INTERSTATE ENVIRONMENTAL COMMISSION

A TRI-STATE WATER AND AIR POLLUTION CONTROL AGENCY

2005

ANNUAL REPORT

OF THE

INTERSTATE ENVIRONMENTAL COMMISSION

Formerly the
INTERSTATE SANITATION COMMISSION

INTERSTATE ENVIRONMENTAL COMMISSION

A TRI-STATE WATER AND AIR POLLUTION CONTROL AGENCY
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January 24, 2006

The Honorable George E. Pataki
The Honorable M. Jodi Rell
The Honorable Jon S. Corzine
and the Legislatures of the States of
New York, Connecticut and New Jersey

Dear Governors:

The Interstate Environmental Commission respectfully submits its report for the year 2005.

The members of the Commission are confident that with the continued support of the Governors and the members of the Legislatures, the Commission will maintain active and effective water and air pollution abatement programs.

Respectfully submitted,

For the State of New York — Chairperson

For the State of Connecticut — Vice Chair

For the State of New Jersey — Vice Chair

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STATEMENT OF THE CHAIRPERSON OF THE INTERSTATE ENVIRONMENTAL COMMISSION

Long before I joined the Commission, I was an active environmentalist and a supporter of the IEC — then known as the ISC, the Interstate Sanitation Commission. I became acutely aware of the pressures the Commission had to contend with in its quest to significantly improve water quality in this, our Tri-State Region. Despite these pressures, the IEC remained steadfast in its insistence on maintaining high water quality standards throughout its District. Such issues as the need for secondary treatment of wastewater, the question of overcapacity at wastewater treatment plants and litigation concerning operations at the Fresh Kills Landfill were issues that readily come to mind. The Commission prevailed; our regulatory and enforcement powers are respected and each year represents another step forward in protecting this Region's waters. Today, as I complete my first year as Chairperson, I can state with pride that our dedication and our resolve to battle pollution has never been stronger. The pages of this 2005 Annual Report reflect the IEC's continued environmental progress in virtually every area of our agenda.

I have long been aware of the heavy responsibilities assigned to the IEC in its role as the pollution control agency with both regulatory and enforcement powers in matters of water pollution throughout this Tri-State Region. In this connection, I am pleased to report that 2005 has been a year when we have enhanced our reputation and prestige both within our Metropolitan Area of jurisdiction and among interstate commissions that reach from Canada to the Mississippi. The Commission's broad range of water quality control programs continues unabated. At the same time, our strengthened lines of communication with our fellow interstate commissions keeps us informed on all matters affecting the quality of interstate waters, thus equipping us with a greater ability to react to potential sources of pollution within our Region.

Of special note is the Commission's active participation in World Water Monitoring Day, initiated in 2002 as National Water Monitoring Day. Our contribution of significant data from nine monitoring stations joins us with environmentalists from at least 48 states and 80 nations collecting much-needed information for an international data bank.

I was also gratified for the opportunity to attend the annual New York Water Environmental Association's Annual Legislative/Regulatory Forum in Albany last May. It afforded us the platform to clearly articulate to the Legislature the depth and scope of the Commission's programs to promote both water pollution control and the execution of our water pollution abatement policies.

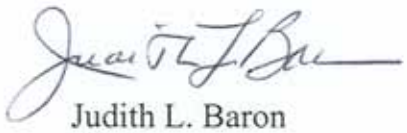
Of particular interest in this Report is the Commission's continuing and extensive

involvement in water monitoring surveys, a program that has always enjoyed one of the highest priorities at IEC. These studies include special intensive surveys to support both the Long Island Sound Study and the New York - New Jersey Harbor Estuary Program. I am pleased to report that this year marks the completion of our 15th year of monitoring in the Long Island Sound to document dissolved oxygen conditions. This is our fifth year of monitoring for pathogens in the New York - New Jersey Harbor complex, our tenth year of sampling shellfish harvesting waters in the New Jersey portion of western Raritan Bay and, for a third year, ambient and point source sampling to determine the causes of bacterial contamination in the Byram River. Hand-in-hand with this monitoring program is our concentrated effort to forge strong lines of communication with our three member states' environmental and health departments and the United States Environmental Protection Agency. We are keenly aware of our responsibility to provide vital information that will prevent overloading at treatment plants which could well compromise the purity of interstate waterways.

I also want to underline the Commission's determined efforts in the area of public outreach programs that extend beyond other interstate commissions and professional pollution control organizations. Included are meetings with legislators on all levels, as well as appearances before citizen groups, student internship programs and public education campaigns. A highlight of our outreach program is our annual boat inspection trip. Legislators, environmental officials, citizen activists and representatives of the media have come to regard this boat inspection trip as a "must attend" event in which we point out both environmental successes and "hot spots" along our waterways. This year's trip covered the lower New York Bay, Raritan Bay, Arthur Kill, Kill Van Kull, and Upper New York Bay and enabled us to examine, at close range, some of the problems that still confront us within our District. I found the trip an ideal backdrop to meet and exchange ideas with so many people.

This Annual Report offers a full review of the wide scope of the Commission's programs and activities, including an update of our legal activities in the areas of regulation and litigation. I invite you to visit our website, www.iec-nynjct.org, for continuing reports and back issues of Annual Reports. This year's Report will soon be available on our website.

On a personal note, it is an honor to serve with my fellow Commissioners, and a source of deep satisfaction to work with them and the staff as Chairperson of the IEC.



Judith L. Baron
Chairperson

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I. EXECUTIVE SUMMARY

Over 100 years ago, the metropolitan waterways were in a deplorable state. Water quality was at an extreme low due to industrial pollution and raw sewage. The world's most productive oyster and clam beds were condemned, finfish stocks were depleted and tasted like "oil", health agencies were inundated with patients suffering from dozens of different types of waterbourne diseases from using recreational waters — many never to reopen in the 20th century — and the air was clogged with coal dust. This was a time when interstate conflicts arose regarding the sanitary conditions of the waters surrounding and shared by the States of New York, New Jersey and Connecticut.

Fortunately, returning to the water is a national focus. The Clean Water Act, established in 1972, set a national goal to restore and maintain the physical, chemical, and biological integrity of the waters of the United States. This year is the 69th anniversary of the Interstate Environmental Commission (IEC) — an agency with a mandate to protect this Tri-State Region's waters long before the creation of state and national environmental entities, and before national standards were established. The Commission is gratified to report about the great improvements in water quality throughout the Region where the majority of the waters are fishable and swimmable. However, the region still faces problems — some of which are local, and some global in nature. Hypoxia, sediment contamination, pathogens, habitat loss, combined sewer overflows, atmospheric deposition, invasive species, impacts on living marine resources, land use issues and public education have all been identified as priority areas of concern. All of these issues have socio-economic impacts throughout the Region.

Following the recommendation of the Tri-State Treaty Commission, the Tri-State Compact establishing the District and the Commission was enacted in 1936, with the Consent of Congress. The Commission has an overall responsibility of protecting the environment by viewing the District from a regional, impartial and unbiased perspective. Whereas each state deals with issues within its own borders, the Commission can and does cross state lines. The Commission strives to harmonize water quality standards, regulations and requirements throughout its District.

The mandates of the Commission are governed by the Tri-State Compact, Statutes, and the IEC's Water Quality Regulations. In addition to its mandates in water pollution, the capabilities and benefits of the Commission as a regional agency were also recognized when the IEC's interstate air pollution program began in 1962, and were further reinforced in 1970 when the Commission was designated as the coordinating and planning agency for the New Jersey-New York-Connecticut Air Quality Control Region. As the Commission plans to meet its mandates and goals for the future, IEC must adapt to adverse conditions, but rely on good science and sound engineering as an integral part of the decision-making process. The Metropolitan Area contains a world class harbor that is able to support a wide spectrum of commercial and recreational industries and activities.

On October 27, 2000, federal legislation was signed changing the name of the Interstate

Sanitation Commission to the ***Interstate Environmental Commission (IEC)***. The new name not only brings the Commission into the 21st Century, it more accurately reflects the Commission's mandates, mission and responsibilities that embrace a broad range of programs and activities that include air pollution, public involvement and education, and regulatory compliance. Nonetheless, the IEC's continuing emphasis is on water quality — an area in which the Commission is a regulatory and enforcement agency. The Commission's website — **www.iec-nynjct.org** — contains information on the IEC, including recent annual reports and other reports, and useful links to other appropriate websites. This Annual Report will also soon be available on the Commission's website.

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. As an interstate agency, the Commission views the Region as an 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. By interacting with other agencies and interstate commissions, challenges and successes are being shared to better address specific mandates. The staff continues to fulfill IEC's technical and administrative responsibilities within the limitations of the current resources.

The Commission's programs are geared to address specific environmental deficiencies and/or to assure compliance with the Tri-State Compact and the Commission's Water Quality Regulations. The programs are designed for gathering the information necessary for enforcement actions, opening waters for commercial and recreational shellfishing, opening waters for swimming, developing water quality and/or effluent criteria, determine immediate environmental conditions, responding to environmental emergencies, and other needs that may arise.

The Commission has greatly contributed to the many significant improvements in the Region's waters. IEC's adoption of its year-round disinfection requirements was instrumental in opening thousands of acres of shellfish beds year-round. There have been fewer beach closings during the summer bathing seasons due to elevated levels of coliform bacteria and no closures due to floatables for the past five years. In 1997, the Commission amended its regulations to require mandatory notification to the IEC of planned sewage bypasses. This was done as an effort to eliminate or, at a minimum, lessen the impacts from planned sewage bypasses. Additionally, in conjunction with its three states' environmental and health departments, US EPA and NYC DEP, the Commission coordinated and spearheaded the effort to have a computer model developed to predict the impacts of unplanned sewage bypasses on the area's beaches and shellfish beds. As part of this effort, regional notification protocols were developed and have been in place since the 1998 bathing season. This program has proved to be extremely effective and is an excellent example of regional cooperation and coordination among many agencies. To address the need for comprehensive monitoring throughout the New York-New Jersey Harbor Complex and its tributaries, IEC has taken a leadership role in the development of harbor-wide monitoring programs in an effort to address data gaps and share water quality data.

The Commission continues to put great emphasis and a high priority on public involvement,

education and outreach activities. This includes testifying at public hearings and meetings on various issues of concern; lecturing at local schools, colleges and to community groups on subjects of environmental concern and Commission activities; participating in seminars and forums involving environmental professionals and the general public; and contributing to various outreach documents for congressional and public awareness. For several years, Commission staff has had hands on interactions with volunteer citizen water quality monitoring groups.

This report provides a record of the water and air pollution activities of the Interstate Environmental Commission for the period December 2004 through November 2005. To address the environmental problems within its area of jurisdiction, the Commission has focused on technical assistance, enforcement, engineering, planning, laboratory analysis, ambient and effluent water quality monitoring, statistical analysis, coordination, oversight and legislative/public outreach and education.

WATER POLLUTION

The Commission's water pollution abatement programs continue to focus on the effective coordination of approaches to regional problems. Opening additional areas for swimming and shellfishing remains a high Commission priority. The IEC's programs include enforcement; minimization of the effects of combined sewers, storm sewers, and municipal separate storm sewer systems; participation in the National Estuary Program; public involvement, education and outreach; control of floatables; compliance monitoring; pretreatment of industrial wastes; toxics contamination; sludge disposal; dredged material disposal; and monitoring the ambient waters — especially with regard to opening new areas for swimming and shellfishing.

Planning and construction is under way to provide water pollution control and abatement from municipal and industrial wastewaters discharging into the IEC's District waters. It is estimated that nearly $8.0 billion has been allocated by municipalities and bond act dispersements in the District for 393 projects recently completed, in progress, and planned for the future.

The Commission remains very actively involved with the Long Island Sound Study and the New York-New Jersey Harbor Estuary Program — both part of the National Estuary Program. IEC participates on the Management Committees, implementation and planning teams, and on various workgroups for these studies. With the Comprehensive Conservation and Management Plans for the LISS and the HEP in place, IEC remains involved with the workgroups that are dealing with total maximum daily loads for pathogens, nutrients and toxics. The Commission remains an active participant in the process for public involvement events and products, such as volunteer monitoring workshops, newsletters, tracking reports and fact sheets. The Commission has been involved with research proposal committees, science and technical advisory committees and interactions with citizen advisory committees throughout the District. In this regard, IEC is a member of the New Jersey Water Monitoring Coordination Council.

IEC's research vessel, the R/V Natale Colosi, was again used by the Commission to

participate in a multi-agency intensive survey in Long Island Sound to continue to document dissolved oxygen conditions. This was IEC's 15th consecutive year as a participant in this important project. For the tenth year in a row, at the request of NJ DEP, during the winter and spring of 2004-2005, the Commission collected water quality samples needed by NJ DEP to check the sanitary conditions of the shellfish waters of western Raritan Bay. In support of the HEP Pathogens Workgroup, IEC recently began a new pathogens monitoring program on the Hudson River. Since 2003, IEC has conducted ambient and inland pathogens track down investigations on the Byram River. IEC coordinates its compliance monitoring program with its three member states' environmental departments, as well as with US EPA. This program consists of the Commission regularly sampling waste discharges from municipal and industrial permittees throughout the District. These and other sampling programs are detailed in this report.

For the eighth consecutive year, the Commission took the lead and coordinated the efforts of the Regional Bypass Workgroup which is comprised of 16 federal, interstate, state, county and local agencies. The Workgroup maintained notification protocols to inform each other of unplanned bypasses and, based upon modeling software especially developed to predict the effects of those bypasses, determined if area beaches and shellfish beds should be closed to protect the health of the public. During the 11-month period ending November 30th, a combination of 196 raw sewage bypasses, illegal connections, and treatment reductions occurred.

The Commission's involvement in several legal actions continued this past year. Those actions are detailed in the Legal Activities section of this report and are highlighted as follows:

- continued participation as a party in 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; and

- continued involvement and oversight of the Consent Orders designed to prevent debris from escaping from the Fresh Kills Landfill located on Staten Island.

The Commission again took an active role in the annual World Water Monitoring Day. Water quality monitoring took place in a coordinated effort around the globe between September 18th and October 18th. The Commission joined thousands of volunteers, agencies and countries around the world to sample area waterways and report their findings. Aboard the IEC research vessel, R/V Natale Colosi, nine sampling stations were monitored for a variety of parameters in the East River and Long Island Sound; the results were input to an international data base.

The IEC laboratory has been located on the campus of the College of Staten Island 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 certified by NJ DEP, NYS DOH and CT DPH and also follows US FDA procedures for sampling in shellfish waters. The Commission's laboratory is also certified under the National Environmental Laboratory Accreditation Program.

IEC's library holdings and archives continue to be updated and provide an accessible regional depository of water and air quality related subjects. The Commission's current and historical holdings have been sought and made available to the academic community, consulting engineering firms, attorneys, environmental and public awareness groups, government agencies across the nation, and international entities.

AIR POLLUTION

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.

During the 12-month period from October 2004 through September 2005, the Commission received a minimal number of air pollution complaints. As it has been in the past, all of the calls originated from Staten Island, New York. Citizen complaints have proven to be an invaluable source of firsthand information about poor air quality. Accurate odor descriptions could lead to the discovery of the emissions sources.

IEC continued its role as coordinator of the High Air Pollution Alert and Warning System for the New Jersey-New York-Connecticut Air Quality Control Region; conditions during the past year did not warrant activation of the system.

The Commission again participated in the Ozone Health Message System to alert the public of unhealthy ambient air conditions. Based on information received from its member states, the Commission disseminated the majority of 32 health messages — 17 for ozone and 15 for fine particulates — between June 6, 2004 and September 13, 2005, to the appropriate government environmental and health agencies throughout the region.

LOWER EAST RIVER, MAY 2005
Photo by P. Sattler, IEC

II. WATER POLLUTION

GENERAL

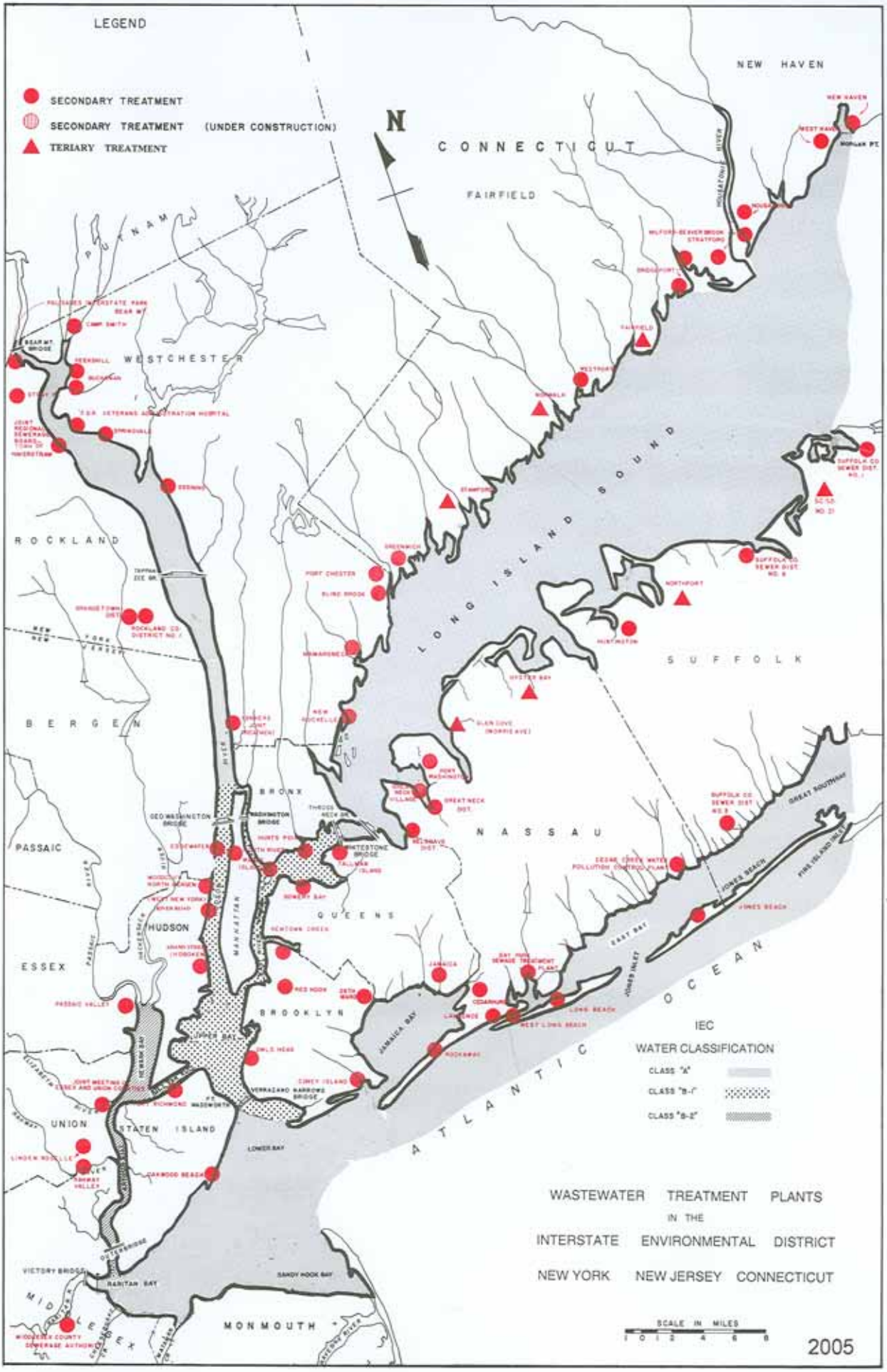
Within the Interstate Environmental District in 2005, almost $8.0 billion was allocated for 393 water pollution control projects which were either completed, in progress, or planned for the future. These monies were allocated in the following manner: over $596.0 million for 139 completed projects, more than $4.89 billion for 150 projects in progress, and more than $2.498 billion for 104 future 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.

Adequate infrastructure is a necessity for maintaining and improving receiving water quality, as well as for minimizing use impairments. These tremendous expenditures on the infrastructure have resulted in significant water quality improvements throughout the District over these past years; however, much remains to be done.

With secondary treatment virtually in place throughout the Interstate Environmental District since 1994, 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 National Estuary Programs in the District have identified major problems affecting water quality which are exacerbated by anthropogenic impacts, namely, global warming, nutrient enrichment, historic sediment contamination, pathogens, habitat loss and floatables. These issues must be addressed in order to maintain and improve commercial and recreational maritime activities, living marine resources, land use, and wetland creation/remediation.

The Commission obtained the information on water pollution control projects presented in this section 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 format used in this report is designed to provide background, as well as the current status of construction, engineering studies and experiments, pilot projects and experiments, and related environmental conditions within the associated drainage basins. The information in this section is that which was available and accurate through November 2005.

A map of the Interstate Environmental District on the following page shows the locations of wastewater treatment plants which discharge into District waterways, the type of treatment and upgrade status of each plant, and the Commission's water quality classifications. Additional information on each plant is listed in Appendix A.



CONNECTICUT WATER POLLUTION CONTROL PLANTS

Connecticut is continuing its efforts to meet the goals of the Phase III Actions for Hypoxia Management formalized in the Total Maximum Daily Load (TMDL) written by Connecticut and New York in 2000, and approved by US EPA in 2001. The TMDL establishes a nitrogen reduction target of 58.5% by 2014. The focus of the TMDL is the wasteload allocation (WLA), and both states have developed plans to gradually upgrade sewage treatment facilities with BNR technology. In Connecticut, the 79 sewage treatment plants located throughout the state — including 12 facilities that discharge to the IED — began trading nitrogen pollution credits in 2003, based on their monitored performance in 2002. Communities that exceed their annual nitrogen reduction targets earn pollution credits and sell them in a Nitrogen Credit Exchange. Communities that have yet to upgrade and do not meet their nitrogen reduction target goals must buy credits. The program takes into account that some plants can more cost-effectively remove nitrogen because of size, design, or proximity to western Long Island Sound where the nutrient impact is greatest. The third annual nitrogen exchange was completed during the summer of 2005 based on 2004 performance. In 2004, 1,262 excess credits were generated which were valued at about $870,000. Since the nitrogen permit limits are lowered each year and the five-year general permit limit for nitrogen is nearing its expiration, CT DEP has proposed to reauthorize the permit a year early. Even if the new permit is approved, the 79 facilities are far ahead of the schedule set in the TMDL.

Bridgeport - East Side and West Side Plants, Connecticut (Fairfield County)

Completed Project

On-line on June 30th, an effluent chemical dechlorination facility was operational at the 30 MGD secondary West Side plant. Final costs associated with this project were $950,000.

Future Projects

Since 1991, the 3,880 acres that comprise the Bridgeport drainage basins have been undergoing a multi-year phased construction CSO improvement program. This is a dual-phase improvement program. Phase I is nearly complete (99%) at an estimated cost of $32 million. Phase II design and subsequent construction is estimated at $80 million with a completion date for all construction by 2016. Phase II construction is planned to begin during the summer of 2006. CSOs which discharge into Black Rock and Bridgeport Harbors will be eliminated and the remaining CSOs will be monitored by a remote telemetering system. The Water Pollution Control Authority has also allocated about $1.5 million per year for sewer system rehabilitation for ongoing work in both drainage basins.

Grass Island Waste Water Treatment Plant, Greenwich, Connecticut (Fairfield County)

Completed Project

The Oneida pump station rehabilitation represents Phase I of the Sewer System Rehabilitation program. Costs associated with this phase were estimated at $855,000. Additional work under this phase, which is located in the Byram and Old Greenwich neighborhoods, included manhole lining, sewer pipe lining, sealing and grouting, and excavated repairs to control infiltration and improve structural integrity.

Projects in Progress

This 12.5 MGD secondary activated sludge plant is operating under federal and State Orders to evaluate force mains, implement a collection system maintenance program, perform an I/I study and implement the findings of the ongoing SSES. The facility is in compliance with all Order dates. Currently, an UV system design is under way.

Future Projects

Re-scheduled to begin during 2006, a new UV disinfection system will be installed. Estimated costs are $1.8 million for the 12-month scope of work. Two engineering studies that are pending in late 2005 involve a headworks evaluation and a plant-wide SCADA assessment. Phase II of the Sewer System Rehabilitation program will go to bid in 2006 and is estimated to incur costs of over $1 million.

Greater New Haven Water Pollution Control Authority - East Shore Water Pollution Abatement Facility (formerly the New Haven Water Pollution Control Authority), Connecticut (New Haven County)

Completed Projects

The Greater New Haven Water Pollution control Authority was formed during 2005. This regional wastewater authority encompasses the towns of East Haven, Hamden, New Haven and Woodbridge.

The Barnes Avenue pumping station and associated force main, as well as the Quinnipiac Avenue pumping station, were placed in service during August 2005. A final cost of $3.2 million was incurred to upgrade and reconstruct these existing, aged facilities as a component of the GNHWPCA's ongoing repair/rehabilitation/capital improvement program for its collection system. The Orange/Bishop/Clinton/Middletown Avenue sewer separation project was also completed during 2005. This $4.8 million project consisted of the installation of approximately 4,000 linear feet of new storm sewers ranging up to 30-inches in diameter (30"Ø).

Projects in Progress

Sewer separation construction will continue until combined sewers discharging to New Haven Harbor are eliminated. This work will not be completed until approximately 2019 at an estimated cost of $350 million; overall, this work is approximately 20% complete. Construction of the 5.5 MG Truman School CSO storage tank is 95% complete. This work is estimated to cost over $18 million and is a component of the GNHWPCA and the City of New Haven Long-Term CSO Control Plan. The Morris Cove pump station replacement is 60% complete with anticipated construction costs of $5.5 million. The Welton Street pump station and storm sewer upgrade in Hamden is 90% complete. This $2.4 million undertaking involves upgrading and reconstruction of an existing aged facility, as well as replacement of new gravity sewers and force mains to eliminate sanitary sewer overflows. The $4 million North Front Street/Pine Street sewer separation phase includes the installation of about 1,000 linear feet of new 30-inch diameter (30"Ø) sanitary storm sewers. This phase is anticipated to be complete during the spring of 2006.

Future Projects

The Long-Term CSO Control Plan, which was completed and approved in 2003, is an ongoing 15-year program. There are three components planned to be completed during 2008. The State Street I/I improvements in the town of Hamden will incur costs of $2.3 million (April). Anticipated to be operational during June, the Lombard East and James Street sewer separations will cost about $9.2 million. Finally, the East Shore WPAF with its associated pump stations — East Street and Boulevard — will be upgraded to maximize wet weather flows. This phase is estimated to cost $8.9 million and be operational during October.

Milford - Beaverbrook, Connecticut (New Haven County)

Future Projects

Facility and design plans are complete for this secondary 3.1 MGD plant which discharges to the Housatonic River. Collection system upgrades will also be undertaken. Construction is anticipated to begin during 2006 and be operational during 2008. This facility is operating under federal and State Consent Orders to reduce nitrogen loadings and attain permitted effluent limitations and requirements. Refer to the Milford-Housatonic facility write-up for additional information.

Milford - Housatonic, Connecticut (New Haven County)

Future Projects

This facility is operating under federal and State Consent Orders to reduce nitrogen

loadings and attain permitted effluent limitations and requirements. Facility and design plans are complete for this secondary 8.0 MGD plant which discharges to the Housatonic River. Both the Housatonic and Beaverbrook facilities will be upgraded; construction is anticipated to begin during 2006 and be operational during 2009. Total costs are re-estimated at $65 million for both plants.

Two pump stations, West Avenue and Gulf Pond, will be upgraded with associated gravity sewers and force mains. The collection system designs are complete; construction and installations will coincide with the main facility timetables. Refer to the Milford-Beaverbrook facility write-up for additional information.

Norwalk Waste Water Treatment Plant, Norwalk, Connecticut (Fairfield County)

Project in Progress

This 20 MGD secondary activated sludge plant is located on the Norwalk River which has a confluence with Long Island Sound. Recently under way, an engineering evaluation ($150,000) is being conducted on the headworks and main lift pump.

Stamford Water Pollution Control Authority, Connecticut (Fairfield County)

Completed Project

This facility is operating under a State Consent Order to upgrade, expand and implement nitrogen removal capabilities. Consent Order compliance dates require substantial completion by early 2005; this facility is in compliance with Order dates. Under way since December 2001, the $105 million expansion and upgrade to this 24 MGD was completed during 2005. This modernization will improve the capability of this plant to remove nitrogen in compliance with LISS Phase III limitations, as well as eliminate chlorine toxicity by using ultraviolet disinfection. This facility, the fifth largest municipal plant in Connecticut, discharges to Stamford Harbor in western Long Island Sound and provides treatment to the greater Stamford area.

Stratford, Connecticut (Fairfield County)

Future Project

A proposal for capacity expansion of this 11.5 MGD secondary treatment plant, in conjunction with a facility-wide upgrade, was approved by the Town of Stratford and CT DEP. Total costs to complete all construction phases are estimated to be $52 million. Start-up dates have yet to be determined.

West Haven, Connecticut (New Haven County)

Completed Projects

The facility plan for the treatment plant was completed and approved by CT DEP. The City has signed a contract for design improvements. Funding logistics are nearly complete for the final details of the collection system facility plan.

Future Projects

This facility is operating under a 1990 (amended in 1992) Stipulated Judgement which requires collection system, pump station and main facility upgrades. This facility is in compliance with Consent Order compliance dates. The Consent Order schedule requires substantial construction completion during 2008, with operational levels attained during 2009.

Facility plans for the 12.5 MGD secondary treatment plant and the collection system upgrades have construction costs estimated at $35 million. This modernization will incorporate BNR capabilities. An approximate construction start-up date is 2007 for this 3-year scope of work.

Westport, Connecticut (Fairfield County)

Completed Project

At a final cost of $250,000, the Church Street sewer replacement was installed during this past summer; the sewer was operational during the 2005 fall season.

Project in Progress

A complete facility upgrade with nitrogen reduction capabilities is under way. The new facility will incorporate a four-stage oxidation ditch reactor system with an anoxic reactor, clarifiers and UV disinfection . The construction is 25% complete and is re-estimated to cost $28 million. It is anticipated that the new facility will be operational during 2008.

TUG & BARGE ON LONG ISLAND SOUND
AUGUST 2005
Photo by P. Sattler, IEC

NEW JERSEY WATER POLLUTION CONTROL PLANTS

Bayonne Municipal Utilities Authority, New Jersey (Hudson County)

Project in Progress

The primary treatment facility in Bayonne, with its discharge to the Kill Van Kull, was converted to a pump station and diverted flows for treatment at the Passaic Valley Sewerage Commissioners' (PVSC) secondary treatment plant on March 31, 1990. The Bayonne Municipal Utilities Authority (MUA) received a $3.6 million (eligible project cost) low interest loan in 2002 from the New Jersey Environmental Infrastructure Trust for the installation of an additional two miles of gravity sewer, as well as for surveying and relining of applicable existing sewers.

The treatment plant at the former Military Ocean Terminal (renamed the Peninsula at Bayonne Harbor) is now under the auspices of the Bayonne MUA. As of May 2004, a port for cruise ships opened here, New Jersey's first cruise port in over 40 years. The port had berthed Liberty Ships during World War 2, as well as transports headed for the Persian Gulf in 1991. Refer to the Peninsula at Bayonne Harbor write-up for additional information.

Edgewater, New Jersey (Bergen County)

Projects in Progress

This facility is operating under a State Consent Order to complete an outfall extension into the Hudson River. Construction is to begin in 2006, with substantial completion by 2007. The plant is in compliance with all Order dates.

Under way since December 2004, a pump station upgrade is 50% complete and is estimated to cost $250,000. Additional collection system work involves sewer separation at an estimated cost of $1.25 million.

Future Projects

Planned to begin during the 2006 winter season, the effluent screening system will be replaced. An estimated cost of $250,000 will include all installations. A facility outfall extension ($1.3 million) is anticipated to begin during 2006.

Jersey City Municipal Utilities Authority, New Jersey (Hudson County)

Project in Progress

The Jersey City primary facilities were converted to pump stations and diverted flows for treatment at PVSC during September 1989. This authority received a low interest loan from the New Jersey Environmental Infrastructure Trust of over $3.7 million (eligible project cost) for CSO abatement. During 2001, the Environmental Infrastructure Financing Program sold Trust bonds in the amount of $15.82 million for combined sewer overflow abatement consisting of construction of in-line and end-of-pipe netting facilities and tide gates to capture solids and floatables, and to rehabilitate one CSO regulator.

Six floatables capture devices, using both in-line and end-of-pipe netting, have been installed. The Jersey City drainage basin, located on the southern Hudson County peninsula, discharges to New York Harbor, the Hudson River, Newark Bay, and the Hackensack River and its tributaries.

Joint Meeting of Essex and Union Counties (Edward P. Decher Wastewater Treatment Facility), New Jersey (Union County)

Completed Projects

Several major upgrades were completed and operational during the period December 2004 and July 2005. The scope of work included the rehabilitation of the primary settling tanks' traveling bridge rail and cog system; installation of a new mixing system in a digester, as well as rehabilitation of the gas holder cover; installation of new sludge feed pumps and an odor control system in the Sludge Thickening Facility; replacement of coarse and fine influent bar screens; installation of the plant-wide fiber optic network; replacement of thickening centrifuges with gravity belt thickeners; and installation of new magnetic flow meters and electric operated valves for the waste activated sludge pumps. Collectively, these upgrades were estimated to cost $8.5 million.

Project in Progress

Recently under way (20% complete), the lime-stabilized cake pipelines from the dewatering building to the truck loading station are being replaced. This upgrade is estimated to cost $200,000.

Future Projects

The newly installed plant-wide optic network will support the new SCADA telemetry control system. An addition to this network will be the installation of the security and process camera monitoring system ($800,000).

Additional facility upgrades that are planned include the construction of a new laboratory and office building ($6.5 million) and a co-generation facility. The treatment plant outfall bulkhead, located on the Arthur Kill, will be rehabilitated at an estimated cost of $800,000.

