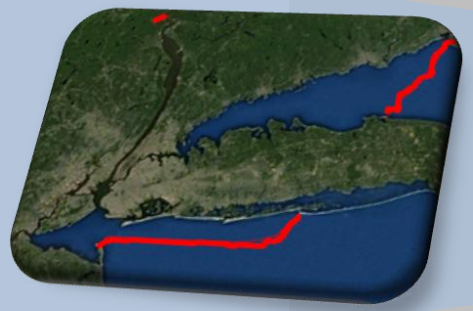
ANNUAL REPORT

INTERSTATE ENVIRONMENTAL COMMISSION

New York – New Jersey - Connecticut



2009

In Brief

INTERSTATE ENVIRONMENTAL COMMISSION

New York – New Jersey - Connecticut

2009 Annual Report In Brief

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INTERSTATE ENVIRONMENTAL COMMISSION

A Tri-State Water and Air Pollution Control Agency

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STATEMENT FROM THE CHAIRMAN

The year 2009 has been a difficult one for the Interstate Environmental Commission (IEC). The recession and fiscal crisis which has affected the country and the New York, New Jersey and Connecticut Tri-State Area which the Commission serves has affected the Commission as well, requiring the re-examination of Commission programs, staffing, goals and objectives. I am pleased to report that the IEC has emerged from this process better focused and equipped to fulfill its mission under the Tri-State Compact to address environmental issues within its Interstate Environmental District with renewed energy and commitment.

The Commission this year reinvigorated and re-emphasized the role of IEC's Environmental Laboratory which has been located on the campus of the College of Staten Island (CSI) since December 1993. The Laboratory is recognized by the Commission's member states of New York, New Jersey and Connecticut as a nationally accredited environmental facility and is certified by the National Environmental Laboratory Accreditation Program (NELAP) through the New York State Department of Health (NYS DOH), the New Jersey Department of Environmental Protection (NJ DEP) and the Connecticut Department of Public Health (CT DPH). NELAP is sponsored by U.S. Environmental Protection Agency. IEC's Laboratory has been, and continues to be, involved in a wide range of sampling and research projects. Many of those projects are described in detail in the Annual Report. A number of them are conducted in collaboration with CSI's Center for Environmental Science and other organizations

*On behalf of the Commission, I would like to emphasize that IEC's Laboratory is available to conduct sampling for, and participate in project work with, the environmental agencies of our member states and with other organizations. New descriptive material describing IEC's Laboratory and its activities has b*een prepared and is available for review.

I also want to point out that the Commission wishes to strengthen and enhance its collaborative working relationship with the environmental agencies of our member states – New York, New Jersey and Connecticut. In these difficult fiscal and budgetary times, IEC believes that the highest environmental value can be achieved where the environmental agencies of our Tri-State Area coordinate their activities and support and assist each other wherever possible. As can be seen from the examples cited in the Annual Report, the IEC has undertaken projects when requested by its member state environmental agencies. Examples of this include IEC's ambient water quality monitoring conducted in the State of New Jersey's Raritan Bay shellfish harvesting beds and IEC's Pathogen Trackdown Program conducted on the Byram River, an interstate waterway running between New York and Connecticut. IEC is actively looking to conduct other and similar programs and activities in conjunction with the environmental agencies of its member states.

The Commission is also re-emphasizing the important role it has played in the Tri-State Area as the focal point for scientific sampling, monitoring and the study of contaminant conditions which affect the quality of waters in the Tri-State District.

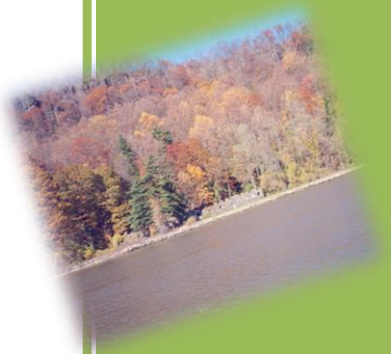
The Commission's Laboratory, its research vessel, the R/V Natale Colosi, and its extensive scientific sampling database are resources for those activities. The Commission is currently working to place its extensive scientific sampling database in a computerized format accessible by scientists, researchers and members of the public.

The Commission has also actively sought grants to supplement its traditional state and federal funding and I am pleased to report that in addition to being awarded several research grants this year described in the Annual Report, the Commission is involved in a number of cutting edge studies, including the areas of pharmaceuticals, green technology, and wastewater effluent. The Commission is interested in continuing with these and other research projects with important implications for human and aquatic health and safety within its Tri-State District. The Commission this past year continued its commitment and involvement with the Long Island Sound Study and the New York – New Jersey Harbor Estuary Program, and conducted special intensive surveys in support of those programs. We just completed our nineteenth year of monitoring Long Island Sound to document dissolved oxygen conditions, our ninth year of monitoring for pathogens in the New York – New Jersey Harbor Complex, our fourteenth year of sampling shell fish harvesting waters in the New Jersey portion of western Raritan Bay, and our seventh year of ambient and point source sampling to determine the causes of bacterial contamination in the Byram River. In addition to participating in these valuable programs, IEC works on a daily basis with the scientists and professionals of the United States Environmental Protection Agency and of the environmental agencies of our member states.

IEC also continues to be a bona fide presence in the environmental community and conducts education and outreach. I am pleased that IEC participated in National Marina Day and World Water Monitoring Day. This year saw the seventh annual World Water Monitoring Day, an event that IEC has participated in since it was begun in 2002 as National Water Monitoring Day. The Commission's outreach and education programs including meetings with key legislators, testimony before government committees and appearances before citizens groups, student internships programs, and public education campaigns. The Annual Report offers a full review of the wide ranging scope of the IEC's programs and activities, and includes an update of the Commission's legal activities in the areas of regulation and litigation as well as in the areas of scientific advancement. It is in limited print, but is available on the IEC's website. I invite you to visit IEC's website, www.iec-nynjct.org for continuing reports, back issues of the Annual Report, and news and information relating to IEC and its activities.

Finally, I want to express my gratitude to my fellow Commissioners and IEC staff for their hard work, dedication and commitment during this difficult year. We look forward to your continued support and to the Commission's continuing fulfillment of its mission under the Tri-State Compact in the coming year.

John M. Scagnelli -s-
Chairman



From the Desk of Ross Brady, Esq.

Acting Administrator

On August 27, 1935, Congress enacted the tri-state compact creating the Interstate Sanitation Commission, renamed the Interstate Environmental Commission (IEC) in 2000. The IEC was constituted in 1936, ratified by New York and New Jersey and then by Connecticut in 1941. IEC water quality regulations are codified in the laws of all three states. As IEC approaches the 75th anniversary of its compact, the Commission is as committed as ever to its mandate and mission as a tri-state water and air pollution control agency with a regional approach.

The IEC's mission is to protect and enhance environmental quality through cooperation, regulation, coordination, and mutual dialogue between government and citizens in the Tri-State Region.

The Commission strives for interstate cooperation and coordination and to harmonize water quality standards, regulations and requirements throughout its District. The IEC has also embarked on important monitoring projects and research vital to the environment, always maintaining strict quality control measures. The Commission's mandate is as important today as it was in the 1930s.

As an interstate agency, the Commission views the tri-state region a single environmental entity and is in a unique position to take the lead on regional issues. IEC can and does cross state boundaries in an impartial and unbiased manner.

The IEC laboratory has been located on the campus of the College of Staten Island (CSI) since late 1993. In addition to its day-to-day operations, IEC's laboratory personnel continue to collaborate with CSI on environmental projects of mutual concern. The IEC laboratory is a nationally accredited environmental facility.

The Commission's air pollution monitoring and response programs remain in place. IEC's 24-hour-a-day, 7-day-a-week answering service (718-761-5677) remains active and IEC personnel investigate as many complaints as its resources will allow. IEC also forwards complaints to the appropriate enforcement and health agencies.

The Commission plays an active role within environmental organizations and workgroups including, but not limited to the Long Island Sound Study and the NY-NJ Harbor Estuary Program, Interstate Council on Water Policy (ICWP) and Association of State and Interstate Water Pollution Control Administrators (ASIWPCA).

LEFT: Microbiological analyses at the IEC's laboratory.
ABOVE: Management Committee, Long Island Sound Study

The IEC performs public outreach and participates in educational programs such as National Marina Day and World Water Monitoring Day.

Boat inspection trips provide an opportunity to view regional waters.

IEC's library and archives continue to be updated and digitized in order to provide an accessible regional depository of water and air quality related subjects. IEC archives will increasingly be available though our website (www.iec-nynjct.org), which has greatly improved and will continue to advance.

IEC legal activities are focused on protecting the waters of the District, fostering cooperation among member states and environmental stakeholders while enforcing IEC regulations within the meaning of the compact. The IEC is involved in the enforcement of IEC's Water Quality Regulations and ensuring inclusion of its regulations in discharge permits, Consent Orders designed to prevent debris from escaping from the Fresh Kills Landfill located on Staten Island, and as an amicus party to an administrative hearing requested by New York City regarding nitrogen and combined sewer overflows in the reissued permits for New York City's water pollution control plants.

The super boom prevented debris from escaping from the Fresh Kills Landfill.

In uncertain times marked by economic stress on state and national levels, the nation has focused on environmental concerns as a vital area where commitments must be met and the IEC as guardian must not falter. Environmental protection has direct social, economic and health consequences.

The IEC remains the guardian of the waters of our environmental District and we continue to do more with less. IEC Commissioners and professional staff are dedicated to upholding the highest quality research, monitoring and analyses, providing valuable resources for our member States, our region and the nation. Water and air quality monitoring and pollution abatement are our priorities and hypoxia in our waters, combined sewer overflows and emerging contaminants continue to need attention and solutions. IEC has been and will be a beacon for research, analysis and solutions that ensure precious water quality.

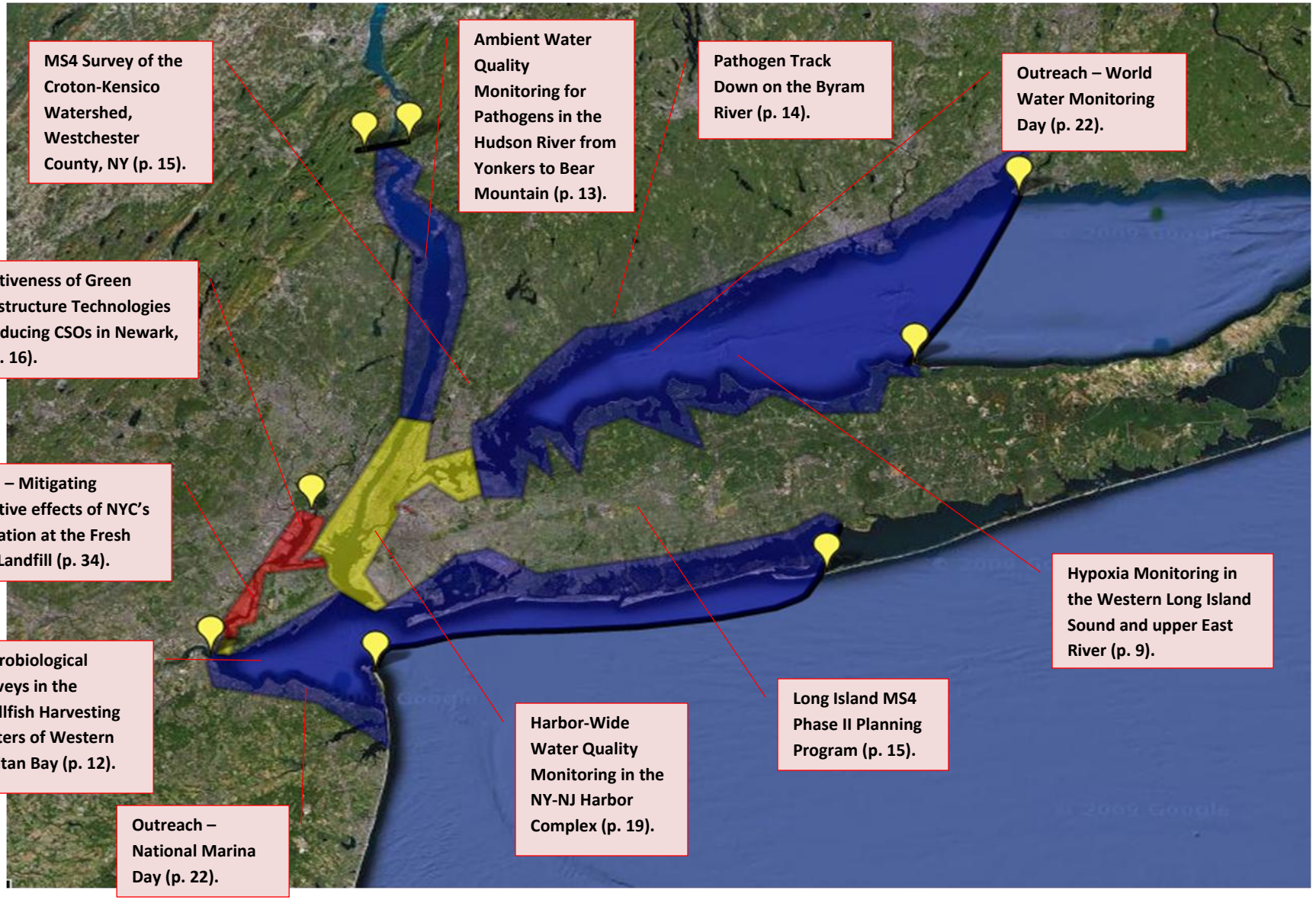
IEC Information booth at the Environmental Justice conference held at the College of Staten Island.

* *Howard Golub had a serious illness in March 2009 and we wish him well.*

THE INTERSTATE ENVIRONMENTAL DISTRICT

Classification of Waters

Yellow Watermarks: Boundary | Solid Black Lines: Boundary Lines | Blue Areas: Class A Waters | Yellow Areas: Class B-1 Waters | Red Areas: Class B-2 Waters



The Commission's Laboratory

The Interstate Environmental Commission's laboratory has been located on the campus of the College of Staten Island (CSI) since December 1993. Its role is to provide data of the highest quality to be used in decision making by environmental managers and researchers.

