaping air
- Cost: \$6.4M
- Annual Savings: \$700K



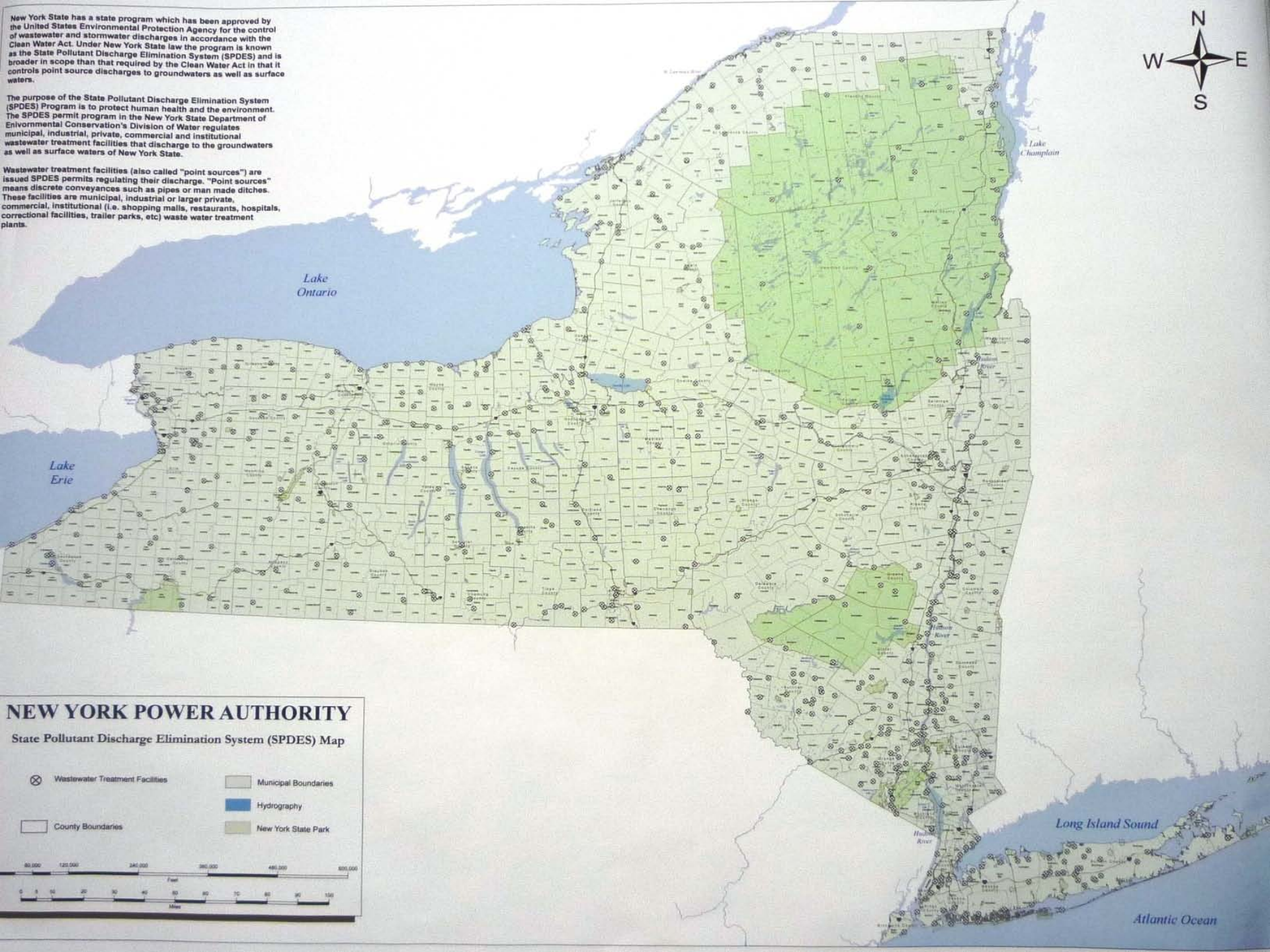
Current Projects

- **Coney Island WPCP – CI-099**
 - Power Efficiency Upgrades
 - Total Installed Cost = \$21M
- **Red Hook WPCP - RH-59**
 - Power Efficiency Upgrades and Generator Installation
 - Total Installed Cost = \$36M
- **Owl's Head Aeration**
 - Total Installed Cost = \$4.1M
- **Owl's Head Engines Phase I & II**
 - Total Install Cost= \$16.6 M & \$7.9M
- **ADG System Upgrade Phase I**
 - Total install cost= \$35.7 M
 - Hunts Point, Red Hook
 - Oakwood Beach, 26th Ward
- **Cedar Creek WPCP**
 - Total install cost= \$8.4 M

New York State has a state program which has been approved by the United States Environmental Protection Agency for the control of wastewater and stormwater discharges in accordance with the Clean Water Act. Under New York State law the program is known as the State Pollutant Discharge Elimination System (SPDES) and is broader in scope than that required by the Clean Water Act in that it controls point source discharges to groundwaters as well as surface waters.

The purpose of the State Pollutant Discharge Elimination System (SPDES) Program is to protect human health and the environment. The SPDES permit program in the New York State Department of Environmental Conservation's Division of Water regulates municipal, industrial, private, commercial and institutional wastewater treatment facilities that discharge to the groundwaters as well as surface waters of New York State.

Wastewater treatment facilities (also called "point sources") are issued SPDES permits regulating their discharge. "Point sources" means discrete conveyances such as pipes or man made ditches. These facilities are municipal, industrial or larger private, commercial, institutional (i.e. shopping malls, restaurants, hospitals, correctional facilities, trailer parks, etc) waste water treatment plants.



NEW YORK POWER AUTHORITY

State Pollutant Discharge Elimination System (SPDES) Map

- ⊗ Wastewater Treatment Facilities
- ▭ Municipal Boundaries
- ▭ County Boundaries
- ▭ Hydrography
- ▭ New York State Park





**New York Power
Authority**

Generating more than electricity

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