JOINT MEETING OF ESSEX AND UNION COUNTIES
UNION COUNTY, NEW JERSEY

NEW GRAVITY BELT THICKENER
Photo Courtesy of Joint Meeting of Essex and Union Counties

Kearny Municipal Utilities Authority, New Jersey (Hudson County)

Future Projects

This primary treatment facility was converted to a pump station and, during November 1990, diverted all flows to the PVSC regional facility for treatment. The Harrison Avenue pump station was completed during November 1998 and went on-line to convey flows to the existing South Kearny pump station and then to the PVSC facility. Two new pump stations with approximately 8,000 linear feet of force main will convey Meadowlands leachate and municipal wastewater to PVSC for treatment is in the planning stage. As an alternative, an existing force main is being televised to determine its integrity. This one-year project is estimated to cost $2.5 million. Refer to the PVSC write-up for additional information.

Additional expansions to the Kearny MUA collection system will involve a new stormwater system to eliminate discharges from the existing CSO system. No start-up date is available; the six-month agenda is estimated to cost $1 million. During 2005, the Kearny MUA received a low interest loan of over $3.3 million from the New Jersey Environmental Infrastructure Trust. These monies will be used for a pump station upgrade.

Linden Roselle Sewerage Authority, New Jersey (Union County)

Completed Projects

This facility was operating under a State Consent Order dealing with a violation of an air permit (March 26, 2004). The necessary corrective actions were completed and approved during April 2005.

During the 2005 calendar year, the main sewer interceptor was televised in order to locate inflow. All needed repairs were accomplished at a final cost of $350,000.

Projects in Progress

The Authority is rehabilitating and upgrading its entire sludge handling area (80% complete) consisting of sludge thickening, digesters, gas system, sludge storage tanks, and sludge pumping equipment. This $13.65 million project has a two-year construction schedule and is being funded by a low interest loan from the New Jersey Environmental Infrastructure Trust Program.

This facility received a New York-New Jersey Harbor Estuary Program grant for PCB track-down. The Authority recently began Phase IV of the effort after receiving US EPA's approval of its QA Project Plan.

Middlesex County Utilities Authority (Edward J. Patton Water Reclamation Facility), New Jersey (Middlesex County)

Completed Projects

Preliminary engineering evaluations and designs for a secondary force main were completed during March 2005. The force main will service the Edison pump station. The installation also included related collection system upgrades.

Projects in Progress

The Authority is installing (90% complete) five indirect dryers with lime mixers and ancillary equipment to reduce the volume and operating costs of the sludge end product. This project is estimated to cost $40.4 million and is anticipated to be operational during March 2006.

Recently under way (5% complete), the bar screens are being replaced at the Sayreville Relief pump station. The estimated $2.4 million upgrade is anticipated to be on-line during June 2006.

Future Project

The new force mains to convey flows from the Edison pump station are estimated to cost $62 million. The three-year installation is planned to be complete during late 2009.

Middletown Sewerage Authority, Township of, New Jersey (Monmouth County)

Completed Projects

The existing bar screens were replaced with fine screens with automated screenings removal equipment and was on-line during August 2005. The final cost was $1.1 million. A dual study recently completed addresses modernization of secondary treatment facilities and aeration efficiency. Collection system rehabilitation involved televised inspection of gravity sewers and manholes with subsequent repairs in North Middletown. This work was completed during 2005 and had a final cost $480,000.

TOWNSHIP OF MIDDLETOWN SEWERAGE AUTHORITY
MONMOUTH COUNTY, NEW JERSEY

FINE SCREENS AND SCREENING
INSIDE RENOVATED AND EXPANDED BUILDING
Photo Courtesy of TOMSA

Future Project

A main facility upgrade will include the installation of fine bubble aeration diffusers. This aeration system will increase the estimated costs to as much as $10 million.

Monmouth County Bayshore Outfall Authority, New Jersey (Monmouth County)

Completed Projects

A temporary outfall underwater pipe was repaired and operational during June 2005; the final costs amounted to $115,105. Renovations at the Sandy Hook pump station were completed during November 2005 at a cost of $20,185.

Project in Progress

This Authority maintains the infrastructure for two customer authorities. It receives secondary treated effluent from the Bayshore Regional Sewerage Authority and the Township of Middletown Sewerage Authority. During 2005, an average of 479.63 MGD was discharged to the Atlantic Ocean out side of the Interstate Environmental District. During 2005, repairs to the Atlantic Ocean outfall pipe were under way (36% complete) at an estimated cost of $422,200.

North Bergen Municipal Utilities Authority - Woodcliff Plant, New Jersey (Hudson County)

Project in Progress

There have been ongoing negotiations since 1995 between this Authority and the NJ DEP to upgrade the plant design from a flow of 2.9 MGD to 3.4 MGD. During 2005, this secondary facility, which utilizes packed tower trickling filters, discharged an average of 2.6 MGD to the Hudson River.

North Hudson Sewerage Authority - Adams Street (formerly Hoboken), New Jersey (Hudson County)

Completed Project

As stipulated in this facility's current NJPDES permit, an ammonia toxicity study was completed; the report is due in January 2006.

Projects in Progress

This facility is operating under a State Administrative Consent Order to complete the installation of solids and floatables facilities. This facility is not in compliance with Order dates. Since October 2002, CSO abatement facilities are being installed along the Hudson River in Weehawken, New Jersey. A collection system consisting of a total of 19 regulators and 14 outfalls will be enhanced with screening modules in order to eliminate solids and floatables greater than one inch in diameter (1"Ø). Two contracts are under way which involve a conduit consolidation ($1.9 million) and a solids and floatables collection structure

($2.3 million).

Collection system upgrades are under way. The contracts include repair of catch basins, manholes, and sewer lines. The Kerrigan Avenue collection system improvements are estimated to cost $3.3 million. The 18th Street pump station upgrade is estimated to cost $3.5 million.

Future Projects

Four main facility and pump station upgrades are planned throughout 2006. First, bar screens will be replaced in the preliminary facilities building. Pump controls will be replaced in the effluent and trickling filter pump stations. Lastly, an alternative energy project using solar panels will be incorporated into the main treatment plant.

North Hudson Sewerage Authority - River Road (formerly West New York), New Jersey (Hudson County)

Completed Project

As stipulated in this facility's current NJPDES permit, an ammonia toxicity study was completed; the report is due in January 2006.

Projects in Progress

This facility is operating under a State Administrative Consent Order to have solids and floatables modules in place. Three solids and floatables screening modules are being constructed. The first is 95 per cent complete ($7 million) and is in operation. The other two modules are under construction with a total estimated cost of $18.2 million.

Future Project

At an estimated cost of $700,000, an UV system will be installed during late 2006.

Passaic Valley Sewerage Commissioners, New Jersey (Essex County)

Projects in Progress

More than 80% complete, sludge degritting and screening system improvements are estimated to incur costs of $7.682 million. This modernization is anticipated to be operational during January 2006. Recently under way, a demonstration project will evaluate reinforcement of the headworks, screens and grit chambers.

This facility received a NY-NJ HEP grant in 2003 to develop a PCB mass balance

in two collection systems that are in the service area. The award was for $50,000. The federal QAPP was approved during July 2005.

An ongoing sewer rehabilitation project is estimated to cost $3.9471 million.

Peninsula at Bayonne Harbor (formerly Military Ocean Terminal), New Jersey (Hudson County)

Future Project

This site was formerly the Military Ocean Terminal (MOT). MOT was decommissioned during the fall of 1998 and has now reverted to the City of Bayonne. The Bayonne Local Redevelopment Authority (BLRA) has proposed a $32 billion plan to develop 18 million square feet of commercial and residential space. In December 2002, the complete and total transfer to the BLRA was finalized and the property was renamed The Peninsula at Bayonne Harbor. The 437-acre site is located in Upper New York Harbor. The proposed plan includes a port facility, townhouses, office space, movie production facilities, a marina, recreational facilities, and a retail complex. Part of this complex is Cruise Port - Bayonne (Cape Liberty Cruise Port - Bayonne, NJ), which is the first new cruise port in New Jersey since 1960.

During the Spring of 2003, the Bayonne MUA began the sewer integration project to link the Peninsula's sewer mains with those in the rest of the City of Bayonne. As is the case with the rest of Bayonne, the sewage from this site will be treated at the PVSC treatment plant.

Rahway Valley Sewerage Authority, New Jersey (Union County)

Completed Project

Rehabilitation and upgrading of two digesters with new mixing and pumping systems is complete. The cleaning and removal of antiquated systems with subsequent installations of associated electrical services and instrumentation were operational and complete on October 31, 2005. Final costs were $4.6 million.

Projects in Progress

Since October 12, 2001, this facility is operating under a State Consent Order to expand the capacity of the existing plant in order to accommodate additional wet weather flows from CSOs. The plant is in compliance with Order dates. The milestone for substantial construction completion is between 2006 and 2008.

Under way since 2004, a cogeneration and sludge drying facility (70% complete) is being built. This facility will house three engine generator sets totaling 4.6 megawatts.

Eventually, prime electrical power will be provided to all treatment plant expansions. Additional projects under way include the preparation of a comprehensive strategic plan which will address the major plant upgrade (13% complete) and rehabilitation of the existing laboratory building (10% complete). Collection system modifications include the installation of approximately 7,100 linear feet of 42-inch diameter (42"Ø) relief sewer beneath Routes1/9, as well as a subaqueous drilling beneath the Rahway River which has a confluence with the Arthur Kill. These phases are estimated to cost $23 million.

Future Projects

Expected to begin during the 2008 fall season, expansion of the existing 40MGD plant will be needed to accommodate wet weather flows due to the elimination of CSOs. The re-estimated $137 million project will include new headworks, new aerated grit chambers, a new primary settling tank, two new final clarifiers, filtration, UV disinfection and effluent pumping. Influent and effluent piping modifications, as well as site facility construction, is planned.

This eight-year endeavor is currently out to bid and involves the design and construction of plant upgrades and enhancements to close the CSOs, eliminate effluent violations, and allow the plant to treat significantly greater wet weather flows of up to 105 MGD. This facility treats daily flows from 14 member municipalities in central New Jersey, which includes about 300,000 residents, and 3,500 industrial and commercial customers.

UPPER NEW YORK HARBOR, AUGUST 2005
Photo by A. Lochner, IEC

NEW YORK WATER POLLUTION CONTROL PLANTS

During April, various grant programs within the Interstate Environmental District were announced and applications were being accepted and funded under New York State's Environmental Protection Fund (~$10.8 million) and the 1996 Clean Water/Clean Air Bond Act. Several federal sources for grant monies include the Long Island Sound Restoration Act (~$2.5 million) and Long Island Sound Futures Fund (~$1 million). Other federal and State sources to fund priority activities to restore water quality will be used for the Hudson River Swimmable Goal, Municipal Separate Storm Sewer Systems Phase II Stormwater Permit Implementation, the NYS Clean Vessel Assistance Program, the Environmental Benefits Fund, the NYC Watershed Protection Program Grant, the Clean Water State Revolving Fund, and the NYS Water and Sewer Co-Funding Initiative.

The Long Island Sound Restoration Act funds will be available for municipal wastewater treatment plant improvement, nonpoint source abatement and control, and aquatic habitat restoration projects which are consistent with the Long Island Sound Study Comprehensive Conservation and Management Plan. Similarly, the LIS Futures Fund will provide grants up to $75,000 to public or nonprofit private agencies, institutions and organizations, interstate entities or regional water pollution control agencies to support projects that restore and protect the health and living resources of the Sound. The NYS Clean Vessel Assistance Program funds projects dealing with education relating to the use, availability and benefits of pumpout and dump station facilities used for the purpose of disposal of septic waste from recreational boats, as well as construction, renovation and replacement of pumpout and dump facilities for recreational boats. The Clean Water State Revolving Fund provides low interest loans to construct water quality projects. The NYS Water and Sewer Co-Funding Initiative assists communities in finding sources of government funding for water and sewer projects.

Bay Park Sewage Treatment Plant - Disposal District No. 2, New York (Nassau County)

Completed Projects

Several engineering studies were completed which address improvements to the chemical bulk storage facilities and plant-wide site permanent lighting.

Projects in Progress

This facility, operating under a State Consent Order (June 29, 2004) to upgrade the chemical bulk storage facilities, is in compliance with the Order dates. Substantial construction completion is required by November 30, 2006. Modifications (10% complete) are being made to the main facility's chemical bulk storage tanks to ensure compliance with this Order and current standards.

Design plans for the influent pumping upgrades are 90% complete. Also, the chilled and hot water piping repairs are 90% complete.

Belgrave, New York (Nassau County)

Projects in Progress

Recently under way, denitrification and UV disinfection facilities are being installed at this 2 MGD trickling filter plant. Construction and installations will take about 18 months and are planned to be operational during the late 2007 spring season. The BNR upgrade will use a denitrification filter. This upgrade is estimated to cost $6 million. During 2003, the District was selected to receive a $2.9 million grant for the BNR upgrade from the 1996 Clean Water/Clean Air Bond Act.

Blind Brook, New York (Westchester County)

Completed Projects

New influent headworks and clarifier improvements that have been under way since 2003 were substantially complete during June 2005. This $1.2 million upgrade included the replacement of the influent/effluent pumps with modifications to the VFDs, a new grit removal system, a submersible pumping system in the primary clarifier scum transfer, full radius scum skimmers, and troughs for the secondary clarifiers. Additionally, structural building improvements included roof and wall repairs.

Bowery Bay, New York (Queens County)

Completed Projects

An engineering evaluation dealing with nitrogen probes was completed during February 2005. The evaluation of various dissolved oxygen probes, which began during July, is continuing.

Projects in Progress

The Bowery Bay WPCP upgrade is a multi-phase modernization intended to improve process efficiency, reduce manpower requirements, and improve reliability. Subsequent to the project's initiation, the City entered into the NYS SPDES Administrative Consent Order - Nitrogen Reduction Agreement. Required under this Agreement, the Bowery Bay WPCP will be retrofitted to reduce nitrogen loadings into the East River and Long Island Sound. This facility is located on the upper East River south of Rikers Island.

Phase I includes replacement of most of the process equipment, as well as complete

replacement of the electrical distribution and HVAC systems throughout the plant. Process upgrades include new raw sewage pumps and drives, new preliminary scum collection and pumping equipment, replacement of return sludge and mixed sludge pumping systems, and replacement of the disinfection system. A centralized residuals handling building will be constructed to provide for collection and concentration of screenings and grit. A new plant instrumentation and control system is also being installed. The electrical distribution system improvements involve replacement of all distribution switchgear and construction of new unit substations and motor control centers. The substations and motor control centers will be sized for the eventual conversion of all plant equipment from 208V to 480V power supply. All new equipment will be 480V; all existing equipment to remain will be powered from the existing 208V motor control centers. A complete new boiler plant will be installed in a new addition to the main building. Heating hot water distribution piping and air handling equipment throughout the plant will be replaced. Upgraded personnel, laboratory and storage facilities are also being constructed. Phase I construction has been under way since December 2000. Currently, the anticipated completion date is mid-2008. The bid price for Phase I was $213 million.

Phase II of the Bowery Bay WPCP upgrade addresses immediate necessary improvements to the Solids Handling Facilities. The work includes the replacement of the existing gravity thickener mechanisms. The existing plunger type sludge pumps are obsolete and will be replaced with progressive cavity type units. Grinders will be provided to minimize the possibility of clogging the new sludge heaters that will be installed downstream. Deteriorated concrete walls and walkways will be repaired and existing hand railing replaced with railings conforming to current codes. The cost of Phase II is re-estimated at $37 million and began during February 2005.

The New York City Department of Environmental Protection (NYC DEP) maintains a vast infrastructure comprised of 14 drainage basins. The 14 treatment facilities are sited throughout the City's five boroughs and range in capacity from 40 MGD to 310 MGD. The sludge management program consists of dewatering facilities sited at eight of the existing 14 treatment plants. The sludge is transferred from the other six plants by sea.

The 14 New York City drainage basins are serviced by a combined sewer system which has approximately 500 outfalls and 382 regulators with tide gates. Completed in 1985, the New York City Regulator Improvement Program was a study to inventory, assess and determine required improvements to the regulators, interceptors and tide gates. These elements control the amount of combined sewer flow captured for treatment, convey it to the treatment plants and prevent tidal inflow from entering the system.

A City-wide CSO abatement program has been under way since the 1980s. The objective is to eliminate or ameliorate the effects of untreated sewage which is bypassed during storm events. The first phase identified the extent to which CSOs result in the contravention of water quality standards. The second phase consists of facility plans

involving the entire area of New York City, which has been divided into four major geographical areas of concern. The ultimate goals of the program are the removal of floatable and settleable materials, and the achievement of New York State standards for dissolved oxygen and coliform bacteria. These programs are being conducted in accordance with SPDES permit and/or Consent Order requirements.

Budgetary constraints necessitate the prioritizing of wastewater pollution control projects and watershed supply and enhancement projects. A new 10-year capital budget was proposed during 2003. The New York City CSO capital improvement program, which is currently in its seventeenth year, is being renegotiated with NYS DEC. Many projects previously reported here throughout the 14 drainage basins are being eliminated, postponed or scaled down. Structural and nonstructural solutions are being evaluated and prioritized. Projects under way in the upper East River drainage basins are moving ahead. The East River proposals include floatables capture, holding tanks, disinfection, in-line storage and swirl concentrators. Tributaries of the East River will also have holding tanks and in-line storage. Refer to the Hunts Point and Tallman Island WPCP write-ups for additional information.

For the Jamaica Bay geographical area, holding tanks and in-line storage are the selected CSO abatement alternatives. The Spring Creek Auxiliary Water Pollution Control Plant (AWPCP) is an existing CSO detention facility with a storage volume of approximately 13 MG — 10 MG basin storage and 3 MG influent barrel storage. The Spring Creek AWPCP is located on Spring Creek, a tributary of Jamaica Bay. Refer to the Jamaica and 26th Ward write-ups for information on additional CSO projects.

The other areas that are being addressed are the Inner New York Harbor and Outer New York Harbor. The plan for the Inner Harbor includes maximizing flow to the WPCPs and activation of the flushing tunnel in the Gowanus Canal which was completed during May 1999. Facility planning is under way for regulator improvements ($20 million). In-line storage is planned for Newtown Creek at an estimated cost of $100 million; facility planning is under way.

Outer Harbor proposals include maximizing flow to the WPCPs and reducing CSOs and dry weather flows in Coney Island Creek. Preliminary design is under way for regulator improvements. Additional fees of $10 million are estimated to determine designated use and the attainment of New York State standards in the receiving marine waters.

The NYC DEP is conducting 26 studies on waterbodies throughout the New York Harbor Complex to address compliance with water quality standards and designated uses. The Use and Standards Attainment (USA) Project began in March 2000. The Waterbody/Watershed Stakeholder Teams, a Government Committee of which IEC is a member, and the NYC Citizens Advisory Committee are active participants in this

undertaking. The goals of the project are to (1) define specific and long-term beneficial uses for each waterbody, as well as water quality goals; (2) develop technical, economic, public and regulatory support for prioritizing and expediting implementation of projects and actions needed to attain goals; and (3) provide the technical, scientific and economic bases to support the regulatory process needed to define water quality standards for the highest reasonably attainable use, and to allow water quality standards to be attained upon implementation of recommended projects. Data collection and analyses are continuing in Jamaica Bay and its tributaries, New York Harbor, Gowanus Canal and the East River and its tributaries.

During 2004, the CSO Long-Term Control Plan Project was negotiated with NYS DEC. The hearing record closed during November 2004. This Consent Order incorporates the USA project. As mentioned above, the technical work of the USA project is continuing; field studies of Coney Island Creek have recently begun.

Refer to the Legal Activities section of this report for additional information.

Future Projects

Phase III of the Bowery Bay WPCP upgrade details the BNR improvements required to bring the plant into compliance with the nitrogen loading reduction Consent Order. The scope of work included in this phase will relate to additional stabilization needs. The cost for this work is estimated at $122 million and is scheduled to begin during Fiscal Year 2006.

The Corona Avenue Vortex Facility (CAVF), which was completed in 2000, was conceived and designed as a pilot facility to evaluate the use of swirl concentrators or vortex-type technology to remove floatables from CSOs that discharge to Flushing Bay and the East River. The initial period of operation of the CAVF indicated that several design enhancements were required in order to reduce maintenance, prevent flooding, eliminate odors, and improve operator safety. The use of this facility is being modified. A wrap-up contract was designed to correct problems at the CAVF and 108th Street pump station which is a combined sewage pump station with a 40 MGD capacity. The wrap-up contract work at the CAVF includes the replacement of four slide gates with sluice gates and the installation of a tide gate to help isolate the facility during high tides. The current estimate is $6 million and is currently scheduled to begin during Fiscal Year 2006.

Cedar Creek Water Pollution Control Plant - Disposal District No. 3, New York (Nassau County)

Projects in Progress

The County negotiated a Consent Order (June 29, 2004) with NYS DEC regarding the upgrading of the plant's chemical bulk storage tanks to current standards. An engineering study that is addressing this issue is complete. Recently under way (10%

complete) modifications are being made to the chemical bulk storage tanks.

Future Project

Construction is planned to begin shortly on a sludge dewatering facility with a new belt filter press and ancillary systems. The estimated cost is $32.344 million and the approximate operational start-up date is anticipated during 2007.

See the Great Neck Water Pollution Control District write-up for more information.

Cedarhurst, New York (Nassau County)

Completed Project

A new secondary digester cover was installed at this 1.0 MGD secondary treatment plant. Operational during June 2005, the final cost estimate was $230,000.

Project in Progress

Presently, this facility's SPDES permit is under review. A permit modification for a reduction in the final effluent limit of total residual chlorine is being negotiated.

Coney Island, New York (Kings County)

Completed Projects

On August 5, 2003, a fire caused damage to a portion of the plant's odor control system which treats air from the primary settling tanks. Initial clean up, damage assessment, and short-term repairs enabled two wet scrubbers to be placed into service at a reduced flow rate by early September 2003. The project scope included implementing an emergency contract to restore the odor control facility to its full operational capacity; and designing a staged approach to provide improved odor control treatment levels by the beginning of June 2004. Additional goals were to maintain improved odor control treatment levels for the remainder of the reconstruction duration; improve the odor control system technology; and complete the building reconstruction in 12 months. The cost for the design was $1.9 million. The construction cost was $6.7 million and all phases were complete on January 4, 2005.

A three-month experiment was completed during September which involved a sludge volume index analyzer.

The objective of the Paerdegat Basin CSO facility, located in Brooklyn at the intersection of Ralph and Bergen Avenues, is to improve the water quality of Paerdegat Basin by substantially reducing combined sewer overflows (CSOs) during rainstorms. The

facility plan includes the reduction of CSO impacts through the maximized use of existing facilities (sewers, interceptors and treatment plant) amounting to 20 MG of in-line storage, and construction of a 30 MG off-line facility comprised of underground influent channels and a 21 MG retention tank, all of which capture and store a large portion of combined sewage during rain that normally would have been discharged to the basin. The diverted flow is screened prior to entering the tank. After storms, stored combined sewage empties into the Paerdegat Basin Interceptor connected to the Coney Island Water Pollution Control Plant, partly by gravity and mostly by pumps, for complete treatment.

Above ground facilities required for the operation of the storage facility include a screenings building, an odor control/HVAC building, pump back building, a collections facility and a personnel and maintenance building. Community enhancements include development of a Natural Area Park operated by the New York City Department of Parks and Recreation, redevelopment of Bergen Avenue, inclusion of a Percent-for-Art project, and the construction of meeting space for Community Board No. 18. Wetlands mitigation to offset the loss of wetlands due to construction activities will be performed according to the requirements of the NYS DEC. Re-estimated costs were $350 million for all phases; Phases I and II were completed during 2002 and December 2005, respectively.

Project in Progress

Phase III of the Paerdegat Basin CSO facility is the construction of above-grade structures consisting of a screenings building, odor control and HVAC building, CSO pump back building, and a collections facilities south building with adjacent Community Board No. 18 meeting room. Construction began during September 2005.

Future Projects

The Coney Island WPCP upgrade is a multi-phase project intended to improve process efficiency and improve reliability. These measures will ensure compliance with all applicable permit SPDES requirements and Consent Orders. All phases of construction, including Consent Order mandated items, have been completed except for Phase 5b - Knapp Street laboratory and visitors' center, Phase 5c - reconstruction of the 72-inch diameter (72"Ø) ocean outfall, and Phase 5d - miscellaneous punch list items. Phase 5c includes abandoning an existing ocean outfall structure in Rockaway Inlet, constructing a new section of outfall with diffusers adjacent to the existing diffusers to be abandoned, and repairing the outfall pipes that remain. These phases are being postponed due to budgetary constraints.

Also part of the Phase III Paerdegat Basin CSO facility is the construction of Bergen Avenue from Avenue K to Ralph Avenue, consisting of roadway pavement, concrete sidewalks and curbs, underground utilities, street lighting and trees. The contract also includes modifications to an existing storm sewer on Avenue K which would redirect

the sewer discharge to a new stormwater outfall to Paerdegat Basin. Cost estimates are $4.65 million (presently not in the capital budget) and the scheduled start has been pushed back to March 2008.

Phase IV is the construction and restoration of lands surrounding Paerdegat Basin including decorative fences, lighting and development of an Ecology Park (4.5 acres) adjoining the 28-acre Natural Area Park. This phase has also been rescheduled to begin during November 2008; cost estimates are $10.5 million (presently not in the capital budget).

The Neptune Avenue pumping station is a new construction project to be located at the intersection of West 23rd Street and Neptune Avenue. The pumping station will be designed to convey 45 MGD through two 30-inch diameter (30"Ø) force mains and connect to the Coney Island Interceptor at Stillwell and Neptune Avenues. This project is in a conceptual design phase. Construction of this unmanned pumping station and installation of mechanical equipment includes six submersible pumps, four grinders, a bridge crane, monorail, pipes, sluice gates, valves, and appurtenances; electrical room and switchgear; standby engine generators; HVAC system; plumbing; and landscaping. The scheduled start has been pushed back to January 2010 with cost estimates of $20 million (presently not in the capital budget).

Glen Cove, New York (Nassau County)

Projects in Progress

The City of Glen Cove's wastewater treatment plant is one of 12 point sources in Nassau and Suffolk Counties that are required to reduce nitrogen loadings into Long Island Sound. It is also the largest nitrogen contributor of those point sources. This facility discharges to Glen Cove Creek which is a tributary of Hempstead Harbor.

Since 1998, New York State awarded four separate grants totaling $4,598,750 to the City. Under the 1996 Clean Water/Clean Air Bond Act, two awards (1998 and 1999) totaling $3,378,750 for the construction of nitrogen removal upgrades and facility improvements. The third award, a $200,000 Environmental Protection Fund grant, was awarded in 1999 to the City for the costs associated with the design, bidding and construction observation and oversights of the upgrade. The fourth award was announced in 2003 and is a $1.02 million Bond Act grant to help the City in reducing the discharge of chlorine by converting the current chlorine disinfection system to one that utilizes ultraviolet (UV), and to upgrade the chemical bulk storage system to meet regulatory standards. The UV installation and the chemical bulk storage facility have been initiated recently; completion is anticipated by the 2006 fall season.

Future Project

The cost to put the facility's chemical and fuel storage tanks in compliance with State and federal regulations was re-estimated at $500,000. A construction and compliance schedule has yet to be determined.

Greater Atlantic Beach Water Reclamation District (formerly West Long Beach Sewer District), New York (Nassau County)

Project in Progress

The District went to bid for the repair of the pier supports which maintain the structural integrity of the outfall pipe in Reynolds Channel. The two-month project is estimated to cost $50,000.

Future Project

Planned upgrades will modernize all three substations in the collection system. The estimate for these improvements range from $300,000 to $500,000, but no construction schedule has been released.

Great Neck, Village of, New York (Nassau County)

Completed Projects

The sanitary sewer system was mapped during this past May using GPS. A final cost was estimated at $67,000. Also complete during 2005, collection system maintenance involved lining 315 linear feet of gravity sewer; root treatment and control in 3,922 linear feet of sanitary sewer; and conducting televised inspections and cleaning of 7,318 linear feet of sanitary sewer. Estimated final expenditures were $97,300.

Project in Progress

This facility is operating under a state Consent Order (July 6, 2005) to update the facility or divert flows. Completion of substantial construction is required by August 9, 2011. An engineering study is 50% complete which addresses upgrading the treatment plant by adding four new pump stations and BNR retrofits. Other feasible alternatives involve combining flows with the Great Neck Water Pollution Control District and/or converting both plants to pump stations and diverting all flows for treatment at a regional facility located on the south shore of Nassau County. Refer to the Cedar Creek and Great Neck Water Pollution Control District write-ups for additional information.

Future Project

Planned for early 2006, the grit chamber will be rehabilitated with new chains, sprockets, rails, shafts and wear shoes at a cost of $55,000.

Great Neck Water Pollution Control District, New York (Nassau County)

Completed Project

Completed and operational on April 29, 2005, cleaning, repairs and mechanical upgrades were performed on one digester at a cost of $307,557.

Projects in Progress

An I/I study is ongoing in certain areas of the collection system to evaluate hydraulic capacity and eliminate extraneous flows. This involves manhole inspections and televising of sewer lines. The District has also implemented a comprehensive grease trap inspection program.

Future Projects

For this facility, the nutrient reduction retrofit mandated by the LISS Phase III nitrogen reduction plan is estimated at over $16 million. Three feasibility plans for upgrading this plant have been identified by an ongoing engineering study.

The Feasibility Diversion Study, funded with $36,000 of CW/CA Bond Act grants, was completed approximately four years ago and concluded that the diversion of the entire effluent from this plant and the Village of Great Neck plant to a regional plant on the south shore is technically feasible. In 2003, the District and the Village of Great Neck were selected to receive an $18.7 million CW/CA Bond Act Grant for the diversion project. Both parties are currently working together to confirm that the diversionary concept is cost-effective. Additional considerations are the possible annexation of Great Neck Village into the District, and individual upgrades of the two secondary treatment plants.

Huntington Sewer District, New York (Suffolk County)

Completed Projects

Suffolk County has approved funds of $320,000 for the remediation of highway stormwater discharge to Huntington Harbor. The County has completed the design for the project and construction is tentatively scheduled to start during the 2005/2006 winter season.

The Village of Huntington Bay has received three CW/CA Bond Act grants since 1999 to install structures to collect and dispose of stormwater runoff. Those projects will reduce pollutant loading to the wetlands, Huntington Bay and Huntington Harbor. The Wincoma Drainage Area "C" project was awarded $241,391 and the project is substantially completed. The Bay Crest Willow Pond Drainage Basin "G" project was awarded $321,751. The Bay Hills Drainage Basin Area "L" was awarded $237,038. Both projects are in final design stage and construction is slated to start in 2006.

Two engineering studies were recently completed. The first involved an effluent assessment to determine mercury concentrations using two different analytical methods. The second was a sewer capacity usage study.

Projects in Progress

The Town of Huntington was awarded more than $8.8 million for the nitrogen reduction upgrade under the Clean Water/Clean Air Bond Act. The Town completed the final design in 2003; issued RFPs for professional services in 2004; and has recently advertised for construction. The biological nitrogen removal system selected by the Town will incorporate sequencing batch reactors (SBRs). A construction start-up is anticipated in April 2006, and plans to be operational during November 2007. A total project re-estimate is $15 million.

Recently under way, improvements to the wastewater collection system include cleaning and televised inspections of 4,900 linear feet of 8-inch diameter (8"Ø) and 12-inch diameter (12"Ø) gravity sewer lines. An additional 1,400 linear feet of 12-inch diameter (12"Ø) gravity sewer lines will be installed with a liner at a cost of $120,000.

In addition to the biological nitrogen removal upgrade, the Town was awarded a CW/CA Bond Act grant of $366,000 in 2003 to convert the existing chlorine disinfection system to one that utilizes UV. The UV system design phase was completed during August 2005 at a cost of $36,900. Bid documents are currently being reviewed by the NYS Environmental Facilities Corporation.

Two projects dealing with nonpoint source pollution are the Fleets Cove/ Knollwood Beach Stormwater Mitigation ($300,000) and the Centerport Harbor Stormwater Runoff Mitigation ($250,000). The Fleets Cove project design is complete with construction to start in 2006. The project includes installation of new drainage pipes, leaching basins and catch basins to treat stormwater runoff. The design for the Centerport Harbor Stormwater Runoff Mitigation Project is being finalized; this project entails improvements to the existing stormwater drainage system.

Hunts Point, New York (Bronx County)

Projects in Progress

The Hunts Point WPCP upgrade is a multi-phase project intended to improve process efficiency, reduce manpower requirements, improve reliability and maintain compliance with all applicable permit requirements and Consent Orders. Subsequent to the project's initiation, the City entered into the NYS SPDES Administrative Consent Order-Nitrogen Reduction Agreement. Required under this Order, retrofitting of existing treatment units will reduce nitrogen loadings into the East River and Long Island Sound. This facility is located on the north side of the upper reach of the East River.

Phase I, estimated to cost $203 million, is a 3½-year construction phase which includes Consent Order mandates for hydraulic improvements to allow treatment of twice dry weather design flow (200 MGD) by October 13, 2004, as well as upgrades to most of the wet stream processes. This modernization includes forebay gate chamber improvements, screen chamber modifications, main pump station upgrade, raw sewage conduit modifications, personnel facility additions, aeration tank froth and foam control, a RAS system upgrade, and chlorine building and contact tank modifications. A new central residuals handling facility will be built on site to handle grit, screenings, and scum under one roof.

Phase II construction is currently under way and has been estimated to cost $192 million. This 3½-year construction phase involves BNR enhancement. To comply with nitrogen reduction requirements, this phase will also include new process and channel air blowers, polymer and alkalinity addition facilities, new centrate distribution facilities and a new main electrical substation. Upgrades will be made on the air headers, diffusers and aeration tanks. The BNR work in this phase is also under the Consent Order and must be constructed and operational by June 30, 2007.

See the Bowery Bay write-up for information on the City-wide projects.

Future Projects

Phase III, the upgrade of the plant's solids handling facilities, is currently under design and has been divided into four construction stages. The first stage will be a contract to renovate the existing digesters and to install facilities to add polymer to the main wastewater flow in order to enhance nitrogen removal. The second stage will be the environmental remediation of the Barretto Point site, which will be the location of future sludge digestion facilities. The next stage will be the upgrade of the existing sludge thickening facilities and the installation of new waste gas burners and a gas holding tank, which will replace existing facilities. The final stage of the solids handling upgrade will

be the construction of two new egg-shaped digesters on the Barretto Point site which is located at the confluence of the Bronx and East Rivers. The scheduled completion date for the upgrade of the solids handling facilities is 2014.