The Commission's laboratory is dedicated to producing technically and legally defensible data through sound science and nationally accepted quality assurance practices.

The IEC's laboratory is recognized by the Commission's member states as a nationally accredited environmental facility. The laboratory is certified by the National Environmental Laboratory Accreditation Program (NELAP) through the New York State Department of Health (NYS DOH), the New Jersey Department of Environmental Protection (NJ DEP) and the Connecticut Department of Public Health (CT DPH). NELAP is sponsored by the US EPA. It is a program that focuses on the technical competence of the entity monitoring the environment.

Having its permanent facility in New York, the IEC's laboratory sought and received primary NELAP accreditation from the NYS DOH (Lab ID: 10437, www.health.state.ny.us). To ensure confidence and quality in the entire spectrum of its environmental testing, the laboratory also received primary NELAP accreditation from the NJ DEP for those parameters that the NYS DOH does not provide primary accreditation (Lab ID: NY240, www.nj.gov/dep/oqa). Furthermore, the laboratory received secondary NELAP accreditation from the NJ DEP and CT DPH (Lab ID: PH 0320, www.ct.gov/dph) for those parameters already certified by the NYS DOH.

The laboratory successfully participates every year, as required by NELAP, in two rounds of proficiency testing administered by the NYS DOH and also, in two voluntary proficiency rounds administered internally. The laboratory is subject to spontaneous state auditing, annual lab and field internal auditing, as well as annual state re-certifications.

A group of experienced and highly qualified professionals makes up the Commission's laboratory. The staff is involved in a wide range of activities, which include but are not limited to:

- conducting ambient water quality sampling and analyses to document hypoxic conditions, assess the sanitary conditions of state and interstate shellfish beds, track down pathogens, and calibrate models used in TMDL development;
- investigating industrial and municipal facilities year-round; and
- conducting field inspections of CSOs, SSOs and MS4s during dry weather to discover illegal discharges and take steps to have them remediated.

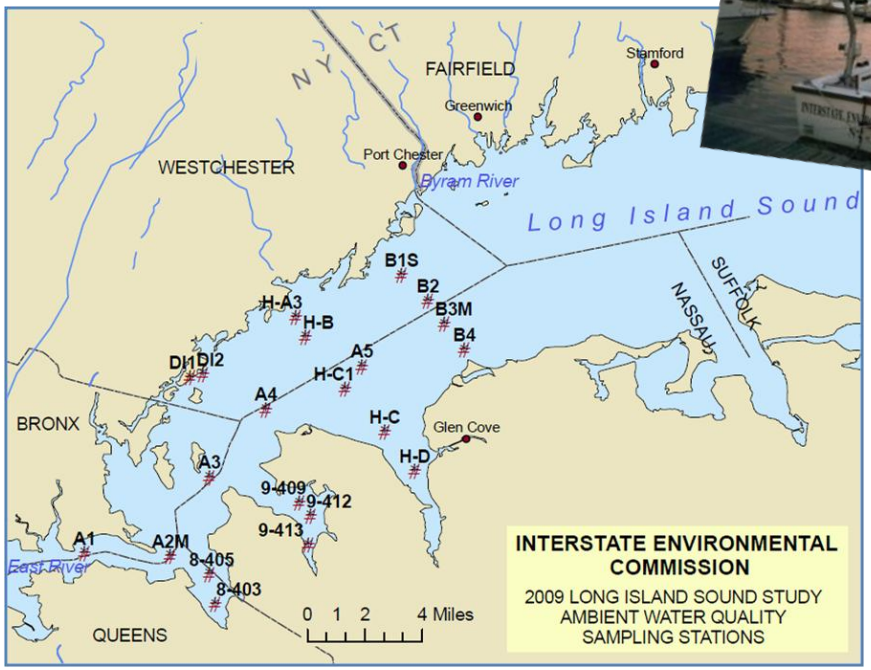
In addition to the day-to-day analyses performed at the laboratory, the Commission, both on its own and in conjunction with the Center for Environmental Science at CSI, submits proposals for research projects whose results will benefit the environment and the citizens throughout the tri-state region. An ongoing collaborative research study pertains to chlorine reactions with phenolic residues in treated effluents. The study has successfully established the mechanisms of toxic chlorophenol formation resulting from treatment plant disinfection (chlorination). The laboratory director and staff continually have research papers and articles published, make presentations at prestigious environmental forums and advise students enrolled in the CES Masters Degree program.

Hypoxia Monitoring In Western Long Island Sound

With an ongoing need to document the hypoxic conditions in Long Island Sound (LIS) and its embayments, where the majority of primary recreational activities in the tri-state region take place, the US EPA - Region 2 requested once more that the Commission continue to conduct intensive ambient water quality surveys in support of the Long Island Sound Study (LISS). For the 19th consecutive year, the Interstate Environmental Commission, using its research vessel, which is available throughout the year, participated in a cooperative sampling effort with other government agencies during the critical summer season of 2009 to measure dissolved oxygen (DO) and other relevant parameters. This information enhances existing data sets and also measures the effectiveness of management activities and programs implemented under the Comprehensive Conservation and Management Plan.

All field measurements were summarized and forwarded weekly to the US EPA's Long Island Sound Office, CT DEP's Bureau of Water Management, Nassau County Health Department, NYS DEC Division of Marine Resources, NYC DEP Marine Sciences Section, Westchester County Department of Health, US EPA's modeling contractor, and to several volunteer monitoring groups. The Long Island Sound data, as well as all Commission ambient water quality data, can be retrieved from the Commission's office and STORET, the US EPA's national database.

Due to the constrained 2009 hypoxia event, 12 weekly sampling runs were conducted from late June through September 14th. Hypoxia occurs when DO readings fall below 3 mg/l and on September 14 hypoxia appeared to end since all DO readings, with the exception of only three, were above 5 mg/l. The ambient network of 21 stations was sampled weekly and in situ measurements were made for pH, temperature, salinity, DO and Secchi depth. Measurements were taken one meter below the surface, at mid-depth, and one meter above the bottom. For stations deeper than 15 meters, measurements were taken at 5 depths — the two additional depths being: one equidistant between the surface and mid-depth, and one equidistant between mid-depth and bottom. Samples for chlorophyll a, a pigment found in aquatic plants and used as an indicator of algal production, were collected at all stations one meter below the surface on alternate runs. These were filtered, archived, frozen, and then shipped to the Center for Environmental Sciences and Engineering at the University of Connecticut (UCONN).



IEC's research vessel, the R/V Natale Colosi, allows staff to address deficiencies quickly and effectively.

Hypoxia Monitoring In Western Long Island Sound, Cont'd

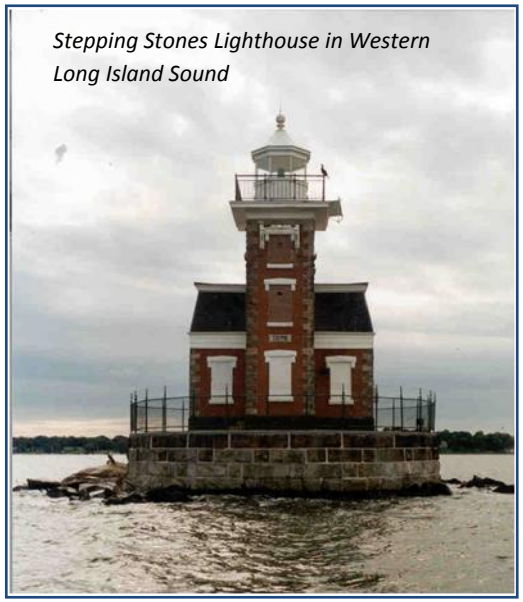
Dissolved oxygen is a measure of the ecological health of a waterbody. Low levels of oxygen can be fatal to aquatic life if levels remain persistently below the organisms' threshold to survive. A DO concentration of 5 mg/l (the minimum DO requirement at all times for IEC's "Class A" waters) is considered to be protective of most marine aquatic life.

Measurements of DO concentrations in both surface and bottom waters are separated and grouped into the following three categories:

- DO concentrations that are less than three mg/l (<3.0 mg/l) reflect hypoxic conditions; under these conditions, very few types of juvenile fish can survive, many adult types of fish will avoid or leave the area, and those organisms not free to move (sessile) will die.
- DO concentrations which are greater than or equal to three mg/l (≥3.0 mg/l) and less than five mg/l (<5.0 mg/l); marine resources surviving in this range are at threshold levels for reduced growth and abundance.
- DO concentrations of at least five mg/l (≥ 5.0 mg/l) are considered to be protective of most marine aquatic life. Five mg/l is IEC's DO criterion for "Class A" waters.

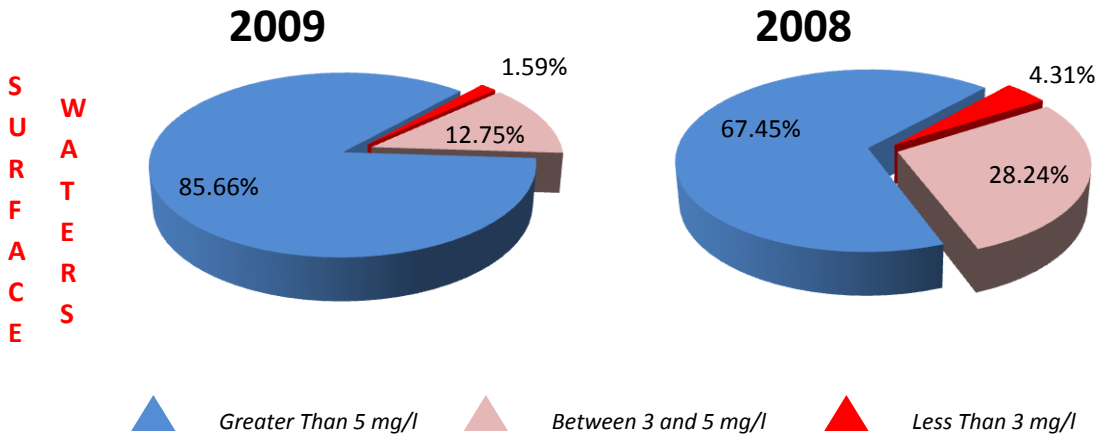
The impact to marine organisms is also dependent on the duration and spatial extent of hypoxia, as well as the water temperature, salinity and the distribution and behavioral patterns of resident species.

As shown on the pie charts below depicting 2008 and 2009 monitoring data, the condition of surface waters was significantly better in 2009 than 2008. The percentages of 2009 surface water DO measurements in the categories of Greater Than 5 mg/l, Between 3 and 5 mg/l, and Less Than 3 mg/l were 85.66%, 12.75% and 1.59%, respectively. In the same category order, the results of the 2008 survey were 67.45%, 28.24% and 4.31%, respectively. For all stations, the surface water range of DO was 2.7 to 17.6 mg/l. The weather patterns for 2009 were unremarkable: wet from June through July, very humid summer with little wind.



Stepping Stones Lighthouse in Western Long Island Sound

DO Monitoring in Western LIS

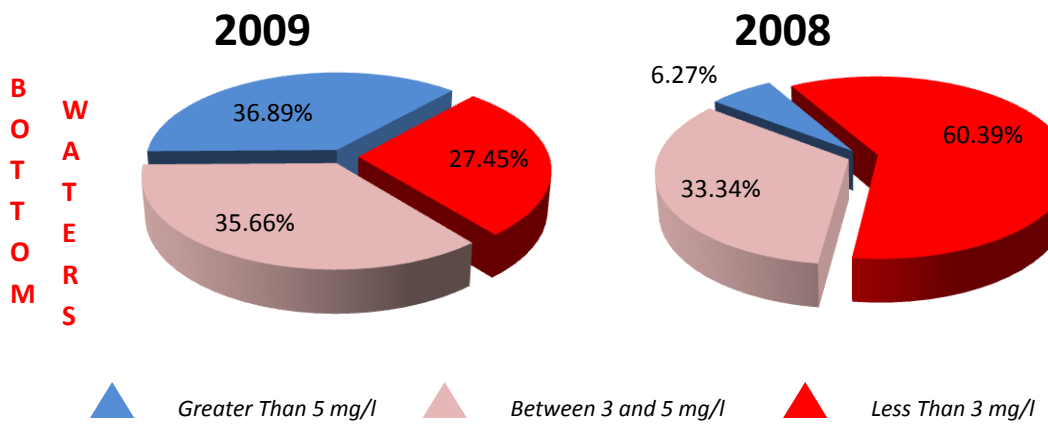


Hypoxia Monitoring In Western Long Island Sound, Cont'd

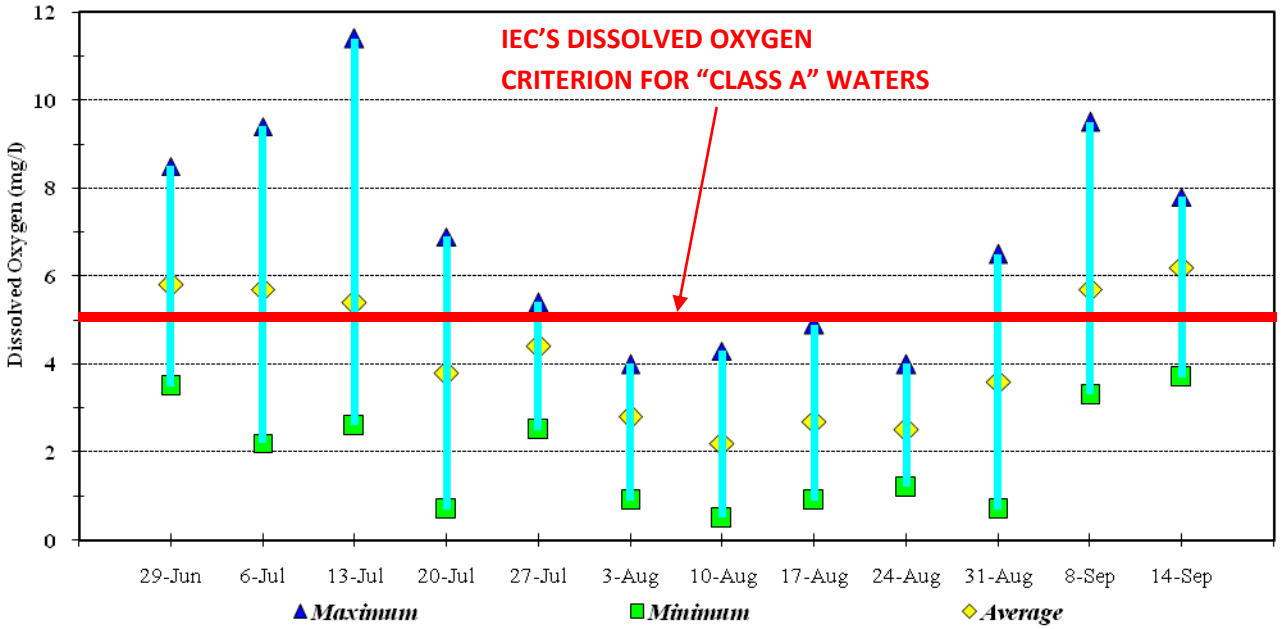
Based on the percentage of hypoxic readings, the bottom waters of the Sound were considerably better in 2009 as compared to 2008. As depicted in the pie charts on the right, the percentages of 2009 bottom water measurements in the categories of Greater Than 5 mg/l, Between 3 and 5 mg/l and Less Than 3 mg/l were 36.89%, 35.66% and 27.45%, respectively. In the same category order, the bottom water results of the 2008 survey were 6.27%, 33.34% and 60.39%, respectively. The DO in bottom waters ranged from 0.5 (August 10th) to 11.4 mg/l, with the low values representing extreme hypoxia and, in some areas, anoxic conditions. A variety of natural and anthropogenic factors (water pollution, municipal water pollution control programs, weather, circulation pattern changes, proliferation or lack of algal blooms, etc.) contribute to hypoxia and year-to-year variability.