Phase IV is the installation of carbon addition facilities required to achieve future total maximum daily nitrogen limits. The carbon addition facilities are required under the Nitrogen Consent Order, and must be constructed and operational by July 2014.

The objectives of the East River CSO facilities planning project are CSO abatement and improving the water quality of several rivers and creeks tributary to and including the East River. The primary goal is to increase, to an extent reasonably feasible and practical, compliance with NYS DEC water quality criteria for the East River and its tributaries through the identification, evaluation and selection of CSO abatement alternatives that would achieve cost-effective improvement in water quality. The tributaries of concern are the Hutchinson River, the Bronx River, and Westchester Creek which are all located in the Borough of the Bronx. Alley Creek, which has a confluence with Little Neck Bay, is located in the Tallman Island drainage basin in Queens County.

The NYC DEP began its CSO abatement program in the 1980s, and expanded the program in response to permits issued by the State. The NYS DEC issued an Order on Consent, June 24, 1996; and an August 6, 1996, Modification that required the NYC DEP to implement a CSO abatement plan to achieve, to a practicable level, compliance with water quality standards. The Order on Consent is currently being renegotiated to revise the milestone dates for the completion of construction for the CSO abatement facilities.

The Hutchinson River CSO Project has been planned by the NYC DEP to reduce CSOs into the Hutchinson River. The goals of the project are to improve the water quality and achieve, to the extent practical, compliance with New York State Class SB water quality criteria. These outfalls currently contribute, on an annual basis, about 95 percent of the CSO discharges to the Hutchinson River, contribute significantly to water quality degradation, and are the primary sources of violations of water quality standards in the river.

The project has gone through a number of design concepts, and the latest proposed plan, as submitted to the NYS DEC on June 30, 2003, provides for the design and construction of two underground storage conduits with a total capacity of 7 MG. The proposed facilities would be constructed in two phases: June 2011 through June 2015 for the 3 MG tank, and December 2016 through 2023 for the 4 MG tank. The CSO storage tanks would be comprised of mechanical bar screens, an air treatment system, an overflow discharge conduit to the river, a pumping station to pump stored combined sewage back to the existing combined sewer system after rainstorms, and a force main to discharge pumped combined sewage into the existing combined sewer system. Provisions would be made for the future installation of disinfection facilities, if such facilities are later found to be necessary for compliance with NYS DEC regulations.

A September 2003 submittal to the NYS DEC provided for the Bronx River CSO Storage Facility Project that will include construction of a 4 MG off-line CSO storage conduit. The storage facility will be located along the east shore of the Bronx River in an area immediately south of the intersection of East 177th Street, DeVoe Avenue and the Sheridan Expressway. Other principal facilities to be constructed as part of this project include a 2,800 gpm pumping station with an accompanying 16-inch diameter (16"Ø) force main for pumpback, air treatment facilities, and mechanical screening facilities. NYC DEP has deferred the construction of the Bronx River CSO Storage Facility beyond the current Ten-Year Capital Plan. However, under the auspices of the Use and Standards Attainment Project, floatables control facilities will be installed at three outfalls discharging into the Bronx River. To date, a conceptual plan has been developed for floatables control at one outfall.

As indicated in a June 2003 submittal to the NYS DEC, the Westchester Creek CSO storage tank project will include the construction of an underground CSO storage tank with a capacity of 12 MG. Other principal facilities to be constructed as part of the project include an operations building to house operational units including air treatment facilities, a single-barrel supply/storage conduit, and a pumping station with a rated capacity of approximately 10,000 gpm with two accompanying 10-inch (10"Ø) and 24-inch (24"Ø) diameter force mains. In addition to the facilities required for CSO abatement, amenities for use by neighborhood baseball Little Leagues will be provided adjacent to the site of the underground storage tank.

Phase I of the Westchester Creek CSO will be for site preparation and construction of the restroom facilities. Phase II includes the CSO tank, sewers, and all required mechanical equipment. The current project schedule indicates that construction of the storage tank and clubhouse facility will be deferred beyond the current Ten-Year Capital Plan.

A BNR alternative will receive Clean Water/Clean Air Bond Act funding and is consistent with the CCMP priorities of the LISS. A froth control facility ($328,461 approved) will be installed.

Jamaica, New York (Queens County)

Projects in Progress

Plant-wide interim expansions are ongoing in order to comply with SPDES limitations and requirements. This work has been estimated to cost over $260 million plus over $48 million in engineering and design construction management fees. There will be two construction phases. Phase I will entail new installations of treatment units such as a primary tank splitter box, a primary tank, a primary force main, the main sewage pumps driven by VFDs, return activated sludge pump stations, waste activated sludge pump

stations, a chlorine contact tank, odor controls, and an electrical substation. Phase II will include a 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 process air piping and new fine bubble diffusers in the aeration tanks, odor controls, emergency lighting and a boiler plant. Final design for Phase II is complete. Phase II construction started in April 2005 and is anticipated to be complete by April 2009.

CSO abatement projects in this drainage basin include the placement of a retention tank in Fresh Creek which is a tributary of Jamaica Bay. The preliminary design is under way. For additional information on other CSO control projects in the Jamaica Bay tributaries, see the Coney Island and 26th Ward write-ups.

See the Bowery Bay write-up for information on City-wide projects.

Joint Regional Sewerage Board-Town of Haverstraw, New York (Rockland County)

Projects in Progress

An operational target date for the upgrading of the aeration system was scheduled during December 2004. The scope of work is now 95% complete and is estimated to cost $2.2 million. Recently under way, rehabilitation of the secondary clarifiers are estimated to incur costs of $750,000. The clarifiers are planned to be operational during August 2006.

Jones Beach State Park, New York (Nassau County)

Completed Project

A design for the incorporation of a SBR process was completed during June 2005. This BNR process will reduce nitrogen loadings; however, cost estimates and a construction start-up for this improvement project have not yet been determined.

Projects in Progress

This barrier island park opened in 1929. It includes six miles of Atlantic Ocean beaches and is considered to be the world's largest public bathing facility. The New York State Board for Historic Preservation recommended that the park be placed on the State Register of Historic Places this past year. This is a prerequisite for federal designation on the National Register of Historic Places under the auspices of the NPS.

Installation of a dechlorination system within the current chlorine contact chamber was on-line during June 2005. The system is still being adjusted to address operational

issues such as pump capacity, automatic alarms and remote monitoring. The goal is to achieve compliance with the water quality based effluent limitation of 0.6 mg/l for total residual chlorine.

Lawrence, New York (Nassau County)

Completed Project

The replacement of the influent pumps and controls was accomplished and on-line in September 2005. Final costs amounted to $291,865.

Projects in Progress

This facility is operating under a State Consent Order to correct collection system Infiltration and Inflow. The Lawrence drainage basin discharges to Bannister Creek in eastern Jamaica Bay.

Future Project

Phase II plant improvements are in the planning stages with no definite construction start-up date as yet. Various plant-wide equipment upgrades and replacements will be done as needed. Remediation costs are estimated at $700,000. During November 2005, the Village of Lawrence was awarded $1.16 million by NYS under the 1996 CW/CA Bond Act. The grant is to help the Village upgrade the main plant to have the capability to remove ammonia and total residual chlorine from the final effluent.

Mamaroneck, New York (Westchester County)

Completed Project

Construction of a BNR demonstration pilot project was completed during 2002. The Clean Water/Clean Air Bond Act award of over $3.83 million required monitoring of the system until 2004. The nitrogen reduction technology of choice proved ineffective; WC DEF stopped all operations and monitoring in June 2003. Under way in November 2004, two pilot projects to address alternative BNR technologies were completed during April 2005.

Phase II automation installations, which will enable remote monitoring of plant processes, are complete. This three-year project was operational during 2005.

Project in Progress

VFD replacements for five main effluent pumps and three intermediate pumps were

under way during October 2005. All upgrades are being performed by in-house staff.

New Rochelle, New York (Westchester County)

Completed Projects

Automation Phase II installations, which will enable remote monitoring of plant processes, are 100% complete at a final cost estimated at $750,000. This phase increases operator control via a Supervisory Control and Data Acquisition telemetry control system.

Two pilot projects were completed during 2005. The first dealt with BNR and the second with dechlorination.

Projects in Progress

A December 12, 1986, NYS DEC sewer extension moratorium on the New Rochelle Sewer District remains in effect. This plant is operating at or above its permitted flow capacity. With anticipated development, there is concern of insufficient plant capacity, as well as the ability to meet effluent requirements. Completed SSES and I/I reduction studies with associated construction is 90% complete.

This facility is operating under a State Consent Order to accomplish collection system rehabilitation (I/I) and eliminate two storm sewer overflows (SSOs) located at Fort Slocum on Davids Island and in Flint Park. The New Rochelle Sewer District — which is comprised of Larchmont, a small section of Mamaroneck, New Rochelle, and Pelham Manor — anticipates a cost of $35 million for all construction phases; construction is under way. By an October 1998 award under the Clean Water/Clean Air Bond Act, Westchester County will receive over $3.3 million to build overflow retention basins in the New Rochelle drainage basin to capture and treat stormwater runoff in order to reduce negative impacts on Long Island Sound. The scope of construction necessary to eliminate the SSOs has increased so greatly that the CW/CA Bond Act award has increased to about $8 million; construction began during mid-November 2002. Other collection system work includes the Sutton Manor pump station rehabilitation and a sludge force main assessment.

Newtown Creek, New York (Kings County)

Projects in Progress

The Newtown Creek WPCP upgrade project is a multi-phase project designed to improve process efficiency and treatment facility reliability. The project is mandated by the NYS DEC Second Modified Judgment on Consent. The Order requires an effluent enhancement program to achieve city-wide effluent limits, secondary treatment and step denitrification treatment levels by December 31, 2007; and complete construction by July

4, 2013.

Phase 1A is a $925 million, 9-year construction phase. Under this phase, the existing main building will be remodeled with the inclusion of new boilers, new emergency turbine generators, and preparations for the installation of the process air blowers. Other items include a new electrical substation, locker facilities, and a visitor's center. Construction of these aforementioned items is currently 71% complete, is estimated to cost $236 million, and is anticipated to be complete during July 2007. The construction of the new solids handling facility consists of the new centrifuge thickening building, 24 thickening centrifuges, eight 3-MG egg-shaped sludge digestion tanks, a sludge transfer station, sludge storage tanks and gas holding tanks. These items are currently 60% complete, are estimated to cost $417 million, and are anticipated to be complete during December 2006. The construction of a new support building to house personnel facilities and laboratories, the disinfection facility, and chlorine contact tanks are progressing. The construction of a new contact tank influent channel, new East River and Whale Creek Canal effluent conduits, the Whale Creek Canal outfall, and the Whale Creek Canal bulkhead are also progressing. Collectively, these items are currently 65% complete, are estimated to cost $247 million, and are planned to be complete during July 2006.

Phase 1B, re-estimated to cost $977 million, is a 10-year construction phase consisting of the construction of the north battery of aeration and final tanks; aeration tank influent splitter box; north control building; and modification of the north half of the central battery of grit, aeration and sedimentation tanks. This work is under way. The installation of the process air system blowers in the main building and process air mains across all three batteries is progressing. The rehabilitation of the existing central and south batteries was completed recently. Collectively, this phase is currently 35% complete, is estimated to cost $661 million, and is planned to be operational during December 2009.

The Manhattan pump station upgrade, which is part of Phase 1B, includes the replacement of raw sewage pumps, structural and architectural modifications to the building, addition of a new electrical substation, and emergency turbine generators. The installation of the interim emergency generators and the community playground is complete. This work is 6% complete, is estimated to cost $194 million, and has a planned completion date of October 2010.

During the Interim Upgrade, a modification of the step-feed aeration process was discovered which produced favorable effluent treatment without the deeper aeration tanks or the primary settling tanks. This new process, termed "Track 3", has been formally accepted by NYS DEC under the Second Modified Judgment on Consent that was entered on June 12, 2002, by the Supreme Court of the State of New York. The Track 3 process significantly reduced the cost of construction. Ongoing since August 2004, 2 test tanks are being used for Track 3 demonstration programs.

See the Bowery Bay write-up for information on City-wide projects.

Future Projects

Phase 1B of the Newtown Creek upgrade includes modifications to the north side of the existing main building's maintenance shops, training facilities, and offices. The modifications also include the replacement of the influent screening equipment and raw sewage pumps. The design is 99% complete. This portion of Phase 1B is re-estimated to cost $142 million and is planned to start during September 2006.

Phase 2, re-estimated at $261 million, is a six-year construction phase consisting of the construction of a new central residuals building with new secondary screens for screening the combined flow from the service areas in Brooklyn, Queens and Manhattan prior to the treatment batteries. This phase also includes the installation of skimmings concentrators, grit cyclones and grit classifiers. Screenings containers, truck loading facilities and an odor control system will also be part of this phase. The design is currently 99% complete. The construction was pushed back to June 2006. Kingsland Avenue will be reconstructed to reflect the final queuing and travel lane configuration. The Nature Walk Extension will be constructed along Kingsland Avenue. The preliminary design is complete. This portion of the phase is estimated to cost $1 million and is planned to begin during December 2006.

Phase 3, re-estimated to cost $677 million, is a seven-year construction phase which involves rebuilding of the existing south half of the central battery and south battery of grit, aeration and sedimentation tanks. The existing control building will be demolished and a new building will be constructed. The design is 70% complete. The construction is planned to begin during October 2008. The final site work would occur at the end of the upgrade and would include landscaping, construction of new on-site roads, parking areas, and site lighting. The preliminary design is complete. With the suspension of the rehabilitation of the existing East River sludge dock and sludge force mains, final design has started on the construction of a new sludge loading facility on Newtown Creek, which is a tributary of the East River.

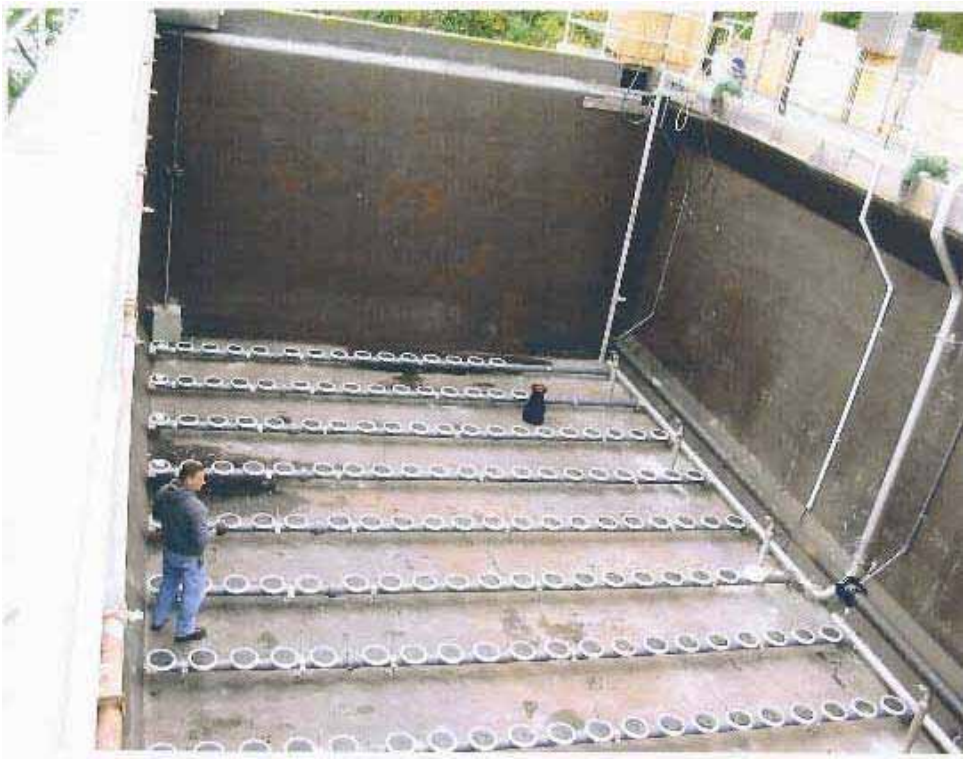
Northport, New York (Suffolk County)

Projects in Progress

This facility is upgrading and expanding its design capacity and the project has been under way since the 2003 fall season. The Northport plant also provides treatment for the Centerport Sewer District. As of February 13, 2004, the Northport SPDES permit was modified to increase the flow limitation to 0.45 MGD. This facility is operating under a State Consent Order to install a remote sensing alarm for the UV system. The facility is in compliance with Order dates.

Various treatment units are being placed on-line when available for this modernization project, which is 95% complete. The upgrade includes the construction of an equalization tank, baffling, fine bubble diffusers, increased generator capacity and UV disinfection. It is anticipated that the plant will start to denitrify in the spring of 2006. A re-estimated cost of $2.1 million includes CW/CA Bond Act funds of $977,500 for the nitrogen and facility expansion, and $155,000 for the UV disinfection system.

NORTHPORT WASTEWATER TREATMENT PLANT
NASSAU COUNTY, NEW YORK



NEWLY INSTALLED FINE BUBBLE DIFFUSERS
Photo Courtesy of Northport WWTP

Future Project

The Stormwater Runoff Control Project for Northport Harbor received $178,000 of CW/CA Bond Act funds. The project includes the installation of a network of catch basins and leaching pools to mitigate stormwater runoff and improve shellfishing and primary contact recreation in Northport Harbor. The Bond Act grant contract was executed in July 2002. The design is complete and the construction is anticipated to start in the spring of 2006.

North River, New York (New York County)

Projects in Progress

Engineering studies dealing with interim plant upgrades, odor control improvements and miscellaneous process control experiments have been ongoing since August 2001. Under way since August 2005, a centrifuge thickening experiment was initiated.

Inspections and cleaning of the eight digester tanks revealed that one tank had damage to the mechanical piping and support systems. The work needed to repair the digester tank includes the internal inspection of six digester tanks; and developing the required repairs to the digester piping, pipe support systems, steel liner, and concrete surfaces subsequent to the inspection. Final testing of each digester tank for leaks after the repairs has been completed is scheduled. The repairs will include furnishing and installing new piping, couplings and pipe sleeves, reinforced pipe support systems, and pipe gaskets; welding of the liner and attachments; grouting behind the liner and at the edges; and concrete spall repairs. Costs for all repairs and inspections are re-estimated at $7 million. These repairs have been under way since June 2004 and anticipated to be complete during June 2007.

This facility, located on the east shore of the Hudson River south of the George Washington Bridge, is operating under a State Consent Order (July 1, 1992) to address issues of capacity, odor, and air emissions. Odor emissions are a particularly sensitive issue for the North River WPCP, since it is located in a heavily populated section of Manhattan with Riverbank State Park constructed on its rooftop. The Post Construction Odor Survey, which was mandated by Consent Order, was to identify and recommend solutions to odor control. The findings of this study were published in the Post Construction Odor Study, which also includes the results of an independent study as part of a settlement with the Natural Resources Defense Council (NRDC), West Harlem Environmental Action (WHEACT) and the City. Both studies focus on identifying odors and recommend remedial measures to further control odor emissions, as necessary.

This facility currently has three odor control systems in operation. These include the systems dedicated to the north and south portions of the plant, and a third system dedicated to the covered primary tanks. All three systems control odors by using two-stage treatment systems. The first stage pulls odorous air through packed bed wet chemical scrubbers. The second stage, the polishing stage, pushes the wet scrubber effluent through activated carbon absorbers. The final settling tanks are the only major plant operational process that are not odor controlled.

The work required to meet the odor minimization goal includes digester gas holder odor control modifications, digester overflow box odor control, thickener room ventilation

modifications, cover and odor control openings in the chlorine contact tanks, and remove restrictions in the secondary bypass and modulate based upon plant flow. Additional odor controls include improvements to the laboratory odor control system, the addition of six carbon adsorbers and two wet scrubbers in the south sector, cover final settling tank effluent launders, addition of two carbon adsorbers in the north sector, replacement of headwork ventilation ductwork, a new process air blower and parallel discharge header, a remote alarm system, and mixed liquor channel ventilation. Finally, modification of the plant chemical storage and transfer systems to comply with current chemical bulk storage requirements. Expenditures are re-estimated at $71.35 million. This project began during 2005.

Future Projects

The work required to address the miscellaneous process and odor control improvements includes rehabilitation of existing scrubbers and absorbers along with the removal of the carbon absorbers bypass; modifying existing carbon bed supports and replacing carbon; replacing chemical metering pumps, pH and orthophosphate controls; replacing and motorizing dampers; and relocating of the scrubbers' fans outside of a partially treated air plenum. Hypochlorite will be added to the skimming system and aeration tanks to kill *Nocardia*. Baffle wall height additions in the aeration tanks will be installed to prevent back mixing between the passes. The addition of observation points on the aeration tanks will allow visual monitoring of the process. Other replacements and upgrades include the aeration tank dump valves, modification of the dissolved oxygen control system to provide flexibility in controlling the DO in the aeration tanks and to prevent the blowers from surging, new operators on the final settling tanks' sluice gate weirs, and a new diffuser system in the aeration tanks. Other goals are to provide additional capacity to the plant's waste sludge system, reduce the amount of odors which are released into the air as the water falls over the weirs, and to modify the primary settling tank adsorber fans to reduce vibration signature. Expenditures are estimated at over $42.96 million and this project has no anticipated start-up date.

See the Bowery Bay write-up for information on City-wide projects.

Oakwood Beach, New York (Richmond County)

Completed Project

A joint facility planning effort for the Oakwood Beach and Port Richmond plants was completed during February 2004, as part of the Staten Island Wastewater Facilities Improvement Project that was initiated in 2001. Area-wide facility planning addresses the future needs of both Richmond County treatment plants, as well as pumping station and collection system issues. Although no major upgrade is definitely planned, there will be replacements of worn out equipment, as needed. Refer to the Port Richmond write-up for

additional information.

See the Bowery Bay and Port Richmond write-ups for information on City-wide and borough-wide projects.

Orangetown, New York (Rockland County)

Completed Project

A NYS Energy Research and Development Authority study is complete and the final report was issued during June 2005.

Projects in Progress

During the period from August 2003 until September 2004, there were 18 sanitary sewer overflow events reported to NYS DEC - Region 3 at several pump stations and sanitary sewer manholes. On March 28, 2005, the Town Board voted to enter into a State Order on Consent which included a $15,000 penalty (½ of which was suspended), as well as a schedule to upgrade pump stations, repair leaking sewers and eliminate illegal sewer connections. The Order also requires odor controls at the main facility. The District is in compliance with Order dates.

In order to share costs and services for providing sewage collection and treatment, the Orangetown District was established in April 2005. The District includes about 200 miles of sewers, 43 pumping stations, a 12.75 MGD secondary treatment plant, and a common outfall with the Rockland County Sewer District which discharges to the Hudson River. The District encompasses the Town of Orangetown — the unincorporated areas as well as the incorporated Villages of Piermont, Grandview-on-Hudson, South Nyack and Nyack. The District can now provide long-term management with a dedicated funding mechanism for sewage treatment and infrastructure maintenance.

Engineering designs have been started on Phase I of a capital improvement plan. Extensive upgrades and expansions are planned for the main facility and collection system. Five pump stations — Better Brands, Hunt Road, Nyack, Pearl Street and Upper Nyack — will be upgraded and/or be rehabilitated as needed. The Better Brands, Hunt Road and Pearl Street force mains will be replaced. Additionally, the Pearl Street influent sewer will be replaced. The main facility will be modernized with new influent screens, a grit system, primary and secondary clarifiers, a gaseous chlorine system and miscellaneous piping, and electrical and drainage improvements. All installations are re-estimated to cost $22.1 million. These phases are planned to be operational during April 2007.

Ossining, New York (Westchester County)

Completed Projects

Facility-wide performance maintenance Phase I costing $3.5 million — an O & M procedure to maintain and extend the life of existing treatment units — is complete. Phase II Automation was completed during 2005 at a cost of $2.2 million.

In order to increase remote monitoring of plant processes, Automation Phase II design alternatives were put in place. Construction and installation began during 2002 and was completed during this past year. This phase increases operator control via a Supervisory Control and Data Acquisition (SCADA) telemetry control system at an estimated final cost of $1.05 million.

Future Project

Planned to begin during April 2006, the aeration system will be upgraded; cost estimates are not yet available.

Owls Head, New York (Kings County)

Projects in Progress

Since the closing of the Fresh Kills Landfill, it has been mandated that the grit and scum building at this facility be expanded to accommodate the storage of grit and scum collected over a three-day to four-day period. The project includes extending the central residual building, designing an odor control system that can accommodate the expansion of the building and the added odorous load of stored grit and scum, improving the bays to accommodate large containers (20-30 cubic yards), and upgrading the electrical service. A Notice to Proceed was issued during June 2005. All construction phases are to be completed by December 15, 2008, at a cost of $17 million.

Stabilization of the forebay includes reconstruction of the forebay conduit, sampling of sediments, sediment removal, crack repair, rehabilitation or replacement of the steel liner (north forebay conduit only), and installation of a cathodic protection system for the new liner. After completing the crack repair, several items will be undertaken: installation of a microfine cement grout around the soil envelope of both conduits, designing of a pump-around system to facilitate wet weather flow during storms; stabilizing the soil around the forebay; and providing power to support the construction. A contract was awarded during March 2005. All phases are to be completed by October 2008 at a cost of $10.3 million.

Future Project

The objectives in reconstructing the 30 MGD Avenue V pumping station and force mains are to: reduce the potential for sanitary sewer surcharge conditions upstream of the station; improve the Coney Island Creek water quality by increasing the wet weather (CSO) pumping capacity; and upgrade and automate the station for unmanned operation. The station's wet weather flow capacity will be increased to a nominal 80 MGD to pump the sum of peak sewage flow of 34.6 MGD and necessary CSO flow of 42 MGD.

The pumping station upgrade includes construction of a wet well extension for temporary pumping, sequential demolition and construction of the wet well lowered by 3.5 feet, demolition of unneeded structures, replacement of tide gates, force mains, removal of old equipment, installation of six wet pit submersible pumps with VFDs and new electrical and HVAC equipment. Having historic and architectural significance, the main building's restoration will be done with the approval of the New York City Landmarks Preservation Commission and the New York State Office of Parks, Recreation and Historic Preservation.

This project will be bid as two contracts. The total cost has been re-estimated at $117.1 million — $42 million for the station and $75.1 million for the force mains. First, is the reconstruction and upgrading of the station for automated operation and expanding the pumping capacity for wet weather flow. Construction was scheduled to begin during November 2005. Second is construction of two new force mains: a 42-inch diameter (42"Ø) pipe (18,500 linear feet) dedicated to dry weather flow and a 48-inch diameter (48"Ø) pipe (13,100 linear feet) dedicated to wet weather flow. Construction is scheduled to begin April 2007.

See the Bowery Bay write-up for information on City-wide projects.

Oyster Bay Sewer District, New York (Nassau County)

Projects in Progress

The installation of nitrogen removal facilities is 75% complete. A two-basin SBR is being constructed with a dedicated building to house the motor control centers, blowers and sludge thickener. Sequencing batch reactors differ from activated sludge plants because they combine all treatment steps in one basin which leaves a smaller footprint. The SBRs have the ability to treat varying flow rates and allow control flexibility. A chemical dechlorination system is being installed concurrently. Anticipated to be operational during December 2005, the re-estimated cost is $9.15 million. The District has been awarded approximately $6.7 million of funding from the 1996 Clean Water/Clean Air Bond Act for the BNR upgrade.

An estimate of $200,000 has been made to relocate digester gas piping and install automatic dial alarms at the Highwood pump station. Construction is recently under way for the relocation while the alarm system is being designed.

OYSTER BAY SEWER DISTRICT
NASSAU COUNTY, NEW YORK

CONSTRUCTION OF SBR BASIN
Photo Courtesy of Steve Hearl, CH2M, PC

Future Project

A collection system expansion is proposed for the Mariners Walk Condominiums. The installation of 582 linear feet of 8-inch diameter (8"Ø) sanitary sewer will be needed to provide service to this residential complex.

Palisades Interstate Park Commission, Bear Mountain, New York (Rockland County)

Completed Project

This facility is operating under a State Consent Order (October 7, 2002) to upgrade and attain SPDES effluent limitations. A facility-wide evaluation report was completed in December 2002. At a final cost $2.4 million, the upgrade of this 0.25 MGD secondary plant was operational on August 25, 2005. The upgrade included new headworks with grit removal, channel grinder and cylindrical screens. A new equalization tank with associated piping was also installed. Other work included rehabilitation of the final clarifier, a new trickling filter recirculation pump station and a new lift station.

Peekskill, New York (Westchester County)

Completed Projects

The installation of Automation Phase II has been under way since early 2002 and was completed during 2005. This phase, estimated to cost $1.25 million, increased operator control via a SCADA telemetry control system. Performance maintenance was also completed this past year at a cost of $1.8 million. This as an O & M procedure to maintain and extend the life of existing treatment units.

Future Projects

Estimated to cost $4 million, odor controls will be installed for the headworks which will be housed in a dedicated building. Construction is planned to begin during the 2006 spring season.

To address wastewater flows that impact potable water supplies in the Croton watershed in upstate New York, preliminary studies have determined that this facility could be expanded to 15 MGD from the existing design flow of 10 MGD. The facility expansion would require extensive tankage to properly treat additional flows; facility grounds are available for these additional units. The diversion of waste flows (~2 MGD) would originate from the towns of New Castle and Yorktown. Final plans and alternatives, i.e., upgrading the existing antiquated facilities, have yet to be determined.

Port Chester, New York (Westchester County)

Completed Projects

Facility-wide performance maintenance to maintain and extend the life of existing treatment units, as well as to replace outdated equipment, was completed during 2005. Phases I and II ($4.5 million) addressed headworks, primary settling tanks, secondary clarifiers, and odor controls. Concurrently, the variable frequency drives for the influent and effluent pumps were installed.

The Village of Port Chester's consulting engineer recommended alternatives to correct sanitary sewer cross over to the storm drainage system: cleaning, televising with subsequent point repairs and sewer main lining, where necessary; and continued surveillance for the removal of illegal sewer connections. These recommendations have been addressed.

Projects in Progress

The Commission is coordinating and addressing oversight for a multi-agency

pathogens track down investigation of the Byram River. Since 2003, IEC field staff discovered dry weather discharges to the river. Continued surveillance, laboratory analysis and data sharing were maintained throughout the past two years. During the 2004-2005 winter/spring seasons, inland tracking for dry weather flow and illegal hook-ups were jointly conducted by IEC and the Westchester County Department of Health. The inland surveillance phase recommenced during October 2005. Refer to the Ambient Water Quality Cooperative Studies section for a detailed report.

Future Project

The facility-wide performance maintenance project will enter Phase III during January 2006. The 15-month modernization is estimated to cost $6.5 million.

Port Richmond, New York (Richmond County)

Future Project

The Port Richmond and Oakwood Beach WPCPs are the subject of a joint facility planning effort initiated in 2001. As part of this effort, approximately $6 million in priority rehabilitation needs have been identified in advance of completion of the long-term facility plan. Priority improvements will include plans for the upgrade of the two Richmond County facilities and their pump stations within the context of system-wide planning, while addressing excessive infiltration and inflow in the sewer drainage areas, personnel facilities, structures, storage requirements, communication and personnel safety issues. Although no major upgrade is definitely planned, worn out equipment will be replaced, as needed.

See the Bowery Bay and Oakwood Beach write-ups for information on City-wide and borough-wide projects.

Port Washington, New York (Nassau County)

Completed Projects

Completed during FY 2005, refurbishing of two pump stations and plant-wide repairs and preventive maintenance, such as roofing and various architectural replacements, were addressed. Final costs amounted to $1.65 million. Additional miscellaneous collection system maintenance addressed televised inspections with subsequent relining and point repairs.

The Port Washington Water Pollution Control District is undertaking a nitrogen removal demonstration project by utilizing existing tankage to create separate nitrification/denitrification zones to demonstrate nitrogen removal. The construction of

the pilot project was completed and has been denitrifying about 1.0 MGD of the plant's wastewater since 2002. In early 2003, the District was selected to receive an $11 million grant from the 1996 Clean Water/Clean Air Bond Act for the BNR upgrade. Based on the results of effluent quality, the plant is currently meeting the August 2004 nitrogen loading limit.

Project in Progress

During 2004, the District received a $291,125 grant, under the auspices of the 1996 Clean Water/Clean Air Bond Act, to provide additional upgrades to the pilot BNR project with a goal of improving process control. The modifications are well under way. Completion is expected during late 2005 to early 2006**.**

Future Project

Rescheduled to begin during the fall season of 2007, the nitrogen removal capabilities will be expanded to provide full scale BNR at the facility's design flow of 4 MGD; costs are estimated at $12 million. The District's engineer is in the process of finalizing the design report which discusses BNR alternatives. Pending approval by the Board of Commissioners, a BNR design will be selected in 2006.

Red Hook, New York (Kings County)

Projects in Progress

Continuing experiments under way since July 2003, include the incorporation of a degritting machine in the solids handling facility, anoxic zone bubble mixers, the utility of portable generators, and fuel cell efficiency.

See the Bowery Bay write-up for information on City-wide projects.

Rockaway, New York (Queens County)

Completed Project

A dual phase digestion pilot project which began during 2001 was terminated during June 2005. The digester which was slated for an acid-phase retrofit was deemed unsafe to complete the necessary upgrade.

Project in Progress

A final design for the stabilization project is recently under way and is anticipated to be complete during November 2007.

See the Bowery Bay write-up for information on City-wide projects.

Rockland County Sewer District No. 1, New York (Rockland County)

Completed Project

A pilot experiment dealing with a membrane bioreactor plant for reuse applications was completed during September 2005.

Projects in Progress

The first construction contract began in 2004 for 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. Construction is re-estimated to cost $50 million. The sanitary sewers along Route 17 are 65% complete ($19 million); installations will continue through December 2008.

Under way since November 2002, sanitary sewer extensions and repairs are being performed in the towns of Clarkstown and Ramapo, as well as the Villages of New Square and Spring Valley. Completed during September 2004, sanitary sewer interceptor replacements and rehabilitation were performed on Spring Valley, Quaspeck Park and Fanley Woods. During June 2005, the sanitary sewer extensions for Christian Herald Road, Mountain View Avenue and Storms Road were completed ($3 million). An estimate of $12.5 million was made for all infrastructure improvements. Additional sewer rehabilitation involving cleaning, televising, sealing and grouting will cost over $499,000.