The waters of western LIS, which tend to be stratified, were well mixed, but hypoxic. Hypoxic (DO < 3 mg/l), as well as anoxic conditions (DO < 2 mg/l), were observed in bottom waters from July 6th to August 31st. As early as July 20th, two stations recorded values less than 2 mg/l. For the six-week period from July 20th to August 31st, 6 stations recorded values of less than 1 mg/l. The temporal ranges of poor surface and bottom dissolved oxygen concentrations were an improvement over those of the 2008 survey.

DO Monitoring in Western LIS



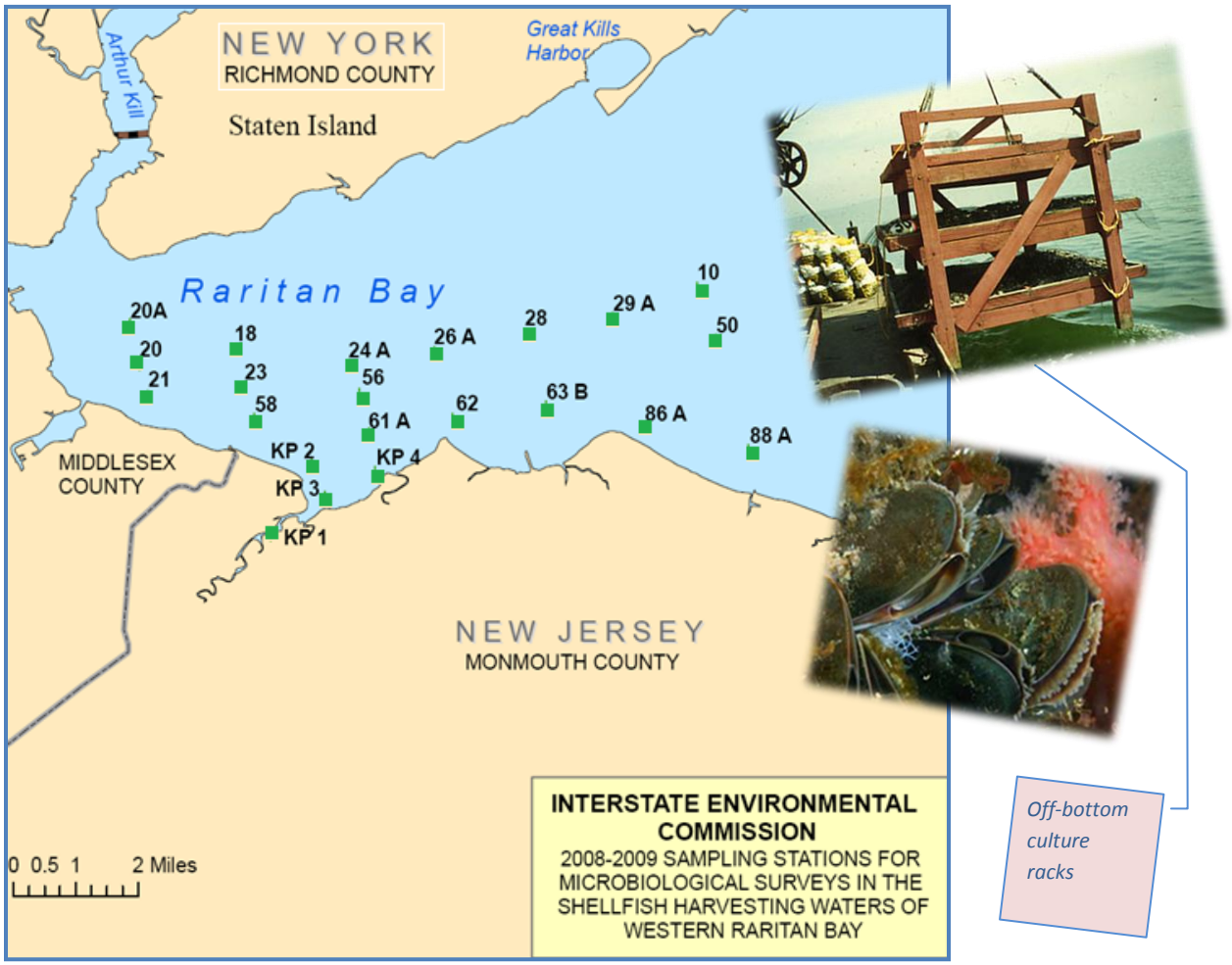
BOTTOM WATERS – 2009 DO Monitoring in Western LIS



2008-2009 Microbiological Surveys in the Shellfish Harvesting Waters of Western Raritan Bay

The New Jersey Department of Environmental Protection (NJ DEP), Bureau of Marine Water Classification and Analysis (BMWCA), regularly conducts ambient water quality monitoring of the State's shellfish harvesting beds. The BMWCA has requested IEC to assist in sample collection in western Raritan Bay during winter and spring for the past 14 years.

Sampling runs were planned to collect data to assess the microbiological quality of shellfish waters; following protocols established by the US FDA's National Shellfish Sanitation Program. Sample collection, storage and delivery adhered to methods outlined in the NJ DEP Field Sampling Procedures Manual. The surveys were triggered by storm events with an intensity of at least 0.2" of rain.



Off-bottom culture racks

A window of 48 hrs subsequent to rain gives ample time to document the effects of the runoff. All samples are collected from surface waters at 22 sampling stations. In conjunction with the NJ DEP/US EPA Performance Partnership Agreement, all samples were transported by IEC to the US EPA's Edison, NJ, laboratory for fecal and total coliform analyses.

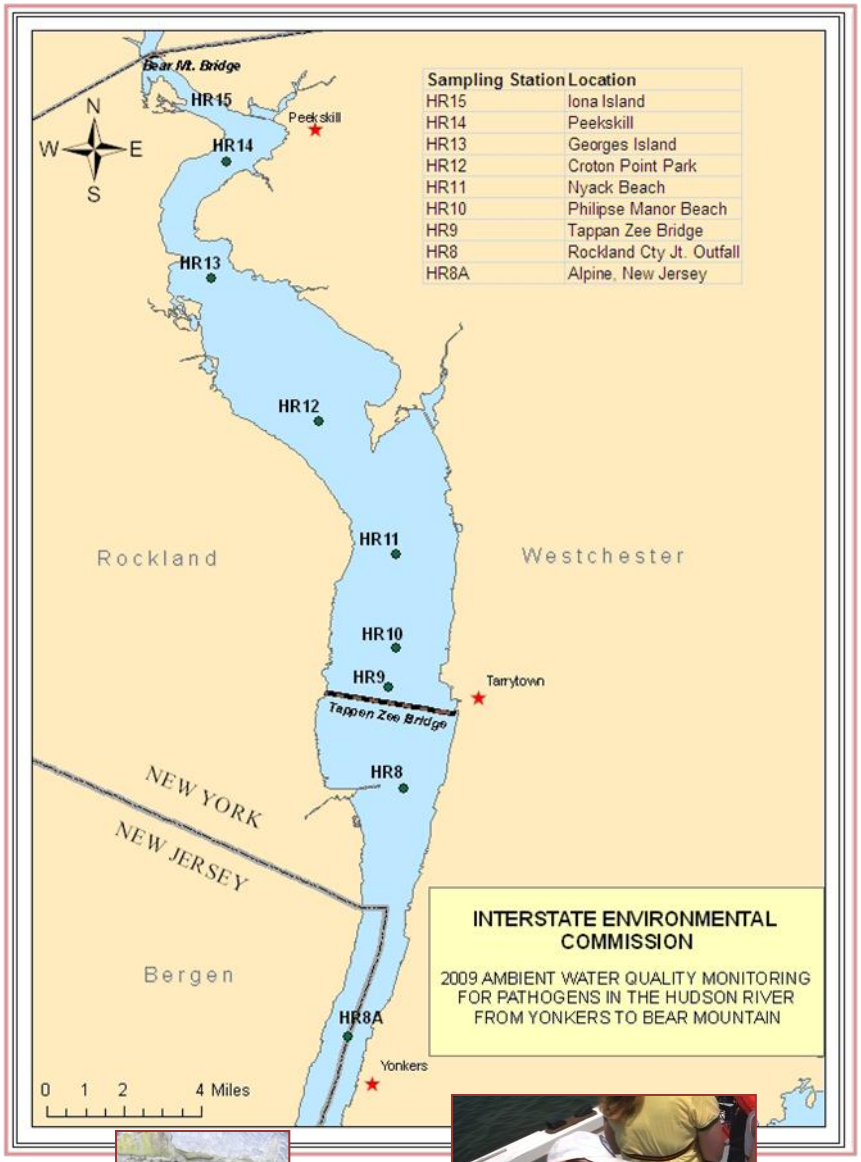
During March 2009, the Commission's R/V Natale Colosi was moved to Raritan Bay and from March 18 to June 1, 2009, one survey run was required. The Commission, at the request of BMWCA, will again conduct this survey over the 2009-2010 winter and spring seasons.

The 10,400 acres of Raritan Bay waters off the eastern shore of Staten Island, NY, represent nearly 45% of New York State's hard clam industry. During 2002, a shortened shellfish season limited the harvest to 48,102 bushels from these waters. The economic hardship of the shortened season was compounded on March 13, 2003, when the NYS DEC Div. of Marine Resources closed the harvest for 2003 due to quahog parasite unknown (QPX). QPX is a protozoan parasite (slime mold) that infects the soft tissue of the clam. On May 2, 2005, about 2,600 acres were reopened for transplant harvest. NJ DEP closed areas of Raritan Bay and Sandy Hook Bay to relay harvest, but allowed depuration harvest to continue in Raritan Bay.

2009 Ambient Water Quality Monitoring for Pathogens in the Hudson River from Yonkers to Bear Mountain

Several recreational beaches, as well as many productive shellfish beds within the Interstate Environmental District (IED) have been frequently closed (some areas closed since the 1920s), primarily due to pathogens contamination from combined sewer overflows and stormwater runoff. Priority attention has therefore been placed on surveys leading to a better understanding of the association between pathogens levels and point and non-point source runoff, as well as pathogens distribution in receiving waterbodies.

While most of the waters in the IED have been recently sampled by IEC or other agencies for bacterial parameters, there is limited monitoring of pathogens for the portion of the Hudson River between Yonkers and Bear Mountain. Recognizing this data gap, the Interstate Environmental Commission, in cooperation with the NYS Dept. of Environmental Conservation's Hudson River Estuary Management Program, and local county health departments, developed a pathogens monitoring program for the aforementioned portion of the river. The results of this plan will be used to create a database for fecal coliform, total coliform, enterococcus and E. coli. Similar District-wide surveys were conducted between 2001 and 2008.



In 2007, the IEC completed a total of five sampling runs and between May 10th and August 12th, 2008, the remainder of wet weather samplings was completed. Funding logistics and QAPP approvals were completed during late 2009 and this survey will continue on April 2010.

Mid–river samples were taken at nine pre-determined locations that span from Iona Island (just south of the Bear Mountain Bridge) to a mid-river location by Alpine, NJ, and Yonkers, NY. All samples were transferred to the IEC laboratory and analyzed for pathogens, including enterococcus, fecal and total coliform and E. coli. Temperature, salinity, conductivity, pH and water clarity (Secchi depth) were also measured at each site. Bacterial growth is impacted by temperature. Favorable temperatures boost bacterial growth. Salinity levels provide an indication of the extent of mixing of fresh water with salt water.