Future Projects

Rescheduled for June 2006, construction of a new advanced treatment facility to serve western Ramapo will incur costs of $42 million. An approximate operational start-up will be during December 2008.

The modernization of the Rockland County 28.9 MGD secondary facility includes replacement of debilitated treatment units and a new SCADA system. Re-estimated costs are $5.1 million. Rescheduled to begin during June 2006, operations are anticipated to be on-line during December 2007.

Springvale Apartments Company, New York (Westchester County)

Completed Project

Originally built in 1957, this privately owned 0.13 MGD secondary facility services an apartment complex of 1,700 residents. This facility discharges to the Furnace Dock

Brook which is a tributary of the Hudson River. During March 2005, the second stage media was replaced in the rotating biological contactor at a final cost of $20,000.

Suffolk County Sewer District #1, Port Jefferson, New York (Suffolk County)

Completed Projects

A pump station upgrade was completed during late 2004 at a final cost of $150,000. An in-house engineering study for collection system upgrades was recently completed.

Projects in Progress

This facility is operating under a State Consent Order to update its chemical bulk storage facilities. The Order requires the completion of substantial construction by September 2005. A revision of this date is being negotiated; construction delays affected the milestone. This facility is also operating under a federal Consent Order dealing with the existing pretreatment program. The facility is in compliance with all Order dates.

An in-house water quality assessment of Port Jefferson Harbor is ongoing. An engineering report for reconstruction of the plant was approved by NYS DEC. All financial and technical approvals have also been obtained. This expansion will address the LISS Phase III nitrogen reduction targets. NYS CW/CA Bond Act grants now total $12.2 million.

Recently under way (5% complete), sequencing batch reactors (SBRs) will be constructed in conjunction with the existing rotating biological contactors (RBCs). These treatment units will enable the facility to meet LISS Phase III nitrogen reduction targets. The re-estimated $23 million project will incorporate UV disinfection. A grant of 85% of the eligible construction cost from the NYS CW/CA Bond Act has been awarded. An approximate operational start-up is anticipated for January 2008.

Future Projects

Already approved by NYS DEC, additional treatment units will be added to accommodate any additional flow requests from commercial and residential developments. Preliminary treatment designs propose the use of a tertiary process with a flow capacity of 1.0 MGD.

Collection system improvements will include the rehabilitation of manholes and sewers to minimize I/I impacts. This work is rescheduled for 2006 and will be accomplished with in-house staff; estimated expenditures are $300,000.

Suffolk County Sewer District #3, Southwest, New York (Suffolk County)

Completed Projects

The laboratory expansion and rehabilitation was completed this past year at a final cost of $2.5 million. Additionally for 2005, replacement of the influent screens accrued costs of $1 million.

Projects in Progress

This facility is operating under a State Consent Order to update its chemical bulk storage facilities. The Order requires the completion of substantial construction by May 2005. This facility is also under a federal Consent Order to address the pretreatment program. The facility is in compliance with all Order dates.

Several engineering studies, design projects and RFP preparations are under way to address a variety of treatment unit and collection system improvements. Consulting engineers are currently designing grit handling improvements and a sludge dewatering and disposal system. An evaluation of the outfall pipe which discharges into the Atlantic Ocean is under way. A process modification evaluation is complete. An RFP was sent to design for an odor control system for the influent. Once funding is in place, another RFP will be posted for the design of a fire suppression system. A project has been awarded to evaluate I/I and develop the Capacity Management/Operations and Maintenance program ($200,000). When construction starts, a phased agenda estimates costs of $125 million for all projects.

SUFFOLK COUNTY SEWER DISTRICT #3
SUFFOLK COUNTY, NEW YORK

FINAL TANK REFURBISHING
Photo Courtesy of Suffolk County DPW

Main facility improvements include the installation of a traveling water screen (15% complete/$2.5 million) and rehabilitation of four original clarifiers (30% complete/$4 million). These projects are anticipated to be complete during June and December 2006, respectively.

Suffolk County Sewer District #6, Kings Park, New York (Suffolk County)

Projects in Progress

This facility is operating under a State Consent Order to update its chemical bulk storage facilities. The Order requires the completion of substantial construction by September 2005. Due to construction delays, a revised date is being negotiated. The facility is in compliance with all Order dates.

Suffolk County has been awarded $7.8 million from the Clean Water/Clean Air Bond Act of 1996 in order to build a 1.2 MGD facility by modifying existing treatment units. The primary settling, aeration, and final settling tankage, as well as the anaerobic digesters, will be converted into equalization tanks, sludge and disinfection facilities, respectively. Phase I construction of the SBR tanks has a final cost $2.3 million. Phase II upgrade plans are complete and will be bid during 2006. An operational start-up is planned for September 2007.

Future Project

An $8 million equipment renovation is anticipated to begin during 2006. Phase II will include the installation and construction of the UV disinfection and sludge thickening systems. The outfall pipe which discharges to Smithtown Bay, an embayment of Long Island Sound, was stabilized recently. Future construction will include a clean-out chamber on the barrier beach and a terminal fitting which is estimated to cost $500,000.

Suffolk County Sewer District #21, SUNY, New York (Suffolk County)

Completed Project

The oxidation ditch equipment was replaced this past year at a final cost of $100,000. An operational start-up was accomplished during 2005.

Projects in Progress

This facility is operating under a State Consent Order to update its chemical bulk storage facilities. The Order requires the completion of substantial construction by March 2006. In addition, the facility is under a federal Consent Order to address the pretreatment program. The facility is in compliance with all Order dates.

Preliminary engineering work has been under way since 1997 to assess BNR alternatives for the LISS Phase III nitrogen reduction requirements. A contract was awarded for an engineering report and design documents for BNR, capacity expansion, and effluent reuse alternatives. A CW/CA Bond Act grant was awarded for $16 million.

Future Project

Construction of sequencing batch reactors is planned for increasing the plant capacity by 0.5 MGD to a total design flow of 3 MGD. This expansion will enable this facility to comply with the LISS nitrogen loading requirements. An approximate construction start-up date is during March 2007; estimates for the work are $15.6 million.

Tallman Island, New York (Queens County)

Completed Project

The Association of Municipal Sewerage Authorities (AMSA) Peak Performance Awards Program recognizes member agency facilities for excellence in wastewater treatment as measured by their compliance with their NPDES/SPDES permit requirements. For the 2004 calendar year, the Tallman Island WPCP received a gold award signifying no violations of the current permit.

Projects in Progress

The Tallman Island upgrading is a multi-phase project intended to improve process efficiency, reduce manpower requirements, improve reliability, and maintain compliance with all applicable permit requirements and Consent Orders. Subsequent to the start of this project, the City entered into the NYS DEC SPDES Administrative Consent Order-Nitrogen Reduction Agreement. This Order requires this facility to be retrofitted to reduce nitrogen loadings into the East River and Long Island Sound. This 80 MGD secondary treatment plant is located on the south side of the upper reach of the East River.

Phase I will consist of high priority repairs and implementation of low-level BNR. The major stabilization improvements in this phase include the replacement of the main sewage pumps and process air blowers. BNR improvements — such as increased blower capacity, mixers, baffles, and increased RAS capacity — will also be implemented. The re-estimated cost of this phase is $195 million and is budgeted for FY 2006.

Phase II of the Tallman Island upgrade includes BNR enhancement work including methanol, alkalinity and polymer addition, and centrate treatment. Other major items include new main sewage pumps and engines, digester improvements, and plant-wide instrumentation. In order to avoid a bypass event while replacing the main sewage pumps and suction piping, a $6 million pump-around-system will be constructed. This three-year

construction phase started in 2005 and, as mandated by Consent Order, must be constructed and operational by December 31, 2009. This phase is estimated to cost $233 million.

Several engineering experiments are under way to investigate the benefits of polymer addition for sludge thickening enhancement, surface washing of aeration tanks to eliminate froth buildup, automated chlorine control, evaluation of *Archaea* solutions for nitrogen removal and the evaluation of the effects of nitrification on chlorine demand.

The objective of the Flushing Bay CSO facility is to improve the water quality of Flushing Creek and Bay by substantially reducing combined sewer overflows during rainstorms; these waters have a confluence with the East River. This will be achieved by a 28-million gallon underground reinforced concrete storage tank capturing and storing combined sewage during rain events. The captured flow will be screened before entering the tank. After storms, the combined sewage will be pumped out of the tank into a nearby interceptor for treatment at the Tallman Island WPCP. The location of the storage tank and its associated facilities is within Flushing Meadow-Corona Park. The tank will be completely underground. At the north end of the site, there will be an above-ground New York City Department of Parks and Recreation (NYC DPR) and NYC DEP building. Pumps, air treatment equipment and other auxiliary equipment required for the operation of the storage facility will be located in the basement of this building. The total cost for this project is $250 million. This CSO facility will be constructed in five phases.

At the present time four of the five construction phases are complete. Phase IV construction started in March 2002 and is scheduled to be complete in November 2006. This phase includes the construction of the diversion chambers and conduits, the above-ground building at the north end of the site, and the construction of mechanical support facilities (pump stations, air treatment systems, screening facilities, etc.).

See the Bowery Bay write-up for information on City-wide projects.

Future Projects

Phase III includes BNR enhancement work including methanol addition and centrate treatment. This three-year construction phase is estimated to cost $23 million. Construction is scheduled to commence in 2006.

The Alley Creek Drainage Area Improvements/CSO Abatement Facilities Project, which has been designated as Phase I of the comprehensive Alley Creek Project, will be constructed in three stages: the Alley Creek Drainage Area Improvements (Stage 1), the Alley Creek CSO Abatement Facilities (Stage 2), and the Alley Park Environmental Restoration (Stage 3). The Oakland Ravine Stormwater Treatment System (ORSTS), a stormwater treatment system in the form of settling basins and natural emergent wetlands which is not a part of the CSO abatement project, has been designated as Phase II of the

comprehensive Alley Creek Project. Alley Creek is located at the head of Little Neck Bay, an embayment of western Long Island Sound.

The principal elements of the project include additional stormwater and combined sewers, a new outfall sewer, and a new combined sewer outfall to substantially eliminate street flooding and sewer surcharging, and construction of a new 5 MG CSO storage facility to abate CSO discharges into Alley Creek (Stage 1). This stage is estimated to cost $93 million and to be complete in June 2006. Stage 2 is the activation of the 5 MG CSO storage facility, upgrading the Old Douglaston pumping station to enhance the station's reliability to pump the captured combined sewage to the Tallman Island WPCP for treatment, a fixed weir constructed within the new outfall sewer at its downstream end near the outfall to induce storage of the combined sewage, and a baffle constructed within the outfall sewer immediately upstream of the fixed weir for floatables control. This stage began during August 2005 and is estimated to cost $9.1 million. Finally, a permanent ecological restoration of approximately 14 acres within Alley Park includes planting of trees and other vegetation, as well as the creation and restoration of wetlands (Stage 3). The restoration will include the planting of approximately 850 trees; 3,100 bushes and groundcover plants; and 109,000 wetland planting plugs. This final stage will begin during December 2005 and is estimated to cost $8 million.

Future Project

The ORSTS will consist of a wetlands treatment system to be constructed in Oakland Ravine to provide primary and secondary treatment of stormwater. The treated effluent will be discharged into Oakland Lake, and ultimately into Alley Creek through the existing outfall sewer. Construction has been deferred beyond the current Ten-Year Capital Plan. However, NYC DEP is in discussions with the New York City Department of Parks and Recreation regarding the development of a scaled-down alternative with an accelerated implementation plan.

26th Ward, New York (Kings County)

Completed Project

The Hendrix Street Canal bulkhead was reconstructed to provide a stable grade and prevent loss of fill from the areas of the plant adjacent to Hendrix Creek, a tributary of Jamaica Bay. This work represents Phase I of the 26th Ward WPCP upgrade and had a bid price of $6.23 million. This phase included installation of new steel sheeting directly in front of the existing sheeting for the entire 1,800 linear feet of existing bulkhead, and construction of a new concrete cap. In addition, replacement of the existing floatables collection boom was necessary, as well as a new floating barge for floatables removal and a new hoisting system to load the container onto disposal trucks. This phase was recently completed.

Projects in Progress

The 26th Ward WPCP upgrade is a multi-phase project to improve process efficiency, reduce manpower requirements, and improve reliability. This modernization will ensure compliance with all applicable SPDES permit requirements and Consent Orders. Phase II of the facility-wide upgrade involves the replacement of the main sewage pumping station force main. Other collection system installations include a new force main and flow meter on the plant site, installation of a new header within the existing pump station, connection of each pump to the new force main, and temporary pumping while the connections are made. Construction of the new force main will require relocation of the existing fuel oil storage tanks. The existing tanks are aging and will be replaced with temporary, above-ground tanks. The project bid price was $16,926,750. Construction for this project began during May 2005.

Phase III will concentrate on BNR installations and other improvements at the plant. The scope of work for this phase includes replacement of the rotating assemblies of the main pumps, preliminary settling tank mechanical equipment (sludge pumps and piping), blower motors and control systems, aeration tank diffusers, return sludge pumps, thickener mechanisms, and various electrical and HVAC elements. Refurbishment of the existing process air blowers, miscellaneous improvements to the final settling tanks, and construction of a new chlorine storage building are the final agenda items for this phase. Work recently began and the re-estimated cost is $90.893 million.

Engineering designs are under way for the replacement of the existing two 3.5 MW gas turbine generators with three 2.5 MW diesel engine generators. Construction costs are estimated at approximately $16.5 million. Subsequent construction is expected to commence in late 2006.

Several engineering studies have been ongoing since 1991 which address biological nutrient removal, centrate nitrogen removal, polymer addition for sludge thickening enhancement, and determining the feasibility of remote probes to monitor a variety of parameters including chlorine residual and the sludge thickener blankets. Additional experiments under way this past year include the evaluation of DO meters, automated chlorine control systems and automated grease skimmers for primary tank grease removal.

The Spring Creek AWPCP was originally constructed and placed into service in the early 1970s. Its function is to capture CSO flows from tributary drainage areas in Brooklyn and Queens. The plant, with a capacity of 13 MG, provides for stormwater detention, solids settling, and disinfection contact time. A stabilization study was performed in the early 1990s and a design was completed by the end of 1999. The facility upgrade will consist of replacement of the pumps and controls, rehabilitation of personnel facilities and basins, installation of a new spray water system and a new emergency generator. Also, construction of a new odor control building and a new scavenger waste

manhole are necessary. Construction started in February 2003, and is anticipated to be complete during November 2006 at a total construction cost of $82 million.

See the Bowery Bay write-up for information on City-wide projects.

Future Project

A comprehensive upgrading at 26th Ward, including expansion of the plant to accept 50 MGD of additional flow during storm events, is being planned. Engineering services for this work are being procured. Design for the comprehensive upgrading is scheduled to begin during June 2006. It is anticipated that substantial construction will be complete during December 2015. The multi-phase construction will include two additional preliminary settling tanks and a new raw sewage pumping station with additional chlorine contact tanks. The preliminary construction cost estimate for the two phases is $363 million.

Wards Island, New York (New York County)

Projects in Progress

Engineering studies and experiments under way since 2003 focus on polymer additions and enhancements, several froth control alternatives and biological centrate treatment.

The Wards Island WPCP upgrading is a multi-phase project to improve process efficiency, reduce manpower requirements, and improve reliability. These necessary steps will ensure compliance with all applicable permit SPDES requirements and Consent Orders. The construction work included in Phase II commenced during September 2002. This phase includes the rehabilitation of the Manhattan and Bronx Grit Chambers. In addition to providing an architectural renovation for each facility, the grit handling process will be automated. Pumps will be placed in each grit channel and will pump the grit slurry to the operating level where the grit will be removed and cleaned by cyclone degritters and grit classifiers. At each location, the electrical system, including the emergency generators, will be upgraded and equipment replaced as needed. Lastly, this phase will include odor control systems to treat the odorous off-gasses from the channel surfaces. The bid price for this work was $91 million.

Phase III, or Plant Stabilization I, previously included all work necessary to provide reliable service for the solids handling facility for 20 years. Due to budget constraints, this work has been deferred until 2010. As an interim measure, a re-estimated $42.4 million plan was designed to stabilize the solids handling facility. Improvements to the thickeners, gas handling system, and gas holder were included. The construction on these improvements began during June 2005 and require four years to complete.

Future Projects

BNR related improvements, as well as other stabilization improvements, will be implemented under Plant Stabilization II (Phase IV). BNR improvements — such as new process air blowers, separate centrate treatment, chemical addition systems, aeration tank improvements, and new RAS pumps — are included. Under the upgrade program, process improvements such as skimmings collection, gate replacement, settling tank mechanical equipment, and concrete repair will be performed. This phase is re-estimated at $179 million and is expected to start in FY 2006. Existing Consent Order requirements mandate BNR completion and operation by December 31, 2010.

See the Bowery Bay write-up for information on City-wide projects.

Yonkers Joint Wastewater Treatment Plant, New York (Westchester County)

Completed Project

A County-wide collection system rehabilitation program has been ongoing since 2000. This $40 million renovation was completed during 2005. By completing the work identified in the SSES, the removal percentages of I/I required by the Consent Order were met. Specifically, during the construction period the four contractors lined 357,000 feet of sewer pipe, grouted 4,700 sewer laterals, waterproofed 2,500 manholes, replaced or raised 200 manhole frames and covers, excavated and replaced 300 feet of sewer pipe and disconnected 58 catch basins.

Projects in Progress

Facility-wide, construction upgrades and equipment installations are 40% complete. Modernization improvements include dewatering facilities, primary boiler system additions, primary gravity thickeners, grit removal facilities and odor controls for sludge storage, and replacement of sludge collection and process equipment. Phase II Automation is complete and finalizes the remote plant-wide data gathering capabilities and plant process monitoring. Concurrently, a new maintenance and storage building with a fire suppression system is being installed. All upgrades are anticipated to be operational during June 2006.

Future Projects

Estimated to cost $17.5 million, main facility upgrades include a skimming system for the final tanks, HVAC rehabilitation in the screen and grit building, and improvements to the primary digester system. Additionally, the Hudson River bulkhead will be repaired. A two-year construction schedule has been tentatively set to begin during the 2005/2006 winter season.

AMBIENT AND EFFLUENT WATER QUALITY MONITORING

Throughout 2005, the Commission conducted extensive compliance monitoring programs of municipal and industrial wastewater discharges. Ambient water quality surveys were conducted to document hypoxia, to measure pathogens affecting shellfish beds, perform pathogens track down in IEC's tri-state District, as well as collect data to support pathogens TMDL development. The Commission's laboratory performs analyses on samples collected at wastewater treatment plants and industrial facilities as well as in the ambient waters. IEC conducted scheduled and reactive sample collection programs in response to regulatory compliance, wet weather conditions, and the need for information on dissolved oxygen and pathogens. Field inspections of CSOs, SSOs and MS4s were conducted during dry weather to discover illegal discharges and to take steps to have them remediated.

The Commission continued its weekly sampling to document hypoxic (low dissolved oxygen) conditions in western Long Island Sound and the upper East River. This year, 2005, was the 15th consecutive summer season that the Commission conducted this sampling. This survey was performed utilizing the IEC's research vessel, the R/V Natale Colosi. The monitoring is performed in support of the Long Island Sound Study and was conducted from late June through mid-September in cooperation with several other agencies. Through agreements with CT DEP, IEC collected and delivered surface water samples to the University of Connecticut (UCONN) for chlorophyll a analysis.

The Commission participated in the third World Water Monitoring Day which grew out of the 2002 National Water Monitoring Day; IEC has participated in this event since its 2002 inception. Aboard the R/V Natale Colosi, in situ measurements of dissolved oxygen, salinity, temperature, and water clarity were made at nine established water quality stations in the upper East River and Long Island Sound. These waterways are within the IED, as well as the core areas of two National Estuary Programs. All of the data were submitted to an international data bank which can be accessed at www.worldwatermonitoringday.org.

The 2004-2005 winter season was the tenth consecutive winter-spring season that IEC participated in a cooperative effort with the NJ DEP and US EPA. Aboard the R/V Natalie Colosi, the Commission's field staff collected surface water samples for the assessment of the sanitary conditions of shellfish beds in western Raritan Bay. The Commission plans to continue reactive sampling in western Raritan Bay during the 2005-2006 winter and spring seasons. When necessary, IEC also responds to emergencies within its District.

The Commission continued to support the HEP Pathogens Workgroup's need for additional data. IEC began an ambient water quality monitoring program in November. The project plan involves monitoring for pathogens at five Hudson River transects located between Yonkers, New York, and the Battery at the tip of Manhattan. All ambient samples are being collected for analysis

by the IEC laboratory for fecal and total coliforms, fecal streptococcus and enterococcus. This unique data set will be used for state and interstate water quality assessments, model calibrations, and TMDL development. In support of the aforementioned HEP Pathogen Workgroup, effluent analyses to determine the concentration of enterococcus at a subset of municipal facilities throughout the District was accomplished during the past year.

All analyses performed by the Commission's laboratory are in accordance with IEC's Laboratory Quality Control Manual, Quality Assurance Project Plans, and Quality Management Plan, all of which are approved by US EPA. IEC's laboratory is certified by NJ DEP, NYS DOH and CT DPH. The Commission's laboratory also has certification under the National Environmental Laboratory Accreditation Program (NELAP) from the NJ DEP, the NYS DOH and the CT DPH. NELAP, under the auspices of the National Environmental Laboratory Accreditation Conference (NELAC), is sponsored by the US EPA. The purpose of NELAC is to foster the generation of environmental laboratory data of known and documented quality through the development of national performance standards.

Investigations of private and municipal facilities involve a six-hour sampling period and an inspection of processes, equipment, and plant records. Investigations of industrial facilities generally involve a 24-hour period or a full day's production. Analyses are performed for the parameters specified in the facilities' National Pollutant Discharge Elimination System (NPDES) permits which contain the Commission's requirements. The data generated from these investigations are used to determine compliance with IEC's Water Quality Regulations and with each facility's NPDES discharge permit. The Commission coordinates the industrial compliance monitoring of major dischargers, as well as its monitoring of municipal facilities, with the environmental departments of its member states and with US EPA.

In 2005, in addition to conducting unannounced effluent surveys, the IEC continued a cooperative program with NYS DEC - Region 2 whose jurisdiction encompasses the five boroughs of New York City. This effort consists of the Commission conducting what NYS DEC defines as reconnaissance inspections and comprehensive inspections at NYC DEP's 14 wastewater treatment plants.

The Commission's laboratory has been located on the campus of the College of Staten Island (CSI) since December 1993. 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 (CES) at CSI, submits proposals for research projects whose results would benefit the environment and the citizens throughout the Tri-State Region. The laboratory director and staff continually have research papers and articles published in prestigious environmental forums and have been involved with students enrolled in the CES Masters Degree program.

SPECIAL INTENSIVE SURVEYS

2005 Ambient Water Quality Monitoring in Long Island Sound to Document Dissolved Oxygen Conditions

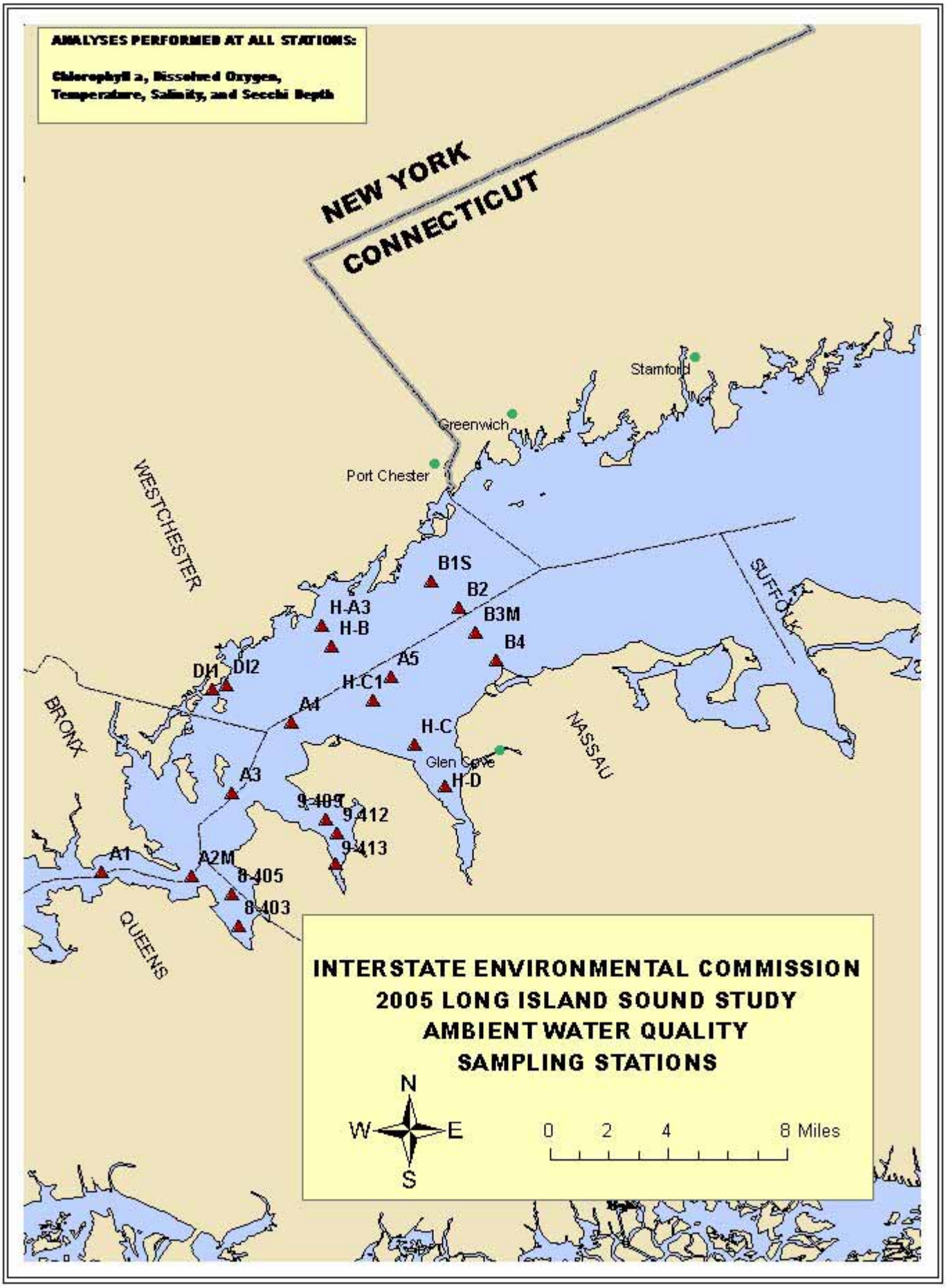
With an ongoing need to document the hypoxic conditions in Long Island Sound and its embayments where the majority of primary recreational activities take place, US EPA - Region 2 again requested that the Commission continue to conduct an intensive ambient water quality survey in support of the Long Island Sound Study during 2005. For the 15th consecutive year, the IEC participated in a cooperative sampling effort with other government agencies during the critical summer season. The existing data sets have been significantly enhanced by the weekly data collected by IEC for western Long Island Sound and its embayments and the upper East River. The information will also be used to measure the effectiveness of management activities and programs implemented under the Comprehensive Conservation and Management Plan. The Commission disseminates its data on a weekly basis to give cooperating agencies and volunteer monitoring groups an immediate picture of environmental conditions, as well as a basis for comparison with historic and ongoing monitoring programs.

IEC actively participates on the Long Island Sound Study Monitoring Workgroup. This is the Workgroup that determined and agreed to station locations, parameters, methodologies, QA/QC, data sharing, etc. A map and a listing of the 2005 station locations are on the following pages. A subset of these ambient water quality stations (those marked with an asterisk on the station listing) were monitored on September 19th for the World Water Monitoring Day data set.

CT DEP again volunteered to have all chlorophyll a analyses performed and to bear the cost for these analyses. The samples collected by the IEC — as well as those collected by NYC DEP and CT DEP — were filtered, archived, and frozen until shipped to the Environmental Research Institute at the University of Connecticut. Under agreements between CT DEP and US EPA's Long Island Sound Office (LISO), the analyses for chlorophyll a were conducted by the University of Connecticut (UCONN).

A lack of oxygen can be fatal to aquatic life if levels remain persistent and drop below the organisms' threshold to survive. Fish kills can also occur due to predation and toxic phytoplankton. During its weekly sampling cruises, the Commission has always communicated from the field with local environmental and health agencies to pass on current information about unique events. Additional monitoring in response to fish kills and beach closures has taken place in past years. Because the Commission's research vessel is available and accessible to typical western Long Island Sound trouble spots, the NYS DEC's Division of Marine Resources requested the Commission to assist and respond to fish kills. During the September cruises, there were several fish kills observed and reported directly from the field to the Division of Marine Resources and to the IEC office. The IEC disseminated these observations to the members of the Regional Bypass Workgroup.

The 2005 survey consisted of 12 weekly sampling runs conducted from June 27th through



*Coastline data: NOAA, Office of National Ocean Service, 1994, NOS80K/ALL/US80K: Medium Resolution Digital Vector U.S. Shoreline shapefile Long Island Sound GIS project area: NOAA/NOS/ORCA/SEA, Silver Spring, MD.

INTERSTATE ENVIRONMENTAL COMMISSION

2005 LONG ISLAND SOUND STUDY SAMPLING STATIONS

STATION	WATER COLUMN DEPTH (meters)	LOCATION		DESCRIPTION
		LATITUDE NORTH D M S	LONGITUDE WEST D M S	
A1 *	26	40-48-12	73-49-36	East of Whitestone Bridge
A2M *	35	40-48-06	73-47-00	East of Throgs Neck Bridge
8-403	3	40-46-38	73-45-38	Little Neck Bay - ~0.2 nm W of yellow nun “B”
8-405	3	40-47-33	73-45-49	Little Neck Bay - ~0.15 nm North of LNB mid- channel buoy
A3 *	25	40-50-30	73-45-18	Hewlett Point South of Fl G 4 Sec "29"
9-409	4	40-49-44	73-43-05	Manhasset Bay
9-412	4	40-49-20	73-42-45	Manhasset Bay
9-413	3	40-48-26	73-42-49	Manhasset Bay
A4 *	35	40-52-35	73-44-06	East of Sands Point, mid-channel
A5 *	13	40-53-54	73-41-12	~2.6 nm East of Execution Lighthouse
B1S	15	40-56-42	73-40-00	Porgy Shoal South of Fl G 4 Sec R "40"
B2	20	40-56-06	73-39-12	Matinecock Point 1.6 nm North of Gong "21"
B3M *	19	40-55-12	73-38-42	Matinecock Point 0.7 nm North of Gong "21"
B4	15	40-54-24	73-38-06	Matinecock Point South of Gong "21"
DI1	10	40-53-33	73-46-24	Davids Island North of Nun "10A"
DI2	6	40-53-40	73-46-00	Davids Island East of Nun "4"
H-A3 *	3	40-55-24	73-43-12	Delancy Point South of Can "1"
H-B *	12	40-54-48	73-42-54	0.7 nm Southeast of Daymarker Fl R 4 Sec
H-C	8	40-51-54	73-40-30	Hempstead Harbor East of R Bell "6"
H-C1 *	11	40-53-12	73-41-42	Hempstead Harbor~ 2.0 nm East of Sands Point
H-D	7	40-50-42	73-39-36	Hempstead Harbor East of Can "9"

* In situ measurements of dissolved oxygen, salinity, temperature and water clarity conducted for World Water Monitoring Day, September 19, 2005.

September 12th. The ambient network of 21 stations was sampled weekly and in situ measurements were made for temperature, salinity and dissolved oxygen (DO). 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 five depths — the two additional depths being one equidistant between the surface and mid-depth samples, and one equidistant between the mid-depth and bottom samples. For the fourth consecutive year, the measurement of water clarity or Secchi depth was collected. A Secchi disk is lowered into the water until it disappears and raised until it appears which equates to the vertical transparency or distance below the water surface that light penetrates. Secchi depth measurements ranged from 0.6 to 2.7 meters. In general, measurements in the embayments are less than 1 meter while open water stations had better clarity with values greater than 2.0 meters. During 2005, few observations below 1.0 meter were recorded; the lowest values were collected subsequent to significant rain events. This correlates with the low chlorophyll a concentrations that were recorded. Clarity on the surface does not necessarily equate to good vertical or horizontal visibility on the bottom.

Samples for chlorophyll a, a pigment found in aquatic plants and used as an indicator of algal production, were collected one meter below the surface on alternate runs at all stations. These were filtered, archived, frozen and subsequently shipped by overnight mail to the Environmental Research Institute at UCONN. To ensure consistency amongst the agencies, the Environmental Research Institute at UCONN also analyzed the samples collected by NYC DEP and CT DEP. Chlorophyll a values ranged from 2.6 to 91.2 ug/l which are nearly identical to the 2004 measurements. The lowest values were observed in the open waters, specifically the East River (2.9 to 24.5 ug/l) and the highest values in the embayments (4.4 to 91.2 ug/l). All sampling, sample preservation and analyses were done according to procedures accepted by the US EPA. All field measurements were summarized and forwarded weekly to US EPA - Region 2's LISO, the CT DEP's Bureau of Water Management, the Nassau County Health Department, the NYS DEC Division of Marine Resources, the NYC DEP Marine Sciences Section, EPA's modeling contractor, and to several volunteer monitoring groups. The data are available from the Commission's office. The Long Island Sound data, as well as all Commission ambient water quality data, can be retrieved from STORET, the US EPA's national data base.

Dissolved oxygen is a measure of the ecological health of a waterbody. A dissolved oxygen concentration of 5 mg/l is considered to be protective of most aquatic life. According to IEC Water Quality Regulations, a waterbody classified as "Class A" — as are all the stations included in this IEC survey — must have a minimum dissolved oxygen of 5 mg/l at all times. Waters of this type are suitable for primary contact recreation, fish propagation and, in designated areas, shellfish harvesting. During 2001, CT DEP adopted revised DO criteria in some of the Long Island Sound waters in Connecticut. NYS DEC is also addressing this issue in Long Island Sound and other New York waters, but has not yet issued its proposed revisions to its ambient water quality standards. To date, NJ DEP has not proposed any revisions to their DO criteria in the New Jersey waters of the NY-NJ Harbor Complex, which also encompasses the IED. Since the interstate waters in

Connecticut, New York and New Jersey are also IEC waters, whatever is done by IEC's member states in those waters is going to affect IEC and the course of action the Commission might have to take regarding its DO regulations.