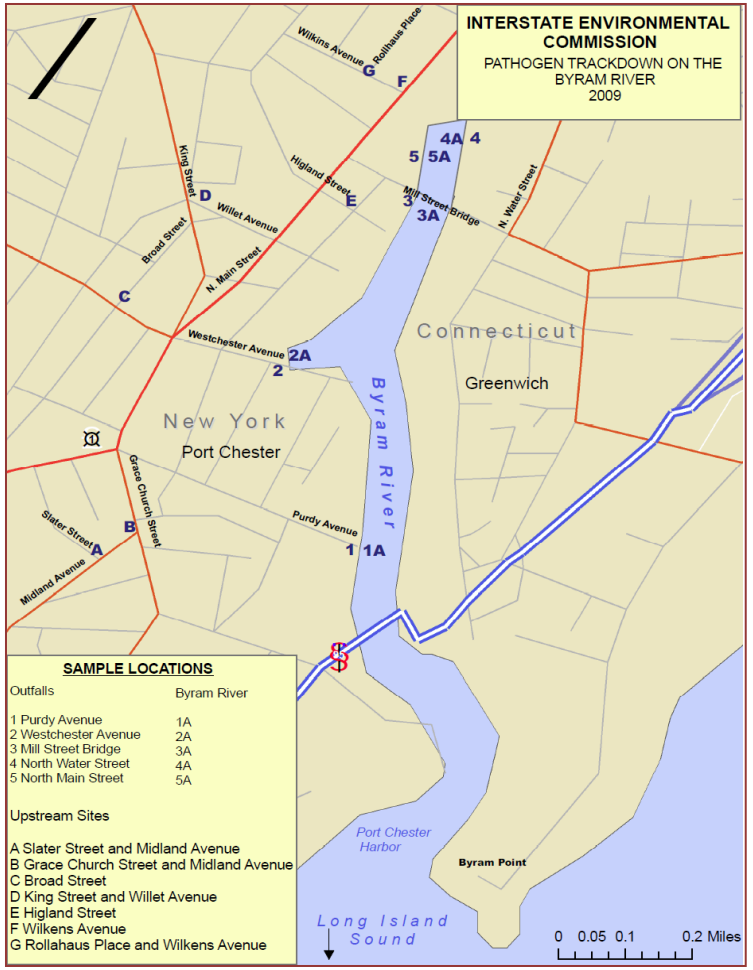
Pathogen Track Down on the Byram River

The Byram River is an interstate waterway about 13 miles long. It runs between New York and Connecticut, with Port Chester, Westchester County, NY, on the west bank and Greenwich, Fairfield County, CT, on the east. The river mouth empties into Port Chester Harbor in Long Island Sound. Persisting bacterial contamination in the Byram River negatively impacts recreational shellfish beds in the adjacent Greenwich Harbor and beaches in the New York-Connecticut area. Identifying and eliminating pollution sources is a priority. The areas around this portion of the river are highly developed with numerous potential industrial and residential sources of bacteria.

Since 2002, the Commission has been working with the CT Dept. of Environmental Protection, NYS Dept. of Environmental Conservation - Region 3, Westchester County Department of Health, Greenwich Health Department, and the Village of Port Chester to eliminate potentially harmful discharges into the Byram River. Throughout the years, the IEC, Westchester County and municipalities have been locating illegal connections to storm sewers or cross connections between sanitary and storm sewers that empty into the Byram River.

Due to persistent bacterial contamination, the Interstate Environmental Commission will continue to meet and work with the other regulatory agencies in 2010 to correct this issue. The Commission is also working with a grassroots citizen's organization in addressing Byram River watershed issues and will begin working with Columbia University to perform water quality monitoring and modeling along the Byram River through funding from the American Recovery and Reinvestment Act (ARRA).

Lower Byram, near its confluence with LIS.



American Recovery and Reinvestment Act and Clean Water Act Section 604(b) Projects

The IEC is the recipient of three grant awards from the NYS DEC to support three water quality planning projects, as part of the Clean Water Act (CWA) Section 604(b) funds made available when President Obama signed the American Recovery and Reinvestment Act (ARRA) into law. The ARRA provides $17.025 billion nationwide ($1.7 million to New York State) to protect infrastructure, create new jobs through green infrastructure developments, remediate hazardous waste sites, protect air and water quality through comprehensive management activities and ensure safety against natural disasters.

Upper Byram

Water Quality Monitoring and Modeling of the Byram River

The Commission will perform a minimum of three dry weather and three wet weather ambient water quality sampling events along the Byram River to assess water quality. A GIS-based watershed planning tool will also be implemented to: 1) help design specific flow and water quality monitoring programs; 2) prioritize sub-basins that contribute significant nutrient and pathogen loads; and 3) identify green infrastructure projects for funding recommendations. This study will commence in December 2009 and will last approximately 25 months with an award of $87,171.

MS4 Survey of the Croton-Kensico Watershed, Westchester County, New York

IEC will collaborate with the Croton-Kensico Watershed Intermunicipal Coalition to develop a regional map of a municipal separate storm sewer system (MS4) within a sub-watershed of the Croton-Kensico Watershed. This study will start December 2009, for a duration of about 25 months (expected completion: summer of 2011) with an award of $28,500.

Long Island MS4 Phase II Planning Program

IEC will act as a pass-through entity to provide Nassau and Suffolk MS4 management planning assistance. The program involves a combination of workshops, presentations, site visits, workgroups and in-depth consultations as provided for by the NYS Sea Grant Long Island - MS4 Planning Program. Work will include assisting over 100 municipalities with planning, implementing, evaluating and documenting existing stormwater programs. Supporting inter-municipal stormwater programs will also be a priority. Funding for this study will last two years.

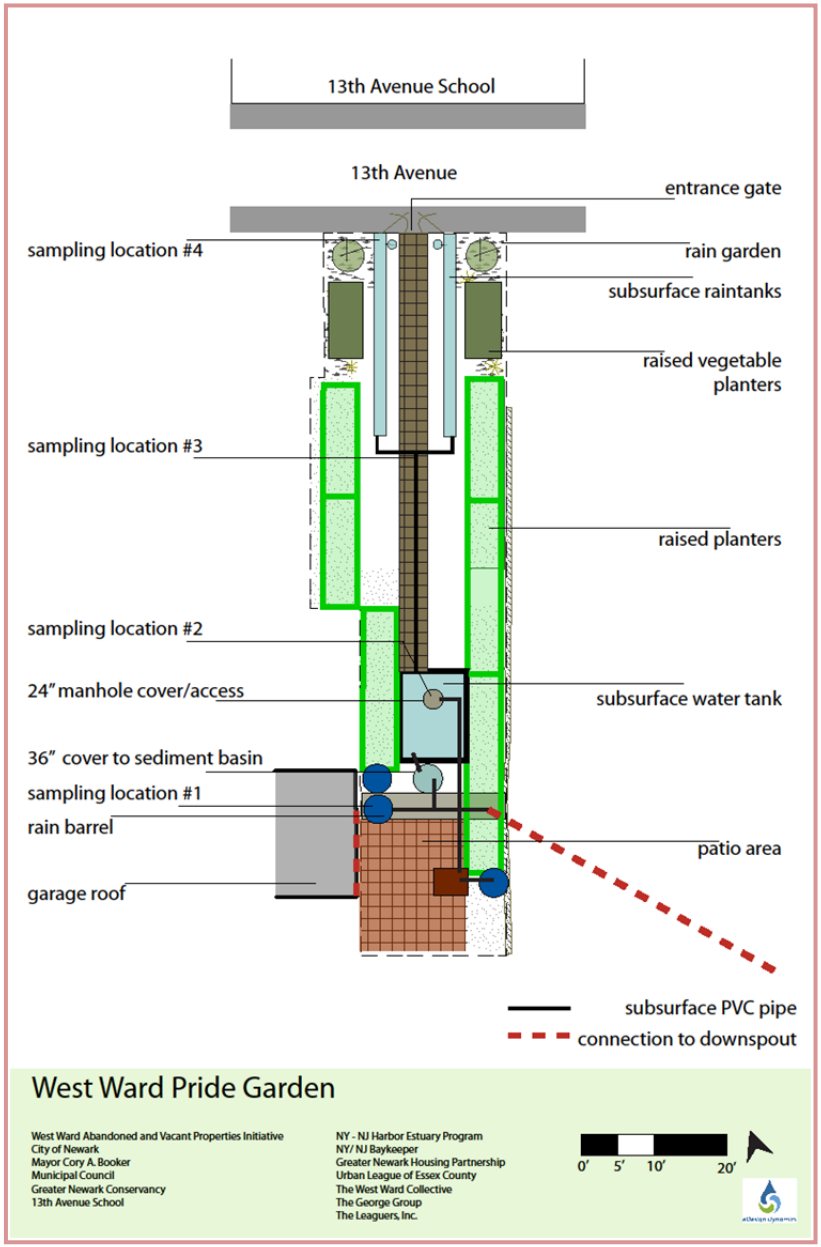
Other Projects and Grants

The Interstate Environmental Commission continues to pursue funding opportunities that support and further its vital role in water quality monitoring and planning. The Commission collaborates with other interstate agencies, member state and federal entities and other environmental stakeholders in the region, through solicited and unsolicited grants from a variety of sources, with the primary objective to fund applied water quality research and projects that will bring benefits to waterways throughout the Interstate Environmental District.

Implementation and Assessment of the Effectiveness of Green Infrastructure Technologies in Reducing Combined Sewer Overflows in Newark, NJ

Green infrastructure (GI) technologies have the potential to mitigate a variety of stormwater issues. A pilot study was conducted in Newark, NJ, with the primary objective of constructing and monitoring a suite of GI measures to assess their effectiveness in minimizing combined sewer overflow (CSO) impacts. The NY/NJ Harbor Estuary Program and the NY/NJ Baykeeper supported this study to design, construct and instrument several GI measures on a city-owned vacant lot in the West Ward neighborhood of Newark, NJ, with the intent to monitor the effect of GI measures on water quality and quantity. The project site is located across the street from an elementary school in a residential/urban area in which stormwater is conveyed by CSOs to the Passaic River.

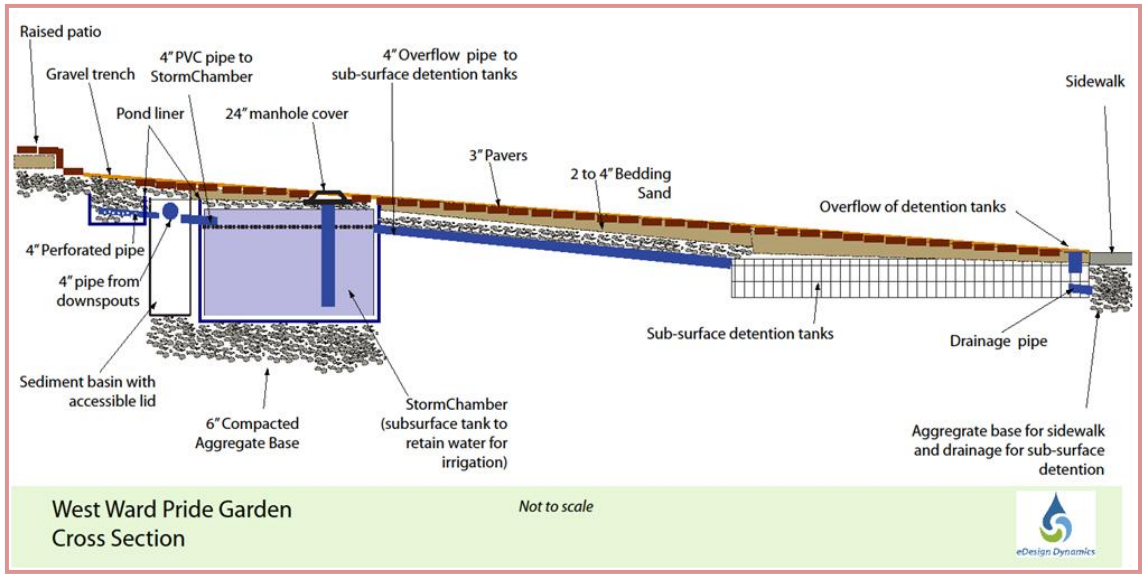
West Ward Pride Garden - Student/Community Involvement



Other Projects and Grants, Cont'd

Upon installation of the GI measures, IEC staff will collect and analyze samples during successive wet-weather sampling events to monitor water quality (pathogens, metals, etc.) at different locations within the network's design. Rain gauges and data loggers will continuously record water quantity parameters. Ultimately, water quality and quantity data collected in this pilot study will demonstrate the functionality of different GI technologies and provide recommendations regarding their technical feasibility, costs, benefits, and implementation at additional locations in Newark and in the NY-NJ Harbor Estuary Region.

The network of GI measures implemented includes: a subsurface retention water tank, above ground cisterns, rain barrels, subsurface detention tanks, permeable pavement, raised planting beds and rain gardens. Since there is no City water supply, a water reuse system was designed with the intent of providing 100% irrigation at the project site. In addition to direct rainfall, stormwater from adjacent rooftops has been re-directed on-site to flow through these GI technologies before reaching the street.



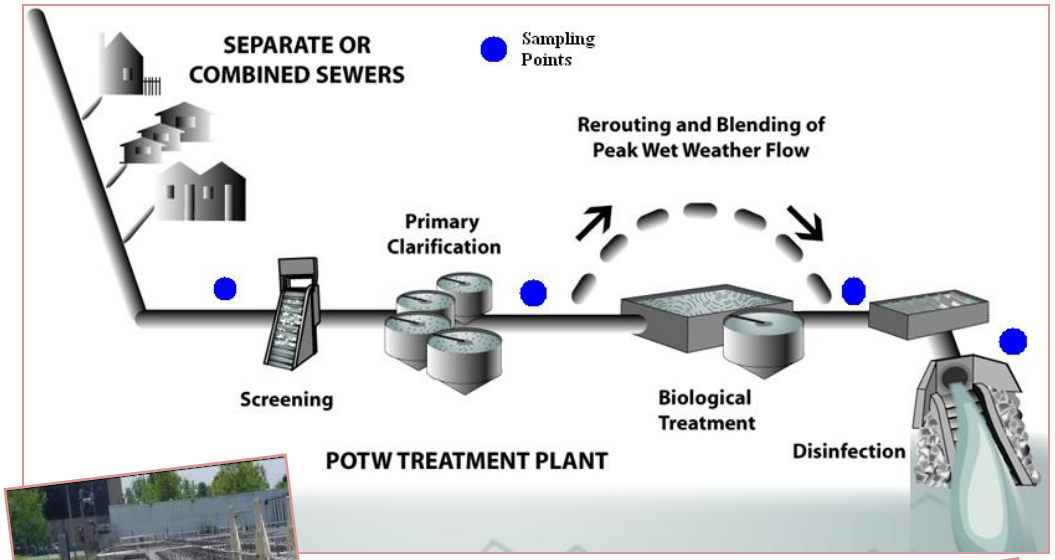
Rain barrel / Cistern

Rain Garden

Permeable pavement

Impact of Blending During Stormflow on Disinfection (Using Chlorination) at Wastewater Treatment Plants

In 2006, the Interstate Environmental Commission began work on a comprehensive research project funded by a contract administered by the US EPA, Office of Water, to determine the microbiological impact of blending. Blending occurs when the influent to a wastewater treatment plant (WWTP) exceeds the plant's secondary treatment capacity. It is the practice of diverting part of the primary effluent – the excess to the plant's secondary treatment capacity - around secondary treatment. The diverted flow is then disinfected, together with the secondary effluent, prior to discharge. Blending allows the delivery of maximum flows to WWTPs during wet weather, in order to reduce CSO events, which is encouraged by the US EPA 1994 CSO Policy.



An examination of the relationship between the concentrations of indicator bacteria and the level of total residual chlorine (TRC) in the WWTP's influent, primary effluent, secondary effluent and final effluent during wet and dry weather was performed. To better understand the impact of blending on CSO abatement and receiving water quality, a detailed sampling plan was implemented. All field work and sampling was performed by IEC staff.

Wet weather sampling started at the beginning of bypassing secondary treatment. In NYC treatment plants, this typically happens when the influent flow exceeds one and a half times the permitted flow limit. During the period from July 2006 to April 2007, 5 dry weather and 12 wet weather events were conducted. In situ field measurements were taken for TRC and pH. Analyses performed by the IEC laboratory included BOD, TSS, turbidity (effluent only), enterecoccus and fecal coliform.

Due to the nature of this project, an extensive amount of inter-agency collaboration and coordination was required. In addition to IEC's field collection and bacterial analyses of samples, two divisions of US EPA Edison performed additional analyses: the Division of Environmental Science and Assessment, where analyses for Giardia and Cryptosporidium were performed, and the Office of Research and Development (ORD), where particle size distribution analyses were completed. Virus (such as adenovirus, astrovirus, rotavirus, enterovirus, polio, coxsackie and echo viruses, Hepatitis A, calicivirus and reovirus) and coliphage samples were analyzed by Biological Consulting Services of North Florida (BCS), which also performed Cryptosporidium infectivity analyses, and protozoa analyses when the US EPA Edison laboratory was not available. US EPA's lab in Cincinnati was involved in bacterial analyses by utilizing PCR methods. Following validation and interpretation of all collected data, a final report was developed by the IEC and released by the US EPA.

Harbor-Wide Water Quality Monitoring Activities In the New York-New Jersey Harbor Complex

As part of and in cooperation with the NY-NJ Harbor Estuary Program (HEP), the Interstate Environmental Commission has been chairing an Ad Hoc Committee to develop a harbor-wide water quality monitoring survey consistent with the NYC DEP Harbor Survey. The conceptual monitoring survey is in place and addresses the entire NY-NJ Harbor Complex, which includes state and interstate waters, as well as tributaries. The Committee includes the IEC, US EPA - Region 2, NYS DEC, NJ DEP, NYC DEP, and the New Jersey Harbor Dischargers Group (NJHDG), which is chaired by Passaic Valley Sewerage Commissioners (PVSC). All of the aforementioned agencies have existing water quality monitoring programs within the HEP's core study area.

To assess the data gaps necessary to have harbor-wide monitoring, the Committee looked at all aspects of the current and future sample/data collection programs, including the parameters of concern, waterways, monitoring scenarios, methodologies, laboratory capabilities and capacities, quality assurance and control and final products. This Committee sought input from all HEP workgroups to identify needs.

Under way in late 2003, the NJHDG, with an initial grant from the HEP, established an ambient water quality monitoring program consisting of 33 stations. Subsequently, all funds were allocated from internal resources.

During 2004, monitoring and sampling for 16 parameters, including dissolved oxygen, nutrients and pathogens (except enterococcus) were conducted weekly between May and September, and bimonthly between October and April. Three laboratories located at the Bergen County Utilities Authority, Middlesex County Utilities Authority and PVSC performed all analyses. This program was maintained in 2009.

During the 2008 fall season, the report entitled, "Harbor-Wide Water Quality Monitoring Report for the New York-New Jersey Harbor Estuary" was issued. The report can be accessed electronically at www.harborestuary.org. The next published report is planned for 2010.

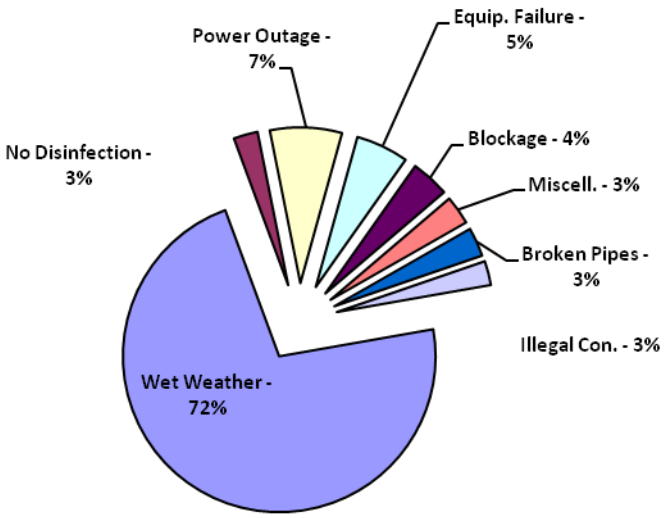
Regional Bypass Workgroup

The Regional Bypass Workgroup (RBWG) was formed in 1997 to address the issue of unplanned bypasses of raw and partially treated sewage. The Interstate Environmental Commission has chaired the RBWG since its inception. The RBWG has members from the environmental and health departments of the Commission's three member states, the IEC, National Park Service, NJHDG, NYC DEP, US EPA, US FDA, US Coast Guard, and county health officials.

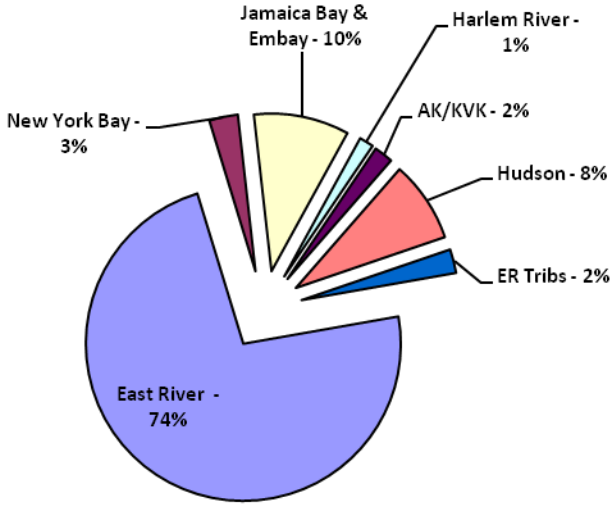
The Workgroup has been using the Regional Bypass Model (RBM); upgraded in 2008, the RBM v2.0 is a mathematical tool developed to predict which areas may be affected by a particular bypass. Specifically, the quick predictions can determine whether a discharge occurring at a certain point will affect another area, and if there should be concern as to whether a beach or a shellfish area should be closed. The RBM takes into account times of discharge, tidal cycles and temperatures and it is useful throughout IEC's environmental District. Also, regional notification protocols were put in place and are updated annually.

The majority of NYC and northern NJ collection systems are comprised of combined sewers. When there is rain, the flows to wastewater treatment plants increase. If the flow is greater than the plant's design flow, part of the flow is "throttled." This throttled flow is considered to be a bypass.

2009 Bypass Events - Common Causes



2009 Bypass Events per Waterway



For the first 11 years (1998 to 2008), the IEC received between 93 and 275 bypass event notifications. Originally, the focus was on raw sewage, but it was expanded to address any type of spill, i.e., chemical, oil, fuel, sludge and treatment reductions. 201 bypass events were reported to the IEC from January 1 to November 30, 2009 (200 in NY, 1 in NJ and 0 in CT). Of the 200 NY bypasses, 0 occurred in Region 1 (Nassau and Suffolk), 198 in Region 2 (5 NYC Boroughs) and 2 in Region 3 (Westchester and Rocklan).

Although most of the bypass events occurred in Region 2, it should be noted that the majority of the treatment facilities, pump stations, regulators and gravity sewers and force mains exist in this region.

184 of the 201 bypass events in 2009 were comprised of raw sewage. Other types of bypasses included disinfected wastewater with primary treatment, secondary treatment with no disinfection and sludge spills. During the critical time of the year when the majority of the public is recreating on local waters and beaches (Memorial Day weekend to Labor Day), there were 90 releases, or 45% of the total.

305(b) Assessments - STORET

Clean Water Act Section 305(B) Water Quality Assessment

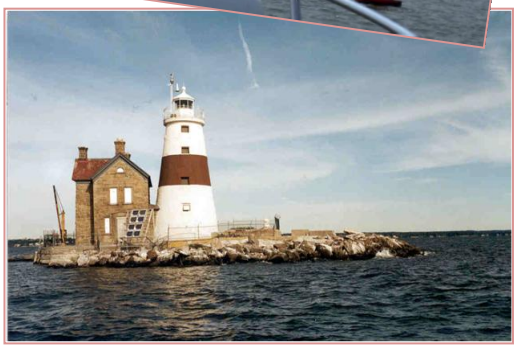
Under Section 305(b) of the federal Clean Water Act, States, Territories, the District of Columbia, Interstate Water Commissions, and participating American Indian Tribes must assess and report on the quality of their waters. The results of a 305(b) assessment are not raw data, but rather, statements of the degree to which each waterway supports its designated uses.

Environmental entities provide assessments and extensive programmatic information to the US EPA, which in turn aggregates these individual 305(b) reports to prepare a biennial National Water Quality Inventory Report to Congress. The Interstate Environmental Commission has made submissions since the inception of this reporting requirement (1984).

As US EPA's Guidance requires, the Commission's report includes its assessment methodology and a great deal of other important information. The assessment of the Commission's nearly 797 square miles of estuarine waters is based on data collected from its ambient and effluent monitoring programs. It is supplemented with water quality data and information on health advisories, fish kills, shellfish closure areas, and beach closings from the Commission's member states' environmental and health departments. The Commission's latest 305(b) report can be retrieved from its website, www.iec-nynjct.org.

STORET

Since its beginning, the IEC has amassed a huge database of ambient and effluent water quality data and has always been an advocate of water quality data collection, analyses and dissemination for the Tri-State Region.



STORET is a national database that contains biological, chemical, and physical data collected by federal, state and local agencies, Indian tribes, volunteer groups, academia, and others (www.epa.gov/storet). The IEC's first input to this data depository dates back to 1970. Since then, the Commission has been a steady contributor. All data sets generated by the Commission that are suitable for input have been entered into STORET. Parameters recorded include dissolved oxygen, temperature, salinity, Secchi depth, chlorophyll a, fecal and total coliform, fecal streptococcus and enterococcus bacteria. Ancillary information such as climatological and tidal data, type of monitoring instrumentation and visual observations, has also been submitted.

The IEC's data can be retrieved on the Internet from two separate databases, the STORET Legacy Data Center (LDC) and the more current, Modernized STORET system. In both systems, the IEC's organization code is 31ISC2RS. In contrast to the LDC, which is a static, archived database, the Modernized STORET is an operational system, actively being populated with water quality data. The Commission's data sets supplied to US EPA prior to 1999 were all placed in the Legacy Data Center, whereas those supplied to US EPA since January 1, 1999, reside in the Modernized STORET System.

Public Education, Outreach and Conferences

The Interstate Environmental Commission's public education and outreach programs encompass a variety of topics and venues. IEC personnel have been called upon to participate in numerous seminars and forums, in roles such as a moderator, speaker, panelist, chairperson and/or a faculty member. The Commission is a member of various engineering, legal and professional organizations, and takes an active role on committees and workgroups of those organizations.

Environmental Justice Conference

The Interstate Environmental Commission co-sponsored and presented at the Environmental Justice Conference on May 8, 2009. The conference, presented by the Center for Environmental Science of the College of Staten Island, received additional sponsorship from Con Edison and attracted stakeholders concerned about the environment.

19th Annual Long Island Sound Citizens Summit

On March 6, 2009, the Annual Long Island Sound Citizens Summit was held in Bridgeport, Connecticut. Panel discussions addressed clean water needs in Connecticut and New York; the State roles in clean water investments; and national and regional support for infrastructure. Attended annually by Commission staff, the Commission maintained an information booth at the summit.

National Marina Day

On August 8, 2009, IEC staff maintained an information booth on National Marina Day. Hosted by the NJ DEP-Leonardo State Marina located on Raritan Bay, the focus was to educate the public about the importance of marinas to local communities.

World Water Monitoring Day

To continue to promote water quality awareness around the globe, the 7th annual World Water Monitoring Day (WWMD) was held from Sept. 18 to Oct. 18th, 2009. The IEC joined thousands of volunteers to sample water quality and report results. IEC visited 9 sites in the upper East River and western Long Island Sound, covering a distance of about 29 nautical miles. The Commission's data can be accessed from www.worldwatermonitoringday.org. In conjunction with the LIS Office and Rocking the Boat, a non-profit organization, another WWMD after school event was held where students experienced hands-on water quality monitoring and data recording.

2009 Legislative and Regulatory Dialogue

The New York Water Environment Association's Government Affairs Committee, in which IEC is an active member, changed the original Legislative Forum in 2007 to an intimate Dialogue. The Legislative and Regulatory Dialogue was held on February 24, 2009, with agenda topics including Challenges of Infrastructure Funding-Stimulus/Recovery Plan and Water Quality and Regulatory Issues.