A presentation of the dissolved oxygen data acquired during the 2005 ambient water quality monitoring in Long Island Sound is shown on the pie chart entitled "2005 Dissolved Oxygen Monitoring". Measurements of dissolved oxygen concentration in both surface and bottom waters are separated and grouped into the following three categories. Dissolved oxygen 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 fishes will avoid or leave the area and those organisms not free to move (sessile) will die. For dissolved oxygen 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. The impact to marine organisms is 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. Dissolved oxygen concentrations of at least five mg/l (≥5.0 mg/l) are considered to be protective of most aquatic life. The summer of 2005 marks the fifth consecutive year that hypoxic conditions were measured in the surface waters of the Sound; the extent was the least during 2003. For all stations, the surface water range of dissolved oxygen was 1.9 to 15.9 mg/l. The waters of western Long Island Sound, which tend to be stratified, were well mixed, but hypoxic. The low value at the surface was recorded on August 8th, 25 days after ambient daily temperatures ranged from 82^0F to100^0F. Bottom waters ranged from 0.1 to 8.9 mg/l representing extreme hypoxia and, in some areas, anoxic conditions. These extremely low values were recorded throughout the summer.

Intense heat and calm conditions had their toll on area fishes. There were several fish kills involving menhaden — also known as mossbunker or bunker— from September 3rd through September 12th in Little Neck Bay, Manhasset Bay, Hempstead Harbor, and Stamford Harbor. Two other fish kills were observed by citizens on August 22nd and August 30th in Norwalk Harbor and in the Norwalk River, respectively. Nonetheless, recreational fishing in western Long Island Sound was very good for fluke, blackfish, black seabass, bluefish, porgy, striped bass, and weakfish. The lobster fishery rebounded with maximum recreational daily limits being met regularly.

The 2005 monitoring season proved to be similar to 2004. The 2004-2005 winter season was very severe: sustained freezing temperatures from January through early February and 41" of snow in the Metropolitan Area. Heavy ice floes kept fishing fleets in port along the entire eastern seaboard of the United States. Ferry service in the New York-New Jersey Harbor Complex was hampered and/or suspended by ice. The summer was essentially drought conditions: minimal rain, stagnant winds, brilliant sunshine with record breaking ambient temperatures to100^0F.

As shown on the pie charts depicting 2004 and 2005 monitoring data, the condition of the surface waters were worse during 2004 than in 2005. The 2005 surface water in situ measurements for the categories of *Greater Than 5 mg/l, Between 3 and 5 mg/l*, and *Less Than 3 mg/l* are 78.7%, 18.3% and 3.0%, respectively. In the same category order, the results of the 2004 survey were

INTERSTATE ENVIRONMENTAL COMMISSION

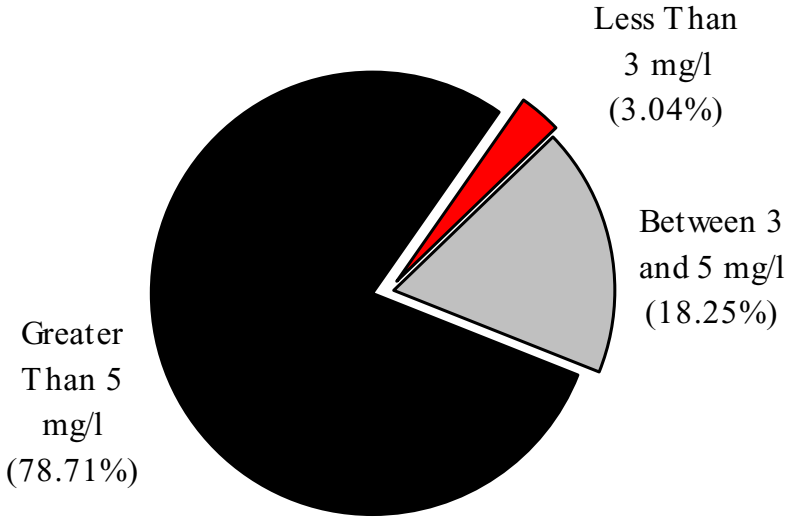
LONG ISLAND SOUND STUDY

2005 DISSOLVED OXYGEN MONITORING

SURFACE AND BOTTOM WATERS

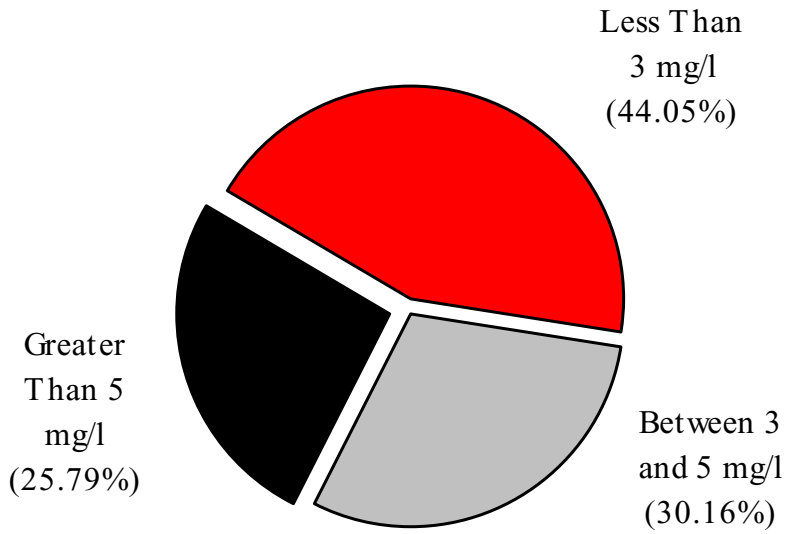
SURFACE WATERS

Range of Dissolved Oxygen Values: 1.9 to 15.9 mg/l



BOTTOM WATERS

Range of Dissolved Oxygen Values: 0.1 to 8.9 mg/l



INTERSTATE ENVIRONMENTAL COMMISSION

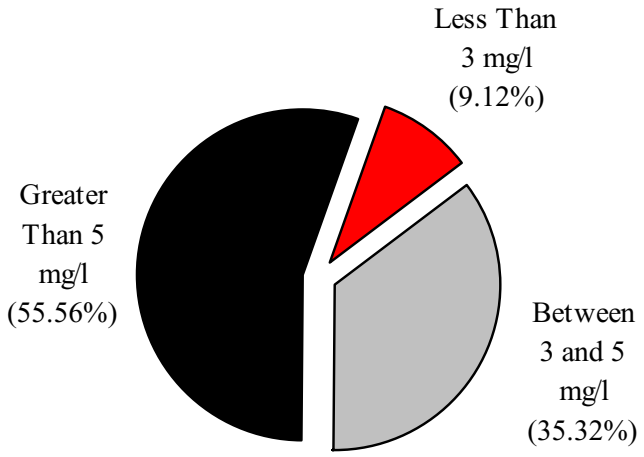
LONG ISLAND SOUND STUDY

2004-2005 DISSOLVED OXYGEN MONITORING

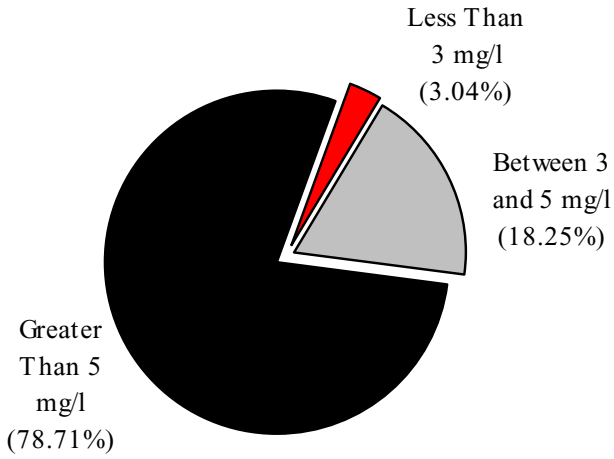
SURFACE AND BOTTOM WATERS

SURFACE WATERS

2004

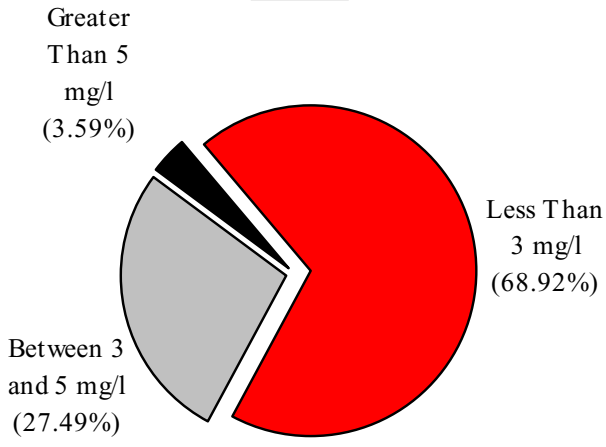


2005

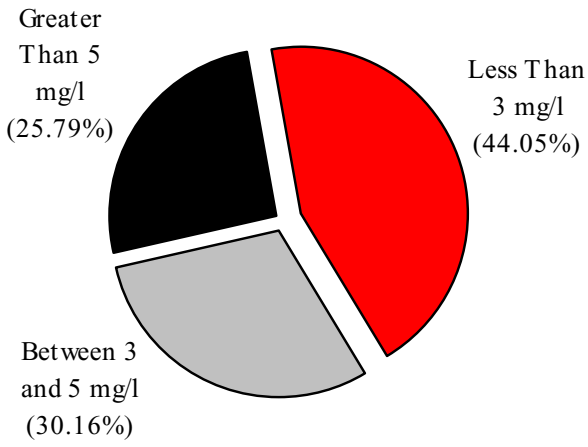


BOTTOM WATERS

2004



2005

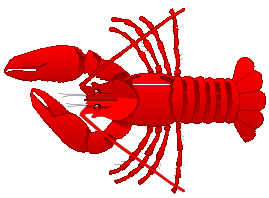


55.6%, 35.3% and 9.1%, respectively. The weather patterns for 2005 were harsh, but similar to the previous year — a very cold, wet winter followed by a cool spring season and continued with a drought-like summer.

Based on the percentage of hypoxic readings, the bottom waters of the Sound were considerably better in 2005 as compared to 2004. As displayed in the bottom half of the pie chart entitled "2004 and 2005 Dissolved Oxygen Monitoring," the 2005 bottom water in situ measurements for the categories of *Greater Than 5 mg/l, Between 3 and 5 mg/l* and *Less Than 3 mg/l* are 25.8%, 30.2% and 44.0%, respectively. In the same category order, the bottom water results of the 2004 survey were 3.6%, 27.5% and 68.9%. 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.

It is important to know the time period in which hypoxic conditions occur in surface and bottom waters. A display of the variation of the average dissolved oxygen concentration at all 21 stations between weekly sampling dates is shown on the graph entitled "Surface and Bottom Waters: Average and Range of All Stations Sampled". The averages, maximum and minimum values of surface and bottom waters for each run are displayed and represented separately. The graph indicates that hypoxic conditions were observed in surface waters during the 2005 sampling; this is the fifth year in a row that these conditions were observed in surface waters. Prior to 2001, the last observation by IEC of hypoxic conditions in the surface waters was in 1997. During 2005, hypoxic, as well as anoxic conditions (DO < 2 mg/l), were observed in bottom waters throughout the summer season.

The bottom water dissolved oxygen concentrations remained low from June 28th to its lowest value of 0.1 mg/l on August 9th and August 16th, reflecting anoxic conditions. Values of 1.0 mg/l or less were recorded during the first three weeks of August at a maximum of 13 stations per weekly survey including the East River, open waters of the Sound, the Westchester County coastline and the mouth of Hempstead Harbor. Bottom water DO concentrations slowly recovered in the latter part of August. Very light winds were the norm; very little surface mixing and aeration occurred until early October with the arrival of record breaking rains and heavy winds.



A gradual and positive recovery of lobster catches in western Long Island Sound was observed this year. Lobster had been a major cash crop for this area; prior to 1999, it was the third largest producer behind Maine and Massachusetts. Dead lobsters were reported in traps in late November 1998 and by late August 1999, catches in western Long Island Sound were nearly zero. The 2004 and 2005 commercial and recreational harvest in the western and central portions of the Sound was better than 2003 when the harvest started to recover — especially compared to 2000 when the dockside landings were almost nonexistent. Although a parameoba may be one cause of lobster mortality, there are other contributing stress factors including, but not limited to, climate, water temperature, hypoxia, fishery management, predation and commercial fishing impacts.

INTERSTATE ENVIRONMENTAL COMMISSION

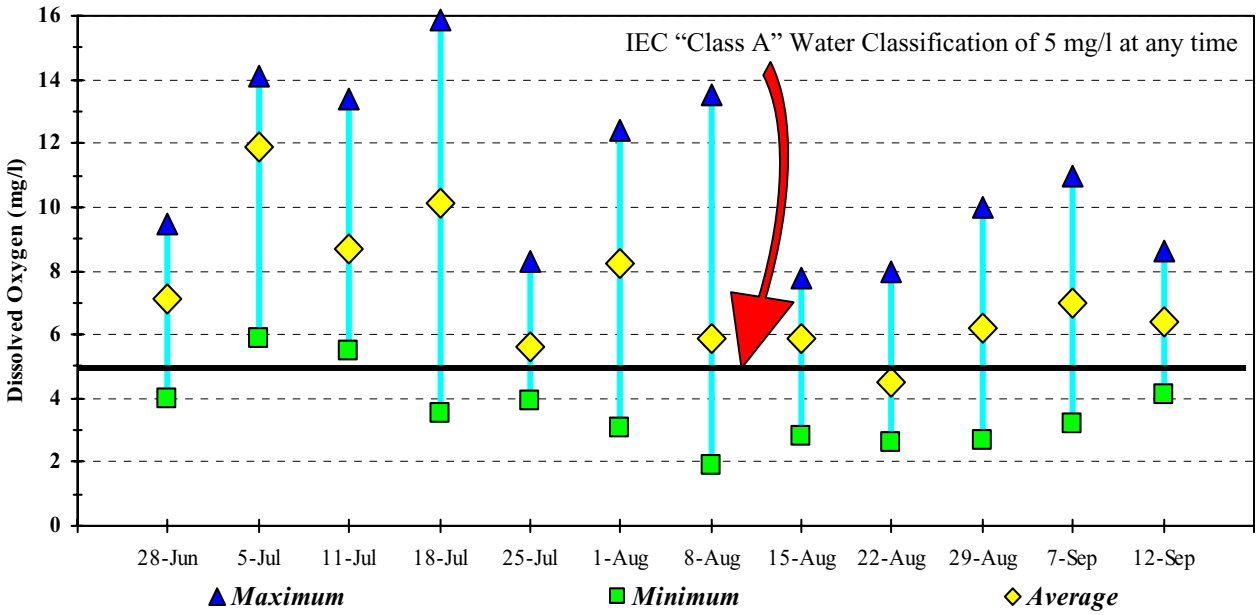
LONG ISLAND SOUND STUDY

2005 DISSOLVED OXYGEN MONITORING

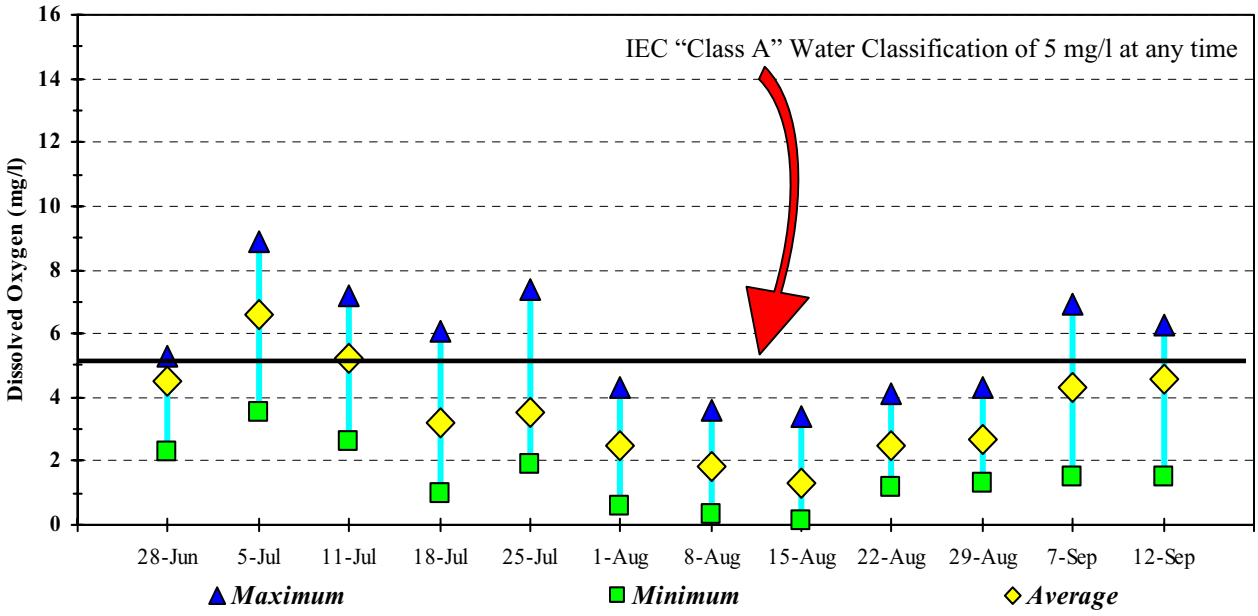
SURFACE AND BOTTOM WATERS:

AVERAGE AND RANGE OF ALL STATIONS SAMPLED

SURFACE WATERS



BOTTOM WATERS



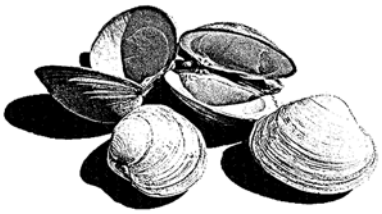
Research dealing with disease and responses to stress in lobsters showed a threshold temperature of 20.5^{0}C; bacterial infections increase due to higher temperatures and hypoxia. Mortality increases with low DO, high temperatures, high sulfide and ammonia concentrations resulting from organic matter decomposition. The profiles on the following page entitled, "2005 Monthly Bottom Water Temperature Distribution in Long Island Sound" illustrates the temporal extent for temperature at all 21 monitoring stations from west to east. In situ measurements of bottom temperature recorded during 2005 were 14.8^{0}C to 23.8^{0}C in July; 19.8^0 C to 24.6^{0}C in August, and 21.9^0 C to 23.2^{0}C in September. Bottom temperatures were similar to 2004 measurements.

Ambient Water Quality Cooperative Studies

2004-2005 Microbiological Surveys in the Shellfish Harvesting Waters of Western Raritan Bay

The New Jersey Department of Environmental Protection, Bureau of Marine Water Classification and Analysis (BMWCA), regularly conducts ambient water quality monitoring of the State's shellfish harvesting beds. In order to meet the increasing demands for sampling that the shellfish industry has requested, accompanied by a shortfall in staffing, the BMWCA requested the IEC, for the tenth consecutive year, to assist in sample collection in western Raritan Bay during the 2004-2005 winter and spring seasons.

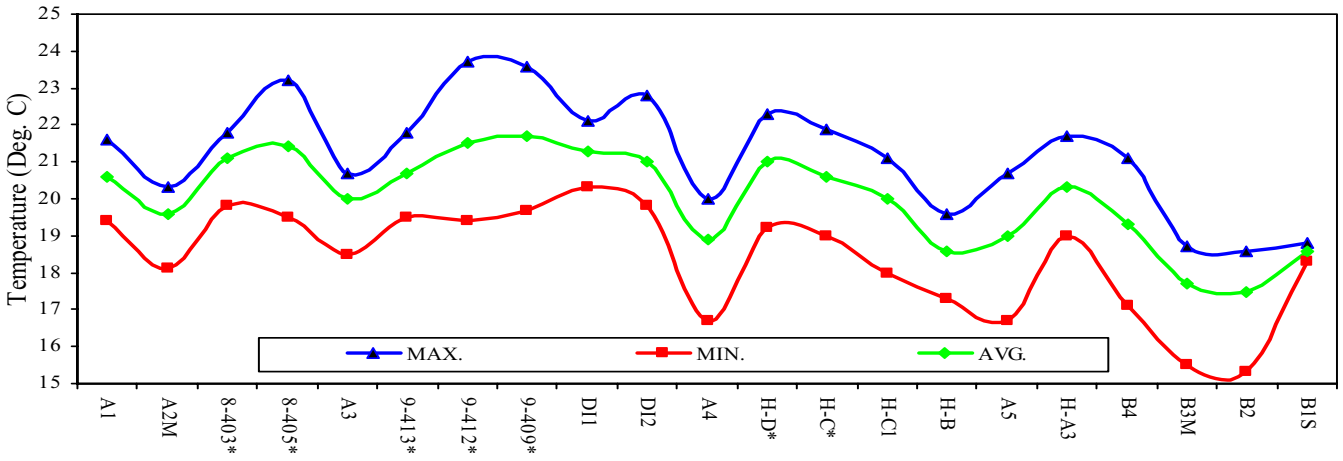
Sampling runs were planned for the purpose of collecting the data needed to assess the microbiological quality of the shellfish waters; protocols used followed the criteria established by the US Food and Drug Administration's National Shellfish Sanitation Program. The surveys were triggered by storm events with an intensity of at least 0.2 inches of rain. A window of 48 hours subsequent to the rain gives ample time to document the effects of the runoff. This year, the sampling route was expanded to include Keyport Harbor. All samples were collected from surface waters at 22 sampling stations. A map and a listing of the sampling stations are on the following pages. In conjunction with the NJ DEP/US EPA Performance Partnership Agreement, all samples were transported by IEC to the US EPA's Edison, New Jersey, laboratory for analysis of fecal and total coliform bacteria.



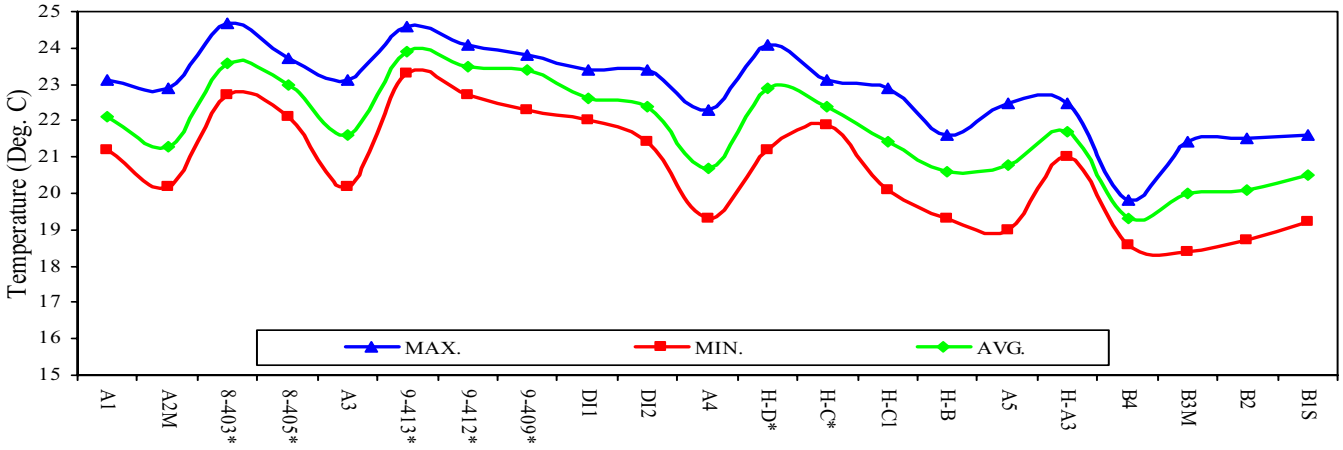
On November 10, 2004, the R/V Natale Colosi was moved to Raritan Bay and berthed at the Leonardo State Marina which is operated by the NJ DEP. From November 30, 2004, until May 4, 2005, four survey runs were completed; this represents a total of 49 completed surveys by IEC over the past ten years. Due to the extreme winter conditions, the R/V Natale Colosi was frozen in port during January and February, as was the entire eastern seaboard of the United States. All sample collection, storage and delivery to the US EPA Edison laboratory adhered to chain of custody procedures and followed standard operating methods as outlined in the NJ DEP Field Sampling Procedures Manual. The Commission, at the request of BMWCA, will again conduct this survey over the 2005-2006 winter and spring seasons.

2005 MONTHLY BOTTOM WATER TEMPERATURE DISTRIBUTION IN LONG ISLAND SOUND

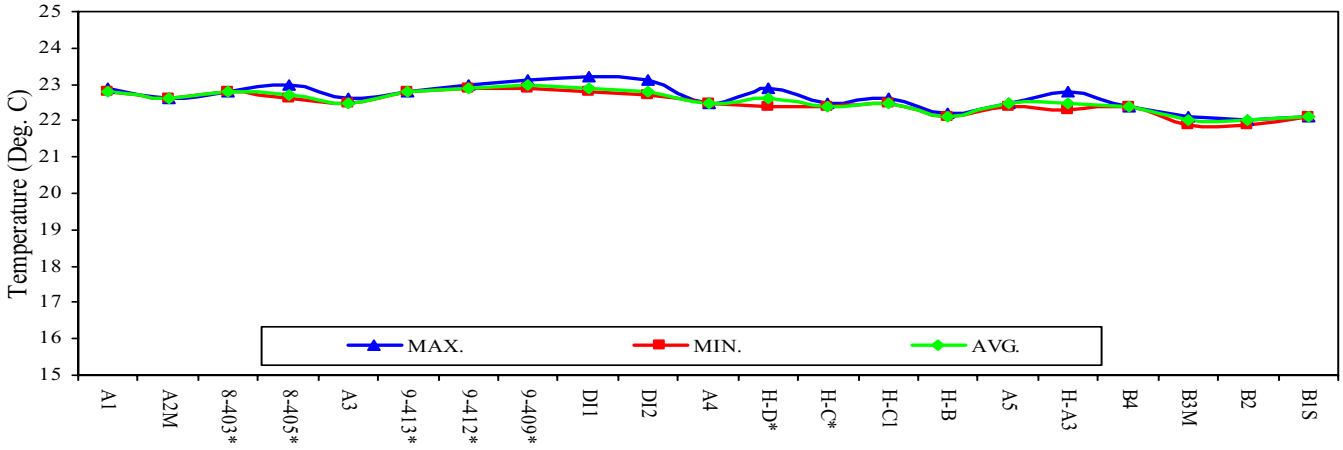
JULY



AUGUST

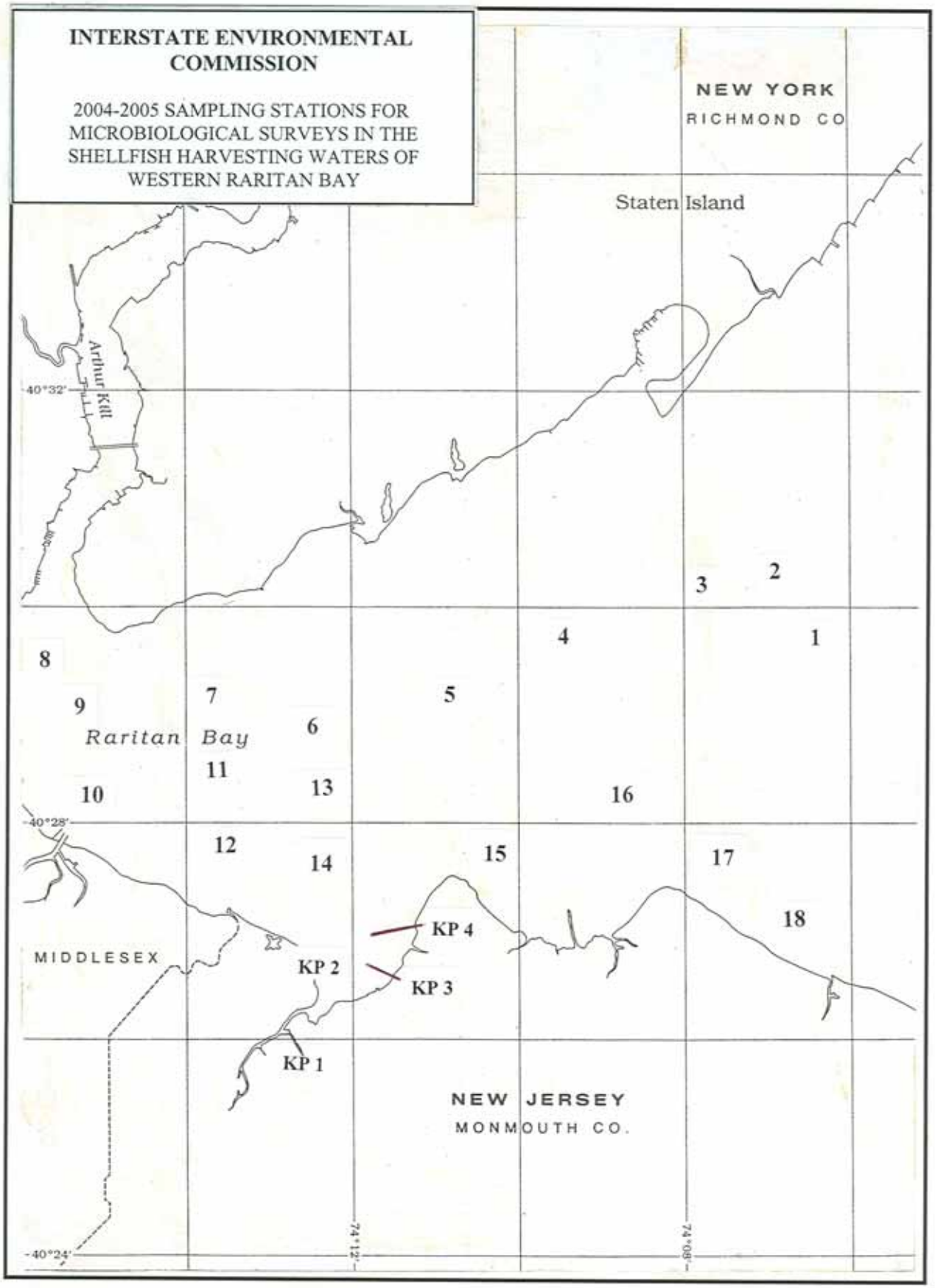


SEPTEMBER



* Stations inside embayments

IEC STATIONS (WEST TO EAST)



INTERSTATE ENVIRONMENTAL COMMISSION

2004-2005 SAMPLING STATION LOCATIONS FOR MICROBIOLOGICAL SURVEYS IN THE SHELLFISH HARVESTING WATERS OF WESTERN RARITAN BAY

SAMPLE No.	STATION	LOCATION		DESCRIPTION
		LATITUDE NORTH D M S	LONGITUDE WEST D M S	
1	50	40-28-40	74-06-42	~0.7 nm south of Can "9"
2	10	40-29-23	74-06-58	~0.5 nm west of Can "9"
3	29A	40-28-58	74-08-09	~0.5 nm west of Buoy "I"
4	28	40-28-45	74-09-23	~1.8 nm north of Union Beach
5	26A	40-28-30	74-10-38	~1.1 nm north of Conaskonk Point
6	24A	40-28-20	74-11-50	~1.25 nm north of Buoy "7"
7	18	40-28-33	74-13-26	~1.0 nm east of Ward Point Daymarker
8	20A	40-28-53	74-14-53	~0.4 nm south of Ward Point Daymarker
9	20	40-28-20	74-14-45	Cheesequake Creek
10	21	40-27-54	74-14-38	Cheesequake Creek
11	23	40-28-02	74-13-18	Seidler Beach
12	58	40-27-35	74-13-09	Seidler Beach
13	56	40-27-56	74-11-41	Keyport Harbor
14	KP 2	40-26-58	74-12-21	Keyport Harbor
15	KP 1	40-26-31	74-12-10	Keyport Harbor
16	KP 3	40-26-52	74-11-55	Keyport Harbor
17	KP 4	40-26-52	74-11-28	Keyport Harbor
18	61A	40-27-23	74-11-33	Keyport Harbor
19	62	40-27-35	74-10-23	Conaskonk Point
20	63B	40-27-46	74-09-05	Keansburg
21	86A	40-27-28	74-07-42	Point Comfort
22	88A	40-27-10	74-06-15	Ideal Beach

The Raritan Bay waters off the eastern shore of Staten Island, New York, represent nearly 45% (10,400 acres) 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 Division 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. This parasite is not harmful to humans and does not represent a public health threat, but is fatal to hard clams. In order to eliminate the spread of the parasite, the transfer program to cleaner, eastern waters of the District was stopped as a precautionary measure. There is no known treatment or cure for QPX. The closure remained in effect throughout 2004. On May 2, 2005, about 2,600 acres were reopened for transplant harvest. The areas approved for harvest are located west of a line extending southerly from the mouth of Lemon Creek (~2,000 acres) and to the east in the area of Great Kills Harbor (~650 acres). The program is restricted to a maximum of 40 diggers.

QPX was also confirmed in low prevalence in parts of the New Jersey waters of Raritan Bay and Sandy Hook Bay. NJ DEP closed these areas to relay harvest, but allowed depuration harvest to continue in Raritan Bay. NJ DEP reopened Sandy Hook Bay to relay in 2004 based on the 2003 sampling results of null prevalence of QPX. Pathologists from New York and New Jersey have reported an overall decrease in QPX prevalence in Raritan Bay in 2004 in both States.

2005 Ambient Water Quality Monitoring for Pathogens Across Hudson River Transects

The NY-NJ Harbor Estuary Program's Pathogens Workgroup (PWG), reactivated in 2000, was charged with determining the data needs to develop, if necessary, a total maximum daily load (TMDL) for fecal coliforms in the NY-NJ Harbor Complex by 2006. With passage of the BEACH Act of 2000, the Act required another indicator organism of bathing beach quality to be used. In the Tri-State Region, little or no information existed as to the ambient concentrations of this indicator organism, enterococcus.

As a member of the PWG, IEC has performed and completed field data collection surveys from land and by boat between 2001 and 2003. Ambient water quality samples were collected at over 60 stations during dry and wet weather to establish a database for enterococcus. Effluent samples were collected from over 30 wastewater treatment facilities throughout the IED. All samples were analyzed for enterococcus and fecal coliform at the IEC laboratory and sampling was conducted during the Commission's routine, unannounced compliance monitoring. During 2004, IEC performed additional monitoring at wastewater treatment plants, both influent and effluent, and stormwater outfalls in New Jersey, to address the need to confirm the comparability of different laboratory methodologies and data on pathogenic indicators The need for the characterization of New Jersey runoff loads for the pathogens impact on the Harbor Complex was a major missing data element. The modeler had requested that this additional sampling be performed to better refine and calibrate the model and to supply information on New Jersey stormwater concentrations of pathogens.

In 2005, IEC was again requested to perform pathogen sampling at transects across the Hudson River. The objective of this project is to compare pathogen concentrations east and west of mid-river points along the Hudson River in order to determine the microbiological content and distribution following a rain event. A second consecutive day of sampling is done to determine pathogens die-offs. This data set will be used for modeling microbial concentrations in the Hudson River.

The approved QAPP set a schedule of sampling following a wet weather event of at least 0.25 inches of rain as recorded in Central Park, NY. The reactive sampling will be repeated for a total of four wet weather events. Samples will be collected from stations along five transects of the lower portion of Hudson River from Yonkers, New York, to the Battery. This area of the river represents an interstate waterway shared by New York and New Jersey where CSOs discharge. Each transect will be represented by five stations. There will be a station at the mid-river point, two stations near the east (New York) and west (New Jersey) shorelines and two stations at points midway between the mid-river point and each of the near-shoreline points. Each of the near-shoreline stations will be located within 25 to 50 feet from the shoreline, taking into account locations of the adjacent CSOs and/or storm sewer outfalls and navigability. All five mid-river sampling locations (central points of each transect) were previously used in IEC's 2001-2003 pathogen studies. These locations were chosen because of their proximity to WPCPs and numerous CSO and/or storm sewer discharge locations. A map and list of station locations are on the following pages.

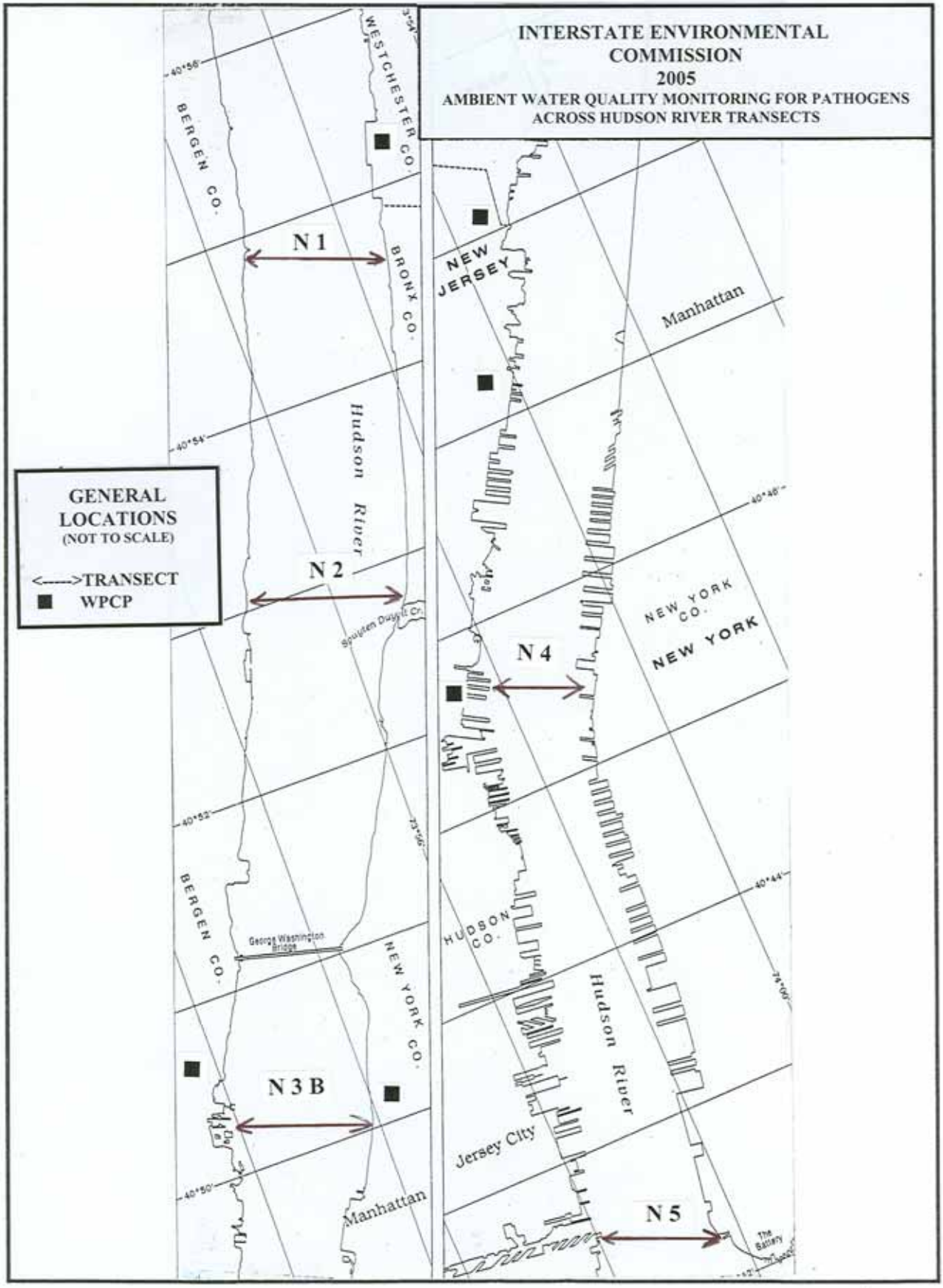
Each of the four wet weather events will consist of two days of sample collection at all 25 stations. The response will be planned as close to the end of the rain event and another trip 24 hours after the commencement of the first sampling day. All 25 stations will be visited once during each trip and samples will be analyzed at the IEC laboratory for enterococcus, fecal coliform and total coliform concentrations.

Temperature and salinity will also be measured at each station since they both affect bacterial growth. Salinity could also provide an indication of the extent of the mixing of fresh water with salt water. It could potentially describe, taking into account a variety of other parameters as well, the pattern of distribution of discharged water in the vicinity of the sample location from sources, including, but not limited to CSOs.

As of December 1, 2005, IEC successfully captured two storm events. IEC used its own research vessel on November 17-18, 2005. NJ DEP-BMWCA provided a boat for the second event on November 30-December 1, 2005. IEC field personnel performed all sample collection, in situ measurements and transfers to the IEC laboratory. IEC and NJ DEP are "on-call" to complete the last two samplings subsequent to sufficient rain.

World Water Monitoring Day

Inspired by the success of the first National Water Monitoring Day in the United States in

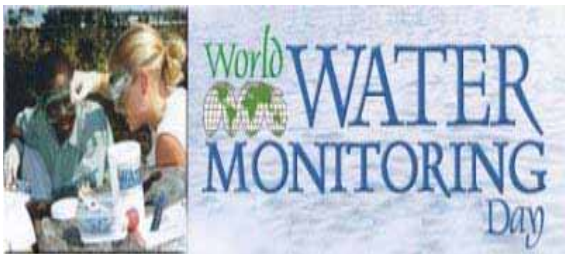


INTERSTATE ENVIRONMENTAL COMMISSION

2005 SAMPLING STATION LOCATIONS
AMBIENT WATER QUALITY MONITORING FOR PATHOGENS
ACROSS HUDSON RIVER TRANSECTS

SAMPLE No.	STATION	LOCATION		DESCRIPTION
		LATITUDE NORTH D M S	LONGITUDE WEST D M S	
1	N-1W NS	40-54-52	73-55-41	MT. ST VINCENT: Transect station New Jersey near shore
2	N-1W	40-54-52	73-55-26	MT. ST VINCENT: Transect station west of N-1
3	N-1	40-54-52	73-55-12	MT. ST VINCENT: Mid river on a line from New York shore at Mt. St. Vincent Academy to the New Jersey shore.
4	N-1E	40-54-52	73-54-58	MT. ST VINCENT: Transect station east of N-1
5	N-1E NS	40-54-52	73-54-47	MT. ST VINCENT: Transect station New York near shore
6	N-2E NS	40-52-46	73-55-35	SPUYTEN DUYVIL: Transect station New York near shore
7	N-2E	40-52-46	73-55-49	SPUYTEN DUYVIL: Transect station east of N-2
8	N-2	40-52-46	73-56-08	SPUYTEN DUYVIL: Mid river on a line from the center pier of the Conrail Bridge over Spuyten Duyvil Creek to the New Jersey shore.
9	N-2W	40-52-46	73-56-23	SPUYTEN DUYVIL: Transect station west of N-2
10	N-2W NS	40-52-46	73-56-36	SPUYTEN DUYVIL: Transect station New Jersey near shore
11	N-3B-W NS	40-48-56	73-58-37	125th STREET: Transect station New Jersey near shore
12	N-3B-W	40-48-56	73-58-19	125th STREET: Transect station west of N-3B
13	N-3B	40-48-56	73-58-17	125th STREET: Mid river on a line from the Manhattan shore at West 125th Street to the New Jersey shore.
14	N-3B-E	40-48-56	73-58-05	125th STREET: Transect station east of N-3B
15	N-3B-E NS	40-48-56	73-57-54	125th STREET: Transect station New York near shore
16	N-4-E NS	40-45-22	74-00-19	42nd STREET: Transect station New York near shore
17	N-4-E	40-45-22	74-00-14	42nd STREET: Transect station east of N-4
18	N-4	40-45-22	74-00-30	42nd STREET: Mid river on a line from the Manhattan shore at West 42nd Street to the New Jersey shore.
19	N-4-W	40-45-22	74-00-47	42nd STREET: Transect station west of N-4
20	N-4W NS	40-45-22	74-00-58	42nd STREET: Transect station New Jersey near shore
21	N-5 E NS	40-21-16	74-01-10	PIER A-THE BATTERY- Transect station New York near shore
22	N-5 E	40-21-16	74-01-18	PIER A-THE BATTERY: Transect station east of N-5
23	N-5	40-21-16	74-01-36	PIER A-THE BATTERY: Mid river on a line from the Manhattan shore to the Conrail Terminal.
24	N-5 W	40-21-16	74-01-48	PIER A-THE BATTERY: Transect station west of N-5
25	N-5 W NS	40-21-16	74-02-00	PIER A-THE BATTERY: Transect station New Jersey near shore.

2002, America's Clean Water Foundation and the International Water Association — together with the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA), the United States Environmental Protection Agency (US EPA) and a host of global partners — coordinated the third annual World Water Monitoring Day. To promote water quality awareness around the globe, World Water Monitoring Day was held on October 18, 2005, with sampling taking place between September 18th and October 18th. October 18th is the anniversary of the enactment of the federal Clean Water Act. IEC has participated in this monitoring effort since its inception.



The IEC joined thousands of volunteers to sample water quality and report their results. It is anticipated that nearly 10,000 sites in 48 states and 80 nations were visited. While comprehensive monitoring goes on throughout the year, IEC conducted in situ testing of water quality parameters on September 19th at nine sites in the upper East River and western Long Island Sound, covering a distance of about 29 nautical miles, aboard the R/V Natale Colosi. These are the same sites monitored by IEC during the past three years. The ambient water quality stations represent a subset of the LISS sampling network (see the 2005 LISS Sampling Stations for specific locations). In addition to meteorological and tidal conditions, parameters collected include dissolved oxygen, salinity, temperature, and water clarity. All IEC data has been submitted to the World Water Monitoring Day website, www.worldwatermonitoringday.org for inclusion into an international data bank.

Pathogen Track Down on the Byram River

The Byram River, an interstate waterway about 13 miles long, runs between New York and Connecticut, with Port Chester, Westchester County, New York, on the west bank and Greenwich, Fairfield County, Connecticut, on the east. The river mouth empties into Port Chester Harbor and has a confluence with Long Island Sound. While a bacterial contamination problem in the Byram River has existed for some time, there's great interest in eliminating this pollution source because there are negative impacts on the shellfish beds that are used for recreational purposes in adjacent Greenwich Harbor, as well as the New York-Connecticut area beaches. Elevated levels of coliform bacteria prevent the safe use of the river and harbor for primary recreational activities, i.e., bathing and, where approved, shellfish harvesting. The areas around this portion of the river are highly developed with numerous potential industrial and residential sources of bacteria. Due to its interstate nature, in 2002, CT DEP requested the Commission to coordinate and address oversight for a multi-agency pathogens track down investigation.

Along with IEC, those involved in the project are CT DEP, NYS DEC - Region 3, Westchester County Department of Health (WC DOH), Greenwich Health Department, and the Town of Port Chester. In 2002 and 2003, the investigation began by assessing historic data and examining potential industrial and municipal sources by reviewing NPDES permits and Consent

Orders of record. Field staff conducted shoreline surveys, as well as inspected one pump station on the Westchester County side of the river. The Commission developed a QA/QC monitoring plan that was submitted and approved by US EPA - Region 1. The monitoring plan's first priority was to identify the outfalls to be monitored for dry weather discharges (no rain within the previous 48-hours). A map on the following page shows the area of concern and the outfalls under investigation. Any discharge observed was then sampled and, where accessible, an ambient sample was also taken. The samples were analyzed at the IEC laboratory for fecal coliform, total coliform, fecal streptococcus and enterococcus. During 2003, six ambient surveys were performed.

In early 2004, IEC met with the WC DOH to discuss locating contaminated discharges to the Byram River from the Village of Port Chester. The investigation involved following the discharges into the river upstream through the sewers. IEC and WC DOH jointly conducted investigations of storm sewers in Port Chester. Subsequently, inland tracking for dry weather flow and illegal hook-ups were jointly conducted by IEC and WC DOH; the aforementioned map shows a demarcation dotted line which encompasses the area of upstream investigations. The search located numerous sources of contamination of varying pipe sizes and flows.

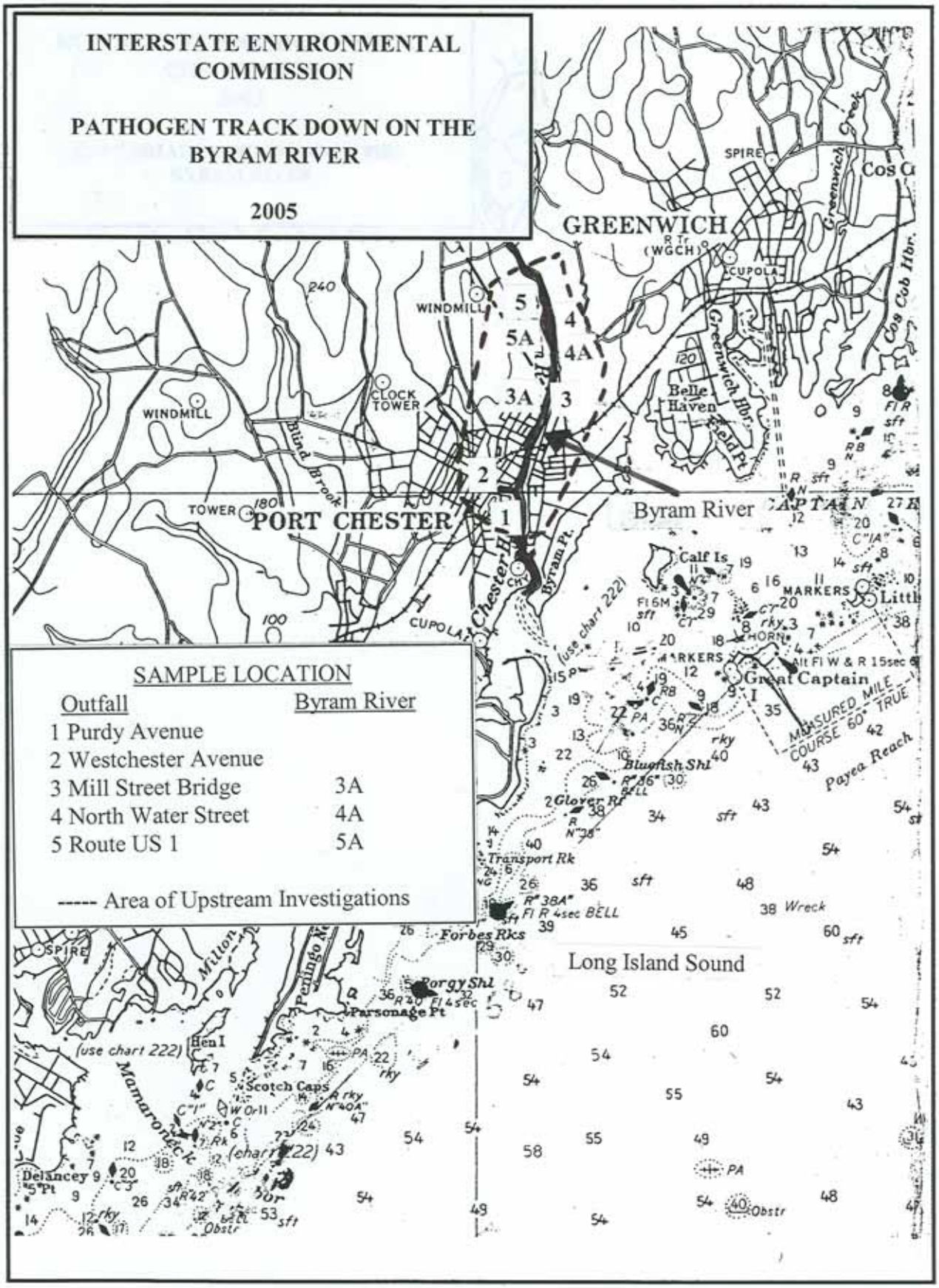
During 2005, the Village of Port Chester remediated all of the sources that were identified by the joint IEC-WC DOH investigations. In addition, Port Chester had relined 1,200 linear feet of sewer and videoed a portion of its sewer line as a method of investigating leaks.

PURDY AVENUE (VILLAGE OF PORT CHESTER, NY) OUTFALL
TO THE BYRAM RIVER (FACING WEST)
Photo by P. Sattler, IEC

IEC performed two more rounds of sampling in the summer of 2005, prior to an August meeting of the agencies involved with the project, and one additional round of sampling after the meeting. All three rounds of sampling still showed elevated levels of bacteria in the Byram River. In October and November of 2005, IEC and WC DOH continued their joint investigations of the Port Chester storm sewers. Continued surveillance, laboratory analysis and data sharing will be maintained in 2006.

Harbor-wide Water Quality Monitoring Activities in the New York-New Jersey Harbor Complex

As part of and in cooperation with the NY-NJ HEP, the Interstate Environmental



Commission has been chairing an Ad Hoc Committee to develop a harbor-wide water quality monitoring survey to be fashioned after the NYC DEP Harbor Survey. The conceptual monitoring survey is in place and addresses the entire New York-New Jersey Harbor Complex which includes state and interstate waters, as well as tributaries. The Committee includes IEC, US EPA - Region 2, NYS DEC, NJ DEP, NYC DEP, and the New Jersey Harbor Dischargers Group (NJHDG) which is chaired by PVSC. All of the aforementioned agencies have existing water quality monitoring programs within the HEP core study area. The conceptual plan is to be consistent with the existing New York City Harbor Survey so as to allow for a harbor-wide assessment of water quality.

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

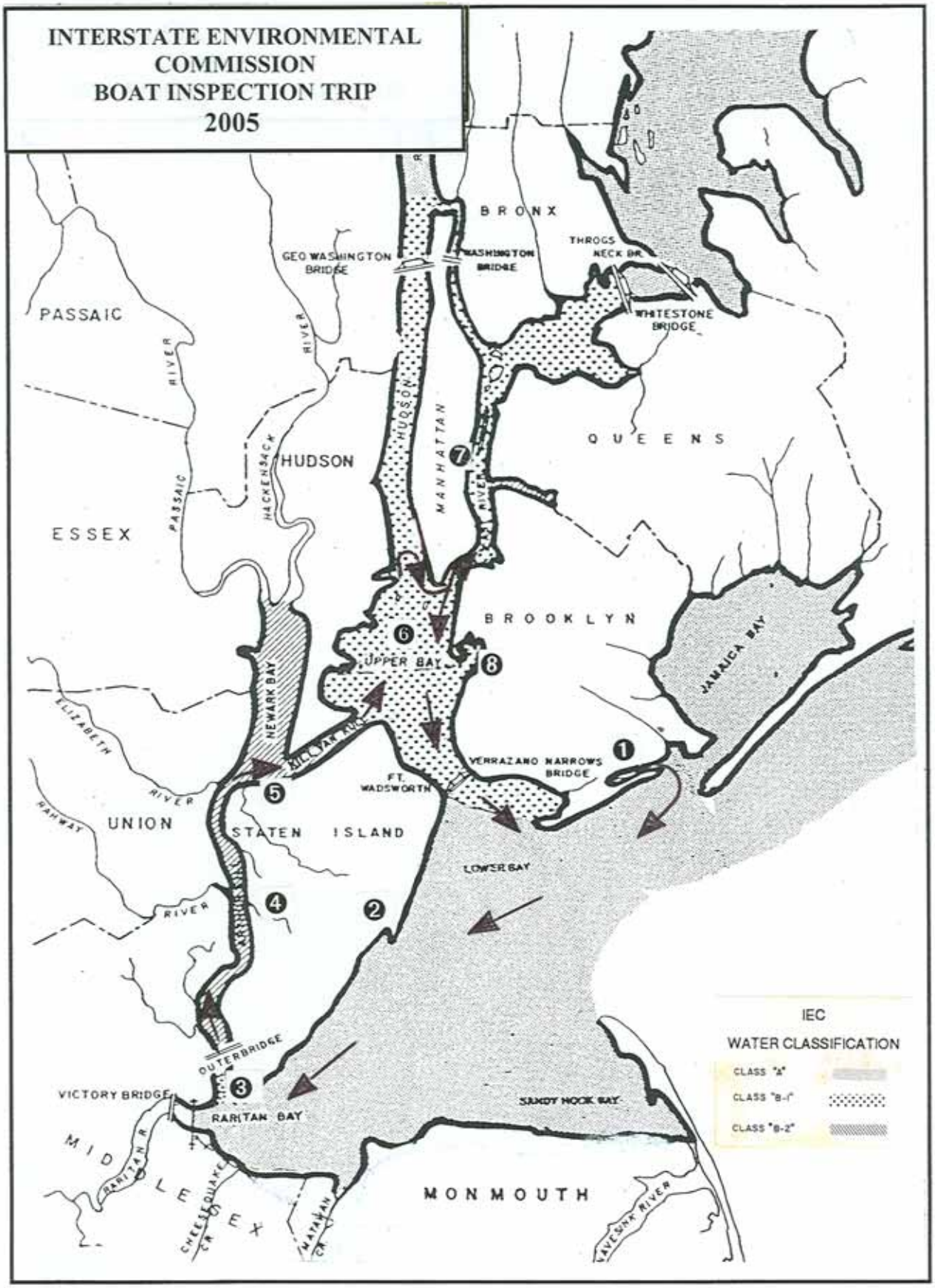
Under way in late 2003, the NJHDG, with an initial grant from the HEP, established an ambient water quality monitoring program consisting of 33 stations. Subsequently, all funds were allocated from internal resources. During 2004, 16 parameters of concern including DO, nutrients and pathogens were collected weekly between May and September, and bimonthly between October and April. The analyses are conducted at three laboratories located at the Bergen County Utilities Authority, MCUA and PVSC. This program was maintained in 2005.

The final products of the sampling efforts will be to create a comprehensive report or establish a website or link fashioned after the NYC DEP Harbor Survey document which would, at the very least, discuss results, status and trends, and immediate environmental conditions. Discussions began during November 2005 to resolve consistent data formatting, analysis and data interpretation, as well as publication issues.

2005 BOAT INSPECTION TRIP

The Commission's annual Boat Inspection Trip provides an excellent opportunity for public officials and other parties interested in protecting the environment to view and discuss water quality issues affecting the Region. The waters inspected this year were impacted by an extreme winter season followed by a dry hot summer, dredging and naturally occurring parasites.

The annual Boat Inspection Trip, held on August 3rd in 2005, has been conducted for nine consecutive years. The area waterways visited were the Lower and Upper New York Harbor, New York and New Jersey waters of Raritan Bay and the Kills, and the confluence of the Hudson and East Rivers. The cruise route was annotated to show ongoing dredging, pier head diving operations, commercial off-loading operations, and small boat traffic requiring "No Wake"zones. The map on the following page shows the six-hour route which was traversed, covering over 50 nautical miles. The waters inspected during the trip provide for a variety of recreational activities such as powerboating and sailing; the use of canoes, kayaks and sculls; fishing, shellfishing, lobstering and



crabbing; and swimming, jet skiing, scuba diving, parasailing, water skiing and wind surfing. On a grand scale, the New York Harbor Complex supports a vast maritime industry including shipping, dry docks, transportation (ferries, water taxis and ocean liners), container ports, tank farms and commercial harvest of crustaceans, finfish and shellfish.

IEC Commissioners, legislators, officials from all levels of government, interstate agencies, citizen groups and the press viewed bathing beaches and seaside parks (Coney Island, NY, and Keansburg, NJ), commercial shellfish operations, numerous party boats and small recreational vessels, tug and barge transports, dredge and dive operations, dry docks, urban and maritime industries, historical landmarks, and waterfront development projects. A running dialogue and brochure of water quality issues; sights and points of interest; recommended fishing and scuba diving sites; as well as local lore dealing with lighthouses, bridges, and embattlements was provided throughout the trip.

The attendees viewed ongoing waterfront development, sewage treatment plants, areas that the Commission has been monitoring to determine the sanitary conditions for shellfish harvesting and bathing, as well as a network of sampling stations that were used for data collection support for the NY-NJ Harbor Estuary Program. The tour visited the recently opened shellfish beds off Staten Island — the beds had been closed due to a naturally occurring parasite. Other waterfront views included electrical/steam generating stations, major oil storage facilities, the Fresh Kills Landfill, restoration efforts due to oil spills and erosion, wooden bulkheads under repair due to marine borers, and several major dredge contracts under way in the Kill Van Kull and Newark Bay.

Attendees had the opportunity to see unobstructed views of the New York City and Hudson County, New Jersey, skylines; the historical embattlements that have protected New York Harbor; over 20 national monuments; nine world famous bridges; and fragile bird sanctuaries on the Isle of Meadows, and on Pralls and Shooters Islands in the Kills. The inspection trip gave the attendees a firsthand view of the progress that has been made and some of the problems that must still be addressed in the Region.

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, i.e., treatment plant upsets, broken pipes due to age, or construction mishaps. The RBWG has members from the IEC's three states' environmental and health departments, IEC, US EPA, US FDA, NYC DEP, US Coast Guard, National Park Service and county health officials. The Workgroup has been using the Regional Bypass model 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. Also, regional notification protocols were put in place and are updated annually.

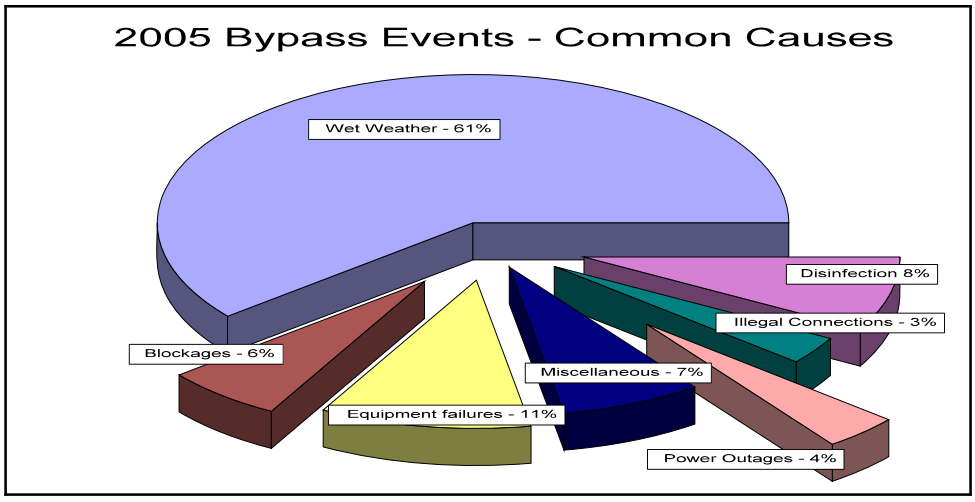
For the first seven full calendar years that the model and notification protocols have been in

place, 1998 through 2004, the Commission received 94, 97, 99, 115, 93, 101 and 211 e-mail messages, respectively, with regard to unplanned spills within the Interstate Environmental District. Originally, the focus of identifying bypass events was raw sewage. The focus has since been expanded to address any type of spill, i.e., chemical, oil, fuel, sludge and treatment reductions. During 2005, first-hand reports of fish kills were called in from the IEC research vessel, R/V Natale Colosi, and were disseminated to all appropriate agencies. The 196 bypass events reported to the Commission for the period January 1 to November 30, 2005, are shown below, delineated by state. The 2004 totals are included as a basis of comparison, as well as to report all bypass events for the past full calendar year.

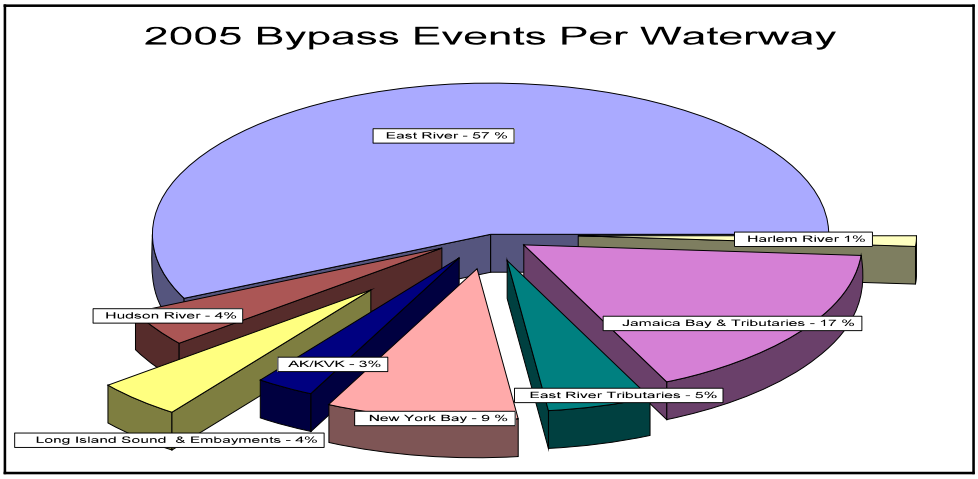
	Total Events in 2004	% of Total	Total Events in 2005	% of Total
Connecticut	4	1.9 %	2	1.0 %
New Jersey	2	0.9 %	1	0.5 %
New York	205	97.2 %	193	98.5 %

The number of reported bypasses from 2004 and 2005 have been substantially higher than any than of the previous 6 years. This may be primarily due to rainfall. The 2004 and 2005 hurricane seasons were extremely active. Additionally, the hydraulic capacity of several plants was diminished due to construction upgrades. The majority of the New York City and northern New Jersey collection systems are comprised of combined sewers and, when there is rain, the flows to the WPCPs increase. If the flow is greater than the plant can handle, part of the flow is “throttled”. This throttled flow is considered to be a bypass. For the 2005 reporting period, there were 119 wet weather bypass events reported to the RBWG. For both 2004 and 2005, wet weather bypasses account for over 50% of the reported events. For 2003, less than 10% of the reported bypasses were caused by wet weather. This year all of the New York events occurred in NYS DEC - Region 2 which encompasses the five boroughs of New York City. It should be noted that the majority of the treatment facilities, pump stations, regulators and gravity sewers and force mains that exist in this region are in New York City.

During the reporting period, all bypass event details were disseminated in a timely fashion by e-mail. For the most part, any missing data from the event was reported by conventional mail subsequent to repairs. Minor events or ongoing investigations of illegal discharges were reported by mail. Volumes bypassed ranged from as little as 3 gallons of sewage lasting a few minutes to wet weather bypasses that were over 100 MG and lasted for a few days. During 2005, the common causes for bypass events were rain (119), equipment failures (21), disinfection problems (16), blockages (11), power outages (8), illegal connections (7), and 14 events were caused by miscellaneous reasons including force main failures and sludge spills. The breakdown is displayed on the pie chart on the next page. The majority of the 196 bypass events were comprised of raw sewage (173). Other types of bypasses include disinfected wastewater with primary treatment, secondary treatment with no disinfection, low chlorine residual and sludge spills.



Bypass events that had the potential to impact primary recreational waters occurred during the period May 28th through September 5, 2005, which represents the "official" bathing season (Memorial Day weekend to Labor Day). There were 54 releases, or 27.6 % of the total, during this period; this is comparable to previous bathing seasons. During 2005, the waterways impacted by bypass events are shown below:



On June 28, 2005, the Commission was notified by the US National Park Service at Gateway National Recreation Area that high bacterial contamination was found, with subsequent closure through July 13th, at the Great Kills Beach on Staten Island, New York. Communication amongst the Workgroup agencies occurred daily; NYC DEP conducted a shoreline survey and sample collection. A construction company discharging to a storm sewer was discovered and was issued a violation, but was not the source of the contamination. During this period, no New York City beaches were closed. On July 13th, the beach was reopened based on the enterococcus values.

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 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 waterbody supports the uses designated by water quality standards. The IEC has made submissions since the inception of this reporting format which began in 1984. Each State and Tribe aggregates these assessments and extensive programmatic information in a 305(b) report which is a comprehensive document, usually involving information from multiple agencies. US EPA then uses these individual 305(b) reports to prepare a biennial National Water Quality Inventory Report to Congress.

The goals for 305(b) reporting include comprehensive coverage characterizing all waters in the Interstate Environmental District which adds to the extensive national coverage; reducing paperwork while increasing the amount of assessed waters; annual electronic updates of key information for all assessed waters during the previous year; geo-referencing 305(b) information to identify and map specific waterbodies, including whether they meet water quality standards and to enable long-term tracking of trends; and more rapid, real-time public availability of water quality information.