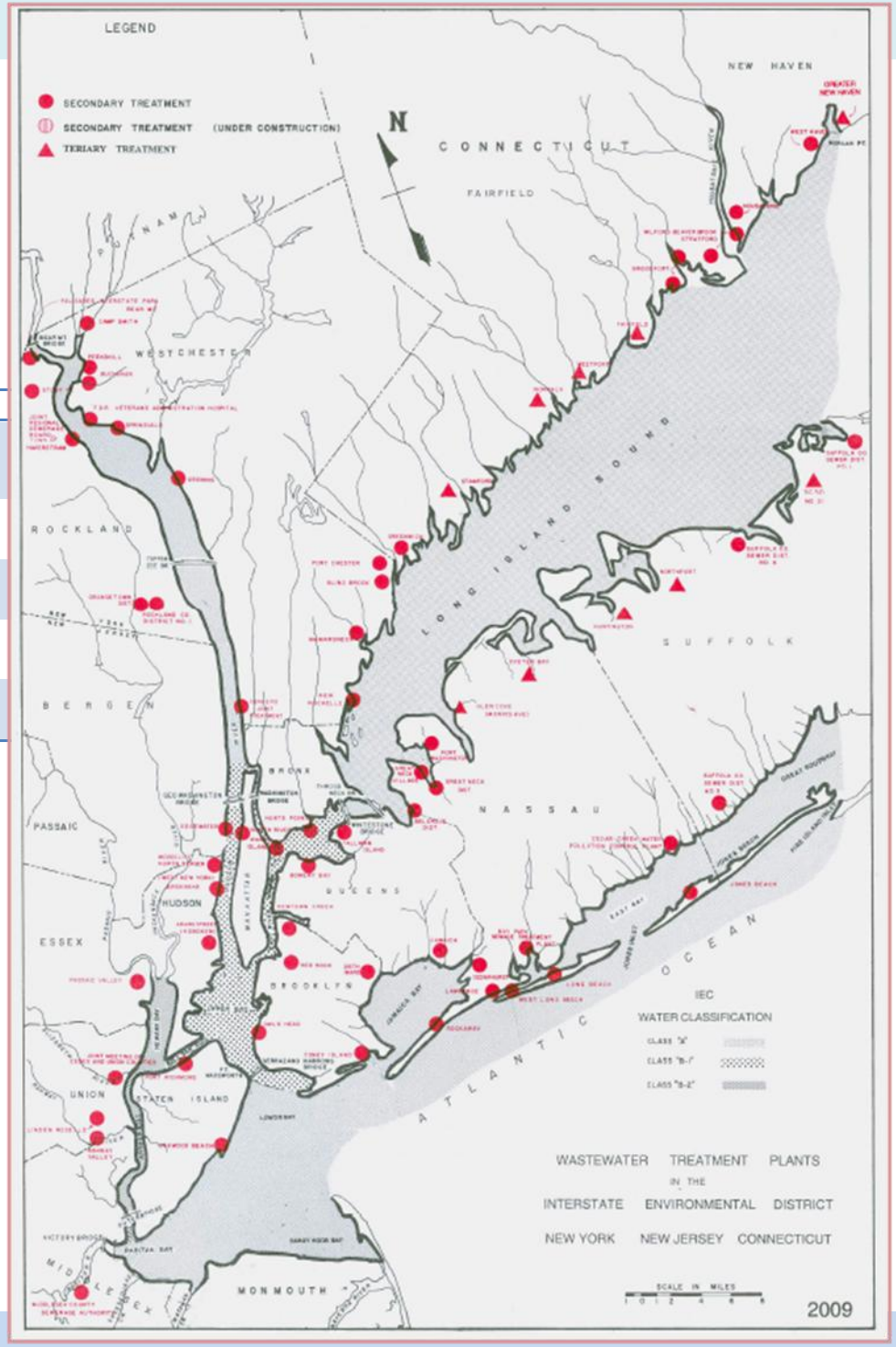
Water Pollution

In 2009, within the Interstate Environmental District, just about $15 billion was allocated for over 271 water pollution control projects. These expenditures are being used for engineering studies, pilot projects and experiments; CSO abatement projects; stormwater remediation; land-based alternatives for sewage sludge disposal; construction of new facilities; and upgrading and/or expanding existing facilities in order to provide adequately treated wastewater for discharge into District waterways. These figures do not include the monies spent by and committed to pollution control by industries.

	Expenditures ($)			
STATE	Completed Projects	Current Projects	Future Projects	Total
Connecticut	35,360,000	926,651,745	482,675,000	1,444,686,745
New Jersey	113,583,700	210,704,193	64,500,000	388,787,893
New York	113,583,700	9,072,418,045	3,966,961,000	13,152,962,745
Total	262,527,400	10,209,773,983	4,514,136,000	14,986,437,383

With secondary treatment virtually in place throughout the Interstate Environmental District since 1994, ensuring adequate infrastructure and control of the Region's combined sewer overflows, stormwater runoff, and municipal separate storm sewer systems is necessary in order to achieve further significant water quality improvements. Communities throughout the District have ongoing CSO control programs and projects that include sewer separation, swirl concentrators, booming and skimming, in-line storage and off-line storage.

The Commission obtained the information on water pollution control projects from officials in the representative State and local governmental agencies, sewerage authorities, consulting engineering firms, and national depositories of water quality data and industrial/municipal effluent data. The Appendix describes the expenditures of treatment plants – separated by State and County within each State - discharging into the Commission's District.

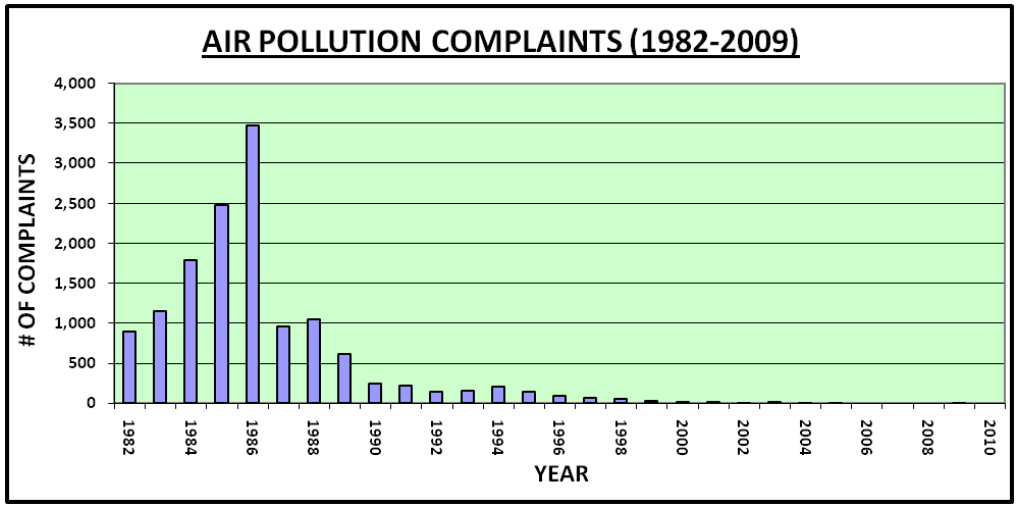


Air Pollution

The Commission's air program was initiated in 1962. To aid the primary control agencies in the solution of air quality problems of interstate nature, the Commission maintained two mobile vans and fixed-site monitoring stations capable of tracing airborne pollutants. In 1964, the first Air Pollution Warning System was put into operation and, through coordination by the Commission with its member states, it has been periodically updated and strengthened as new information became available. In April 1970, the Commission was designated as the coordinating agency for the NJ-NY-CT Air Quality Control Region under the federal Air Quality Act. Pollutant values and meteorological conditions did not warrant activation of the system during 2009.

The Commission has maintained round-the-clock response for air pollution complaints since the late 1960s. A field office, established on Staten Island in 1982, was especially important during 1986 when odor complaints reported to the Commission peaked at nearly 3,500 complaints affecting 63 different neighborhoods throughout Staten Island. Over the last 20 years, Staten Island was the source of more citizens' complaints than any other area in the Commission's jurisdiction mainly due to the Fresh Kills Landfill. However, since the landfill's closure in 2001, complaints have been minimal. For the 12-month period ending September 30, 2009, the Commission received two odor complaints from two different neighborhoods. No garbage odors were reported to the Commission for the tenth consecutive year.

IEC's Staten Island field office was closed in 1989 due to budgetary restraints, but the Commission still maintains a 24-hour-a-day, 7-day-a-week answering service (718-761-5677) to receive complaints. The IEC contacts and works closely with the appropriate enforcement agencies and health departments in NY and NJ to perform follow-up.



Ozone Health Message System

For the 22nd consecutive year, the Ozone Health Message System was activated to alert the public of unhealthy levels of ozone in the atmosphere of the Metropolitan Region. The system was developed as a cooperative effort by the IEC and environmental and health representatives from the States of NJ, NY and CT; New York City; and the US EPA. It serves as a central source of precautionary advice on ozone during the warm weather months (May to October) when higher concentrations of ozone occur.

The IEC received, between April 24 and Aug. 18, 11 ozone and 5 fine particulate (soot & dust) advisories from the NJ Dept. of Env'l Protection. The number of advisories and temporal span were considerably less than past years. During 2009, it was not necessary for IEC to issue a region-wide Ozone Health Message.

Regional Air Pollution Warning System

The IEC is the coordinator of the NJ-NY-CT Air Quality Control Region's High Air Pollution Alert and Warning System. Based on high pollutant concentrations or stagnation advisory reports, the Commission may activate this system. The pollutant levels and stagnation advisory reports did not warrant activation of the system during this past year.

LEGAL ACTIVITIES

Legal Counsel advances the mission of the Commission in regulation and enforcement, as well as outreach and examination of factors affecting the tri-state environmental district.

Legal Counsel:

- *Proactively seeks to assure compliance with IEC regulations, to recover damages from polluters and ensure accountability and remediation.*
- *Counsels the Commission about state and federal regulatory changes.*
- *Counsel to the Commission also counsels the staff and Commissioners on related matters including without limitation, matters relating to insurance, ethics, contracts, personnel, labor and management issues.*

In addition to litigation, Legal Counsel must synthesize and analyze proposed legislation, regulatory changes and local issues in the member states, which may affect the IEC's environmental district. This may include:

- *assisting with or delivering testimony upon the request of the Commission.*
- *updating legislators seeking information*
- *reviewing agency and interagency policies and memoranda*
- *Counsel must also insist IEC regulations be incorporated into permits.*

Litigation, negotiation, and dispute resolutions are all options to ensuring compliance and fostering cooperation, which was the starting point for the Commission in 1936.

The Interstate Environmental Commission is a tri-state commission whose compact is part of the laws of each member state. Its regulations are enforceable and action may be brought in the courts of all of the states. The IEC received congressional consent and therefore its actions and regulations have a federal imprimatur. As such, the IEC is in a unique position to work on behalf of the interest of the Interstate's environmental district. Where IEC regulations are more stringent than State regulations, the IEC water quality regulations must be enforced. Article XI of the compact provide that member states may pass stricter water quality regulations.

Some of the legal activities and their histories are available in our full annual report and in this brief. These activities are illustrative and not all-inclusive of the legal activities of the IEC. At the time of publication, an administrative decision has been and remains long pending on nitrogen issues

MITIGATING NEGATIVE EFFECTS OF NEW YORK CITY'S OPERATION AT THE FRESH KILLS LANDFILL

Fresh Kills landfill was the subject of litigation beginning in 1979 (Township of Woodbridge v. City of New York, civil no. 79-1060) and spanning over 20 years of court orders and consent decrees. Problems of medical waste and other debris escaping from the landfill persisted. Fresh Kills landfill was closed pursuant to New York City and New York State Law in March 2001, and opened briefly for limited purposes after the attack of September 11, 2001.

Four years after closing the Fresh Kills Landfill in Staten Island, the City drew up a 20-year plan — a Solid Waste Management Plan (SWMP or Plan)— to handle waste by shipping the bulk of it elsewhere.

It relies on the use of four transfer stations from which garbage would be barged to states west and south of New York for landfilling. Some portion of the City's garbage would be incinerated at a facility in New Jersey. The plan ends the continued renewal of short-term contracts for debris disposal that relied exclusively on truck transport with its attendant negative traffic and air quality implications.

What remains of the extensive Fresh Kills litigation is for all parties to agree upon a negotiated settlement. The State's approval of the SWMP Plan will go a long way toward achieving that goal. Discussion of uses for the Fresh Kill's site as park land or for transportation has sporadically taken place. See the Commission's Annual Report for more details.

ADDRESSING NITROGEN AND COMBINED SEWER OVERFLOW IMPACTS OF SOME NEW YORK CITY TREATMENT PLANTS

The Commission's involvement in proceedings concerning SPDES permits at 14 Water Quality Treatment Plants dates to its appearance as an amicus curiae with the New York State Supreme Court in 1999, and participation in the oral argument. The Commission was asked to provide guidance to the State of Connecticut when that State intervened in the lawsuit filed by the Hudson Riverkeeper and others against the NYS DEC and NYC DEP seeking modifications of SPDES permits. Throughout, the Commission has maintained a presence in both matters, providing historical data, data on the Long Island Sound Study's "no net increase policy," making available the comprehensive records kept by the Commission, and comparing Connecticut's permits to New York's permits.

In January 2004 five parties (including the Interstate Environmental Commission, the Natural Resource Defense Council, the Riverkeeper, Save the Sound and the State of Connecticut) who had intervened in an administrative hearing where the City of New York and the NYS DEC were the mandatory parties, were granted amicus (friend of court) status on the nitrogen control issue, and the Natural Resource Defense Council and the Riverkeeper full party status on the CSO issue (IEC was granted amicus party status).

The Administrative Law Judge (ALJ) stayed the CSO issue pending the outcome of an enforcement proceeding that followed NYS DEC's issuance of a Notice of Violation against the City, and the City's expressed intention to negotiate a settlement on CSOs.

A CSO abatement order modifying two earlier Orders of 1992 and 1996 was noticed for comment in September 2004, and a public meeting held in October.