Since 1998, the IEC has been providing 305(b) reports both as an annual electronic report and an abbreviated narrative report. The abbreviated narrative report contains only the information that has changed from the last report, and a simple reference to that report. IEC reporting format conforms to the US EPA guidelines. The following table summarizes the individual supporting uses of the IEC's nearly 797 square miles of estuarine waters. The Commission is presently preparing the 2005 electronic 305(b) report. The assessment is based on the Commission's data collected from its ambient and effluent monitoring programs. It is supplemented with data from the Commission's member states' environmental and health departments dealing with information on water quality, health advisories, fish kills, shellfish closure areas, and beach closings.

STORET

Since its beginnings, the Commission has amassed a huge data base of ambient and effluent water quality data. These data have been collected for a variety of reasons which have been highlighted throughout this report, previous Annual Reports, and in special reports. The Commission has been a depository and advocate of water quality data collection, analyses and dissemination for the Tri-State Region. Originally under the auspices of the Public Health Service, the US EPA has the responsibility for the computerized National Water STOrage and RETrieval (STORET) data base for housing and managing data and metadata on air, sediment, soils and water. The water matrix contains information on end-of-pipe water quality from municipalities and industrial complexes, groundwater, saline and freshwater. The system promotes data sharing among federal, state, interstate, and local agencies, as well as the private sector. The Commission

2004 INDIVIDUAL USE SUPPORT IN THE INTERSTATE ENVIRONMENTAL DISTRICT

Designated Use	Total Square Miles Surveyed	Percent Good (Fully Supporting)	Good (Threatened)	Fair (Partially Supporting)	Poor (Not Supporting)	Poor (Not Attainable)
ESTUARIES (Total Square Miles = 797.55)						
AQUATIC LIFE	387.04*	29.57	21.41	32.58	16.44	0.00
FISH CONSUMPTION	797.55	16.93	0.00	80.35	2.72	0.00
SHELLFISH CONSUMPTION	797.55	40.76	0.00	18.09	41.15	0.00
PRIMARY CONTACT	797.55	75.86	0.00	4.87	11.00	8.27
SECONDARY CONTACT	797.55	100.00	0.00	0.00	0.00	0.00

* Long Island Sound and upper East River waters of the Interstate Environmental District.

has data in this repository dating back to1970.

The original data base underwent a complete modernization and overhaul between 1991 and 1998. Since then, the system has been subjected to continuous updates and improvements. The Commission is currently preparing its most recent water quality data for input into STORET, Version 2.0. The Commission's input to the modernized STORET is represented by over 80,000 parametric recordings which include dissolved oxygen, temperature, salinity, chlorophyll a, and fecal and total coliform bacteria. The modernized version of STORET has been enhanced to contain ancillary information such as climatological and tidal data, type of monitoring instrumentation, personnel expertise and visual observations.

PROPOSED REVISIONS TO DISSOLVED OXYGEN SURFACE WATER QUALITY STANDARDS FOR MARINE WATERS

In November 2000, US EPA issued the final guidance document *Ambient Aquatic Life Water Quality Criteria for Dissolved Oxygen (Saltwater): Cape Cod to Cape Hatteras.* This document recommended guidelines for revising water quality criteria for dissolved oxygen (DO). As a result of the release of this document, the Commission's member states, as well as the Commission, have or are considering revisions to current DO standards. Subsequent to public hearings, US EPA - Region 1 approved Connecticut's proposed revisions during May 2001. Connecticut adopted the revised dissolved oxygen ambient water standards in certain portions of Long Island Sound.

NYS DEC is continuing to prepare a rulemaking that would include revised standards for several limiting parameters in marine waters including dissolved oxygen, ammonia, and additional standards for human health protection. These proposed rules will be released to public notice as a formal proposed rulemaking. The Commission is closely monitoring these activities to determine a course of action for the Interstate Environmental District.

NATIONAL ESTUARY PROGRAM

The National Estuary Program was established in 1984 and provides assistance to estuaries of national significance which are threatened by pollution, development or overuse. The NEP provides federal assistance to develop a Comprehensive Conservation and Management Plan for designated estuaries. There are 28 estuaries located along the Atlantic, Pacific and Gulf of Mexico coastlines, as well as in Puerto Rico and the US Virgin Islands, that are developing or implementing CCMPs. Within the Interstate Environmental District, Long Island Sound and the New York-New Jersey Harbor Estuary have been receiving funding under this program since 1985 and 1988, respectively. The overall coordination for the Long Island Sound Study (LISS) is being done by the US EPA - Regions 1 and 2. The New York-New Jersey Harbor Estuary Program (HEP) is being coordinated by the US EPA - Region 2.

During 2005, the Commission continued its active participation as a member of the Management Committees, implementation and planning teams, as well as various workgroups for

the LISS and the HEP. Commission staff members have taken active roles in the preparation and dissemination of outreach materials intended for legislators and the public. IEC staff also attends the spring and fall meetings of the Association of National Estuary Programs (ANEP). The spring meetings in Washington, DC, give the NEPs access to the appropriate legislators. The fall meetings, which are hosted by different NEPs, give the opportunity to share successes and failures, as well as program management, and education/outreach. The Commission has been involved with these national programs since their inception.

The Governors of New York and Connecticut and the Administrator of the US EPA signed the final CCMP for the LISS in September 1994. The Long Island Sound is bounded by Connecticut and Bronx and Westchester Counties, New York, on the north and by Long Island on the south. It is about 110 miles long ranging from the East River to the Race. In October 1996, the Governors of New York and Connecticut met to re-affirm their commitment to the actions set forth in the CCMP. The LISS 2003 Agreement more clearly defines desired outcomes of the CCMP actions in measurable, trackable terms, proposes a better link between monitoring/research and environmental indicators to established goals and results, promotes implementation, and addresses new issues. It affirms targets for nitrogen reduction and habitat restoration. The "vision" is to restore the health of the Sound by 2014, the 400th anniversary of Adrian Block's first exploration of the region. The Agreement focuses on hypoxia, pathogens, toxic substances, living resources and their habitats, open space and public access, watershed management, public education and community involvement and partnerships.

Six LISS workgroups have developed missions to accomplish the goals set forth in the 2003 Agreement. The Systemwide Nutrient Workgroup will provide recommendations to both the LISS and HEP on the use of a model to support development of TMDLs for the NY-NJ Harbor and NY Bight and support reassessment of the dissolved oxygen TMDL for Long Island Sound. The Stewardship Workgroup established the Long Island Sound Stewardship Initiative which is a public/private partnership formed by the LISS to identify, protect and enhance special places throughout the Sound and adjacent near-shore areas. The Communications Workgroup, through a multitude of public outreach materials, is increasing the public's awareness of the Sound, the need to restore and protect the Sound, as well as the public's role in this process. The Non-point Source Pollution and Watersheds Workgroup is effectively meeting the non-point source mitigation goals and the watershed management initiatives through the Nemo Project and impervious surface trend analyses. The Connecticut River Nitrogen Project Workgroup is developing scientifically-defensible nitrogen load allocations, as well as an implementation strategy for the Connecticut River Basin in Massachusetts, New Hampshire, and Vermont which are consistent with TMDL allocations established for LIS. The Habitat Workgroup is using partnerships to leverage limited state, local and federal funds in order to restore the ecological functions of degraded and converted habitats.

The Governors of New York and New Jersey and the US EPA Administrator signed the final

CCMP for the HEP in August 1997. The estuary includes the waters of New York-New Jersey Harbor Complex and the tidally influenced portions of all rivers and streams that empty into the Harbor Complex. The plan addresses habitat and living resources, toxic contamination, dredged material, pathogens contamination, floatable debris, nutrients and organic enrichment, rainfall-induced discharges, and public involvement and education. Simultaneous with the 1997 closure of the Mud Dump Site (MDS) in the Atlantic Ocean, the site and surrounding areas that had been used historically as disposal sites for dredged materials was designated as the Historic Area Remediation Site (HARS). The Commission took an active role by serving on the MDS/HARS Workgroup. The final CCMP was amended to reflect the accelerated implementation schedule.

The nutrients, pathogens and toxics workgroups are addressing the modeling and water quality issues with the intent of ultimately developing total maximum daily loads. Schedules for developing and implementing TMDLs are in place. IEC has been involved with these meetings and will assist in the process, especially for the interstate waters within IEC's jurisdiction. Refer to the water quality surveys in this report for details of IEC's pathogens study being conducted in cooperation with the HEP.

The Triennial Review Process conducted by EPA Headquarters is used to determine each NEP's progress, effectiveness and funding eligibility. The process helps assess how the NEPs support the core elements of the Clean Water Act and the contributions to achieving the goals of EPA's 2003 Strategic Plan. The Commission supports this process by contributing to the Implementation Review Report, as well as taking an active role interacting with the Review Teams. This year, the R/V Natalie Colosi was used to host guests from EPA Headquarters and EPA - Region 1 for a guided field tour of western Long Island Sound.

COMBINED SEWER OVERFLOWS AND MUNICIPAL SEPARATE STORM SEWER SYSTEMS

Since the passage of the Clean Water Act and the implementation of secondary treatment, the quality of the Region's waters has improved dramatically. However, waterbodies are still negatively impacted by urban and suburban stormwater runoff. Combined sewer overflows (CSOs) and municipal separate storm sewer systems (MS4s) are major sources of pollution that are allowed to discharge only during wet weather.

The Commission's continuing activities with combined sewer overflows include in-house programs, as well as IEC's participation in the National Estuary Programs in the Region. The Commission has maintained an active dialogue with its member states, US EPA and POTW owners/operators to keep abreast of the status of CSO abatement activities in the District.

The Commission has an ongoing program of inspecting CSOs to determine whether they are discharging during dry weather. When dry weather discharges are discovered, the incident is

reported to the appropriate state environmental department for remediation. The Commission then works with that department to determine the most expeditious manner to remediate the violation.

During the past three years, interest in the operation and control of municipal separate storm sewer systems has intensified. Phase I of the US EPA's stormwater program (1990), administered as NPDES permit requirements, addresses medium and large municipal separate storm sewer systems, construction activities, and industrial activities. Phase II is an effort to preserve, protect, and improve the nation's water resources by implementing programs and practices to control polluted stormwater runoff.

Long Island communities were informed of the requirements of the new Phase II Stormwater Program announced by NYS DEC on September 18, 2002. Among the documents released by NYS DEC were two draft Phase II general SPDES permits — one for Small Municipal Separate Storm Sewer Systems (MS4s) and one for construction activities. According to the draft permits, all New York regulated entities (communities with stormwater discharges from MS4s and construction activities) were required to apply for coverage by SPDES permits by March 10, 2003. Communities with MS4s were then required to proceed with preventing pollution using appropriate technologies and management practices outlined in the permit. The permittees are expected to report annual progress to the NYS DEC and fully implement the proposed program by March 2008.

The draft general MS4 permits require six minimum controls including: 1) public education/outreach on stormwater issues, 2) public involvement/participation in decisions involving stormwater, 3) illicit discharge detection and elimination, 4) construction and stormwater site runoff control, 5) post-construction management of stormwater facilities, and 6) pollution prevention at facilities operated by municipalities.

Initiated in 2002, the Commission was asked by US EPA - Region 2 to investigate the feasibility of conducting dry weather investigations of MS4s in the District, somewhat like the IEC's ongoing CSO program described above. IEC received some information from EPA on MS4s (locations, sizes, and waterways) in Nassau County, New York, and started conducting outfall inspections. Because of the importance of the track down of this pollution source, the Commission has continued this program. The field inspections revealed some of the Nassau County outfalls flowing under dry weather conditions. That information was referred to NYS DEC - Region 1 for appropriate action. The tables on the following pages show the 2004 and 2005 summaries of inspections. This program will continue during 2006.

CONFERENCES

New York Water Environment Association's Legislative/Regulatory Forum

For the fifth consecutive year, the Commission and its interstate counterparts with New York membership co-sponsored the New York Water Environment Association's Legislative/Regulatory Forum in Albany, New York. Meeting in New York's capitol in May gave the six interstate

INTERSTATE ENVIRONMENTAL COMMISSION
MS4 DRY WEATHER INSPECTIONS
NASSAU COUNTY, NEW YORK
2004

LOCATION	DATE INSPECTED	NUMBER OF OUTFALLS INSPECTED	NUMBER OF OUTFALLS FLOWING
Mill Pond Park, Port Washington	03/24/04	3	0
Whitney Lake Park, Manhasset	03/24/04	11	9 (1)
Cow Meadow Park, Freeport	09/22/04	1	0
Newbridge Road Park, Bellmore	09/22/04	1	0
Milburn Park, Freeport	09/22/04	2	0
Mill River Park, Rockville Center	09/22/04	2	0
Massapequa Preserve	09/22/04	2	0
Bay Park, East Rockaway	09/22/04	9	0
Whitney Lake Park, Manhasset	09/22/04	10	5 (1)
Gerry Park, Roslyn	09/22/04	8	0
Mill Pond Park, Port Washington	09/22/04	3	0
Oyster Bay Harbor, Oyster Bay	09/22/04	6	0

(1) All observed flowing outfalls are referred to NYS DEC, Region 1 for remediation.

INTERSTATE ENVIRONMENTAL COMMISSION
MS4 DRY WEATHER INSPECTIONS
NASSAU COUNTY, NEW YORK
2005

LOCATION	DATE INSPECTED	NUMBER OF OUTFALLS INSPECTED	NUMBER OF OUTFALLS FLOWING
Mill Pond Park, Port Washington	04/14/05 05/06/05 07/22/05 11/03/05	3 3 3 3	1 (1) 0 0 0
Whitney Lake Park, Manhasset	04/14/05 07/22/05 11/03/05	9 9 8	1 (1) 3 2
Cow Meadow Park, Freeport	04/14/05 05/06/05 07/22/05	1 1 1	0 (2) 0 0 (2)
Newbridge Road Park, Bellmore	04/14/05 05/06/05 07/22/05	4 4 4	1 (1) 1 (1) 0
Milburn Park, Freeport	05/06/05 07/22/05	3 4	0 0
Mill River Park, Rockville Center	05/06/05 07/22/05	2 2	0 0
Massapequa Preserve	04/14/05 05/06/05	2 2	0 0 (2)
Bay Park, East Rockaway	05/06/05 07/22/05	9 9	0 0
Gerry Park, Roslyn	07/22/05 11/03/05	8 8	0 0
Mill Pond Park, Port Washington			
Oyster Bay Harbor, Oyster Bay	04/14/05 05/06/05	6 6	0 0

(1) All observed flowing outfalls are referred to NYS DEC, Region 1 for remediation.
(2) Tidally affected; outfall pipe partially submerged.

commissions the opportunity to emphasize to the New York Legislature the scope of the agencies' individual and combined efforts being undertaken to promote water pollution control and carry out water pollution abatement activities.

Collectively, the Delaware River Basin Commission, the Great Lakes Commission, the Interstate Environmental Commission, the New England Interstate Water Pollution Control Commission, the Ohio River Valley Water Sanitation Commission, and the Susquehanna River Basin Commission represent 20 states, the federal government and the Canadian provinces of Ontario and Quebec. "Watershed Planning, Monitoring and TMDLs" was a discussion issue and the panel was moderated by the IEC. The panel was comprised of the executive directors of the six aforementioned commissions. Other forum topics of interest included a national focus by the National Association of Clean Water Agencies, a state focus by NYS DEC, and a federal focus by US EPA. Two additional Forum agenda items included "Recent New York and Federal Legislative, Regulatory, Court and Policy Developments" and an infrastructure panel comprised of the NYS Environmental Facilities Corporation, Legislative Commission on Water Resource Needs and the Albany County Sewer District.

PUBLIC EDUCATION AND OUTREACH

The Commission continues its commitment to participating in an active public involvement, education and outreach program. IEC continues to lecture at local schools and colleges, community boards, scuba and fishing clubs on a variety of environmental topics and Commission activities. Many of the Commission's staff members participate in this effort.

This year, the Commission's public education and outreach program encompassed a variety of topics and venues. IEC personnel have been called upon to participate in various seminars and forums in various 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 those organization's committees, boards, etc. The technical staff is involved with ASIWPCA, ICWP, WEF, NY WEA, NWQMC and other professional organizations and activities. Counsel is actively involved with the New York City Bar Association and its Committee on Environmental Law. Commission personnel have published articles on a variety of environmental topics, including interstate compacts, laboratory research and water pollution control. Activities such as these enhance the Commission's visibility and make IEC and its functions known to a broad audience.

III. AIR POLLUTION

GENERAL

In 1962, after passage of supplemental statutes in New York and New Jersey, the Commission's air program was initiated. In 1969, Connecticut passed legislation mirroring that of New York and New Jersey, extending the IEC's air investigation and study authority. To aid the primary control agencies in the solution of air quality problems of an interstate nature, the Commission maintained two mobile vans capable of measuring airborne pollutants. The vans were used to trace air contaminants across state lines and locate sources. The Commission also maintained fixed-site monitoring stations.

In 1964, the first Air Pollution Warning System was put into operation and, through coordination by the Commission with its member states, has been periodically updated and strengthened as new information regarding air pollution abatement practices became available. In April 1970, the Commission was designated as the coordinating agency for the New Jersey-New York-Connecticut Air Quality Control Region under the federal Air Quality Act. Pollutant values and meteorological conditions did not warrant activation of the High Air Pollution Alert and Warning System during 2005.

The Commission has maintained round-the-clock response for air pollution complaints since the late 1960s. New York City's Borough of Staten Island remains the source of more citizens' complaints than any other area in the Interstate Environmental District. To better serve the needs of the public by faster response to complainants, a field office was established on Staten Island in 1982 and remained in operation until 1986 when odor complaints reported to the Commission peaked at nearly 3,500 complaints affecting 63 different neighborhoods throughout Staten Island. The number of complaints received by the IEC has significantly declined over the years, and no garbage odors were reported to the Commission for the sixth consecutive year.

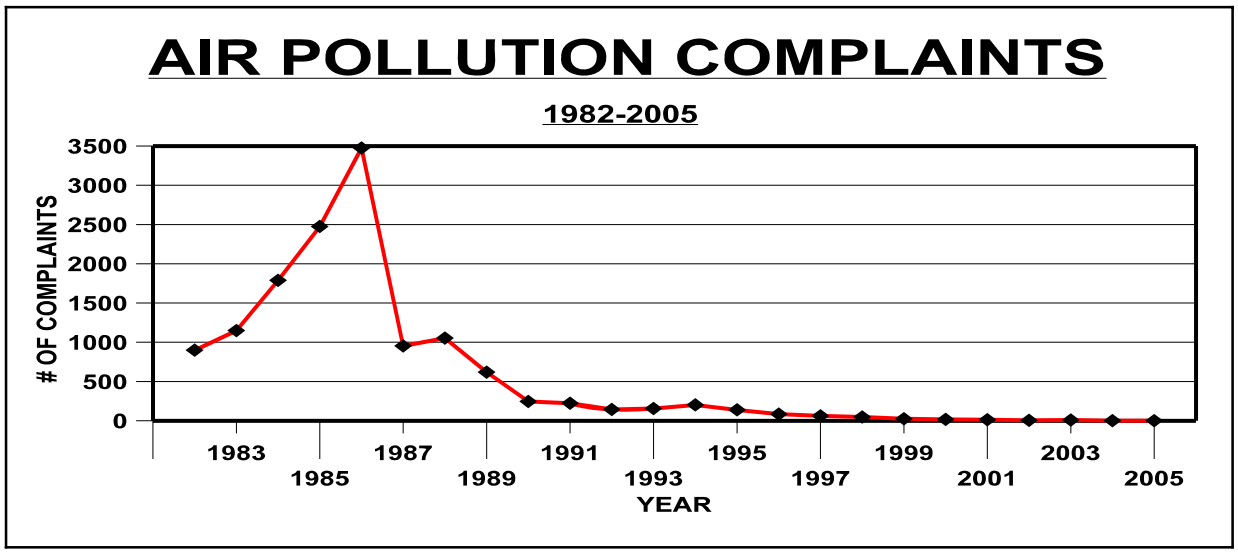
AIR POLLUTION COMPLAINTS

Staten Island remains as the source of more citizens' complaints than any other area in the Commission's jurisdiction. Historically, many of the complaints come from the western portion of Staten Island in the vicinity of the New York-New Jersey border and from the neighborhoods closest to the Fresh Kills Landfill. However, during the 2005 reporting period, complaints were minimal and were received from only two neighborhoods.

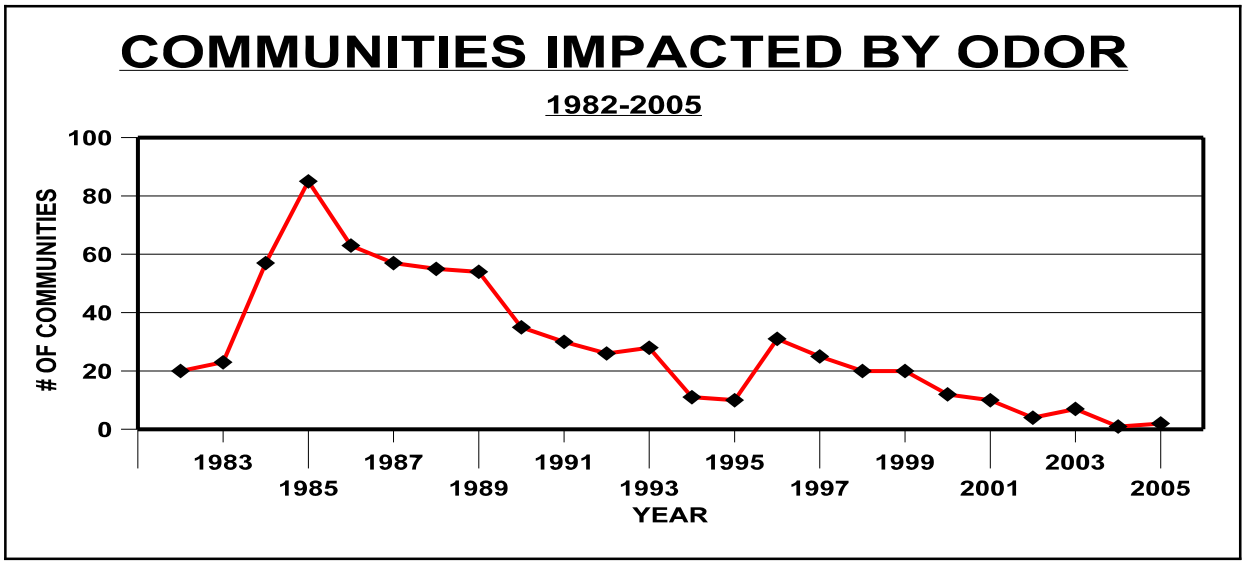
IEC's Staten Island field office was closed in 1989 due to budgetary restraints. Since then, the Commission still maintains a 24-hour-a-day, 7-day-a-week answering service (**718-761-5677**) to receive complaints. Complainants are contacted during regular office hours by IEC staff and, when available, IEC personnel are dispatched to investigate ongoing complaints. When warranted, Commission personnel are contacted during non-office hours. The IEC also contacts and works

closely with the appropriate enforcement agencies and health departments in New York and New Jersey to perform follow-up.

For the 12-month period ending September 30, 2005, the Commission received three complaints from two Staten Island neighborhoods: Arden Heights and Tottenville. This continues the pattern of a decreasing number of complaints since the 1986 peak of nearly 3,500 complaints and from a peak of 63 different Staten Island neighborhoods.



Over the years, the majority of the complaints received by the IEC tend to come from the same group of neighborhoods. This year, the odor complaints were chemical in nature or unidentifiable. In past years, a category reflecting "nonspecific" descriptions, i.e., bad or awful or



nauseating were received regularly. However, that was not the case for 2005. Citizen complaints are the most frequent source of firsthand information about poor air quality. The odors are usually detected by persons who do not have special knowledge or training in identifying problem emissions; it is their accurate odor descriptions that could lead to the sources of odors. This is the sixth consecutive year that the nuisance odor category of "garbage" was not registered.

OZONE HEALTH MESSAGE SYSTEM

For the 18th 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 Commission and environmental and health representatives from the States of New Jersey, New York and Connecticut; New York City; and the US EPA. It serves as a central source of precautionary advice on ozone to the Region during the warm weather months (May to October) when higher concentrations of ozone occur. The Metropolitan area ranks as the fourth worst in the nation for dangerous levels of particulate pollution, and the seventh worst for ground-level ozone. Ozone irritates the respiratory system and may cause decreased lung function. Adverse effects may include shortness of breath, chest pain, throat and eye irritation, and wheezing. It especially affects the elderly and those with pre-existing lung disease. Healthy adults and children may feel these effects during high ozone days. Whenever ozone reaches unhealthy levels, the public is advised against strenuous outdoor activities and physical exertion such as jogging, ball playing, and running.

IEC continued to participate in this program during 2005. The Commission took an active role in alerting the public to unhealthful conditions. During the warm weather months, when elevated levels of ozone existed in parts of the Metropolitan Area, the IEC relayed "health advisory" messages to the appropriate government environmental and health agencies. The IEC received 17 ozone and 15 fine particulate (soot and dust) advisories from the New Jersey Department of Environmental Protection. Ozone health advisories were received between June and September. The majority of fine particulate advisories were received between June and August. This period of poor air quality was considerably shorter than previous years, but nearly the same as 2004. Individual states issue their own health messages which identify specific counties where ozone levels are a special health threat. During 2005, 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 New Jersey-New York-Connecticut 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.

IV. LEGAL ACTIVITIES

The Office of Legal Counsel, ever sensitive to changing times, has embarked on a course of examining risk assessment and compliance structures as they relate to legal functions, with a view towards enhancing the Commission's structural integrity. It is essential that every aspect of the Commission's dealing be grounded in best legal practices and regulatory compliance. One outcome of the examination has been a review of internal policy systems to address sensitive security matters, with a particular emphasis on how the Commission disseminates information. The Office of Legal Counsel is proactive when advising the Commission on effective compliance and, when required, represents the Commission in administrative and judicial proceedings. Of necessity, this requires Legal Counsel to be attuned to legislative and regulatory changes affecting a regulatory agency. In navigating the complex system of state and federal regulations, the Office of Legal Counsel must adequately assess the environmental risks of a given situation, with a particular emphasis on water quality, and maximize any benefit or recovery to the Commission. A recovery can take the form of a legal victory against a polluter or a penalty. At the same time, Counsel must take care to minimize any legal exposure to the Commission in all venues, environmental or otherwise. The Office of Legal Counsel represents the Commission in all water quality aspects of environmental issues: permitting, litigation, compliance actions, enforcement matters and investigations of any wrongdoing. The Office of Legal Counsel advises the Commission on matters of labor, personnel, insurance, ethics and contracts. The Office of Legal Counsel uses its expertise to solve Commission problems, and federal and state governmental problems arising from various types of environmental regulations.

As is the case with many of the Commission's roles, Legal's activities provide other benefits, especially in the area of public education and public outreach. Refer to the "Public Education and Outreach" section of this report for more details.

The summary of legal activities that follows is by no means meant to be all inclusive, but rather highlights significant legal activities.

A 20-year plan to dispose of New York City's garbage was introduced in October 2004, with an expectation that it would be approved by the City Council, followed by a review and approval by the New York State Department of Environmental Conservation. The City Council did not meet the expectation to approve of the plan and, instead, in June, disapproved the City's plan and voted to substitute a solid waste plan of its own which the Mayor, in turn, vetoed. The Commission remains committed to its long association with remedying the problems attendant to solid waste disposal such that the City and the Metropolitan Area avoid environmental harms from floatable debris and leacheate.

An administrative proceeding on issues related to nitrogen and combined sewer overflows (CSOs) continued during 2005, with a particular emphasis on CSOs. The parties await a decision on the nitrogen appeal. The administrative law judge stayed the portion of the proceeding addressing

CSOs pending agreement on a CSO Abatement Order. Ultimately, while the City and State reached agreement, no agreement was reached by any of the other parties in interest — the Natural Resources Defense Council, the Riverkeeper, the Soundkeeper, the New York/New Jersey Baykeeper and the Commission. In fact, CSOs were the issue driving the administrative hearing process throughout the year.

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

Four years after closing the Fresh Kills Landfill in Staten Island, the City has drawn up a 20-year plan — a solid waste management plan (SWMP)— to handle waste by shipping the bulk of it elsewhere. It relies almost exclusively 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 is undoubtedly an improvement over 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. In June, the City Council refused to approve the final comprehensive plan, and instead passed their own plan, which the Mayor promptly vetoed. Once the City Council does approve a final plan, it will go to the State for review and approval. The City Council plan cited deficiencies in the consideration of alternatives to improve air quality, improve recycling, the failure to create an office to focus on waste reduction, recycling and reuse, efforts to get commercial waste into the system, and reducing the overall environmental impacts of the present solid waste management system. The City Council's plan also advocated negotiating for more than the proposed four sites. A new election cycle will put a new City Council President in place and, thereafter, some action on the City's plan is anticipated.

The centerpiece of the new plan is the retrofitting of four transfer stations — E. 91st Street in Manhattan, North Shore in Queens, Southwest Brooklyn and Hamilton Avenue in Brooklyn — to handle residential debris, the shipping of commercial refuse from a pier at 59th Street on the west side of Manhattan and more recycling. The estimated cost of these four transfer stations is $85 million and all four would reopen by 2007. Taken together — residential waste management, residential recycling and commercial waste management — these initiatives will mean a new era in solid waste management and planning in New York City.

Much detail is buried in the footnotes of this comprehensive plan, among which are questions related to whether and how the City contemplates approaching any problems that might arise from leachate that could accumulate in containers. Since barging is a remedy necessarily dependent upon weather conditions and barges may not travel in severely inclement weather, a plan for staging and maintaining containers should be a prerequisite. No such provision is made in the SWMP. If a problem with leachate leaking from containers occurred, there is no stated remedy to address such an occurrence. This is one area where the Commission must be fully satisfied that no adverse effects to the Region's water quality will result from barging containers across the Interstate Environmental District's waters.

Significantly missing in the SWMP are its failure to address the legal underpinnings for the disposal of commercial garbage, thus clouding the issue of responsibility for managing private transfer stations. The plan, too, while sweeping in its reach and comprehensive on the surface, fails to examine the broader regional impacts of the City's plan. It fails both the State Environmental Quality Review Act and the City Environmental Quality Review Act requirements for analysis of alternatives to the long-term export of waste to landfills. Thus, the sustainability of the overall plan could be called into question since the state hierarchy of disposal options ranks landfilling last. Each of these items requires careful review and evaluation.

The Commission continues to have concerns regarding debris control measures, in part, due to the current construction of a transfer station at the Fresh Kills Landfill that it is understood will handle debris generated from the borough of Staten Island. An Independent Expert has represented to the parties (to litigation over debris disposal at the landfill) that it is believed that once completed, entirely containerized garbage will be transported by a fully enclosed barge unloader prior to its departure points in New Jersey and then to Pennsylvania and Virginia via barge. The Commission has some concern about the continued use of the landfill, albeit for debris whose final destination is elsewhere, since the process has similarities to the one previously used. Some potential remains for debris to escape in the similar fashion to when debris was being deposited upon the landfill as a final destination. The landfill will continue to be used in a process that is not without complications and has the potential for debris escaping into the waterways — the initial impetus for IEC's entry into litigation about the operation of the landfill. The City continues to rely on short-term plans, and will do so until the final environmental impact statement (FEIS) for the SWMP is fully adopted and implemented.

The federal case concerning operation of the Fresh Kills Landfill, of which the Commission is a party, remains on the federal docket. All parties must agree upon several remaining debris control measures that will continue in some fashion or be severely cut back. Among those items are: the skimmer boats, the booms, marine fencing and a composting operation. The Commission's position on each issue is noted below.

There is currently one skimmer boat operating at the Fresh Kills Landfill on a daily basis, with a twelve-hour schedule four days-a-week, and a limited schedule one day per week. There continue to be two booms in operation — a range boom that is open only on an incoming tide as much as is deemed necessary and the Outer Boom, the last line of defense before leaving the landfill, which is also open on an incoming tide. It is the Commission's position that the Outer Boom remain in place permanently. Without the Outer Boom, floatable debris will enter the waters of Fresh Kills and be deposited along the shoreline. The Independent Expert (IE) concurred with that position. With regard to the marine fence, the IE's draft final report recommends that if the marine fence is removed, a skimmer boat or some other means of controlling floatable debris should be present at all times during fence removal, and that care be taken to minimize disturbing the bottom sediment. The IE has recommended that the land-based fence, having served its purpose, should be moved or removed, as necessary, to allow for completion of final grading and capping of the landfill. The land-based fence should be moved back following final capping as both a protection from debris

escaping and as a deterrent to trespassers. The continued operation of a composting facility under private contract should not pose any significant potential for debris to escape unless current budget constraints change and allow for renewed collection of residential grass clippings and leaves typically collected in plastic bags. It is the plastic bags that present a potential for concern, as it was the plastic bags that tended to become loosened and to escape from Fresh Kills.

The references herein to the IE are found in a September 1997 Court Order mandating the hire. While the IE presumably works for the parties, an independent monitoring team (IMT) consisted of one member from NYC DOS, one member from the original independent monitoring consultant, and one member hired by the plaintiffs, but compensated by the City. Both were fully operational in 1999, however, in accordance with Court Orders, the IE was charged with making a determination as to what debris control measures were required and whether and what monitoring functions should continue. In 2002, the IE concluded that there was no longer a need for the IMT. At the end of 1997, when the Court had relieved the City of its obligation to build a single-barge enclosed unloader contingent upon the City's implementing certain measures, among the requirements were the establishment of a IMT and the IE. The failure on the part of the City to implement certain measures could have resulted in an immediate return to court and the rendering of a judgement that the City immediately begin construction on the single-barge enclosed unloader. In any event, the long-term solution could be revisited on an annual basis.

The genesis of this landfill case was a 1979 lawsuit relating to the waterborne debris that enters the District's waters as a result of the garbage unloading operations at the Fresh Kills Landfill (Township of Woodbridge v. City of New York, Civil No. 79-1060). Located on the Arthur Kill shoreline in the western portion of Staten Island, New York, the majority of New York City's municipal solid waste was transported to the Fresh Kills Landfill by barge.

In 1986, the IEC intervened in an action in New Jersey federal District Court which was initiated in 1979 by the Township of Woodbridge, New Jersey. Approximately 13 Court Orders were issued in the intervening years prior to IEC's cross-motion for contempt in September 1987. After investigations were conducted by the Commission's field inspectors, it was determined that, in spite of the Orders issued and the steps taken by the City, the problem of debris from the landfill operations entering adjacent waterways persisted in contravention of the IEC's Water Quality Regulations. IEC sought and succeeded in obtaining a Contempt Citation.

In order to find a solution to the Region's waterborne garbage problems, the parties to the suit entered into a Consent Order. That Consent Order required the City of New York to implement water cleanliness procedures; the installation of interim remedial equipment, including the superboom; and the hiring of an independent monitor. The Order also provided for an Independent Consultant to evaluate the effectiveness of the interim equipment and procedures, and to recommend alternative long-term measures by January 1, 1990. Reports issued by the Independent Consultant

in 1990 recommended containerization and a single-barge enclosed unloading system as alternatives. The City concluded that of the final alternatives reviewed, the single-barge enclosed unloading facility presented the most effective and practical method to comply with the Consent Decree and proposed to implement it. The IEC submitted a revised Consent Decree to the parties in January 1991. During 1992, the Commission's request for assurances that there are monies set aside and dedicated solely to the design and construction of the single-barge enclosed unloading system were met. With only a minor adjustment in compliance dates, a draft Consent Decree was accepted by the parties in the spring of 1993. A final Consent Decree was filed in the United States District Court on June 15, 1993, and a fully executed copy was received by the Commission on June 28, 1993. Although the City was seemingly compliant after the 1993 revised Consent Decree was entered, 1995 saw the disbursement of technical assistance funds held by the Court. Litigation resumed during 1996 when Woodbridge initiated an action seeking relief from medical waste washing up on its shores. Ultimately, a monitor determined that while debris, including medical waste, escaped from the landfill, evidence was insufficient to establish the landfill as the sole source. During 1996, the City let it be known that following the passage of laws mandating closure of the landfill by the year 2001, they were considering filing a motion to be relieved of their obligation to build the single-barge enclosed unloader.

The enclosed barge unloader had been selected by the City and agreed upon among all the parties as the permanent solution for keeping floatable debris from entering the waterways in and around the landfill. When the City sought relief from building the enclosed unloader subsequent to the 1996 passage of laws mandating that no garbage be brought to the landfill for disposal after the end of 2001, the Commission was willing to consider appropriate alternative solutions that offer the same safeguards as those of the enclosed barge unloader. The Commission was committed in 1996, and remains committed today, to ensuring that floatable debris is prevented from entering the waterways around the landfill.

What remains is for all the parties to agree upon a negotiated settlement taking into account the remaining issues cited. Moreover, in light of the issuance of an FEIS for a SWMP, all parties should be satisfied that no opportunity for debris to enter into the water or land in the Interstate Environmental District remains an issue.

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

Controlling combined sewer overflows was the issue driving the administrative hearing process before the New York State Department of Environmental Conservation throughout this year. The parties await a decision on an appeal of the nitrogen portion of this administrative proceeding.

November 2005 saw a ruling on the combined sewer overflow issue. The decision followed an agreement between the City of New York and the New York State Department of Environmental Conservation to a newly modified Administrative Order on Consent (ACO) for CSO control. Despite agreement between the City and State on CSO control, an administrative law judge (ALJ)

invited interested parties to file petitions for party status and to raise any and all CSO issues of concern. The Commission, along with the Natural Resources Defense Council, the Riverkeeper, the Soundkeeper, and the New York/New Jersey Baykeeper submitted petitions in the administrative process detailing their concerns with CSO control. Among the concerns raised by the Commission were: the incorporation of long-term controls into the permit, complying with EPA's CSO policy to attain water quality standards, and ensuring the timely implementation of the long- term control provisions of the ACO for CSOs. The IEC is of the belief that NYS DEC must tighten its requirement for long-term CSO controls by strict adherence to the schedule incorporating the final dates for completion of construction on facility plans. In fact, the Commission wants assurances that measures for long-term control plans (LTCPs) are addressed in a timely fashion by inclusion in the permit, the legally enforceable mechanism available to citizens under the Clean Water Act.

In the main, the Commission sought the incorporation of the ACO for CSOs into the permit, approval deadlines for individual City-wide long-term control plans and compliance with EPA's CSO policy regarding the attainment of water quality standards (WQS). IEC particularly wanted to see the inclusion of some language in the permit that any modification made to the ACO must be publicly noticed, and that there be a 12-month deadline for NYS DEC to approve long-term control plans, with a provision for notice, if the LTCP is not completed in the recommended timeframe. Including this notice provision would ensure public participation in the development of the LTCP.

A public Issues Conference was held during May, at the end of which the administrative law judge sought additional briefings by June on three subjects. The ALJ was desirous of knowing the parties' views on whether the January 2005 ACO on CSOs was the appropriate mechanism for CSO regulation, or whether a compliance schedule must be set forth in the SPDES permits; whether proposed changes to the ACO are subject to a full adjudicatory hearing; and, lastly, how the phrase "shall conform to Combined Sewer Overflow Policy" as the phrase appears in the CWA should be interpreted?

The Commission has consistently maintained that with regard to CSOs, which are more complex and less straight forward than nitrogen controls, using both a SPDES permit and an administrative consent order is appropriate. With regard to whether or not a full adjudicatory hearing is required whenever the permittee misses a milestone date, the IEC proposed a reasonable compromise. Given that well over 200 milestone dates exist in the ACO, the Commission identified only 31 critical milestones dates to be incorporated into the permit which, if missed, would trigger the requirement for a full adjudicatory hearing. The IEC-selected critical milestone dates include approved drainage basin specific LTCPs (long-term control plans) and dates for the completion of final construction.

In November, the administrative law judge issued a ruling on ten issues, including several that the IEC briefed in the Commission's submittals. Although captioned "Rulings on Proposed Adjudicable CSO Issues and Party Status", the ruling does not explicitly rule on party status and finds only one issue to be adjudicable, but notes that a hearing could be avoided if NYS DEC chooses to include language suggested by the judge into the SPDES permits. This most recent ruling

addresses issues that none of the intervening parties directly raised. It, thus, demands explanation or clarification. Of particular concern to the Commission is the ruling that indicates *that it is not necessary to recite that IEC regulations apply to the permittees, as such a recitation is not required by regulation, and IEC regulations are referenced in the draft permit*. In fact, IEC regulations are referenced throughout the draft SPDES permit — not only in the introductory language where the permittee is advised that the permit is governed by the Clean Water Act, Environmental Conservation Law and IEC Regulation. This and other rulings may require further exploration.

This portion of the administrative proceeding concerning CSO control had its genesis in the administrative proceeding on the City's SPDES permits concerning nitrogen control, which began after the City requested a hearing. It was during the consideration of nitrogen control issues that some intersection of CSO control with nitrogen control surfaced. Thereafter, interested parties sought a fuller exploration of many CSO control issues. The beginning of this SPDES administrative hearing on both issues is set forth below.

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 New York State Department of Environmental Conservation (NYS DEC) were 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 combined sewer overflow issue. The administrative law judge 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 the June 1993 NYS DEC decision; complying with 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.

The impetus for the City's hearing request came from their concern that certain provisions in newly issued modified State Pollutant Discharge Elimination System permits conflicted with other enforceable Orders on Consent regarding the nitrogen related provisions. In April 2004, the ALJ found that an issue could be adjudicated as to whether *new law, information, guidance, regulation or other relevant fact has occurred since an April 2002 consent order on nitrogen necessitated the modification proposed in the SPDES permits*. The ALJ requested written submittals

from only the two mandatory parties — New York City and NYS DEC. NYS DEC appealed the ALJ's decision arguing, as had all of the intervening parties, that the law was clear — a permit trumped an administrative consent order— and no factual hearing was required. When the Commission learned that the City was not content to reply to a decision favorable to them, but they had also filed an action in state court, as was their right under the 2002 consent order, the Commission sought and was granted permission over the City's objection, to file a sur-reply. The Commission's August 2004 filing was supportive of the NYS DEC's position, that no hearing was necessary. A decision on this nitrogen portion of the proceeding is anticipated next year.

The City's argument for a hearing on the nitrogen issue, in essence, is that since April 2002, when both the City and State signed an administrative order on consent, they had been required to meet certain nitrogen control limits, and that the modified SPDES permit conditions require that NYC DEP meet more stringent nitrogen limits. An Administrative Consent Order of April 2002 had settled two separate court actions against the City for exceeding the limits for nitrogen discharges that affected the quality of Long Island Sound. The ACO was the culmination of two matters — one commenced with a citizen suit against the City in federal court and the other with the State of New York suing the City in state court.

The Commission had not participated as a party in either case, but did file an *amicus curiae,* friend of court, brief in the state case in 1999 and participated in the oral argument. Immediately following the filing in federal Court, the Commission was asked to provide guidance to the State of Connecticut when they intervened in the lawsuit filed by the Hudson Riverkeeper and others. Throughout, the Commission has maintained a presence in both matters, aiding with 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.

The SPDES permits require that NYC DEP's WPCPs meet the limits established by the Long Island Sound Study (LISS). IEC has long been a key player on the Management Committee responsible for the nitrogen control limits, and has participated in the discussions that led to finalizing the Total Maximum Daily Loads (TMDLs) set by the LISS and adopted by the United States Environmental Protection Agency as minimal requirements for the states.

The Clean Water Act, from which the New York State SPDES system is derived, requires the states to promulgate, and EPA to approve, TMDLs for wasteload allocations (WLAs) for water bodies for which the effluent limits promulgated pursuant to the CWA are not stringent enough for a water body to comply with applicable water quality standards (WQS). States were required to identify those water bodies that do not meet water quality standards after applying the technology-based effluent limitations that are required by the CWA. The CWA also established lists of impaired water bodies identified by the states.

New York and Connecticut identified Long Island Sound as "water quality limited" due to hypoxia, mainly caused by nitrogen discharges, and made it a priority for the development of

TMDLs. TMDLs establish wasteload allocations for individual pollutants, applicable to all discharges to a water body to ensure that the combined effect of the discharges does not result in violations of the applicable WQS. By definition, a TMDL specifies the allowable pollutant load from all contributing sources (e.g. point sources, non-point sources and natural background) that will attain a water quality standard that applies to that water body, taking into account seasonal variations and including a margin of safety. The margin of safety takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality. In essence, a TMDL defines the capacity of the water to absorb and digest a pollutant and still meet water quality standards. In April 2001, EPA approved TMDLs for Long Island Sound developed jointly by NYS DEC and the Connecticut Department of Environmental Protection. When the discussions and approvals for the adoption of final TMDLs were taking place, NYS DEC, NYC DEP, CT DEP and IEC were prominent among the participants on the LISS Management Committee.

By February of 1998, the LISS Management Conference adopted a 3-phase plan for hypoxia management by nitrogen reduction. Phase III Action Limits set an overall 58.5 percent reduction target for any discharge to Long Island Sound (not just those discharges from NYC DEP WPCPs), from the 1990 baseline for Long Island Sound nitrogen loads. Data on nitrogen loads were fully quantified for 1990, which is why that year was established as the baseline.

The nitrogen ACO provided for limits which are clearly superceded by the TMDLs established by the SPDES permits issued by NYS DEC that are the subject of the administrative proceeding. NYC DEP made a request for an administrative hearing arguing for the primacy of the ACO governing nitrogen limits over the SPDES permits' limits. All five interveners, including IEC, argued along with NYS DEC that the permit has primacy over any administrative consent order. Especially critical to the success of achieving the TMDL limits is the cooperation and coordination of all parties involved, and specifically, the willingness of nitrogen dischargers from New York and Connecticut to abide by the LISS TMDL limits. IEC, as an interstate body with regulatory authority over the waters of both New York and Connecticut which lie within the Interstate Environmental District, has a particularized interest in ensuring adherence to the LISS TMDL limits. Critical to achieving nitrogen reduction is having all those who contribute to the nitrogen load achieve TMDL limits established by the LISS. Based upon recent estimates, the WPCPs owned and operated by NYC DEP are responsible for at least 50% of the nitrogen load to Long Island Sound.

IEC's position on the nitrogen administrative order is that an ACO, as a stand-alone document, is not a permit, and may not be used in lieu of a permit. In addition, NYS DEC has jurisdiction to administer a program permitting discharges under certain prescribed conditions. A discharger's ability to discharge flows from a permit rather than from an administrative order. The effluent limits in the newly issued permits for the 14 WPCPs in contention can be amended, modified or changed by the NYS DEC to add more stringent limits than those required in the previously issued ACO. In addition to the updated water quality standards, this can be driven by a number of other processes such as updated regulatory requirements, latest watershed-based modeling analyses and realization of harmful impact of the particular pollutant on the water quality. In the case of the newly developed TMDLs put into effect by EPA, NYS DEC fully has the right to

amend the effluent limitations to include more stringent TMDL-based nitrogen limits into the permits.

The permit conditions set aggregate effluent limits for nitrogen discharges for two groups of four plants discharging into the upper reach of the East River and into Jamaica Bay, respectively. Before these limits were to take effect in 1996 and 1997, the City was required to make operational and process changes to maximize nitrogen removal in the existing plant units, and also conduct extensive pilot work to test new processes and technologies. The City and NYS DEC were then to jointly determine the most appropriate new systems to implement in order to meet specified nitrogen reduction goals. In the long-term, a Nitrogen Control Feasibility Plan would have comprehensively analyzed additional methods to meet much greater levels of nitrogen reduction for future discharges. It was because neither the limits nor the Nitrogen Control Feasibility Plan were implemented that the litigation ensued which ended with the 2002 ACO.

This proceeding is of concern to many because violations of the nitrogen loading limits contribute to the severe hypoxic conditions in Long Island Sound and Jamaica Bay and cause damage to those ecosystems. The proximate location of these plants which had discharged pollutants into the East River and Jamaica Bay in violation of the permitted effluent limit of the SPDES permits, and the likely impact on Long Island Sound, accounts for the concern on the part of the State of Connecticut. Three of the five parties — the IEC, Pace Environmental Litigation Clinic and NRDC — sought full party status on another issue which gained renewed focus during 2005, combined sewer overflows. IEC has argued that long-term controls for combined sewer overflows should be finalized and if the final plan is incorporated into the CSO Abatement Order and then, in turn, incorporated into the permit, that would suffice. The Commission, as an interstate agency, is uniquely situated as a participant in this matter.

During the spring of 2005, the nitrogen issue was active in the New York State Supreme Court. A New York State Supreme Court ruled against the City plan for nitrogen reduction and deferred to NYS DEC. The Court also imposed substantial penalties against the City for failing to meet certain milestone dates.

In an April 8, 2005, decision of the New York State Supreme Court, the judge found that NYS DEC's refusal to accept the City's plan was neither arbitrary nor capricious and awarded penalties of $13.9 million for failing to comply with certain construction deadlines (failing to complete design phases for the Wards Island and 26th Ward WPCPs and Phase I construction for Tallman Island and 26th Ward). The funds will be held in escrow and returned to the City if they do comply with certain construction deadlines.

In the main, the City argued that they could save as much as $800 million using a methodology know as "Sharon." The Court correctly reasoned that its decision rested on weighing the competing views of engineering experts and that where a court had to decide if an agency action was arbitrary or capricious, it was required to give deference to the agency responsible for the challenged decision. The Court noted that it was not ideally suited to determine technical questions

and that the factual questions requiring specialized expertise is just the sort of matter where the Court must defer to the administrative agency responsible, herein, the New York State Department of Environmental Conservation.

CONEY ISLAND, AUGUST 2005
Photo by A. Lochner, IEC

WASTEWATER TREATMENT PLANTS DISCHARGING INTO INTERSTATE ENVIRONMENTAL DISTRICT WATERS

2005

PLANT	IEC RECEIVING WATER CLASSIFICATION	DATE OF CONSTR.	FLOW AVG. (MGD)	FLOW DESIGN (MGD)	TYPE OF TREATMENT	SLUDGE (1) GENERATED (TONS/YEAR)	SLUDGE (PERCENT SOLIDS)	SLUDGE DISPOSAL METHOD	ESTIMATED POPULATION SERVED
CONNECTICUT									
Fairfield County									
Bridgeport - East Side	B-1	2002+	7.9	10.0	Secondary (AS)	1,000.0 (4)	-	Incineration (2)	44,750
- West Side	B-1	2002+	24.1	30.0	Secondary (AS)	3,000.0 (4)	-	Incineration (2)	112,500
Fairfield	A	2002+	7.9	9.0	Secondary (AS)	5,000.0	20	Compost	43,000
Greenwich (Grass Island)	A	2003+	9.1	12.5	Secondary (AS)	1,745.0	25	Landfill	38,000
Norwalk	B-1	2002+	13.3	20.0	Secondary (AS)	2,288.0	25	Compost	80,000
Stamford	B-1	2005+	14.7	24.0	Secondary (AS)	15,600.0	22	Landfill	100,000
Stratford	A	1992+	7.4	11.5	Secondary (AS)	40,313.0	5.7	Incineration	49,390
Westport	A	1975+	1.8	2.9	Secondary (AS)	16.3 (5)	3 to 6	Incineration (2)	14,800
New Haven County									
Greater New Haven - East Shore	B-1	2000+	30.9	40.0	Secondary (AS)	33,789.1	22.4	Incineration	200,000
Milford - Beaver Brook	A	1996+	1.9	3.1	Secondary (AS)	577.0	13.8	Incineration (2)	10,700
- Housatonic	A	1996+	6.2	8.0	Secondary (AS)	4,345.0	15	Incineration (2)	43,300
West Haven	B-1	2000+	7.2	12.5	Secondary (AS)	8,700.0	27	Incineration	53,000
NEW JERSEY									
Bergen County									
Edgewater	B-1	1989+	3.6	6.0	Secondary (PO)	11,930.4	7.12	Beneficial Reuse (2)	16,000
Essex County									
Passaic Valley Sewerage Commissioners	B-1	1988+	253.6	330.0	Secondary (AS)	71,799.0	54.2	Landfill Daily Cover	1,400,000
Hudson County									
North Bergen M.U.A. - Woodcliff	B-1	1991+	2.6	2.9	Secondary (TF)	8,568.0	9.05	Incineration (2)	22,500
North Hudson Sewerage Authority									
- Adams Street (Hoboken)	B-1	1993+	-	24.0	Secondary (TF)	- -	-	Incineration	119,200
- River Road (West New York)	B-1	1993+	-	10.0	Secondary (TF)	- -	-	Incineration (2)	45,800
Middlesex County									
Middlesex County Utilities Authority	A	2001+	119.8	147.0	Secondary (AS)	222,352.0	22.4	Beneficial Reuse	750,000
Union County									
Joint Meeting of Essex & Union Counties	B-2	2001+	66.4	85.0	Secondary (AS)	28,064.5	30.35	Land Application	500,000
Linden Roselle Sewerage Authority	B-2	1989+	10.7	17.0	Secondary (AS)	48,000.0	4.9	Beneficial Reuse	65,000
Rahway Valley Sewerage Authority	B-2	1991+	30.2	40.0	Secondary (AS)	16,991.0	21.2	Trucked Out	300,000

WASTEWATER TREATMENT PLANTS DISCHARGING INTO INTERSTATE ENVIRONMENTAL DISTRICT WATERS

2005

PLANT	IEC RECEIVING WATER CLASSIFICATION	DATE OF CONSTR.	FLOW AVG. (MGD)	FLOW DESIGN (MGD)	TYPE OF TREATMENT	SLUDGE (1) GENERATED (TONS/YEAR)	SLUDGE (PERCENT SOLIDS)	SLUDGE DISPOSAL METHOD	ESTIMATED POPULATION SERVED
NEW YORK									
Nassau County									
Bay Park	A	2003+	57.0	70.0	Secondary (AS)	38,893.8	21.22	Beneficial Reuse	534,000
Belgrave Sewer District	A	1995+	1.6	2.0	Secondary (TF)	2,514.0	3.5	Trucked out to Bay Park & PVSC	12,000
Cedar Creek	A	1997+	57.1	72.0	Secondary (AS)	53,428.5	18.07	Beneficial Reuse	550,000
Cedarhurst	A	2003+	-	1.0	Secondary (TF)	- -	-	Trucked Out	6,000
Glen Cove	A	2003+	3.6	5.5	Secondary (AS)	4,243.4	24.56	Landfill	28,000
Greater Atlantic Beach Water Reclamation District (Formerly - West Long Beach Sewer District)	A	2001+	0.5	1.5	Secondary (TF)	44.0 (6)	4.2	Trucked to Bay Park	5,000
Great Neck Sewer District	A	1990+	2.8	3.8	Secondary (AS)	560.0	22 to 30	Landfill	15,000
Great Neck Village	A	1996+	0.8	1.5	Secondary (TF)	81.1 (5)	7.2	Trucked Out	9,000
Jones Beach	A	1990+	0.1	2.5	Secondary (TF)	-	-	Trucked Out	Seasonal
Lawrence	A	2002+	1.3	1.5	Secondary (TF)	382.0	5.7	Trucked Out	5,500
Long Beach	A	2003+	5.5	7.5	Secondary (TF)	671.0 (4)	26	Landfill	37,000
Oyster Bay Sewer District	A	1992+	1.2	1.8	Secondary (TF)	35.0 (5)	4	Trucked Out	8,500
Port Washington Sewer District	A	1991+	2.8	4.0	Secondary (TF)	550.0 (4)	30	Incineration	35,000
New York City									
Bronx County									
Hunts Point (7)	B-1	1977+	126.0	200.0	Secondary (AS)	3,579.3	25.5 to 29.0	Land Application/Landfill Cover	630,000
Kings County (Brooklyn)									
Coney Island (7)	A	1995+	92.0	110.0	Secondary (AS)	(3)	-	Land Application/Landfill Cover	602,100
Newtown Creek (7)	B-1	1967	228.0	310.0	Secondary (AS)	(3)	-	Land Application/Landfill Cover	1,039,300
Owls Head (7)	B-1	1996+	101.0	120.0	Secondary (AS)	(3)	-	Land Application	761,500
Red Hook (7)	B-1	1987	30.0	60.0	Secondary (AS)	501.4	21.1 to 25.6	Landfill	192,200
26th Ward (7)	A	1975+	59.0	85.0	Secondary (AS)	2,681.4	25.1 to 27.9	Land Application/Landfill Cover	271,240
New York County (Manhattan)									
North River (7)	B-1	1986	129.0	170.0	Secondary (AS)	(3)	-	Land Application/Landfill Cover	584,190
Wards Island (7)	B-1	1979+	208.0	275.0	Secondary (AS)	4,476.0	25.4 to 28.2	Land Application	1,004,200
Queens County									
Bowery Bay (7)	B-1	1978+	125.0	150.0	Secondary (AS)	1,704.7	24.4 to 26.8	Landfill	727,100
Jamaica (7)	A	1978+	83.0	100.0	Secondary (AS)	1,209.4	24.0 to 26.5	Land Application/Landfill Cover	632,150
Rockaway (7)	A	1978+	21.0	45.0	Secondary (AS)	(3)	-	Land Application	94,500
Tallman Island (7)	B-1	1979+	58.0	80.0	Secondary (AS)	893.6	23.1 to 25.8	Landfill	388,200

WASTEWATER TREATMENT PLANTS DISCHARGING INTO INTERSTATE ENVIRONMENTAL DISTRICT WATERS

2005

PLANT	IEC RECEIVING WATER CLASSIFICATION	DATE OF CONSTR.	FLOW AVG. (MGD)	FLOW DESIGN (MGD)	TYPE OF TREATMENT	SLUDGE (1) GENERATED (TONS/YEAR)	SLUDGE (PERCENT SOLIDS)	SLUDGE DISPOSAL METHOD	ESTIMATED POPULATION SERVED
NEW YORK (con't)									
Richmond County (Staten Island)									
Oakwood Beach (7)	A	1979+	30.2	40.0	Secondary (AS)	563.6	25.5 to 27.1	Landfill	151,600
Port Richmond (7)	B-2	1978+	34.0	60.0	Secondary (AS)	(3)	-	Landfill	172,300
Rockland County									
Joint Regional Sewerage Board - Town of Haverstraw	A	2002+	4.7	8.0	Secondary (AS)	3,954.3	19.7	Landfill/Compost/Incineration	55,700
Orangetown Sewer District	A	1996+	0.3	12.75	Secondary (TF)	4,962.0	25	Compost	50,300
Palisades Interstate Park - Bear Mountain Plant	A	1967+	0.1	0.3	Secondary (TF)	-	-	-	20,000
Rockland County Sewer District # 1	A	1995+	23.2	28.9	Secondary (RBC)	2,949.0	26	Composting	200,000
Stony Point	A	1985+	1.1	1.0	Secondary (AS)	933.0	15	Composting	12,000
Suffolk County									
Huntington Sewer District	A	1988+	2.0	2.5	Secondary (TF)	2,126.0	22	Landfill	25,000
Northport	A	1972+	0.4	0.45	Secondary (AS)	31.3 (5)	2.5 to 3	Incineration (2)	3,500
Suffolk County Sewer District # 1	A	1988+	0.9	0.85	Secondary (RBC)	229.5 (5)	2.2	Landfill	12,000
Suffolk County Sewer District # 3	A	1989+	25.1	30.0	Secondary (AS)	71,060.0	21.7	Landfill	280,000
Suffolk County Sewer District # 6	A	1973+	0.3	0.6	Secondary (AS)	86.8 (5)	1.3	Landfill	6,000
Suffolk County Sewer District # 21	A	1989	1.7	2.5	Tertiary	397.2 (5)	1.7	Landfill	20,000

WASTEWATER TREATMENT PLANTS DISCHARGING INTO INTERSTATE ENVIRONMENTAL DISTRICT WATERS

2005

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NEW YORK (con't)									
Westchester County									
Blind Brook (Rye)	A	2000+	3.6	5.0	Secondary (AS)	538.9 (6)	0.12	Pumped to Port Chester	25,000
Buchanan	A	1999+	0.3	0.5	Secondary (AS)	3,200.0	30	Trucked Out	2,100
Coachlight Sq. Condo. Asso. Inc.*	A	1992+	-	0.05	Secondary (AS)	-	-	Trucked Out	210
Mamaroneck	A	1993+	17.6	20.6	Secondary (AS)	7,614.8 (5)	0.5	Pumped to New Rochelle	80,000
New Rochelle	A	1997+	15.4	13.6	Secondary (AS)	12,500.0	21.2	Landfill	80,000
Ossining	A	1981	5.6	7.0	Secondary (AS)	27,917.0	3.9	Trucked Out	36,000
Peekskill	A	1980	7.3	10.0	Secondary (AS)	30,912.0	2.1	Trucked to Landfill	32,500
Port Chester	A	1990+	4.6	6.0	Secondary (RBC)	1,670.0	4.25	Trucked Out	25,000
Springvale Sewerage Corporation*	B-1	1992+	0.1	0.13	Secondary (RBC)	35.6 (5)	3	Trucked Out	1,700
Yonkers Joint Treatment	A	2002+	106.2	120.0	Secondary (AS)	32,500.0	28.1	Landfill	500,000
Federal and Military									
Camp Smith (Westchester County)	A	1997+	0.06	0.24	Secondary (TF)	7,000.0	3	Trucked Out	200 to 2,400
Veterans Administration Hudson Valley Healthcare System (Westchester County)	A	1982+	-	0.4	Secondary (TF)	-	-	Trucked Out	Patient Count

NOTE: Except for the IEC Receiving Water Classification, all information and data are supplied by the operating entities and are published as supplied.

(+) Year of major additions or reconstruction.
(*) Private or institutional sewage treatment plant.
(-) Denotes no information.
(1) Except where indicated, all volumes represent wet tons per year.
(2) Disposal method occurs off-site.
(3) Transferred by sea to dewatering facility for processing.
(4) Reported as dry tons per year.
(5) Estimated volume.
(6) Metric dry tons.
(7) Starting April 1, 2003, plants are permitted on a 12-month rolling average of daily flows instead of dry weather flows.

(AS) Activated Sludge (BO) Biochemical Oxidation (OD) Oxidation Ditch
(RBC) Rotating Biological Contractor (PO) Pure Oxygen (RD) Rotating Disc (TF) Trickling Filter

INTERSTATE ENVIRONMENTAL COMMISSION
DISCONTINUANCE OF SANITARY FLOW

NAME	SPDES #	COUNTY	DATE (1)	CEASE FLOW	DRAINAGE BASIN	DIVERT TO MUNICIPAL SYSTEM
North Conduit Avenue Sewer Project	NY 0267597	Queens	12-22-04	X	Jamaica	
Public School #3	NY 0072958	Richmond	03-08-05	X	Oakwood Beach	X
Waterside Generating Station	NY 0005207	New York	05-06-05	X	North River	
Flushing Bay CSO Facility- Dewatering Well	NY 0201383	Queens	07-06-05	X	Tallman Island	
Intermediate School 7 (2)	NY 0036978	Richmond	10-12-05	X	Oakwood Beach	X
Exxon Mobil Off-Site Plume	NY 0200930	Kings	12-15-05	X	Newtown Creek	
Exxon Mobil Brooklyn Terminal	NY 0004995	Kings	12-15-05	X	Newtown Creek	

(1) Official notice of action and notification by NYS DEC, Region 2.

(2) Operation of the facility has ceased permanently. A discharge is no longer occurring from this site.

INTERSTATE ENVIRONMENTAL COMMISSION
FINANCIAL STATEMENT FY 2005

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, 2004 to June 30, 2005:

CASH BOOK BALANCE AS OF JUNE 30, 2004			$1,279,371.65
RECEIPTS			
Connecticut - FY'05	$ 84,956.00		
New York - FY'05	388,000.00		
New Jersey - FY'05	383,000.00		
EPA - FY'04	210,677.00		
EPA - FY'05	0.00		
Interest	17,042.57		
Miscellaneous Receipts	3,332.11		
TOTAL RECEIPTS			1,087,007.68
		Sub-Total	$2,366,379.33
DISBURSEMENTS			
TOTAL DISBURSEMENTS			1,515,521.20
CASH BOOK BALANCE ON JUNE 30, 2005			$ 850,858.13

U.S. Treasury Bills	$ 694,499.64
Insured Money Market Accounts	168,700.15
Checking Accounts	(12,341.66)
	$ 850,858.13

GLOSSARY

ACO	administrative consent order
ALJ	administrative law judge
ASIWPCA	Association of State and Interstate Water Pollution Control Administrators
AWPCP	auxiliary water pollution control plant
BLRA	Bayonne Local Redevelopment Authority
BMWCA	Bureau of Marine Water Classification and Analysis
BNR	biological nutrient removal
CAVF	Corona Avenue vortex facility
CCMP	Comprehensive Conservation and Management Plan
CES	Center for Environmental Science
CSI	College of Staten Island
CSO	combined sewer overflow
CT	Connecticut
CWA	Clean Water Act
CW/CA	Clean Water/Clean Air Bond Act
DEC	Department of Environmental Conservation
DEP	Department of Environmental Protection
DO	dissolved oxygen
DOH	Department of Health
DOS	Department of Sanitation
DPH	Department of Public Health
DPR	Department of Parks and Recreation
EPA	Environmental Protection Agency
EPF	Environmental Protection Fund
FDA	Food and Drug Administration
FEIS	final environmental impact statement
FY	fiscal year
GNHWPCA	Greater New Haven Water Pollution Control Authority
GPM	gallons per minute
GPS	global positioning satellite
HARS	Historic Area Remediation Site
HEP	Harbor Estuary Program
HVAC	heating, ventilating and air conditioning
ICWP	Interstate Council on Water Policy
IE	Independent Expert
IEC	Interstate Environmental Commission
IED	Interstate Environmental District
IMT	interim monitoring team
I/I	infiltration/inflow
ISC	Interstate Sanitation Commission
KMUA	Kearny Municipal Utilities Authority
LIS	Long Island Sound
LISO	Long Island Sound Office
LISS	Long Island Sound Study
LTCP	long-term control plan
LWRP	local waterfront revitalization program
MC	management committee
MCUA	Middlesex County Utilities Authority
MF	membrane filter
MG	million gallons
MGD	million gallons per day
MPN	most probable number
MS4	municipal separate storm sewer system
MUA	Municipal Utilities Authority
NCHD	Nassau County Health Department

GLOSSARY
(continued)

NELAC	National Environmental Laboratory Accreditation Conference
NELAP	National Environmental Laboratory Accreditation Program
NEP	National Estuary Program
NHSA	North Hudson Sewerage Authority
NJHDG	New Jersey Harbor Dischargers Group
NJPDES	New Jersey Pollutant Discharge Elimination System
NPDES	National Pollutant Discharge Elimination System
NOV	notice of violation
NPS	National Park Service
NRDC	Natural Resources Defense Council
N/SPDES	National/State Pollutant Discharge Elimination System
NSSP	National Shellfish Sanitation Program
NWQMC	National Water Quality Monitoring Council
NYC	New York City
NYS	New York State
O & M	operation and maintenance
OPRHP	Office of Parks, Recreation and Historic Preservation
ORSTS	Oakland Ravine Stormwater Treatment System
POTW	publicly owned treatment works
PVSC	Passaic Valley Sewerage Commissioners
QAPP	quality assurance project plan
QA/QC	quality assurance/quality control
RAS	return activated sludge
RBC	rotating biological contactor
RBWG	Regional Bypass Workgroup
RFP	request for proposals
R/V	research vessel
SBR	sequencing batch reactors
SCADA	supervisory control and data acquisition system
SCSD	Suffolk County Sewer District
SOP	standard operating procedure
SPDES	State Pollutant Discharge Elimination System
SSES	sewer system evaluation survey
SSO	storm sewer overflows
STORET	STOrage and RETrieval, EPA's national water quality data base
STP	sewage treatment plant
SUNY	State University of New York
SWMP	solid waste management plan
TMDL	total maximum daily load
UCONN	University of Connecticut
USA	Use and Standards Attainment Project
USCG	United States Coast Guard
UV	ultraviolet
VCP	vitrified clay pipe
VFD	variable frequency drive
VOC	volatile organic carbon
WCDEF	Westchester County Department of Environmental Facilities
WEA	Water Environment Association
WEF	Water Environment Federation
WHEACT	West Harlem Environmental Action
WLA	waste load allocation
WPAF	water pollution abatement facility
WPCA	Water Pollution Control Authority
WPCP	water pollution control plant
WQS	water quality standard