By November, all intervening parties had submitted written comments on the Order, along with approximately 600 others. NYS DEC promised responses early in 2005.

A revised CSO Abatement Order was necessitated by the City's failure to meet goals and objectives of previous Orders — in particular, water quality goals and concerns about facility plans. Among the CSO concerns raised by the Commission were the incorporation of long-term controls into the permit, which would follow a June 1993 NYS DEC decision; complying with US EPA's CSO Policy to attain water quality standards; and ensuring the timely implementation of the long- term control provisions of the CSO Abatement Order.

In February 2006, New York City and the NYS DEC entered into a Judicial Consent Order (JCO) to attain certain nitrogen discharge limits from City

LEGAL ACTIVITIES (Cont'd)

This JCO only applies to the nitrogen issue (not CSOs) and binds only the City and NYS DEC, not the intervening parties to the administrative proceeding concerning the SPDES permits for WPCPs owned and operated by the City.

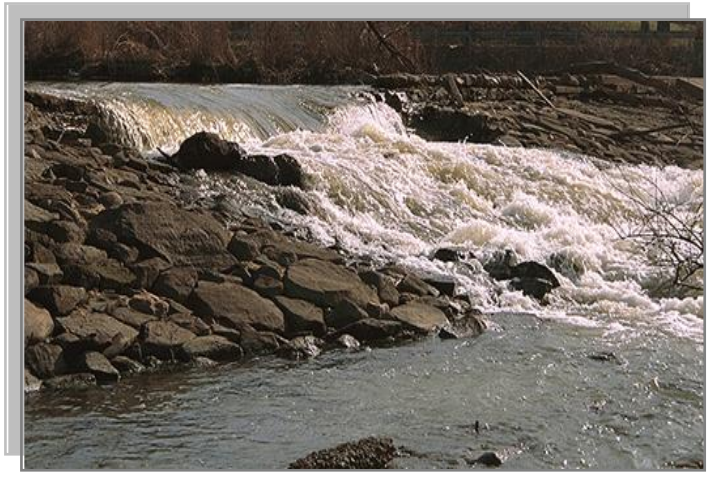
In April 2006, NYS DEC issued revised draft SPDES permits to the city, primarily revising provisions to address potential combined sewer overflow issues, but also revising some nitrogen provisions. Pending before the NYS DEC Deputy Commissioner were appeals in an administrative proceeding from a November 2005 ruling on CSOs and an April 2004 nitrogen issues ruling. The Interstate Environmental Commission is an amicus party to this administrative proceeding.

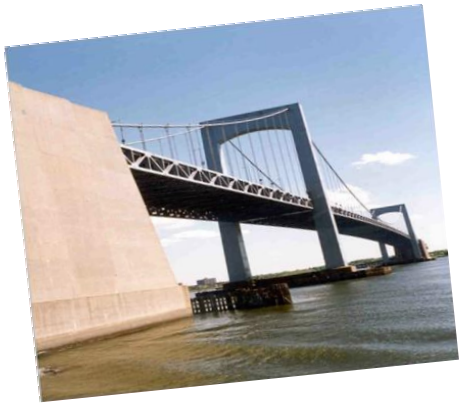
During January and February 2007, the Commission, along with the Consolidated Intervenors (Natural Resource Defense Council; Riverkeeper, Inc.; Soundkeeper, Inc.; and New York/New Jersey Baykeeper); NYS DEC and NYC DEP, participated in the administrative proceeding concerning how the city's SPDES permits address CSOs and nitrogen discharges, through the filing of statements.

On March 16, 2007, the ALJ issued a Ruling on Proposed Adjudicable Nitrogen Issues and Party Status. The ruling named the City of New York as a party on permits along with NYC DEP, and set a schedule for those who wished to appeal to the NYS DEC Commissioner from a November 2005 Ruling on CSO issues and any party who wished to appeal from rulings on nitrogen issues.

During April and May 2007, the Commission and Consolidated Intervenors filed appeals addressing issues about the incorporation of the CSO ACO into the SPDES Permit; whether narrative water quality based effluent limitations for CSO discharges should be included; and whether and to what extent changes to the CSO ACO should be subject to a full adjudicatory hearing. The IEC, an amicus party, has limited appellate rights to only the issues set forth by the ALJ who has allowed the Commission to file responsive papers if the other participants appealed CSO or nitrogen issues.

In October 2007 Consolidated intervenors filed amended pleadings concerning nitrogen issues and attached a Jamaica bay plan. The Nitrogen and CSO issues remain pending before the NYSDEC Commissioner.





APPENDIX A: Projects & Expenditures

NEW YORK – Wastewater Treatment Plant Projects & Expenditures

Nassau County, New York	Current Expenditures, $	Current Projects	Future Expenditures, $	Future Projects
Bay Park	9,320,000	Facility improvements: modifications to the chilled and hot water piping, permanent lighting upgrade to enhance safety and security.	—	Three projects up for bid: improvements to the raw sewage pump system, installation of a pumping station for the plant's dissolved air flotation facility, and a project dealing with the plant's total residual chlorine controls.
Belgrave	10,137,295	Installation of denitrification and UV disinfection facilities; additional upgrades include a new screenings building and a new secondary clarifier.	—	N/A
Blind Brook	30,000	Operating under a 2008 State Order to meet SPDES permit limitations for total nitrogen and total residual chlorine reductions. Collection system upgrades include installations at one pump station with alarm systems and remote monitoring of various facility functions.	10,920,000	Performance maintenance in order to upgrade the plant process equipment. Upgrades to the aeration tanks to increase nitrogen removal include: internal recycle pumps, instrumentation and controls.
Cedar Creek	32,344,000	Improvements to the sludge thickening and dewatering facilities. Includes the installation of new belt filter dewatering equipment and demolishing of the old tanks.	—	N/A
Cedarhurst	—	N/A	300,000	Construction to address total chlorine residual reduction (no construction start-up dates have been determined due to the potential Nassau County master plan in 2012).
Glen Cove	—	N/A	4,500,000	Facility's bulk chemical and bulk petroleum storage tanks will be modified or replaced in order to meet state and federal regulations. Includes upgrades to the final tanks and sludge drying facilities.
Great Neck WPCP	—	Green projects include: producing biofuel utilizing waste vegetable oil from local restaurants. This biofuel, generated on site, is used to power five diesel vehicles, heat two buildings. If feasible, digester gas will be used to generate electricity and heat for anaerobic digester systems with micro turbines. A rain garden will address stormwater runoff and act as a bio-filter that will pre-treat the site's stormwater runoff (No cost provided).	60,000,000	Planned upgrade and expansion to comply with the NYS DEC effluent limitations mandated by the LISS Phase III nitrogen reduction plan, and provide increased hydraulic capacity sufficient to accommodate the wastewater flow from the District and Village of Great Neck. Upgrades to specific treatment units include: primary tanks, primary sludge pumping system, new oxidation ditch system, four new final settling tanks, new effluent flow meter, new UV disinfection system and upgrades at the existing effluent pumping station. Improvements to solids handling system and installation of a new plant generator for back-up power are planned.

NEW YORK – Wastewater Treatment Plant Projects & Expenditures, Cont'd

Nassau County, New York	Current Expenditures, $	Current Projects	Future Expenditures, $	Future Projects
Greater Atlantic Beach W.R. District	—	N/A	2,400,000	Due to modification of the District SPDES permit, the plant is required to reduce effluent ammonia concentrations and the total chlorine residual.
Great Neck Village	196,000	Collection system rehabilitation involves lining of 1,200 LF of 12-inch diameter (12"Ø) and 300 LF of 8-inch diameter (8"Ø) gravity sewers.	14,700	Grit chamber rehabilitation: new chains, sprockets, rails, shafts and wear shoes. Installation of nitrogen removal facilities and UV disinfection is pending. A letter report was prepared to evaluate construction of the treatment plant using an MBR or an oxidation ditch in order to meet nitrogen limits.
Jones Beach	—	Approved by the state, a new project to reduce concentrations of total nitrogen in effluent using an SBR process has been initiated as a result of the Long Island Sound Study (No cost provided).	—	Replacement of the existing grinder unit at the head of the higher flow unit, installation of stainless steel brackets, hardware, and rail system to both muffin monster units is slated for future construction.
Lawrence	—	N/A	7,1600,000	Various plant-wide equipment upgrades and replacements with a major focus on BNR capabilities and UV disinfection. Facility was awarded a grant by NYS under the 1996 CW/CA Bond Act to upgrade the plant. Upgrades include: removal of ammonia, total residual chlorine, and provide denitrification from the final effluent.
Long Beach	2,500,000	Facility is operating under a State Consent Order (September 2008) to address dechlorination and ammonia removal effluent limitations. Work is in progress to modify one lift station on New York Avenue.	—	N/A
Oyster Bay	—	N/A	236,000	Plans to replace the influent pump station control panels, install auto alarm system at Highwood Pump Station, replace building doors and hardware are currently in the design phase. Future construction to replace the Control Building roof is scheduled. An engineering study evaluating the effluent pump capacity is underway.
Port Washington	22,200,000	Modifications are being constructed for nitrogen removal capabilities using an oxidation ditch. Additional installations include: one new clarifier, UV disinfection, an enlarged plant emergency generator, associated pumps, piping and electrical needs.	550,000	Rehabilitation of the refractory (heat resistant ceramic component) in the sludge fluidized bed reactor.

NEW YORK – Wastewater Treatment Plant Projects & Expenditures, Cont'd

Rockland County, New York	Current Expenditures, $	Current Projects	Future Expenditures, $	Future Projects
Jt. Regional Sewerage Board- ***Haverstraw***	—	N/A	650,000	Four-month agenda has been scheduled for the replacement of the existing bar screen, as well as the existing grit removal system.
Orangetown Sewer District	3,300,000	Phase I/ Tier II of the Pumping Station Improvement Plan at the treatment plant includes the replacement of sludge pump lighting and the installation of an internal heating system.	$3,000,000	Phase 2 of the Pumping Station Improvement Plan will include rehabilitation of sludge holding tanks Nos. 1 and 2.
Rockland County Sewer District #1	132,900,000	Engineering studies addressing flow monitoring, I/I and hydraulic modeling of the collection system. Construction of a new 1.5 MGD advanced treatment facility to serve western Ramapo, the modernization of the existing Rockland County 28.9 MGD secondary facility is underway. The installation of principal trunk sewers, pump stations, force mains, and laterals in the Villages of Hillburn and Sloatsburg and the unincorporated portion of western Ramapo are in progress.	26,000,000	Additional existing treatment plant and pump station improvements , collection system construction for Western Ramapo, New York and the Cooper Morris Drive-Buena Vista Road-Dogwood Lane sewer extension and pump station are scheduled for future construction.
Suffolk County, New York	Current Expenditures, $	Current Projects	Future Expenditures, $	Future Projects
Huntington	550,000	Two projects dealing with nonpoint source pollution: the Fleets Cove/Knollwood Beach Stormwater Mitigation and the Centerport Harbor Stormwater Runoff Mitigation.	850,000	Collection system maintenance, i.e., cleaning and televising sanitary sewers. Preliminary plans have been prepared for the installation of the Hill Place siphon.
Northport	—	N/A	8,100,000	Phase II of facility upgrades to meet 2014 permit limits is currently under review by NYSDEC, Region I. Phase II upgrades include de-nitrification filters, pH control, dis. oxygen control system & influent screening system. Phase II also includes collection system improvements: sewer and manhole lining and repairs (I/I remediation), shoreline sewer and pump station replacement.
Suffolk County Sewer District 1- ***Port Jefferson***	350,000	Facility is operating under a State Consent Order to update its chemical bulk storage facilities. In progress: a water quality assessment of Port Jefferson Harbor, an engineering study for collection system upgrades for rehabilitating manholes & sewers to minimize I/I impacts. A pump station evaluation to assess hydraulics was completed & recommendations are being considered.	1,500,000	Sewer rehabilitation and pump station upgrades are planned for lower Port Jefferson.

NEW YORK – Wastewater Treatment Plant Projects & Expenditures, Cont'd

Suffolk County, New York, Cont'd	Current Expenditures, $	Current Projects	Future Expenditures, $	Future Projects
Suffolk County Sewer District 3- *Bergen Point*	120,000,000	Facility is operating under a State Consent Order to update its chemical bulk storage facilities. Engineering studies: grit handling improvements, UV disinfection facilities, a sludge dewatering and disposal system, designs for a 10MGD treatment plant expansion, and an odor control system for the influent. Study of the collection system improvements including evaluations for the I/I project and reduction of extraneous flows.	—	N/A
Suffolk County Sewer District 6- *Kings Park*	56,800,000	Facility is operating under a State Consent Order to update its chemical bulk storage facilities. The installation of sewer systems in both downtown Smithtown and Kings Park along with pump stations, groundwater discharge, and a plant expansion of 1.2 MGD are underway. Installation of a second SBR, an UV disinfection system and related construction are underway.	—	N/A
Suffolk County Sewer District 21- *SUNY Stonybrook*	—	This facility is operating under a State Consent Order to update its chemical bulk storage facilities.	18,000,000	Construction of sequencing batch reactors is planned in order to increase the plant capacity by 0.15 MGD to a total design flow of 2.65 MGD. To enable compliance with LISS Phase III nitrogen reduction targets, a portion of the treated effluent will be diverted to groundwater.
Westchester County, New York	Current Expenditures, $	Current Projects	Future Expenditures, $	Future Projects
Blind Brook	—	Facility is operating under a 2008 State Order to meet SPDES permit limitations for total nitrogen and total residual chlorine reductions.	10,920,000	Performance maintenance in order to upgrade plant process equipment. Upgrades to the aeration tanks to increase nitrogen removal includes: internal recycle pumps, instrumentation and controls.
Mamaroneck	229,000	Facility is operating under a 2008 State Order to meet SPDES permit limitations for total nitrogen reductions. Under construction is a project to replace variable frequency drives on the sludge force main pumps.	65,880,000	Screening and grit facilities will be repaired and rehabilitated, steel sheet piles that encase one of the Long Island Sound outfalls will be replaced, designs for the replacement of the administration building roof and tower, and construction of a BNR upgrade.

NEW YORK – Wastewater Treatment Plant Projects & Expenditures, Cont'd

Westchester County, New York, Cont'd	Current Expenditures, $	Current Projects	Future Expenditures, $	Future Projects
New Rochelle	1,550,000	Facility is operating under a 2004 State Order to meet SPDES permit limitations for total nitrogen, flow, CBOD and TSS percent removal, and total residual chlorine. Demolition of obsolete equipment is 85% complete.	321,000,000	Increased flow capacity and TRC construction for a Composite Performance Implementation Project is scheduled for Spring 2010; BNR upgrade project.
Ossining	9,645,000.	Installations at five pump stations include alarm systems and remote monitoring of various facility functions; Sludge handling improvements include two new sludge holding tanks and a new sludge loading building with odor control capabilities.	6,150,000	Replacement of twin feeder aerial cables is set for design; design for total chlorine residual reduction includes: new sodium bisulfate tanks, piping, induction mixers, instrumentation and controls and design for structural rehabilitation of the chlorine contact tank.
Peekskill	8,980,000	Two pump stations are being upgraded with alarm systems and remote monitoring capabilities for various operating functions; Rehabilitation of the Mill Street pump station; Upgrades to the aeration system including aeration diffusers, controls, blowers and instrumentation.	13,450,000	Electrical upgrades at one pump station and at the main facility; Upgrade to the influent pumping stations includes screens, motors, structural upgrades and HVAC; Design for total residual chlorine reduction (new UV disinfection system will replace hypochlorite disinfection system).
Port Chester	—	Facility is operating under a 2008 State Consent Order to achieve SPDES effluent limitations for total nitrogen and total residual chlorine.	200,000	HVAC upgrade is planned.
Springvale Sewerage Corporation	—	N/A	40,000	Replacement of gear drive, reducer and motor with identical replacement parts on a primary settling tank.
Yonkers Joint Treatment	20,750,000	Upgrade to the primary digester system, includes roof replacements; dewatering building upgrade includes upgrade to the centrifuge drives, control panels and ancillary equipment. Three capital projects are currently in progress at the North Yonkers pump station: odor control, electrical control upgrade, and HVAC replacement.	23,300,000	Construction of Phase II of the Cellular Bulkhead Rehabilitation; Chlorine contact tank and piping upgrade construction; Emergency generator replacement includes a new generator, ATS, controls, duct banks and associative electrical work; Upgrades to the engine generators includes new cabling, generator, associated electrical work, and a siloxane treatment system.

NEW YORK – Wastewater Treatment Plant Projects & Expenditures, Cont'd

New York City, New York	Current Expenditures, $	Current Projects	Future Expenditures, $	Future Projects
Bowery Bay *Queens County*	510,500,000	Multi-phase facility upgrade including: Phase I includes replacement of process equipment, complete replacement of the electrical distribution and HVAC; Phase II addresses improvements to the Solids Handling Facilities; Phase III addresses BNR improvements.	55,000,000	Phase IV of the upgrades includes an upgrade to the emergency generator facilities.
Coney Island *Kings County*	—	Code compliant fire alarm system; modifications and improvements to the chemical bulk storage and petroleum bulk storage facilities. Installation for new truck unloading containment pads, drainage piping and associated equipment. New chemical system will be linked to the existing SCADA system over a fiber optic link.	—	New diffuser system will be constructed to replace existing system. The failed pipe and outfall structure will be demolished.
Hunts Point *Bronx County*	508,000,000	Multi-phase facility upgrade: Phase I includes Consent Order mandates for hydraulic improvements to allow treatment of twice dry weather design flow (200 MGD); Phase II -BNR enhancement. Phase III (solids handling facilities) is under design; Phase IV is the installation of carbon addition facilities.	—	N/A
Jamaica *Queens County*	308,000,000	Plant-wide expansions: Phase I includes: new installations of treatment units such as a primary tank splitter box, a primary tank, and a primary force main. Phase II includes: new secondary screenings building, main building alterations, a residuals handling building, an administrative and maintenance building, new covers for existing sludge storage tanks, rehabilitation of the existing air blowers, new fine bubble diffusers in the aeration tanks, odor controls, emergency lighting and a boiler plant.	—	N/A
Newtown Creek *Kings County*	5,614,000,000	Multi-phase facility upgrade project. Phase IA includes: main building remodel, a visitor's center, new solids handling facility, new support and laboratory building. Phase IB includes: construction of North and Central batteries and the Manhattan pump station upgrade. Phase II includes: new central residuals building and demolition of existing digesters. Phase III includes: Rebuild of existing South battery (grit, aeration and sedimentation tanks).	287,000,000	Facility upgrade Phase III includes: three new sludge vessels and a nature walk. Other various process enhancements including digesters, aeration tanks, disinfection building and north control building.

NEW YORK – Wastewater Treatment Plant Projects & Expenditures, Cont'd

New York City, New York, Cont'd	Current Expenditures, $	Current Projects	Future Expenditures, $	Future Projects
North River ***New York County***	142,100,000	Facility is operating under a 1992 State Consent Order to address issues of capacity, odor, and air emissions. Major projects to address consent order include: rehabilitation of odor control system, process air upgrade, dissolved oxygen probe, increasing waste sludge capacity. Digester mechanical piping and support systems.	—	N/A
Owls Head ***Kings County***	344,300,000	Grit and scum building expansion; Stabilization of the forebay; Reconstruction of Avenue V Pumping Station.	—	N/A
Red Hook ***Kings County***	—	A continuing experiment, under way since July 2003, involves fuel cell efficiency. (No cost provided).	—	N/A
Rockaway ***Queens County***	—	Ongoing engineering studies are addressing total residual chlorine management, chlorine disinfection system improvements, and the first planning phase of plant-wide improvements (No cost provided).	—	N/A
Tallman Island ***Queens County***	672,000,000	Multi-phase facility upgrade. Phase I includes replacing main sewage pumps and process air blowers. Phase II involves BNR enhancement and plant-wide instrumentation. Phase III continues BNR enhancement. In progress is the Alley Creek Drainage Area Improvements/CSO Abatement Facilities Project.	2,146,000,000	Flushing Bay CSO facility improvements.
Wards Island ***New York County***	401,300,000	Multi-phase facility upgrade including rehabilitation of the Bronx and Manhattan grit chambers. Phase III includes solids handling facility stabilization, BNR improvements, and main electrical substation improvements.	15,700,000	Improvements to: primary sludge pumping, new cyclone degritters, and new primary settling tanks sluice gates.
26 Ward ***Kings County***	140,436,750	Multi-phase facility upgrade. Phase II includes replacement of the main sewage pumping station force main and other various collection system installations. Phase III includes BNR installations, refurbishing of existing air blowers, and construction of new chlorine storage building. Also the installation of three new diesel engine generators is scheduled.	814,000,000	Expansion of plant to accept 50 MGD of additional flow during storm events; multi-phase construction will include two additional preliminary settling tanks, a new raw sewage pumping station with additional chlorine contact tanks, an odor control, and scum removal system.

NEW JERSEY– Wastewater Treatment Plant Projects & Expenditures

New Jersey	Current Expenditures, $	Current Projects	Future Expenditures, $	Future Projects
Bayonne Municipal Utilities Authority	3,653,211	Installing additional two miles of gravity sewer, surveying and relining of applicable existing sewers, and combined sewer system (partial) sewer separation work.	—	N/A
Bergen County Utilities Authority- ***Edgewater***	14,500,000	Design of the Phase I SCADA and security improvements and Phase II Equipments Improvements.	15,000,000	Study and design of the Outfall Extension from the bulkhead to the pierhead in the Hudson River.
Joint Meeting of Essex/Union	16,000,000	3.2 MW co-generation facility.	10,000,000	Facility improvements including: plant access and parking improvements, plant-wide pump and valve replacements and service water system upgrades.
Linden-Roselle Sewerage Authority	550,000	Replacement of two transformers and an upgrade of the UV system electric controls.	8,000,000	Plant upgrade including improvements to aeration tanks, clarifiers, and microgeneration.
Middlesex County Utilities Authority	111,400,000	Amended Administrative Consent Order (Nov. 15, 2005) requiring the installation of new force mains from the Edison pump station, acoustic monitoring of the 102-inch diameter (102"Ø) Sayreville relief force main, a state-wide survey of the existing pre-stressed concrete cylinder pipe (PCCP) force mains, and exploration of alternate power sources for the co-generation facility is underway.	—	N/A
Middletown Sewerage Authority	16,308,00	Facility upgrade includes installation of fine bubble aeration diffusers, one aeration tank and one clarifier. An I/I study for drainage basin 2, which includes repair and rehabilitation of sewers. Ongoing energy audit study.	—	N/A
North Hudson Sewerage Authority- ***Adams Street***	27,699,982	Operating under a State Administrative Consent Order to complete the installation of solids and floatables facilities. Collection system upgrades include: repair of catch basins, manholes, sewer lines, and the 18th and 11th street pump station upgrade. Pump controls are being replaced in the effluent and trickling filter pump stations. Alternative energy project using solar panels at the main treatment plant includes new roofs and building HVAC. Main facility improvements include replacement of the primary sludge pumps, new sludge transfer pumps and various controls.	—	N/A
North Hudson Sewerage Authority- ***River Road***	19,301,000	Facility is operating under a State Administrative Consent Order to have solids and floatables modules installed in the CSOs discharging to the Hudson River. Three solids and floatables screening modules are being constructed. Facility improvements include the 2^{o} clarifier, installing a new influent bar rack & performing a fire system upgrade.	—	N/A
Passaic Valley Sewerage Commissioners	17,600,000	Engineering studies: removal of fine screenings, CSO nets to capture fine screenings in primary effluent, computer monitoring of final clarifiers during wet weather, restore concrete in final clarifiers, reduction of nitrogen in the sludge recycle stream.	31,500,000	Future projects: improvements to the electrical and controls of the effluent and wet weather pump stations, filter press locker facility, final clarifiers Phase V, modifications to the sludge and septage liquid waste receiving facilities, repair to utility tunnels and galleries, and weir wall replacement.

CONNECTICUT– Wastewater Treatment Plant Projects & Expenditures

Connecticut	Current Expenditures, $	Current Projects	Future Expenditures, $	Future Projects
Bridgeport- ***East/West Side***	116,496,000	East Side dechlorination project, Harborview pump station rehabilitation, CSO improvement program and engineering study, Evaluation of sludge processing, low level nitrogen study, and River St. pump station and Island Brook Interconnect Sewer Design.	—	N/A
Fairfield	605,000	5-Phase Infiltration/Inflow Plan (System evaluation and rehabilitation).	180,000	Rehabilitation of sewer lines in Section 1.
Grass Island WWTP- ***Greenwich***	2,728,245	Sewer System Rehabilitation Program	7,275,000	Proposed plant improvements: RAS pumps, WAS pumps, aerations systems upgrades, final effluent pumps and controls. Design for pump station rehabilitation. Riverside Railroad Force Main Crossing project design.
Greater New Haven	623,200,000	Low Level Nitrogen Removal project, sewer separation construction, and tide gate improvements	438,000,000	Long-Term CSO Control Plan, upgrade East Shore wet weather capacity, comprehensive collection system upgrades, Low Level Nitrogen Removal project.
Milford- ***Beaverbrook***	13,000,000	Facility upgrade to meet LISS III nitrogen reduction targets (Operating under Federal and State Consent Orders to reduce nitrogen).	—	N/A
Milford- ***Housatonic***	72,000,000	Facility upgrade and flow capacity, Reduce nitrogen loadings for 2014 limits (Operating under Federal and State Consent Orders to reduce nitrogen), West Ave and Gulf Pond pump stations upgrade.	—	N/A
Norwalk	7,622,500	Engineering study to address low level nitrogen reductions, evaluations of CSO and wet weather treatment, SCADA instrumentation needs. Slip line and point repair (South Side 48” interceptor line).	36,500,000	CSO remediation on Norwalk River, main facility headworks replacement.
Stamford	5,000,000	Sewer Project to replace failing septic systems.	—	Proposal for a project to convert wastewater biosolids to energy using gasification process.
Stratford	52,000,000	Facility-wide upgrade and capacity expansion.		
West Haven	34,000,000.00	Facility upgrade including: two new secondary clarifiers, improvements to the existing secondary clarifiers and primary clarifiers, improvements to the existing aeration tanks including new blowers, new return pumps, new chemical feed systems for BNR, new screening equipment, new Lab and Technical Support Building, new SCADA system, improvements to the Administration Building and landscaping improvements. (2002 Administrative Order to upgrade the treatment plant for BNR and to eliminate sporadic NPDES Permit violations).	70,000	By-pass line at Dawson Avenue Pump Station to replace existing valves and clean the wet well.
Westport	—	N/A	650,000	Residential gravity sewer extensions are planned for the Imperial Avenue/Keyser Road vicinity.

APPENDIX B

Financial Statement FY 2009

The Commission's accounting records are maintained on a cash basis and are audited annually. The following is a statement of cash receipts and disbursements for fiscal year July 1, 2008 to June 30, 2009:

CASH BOOK BALANCE AS OF JUNE 30, 2008		$	661,995.48
RECEIPTS			
Connecticut - FY'09	$ 97,565.00		
New York - FY'09	387,203.00		
New Jersey - FY'09	383,000.00		
EPA - FY'08	708,100.00		
EPA - FY'09	537,151.00		
LIS Fund Grant	12,320.00		
Interest	8,256.99		
Miscellaneous Receipts	2,054.50		
TOTAL RECEIPTS			2,135,650.49
	Sub-TotaL	$	2,797,645.97
DISBURSEMENTS			
TOTAL DISBURSEMENTS			1,885,505.86
CASH BOOK BALANCE ON JUNE 30, 2009		$	912,140.11
			==========

U.S. Treasury Bills	$	199,822.50
Insured Money Market Accounts		657,019.79
Checking Accounts		55,297.82
	$	912,140.11
		=========

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