

INTERSTATE SANITATION COMMISSION

A TRI-STATE ENVIRONMENTAL AGENCY



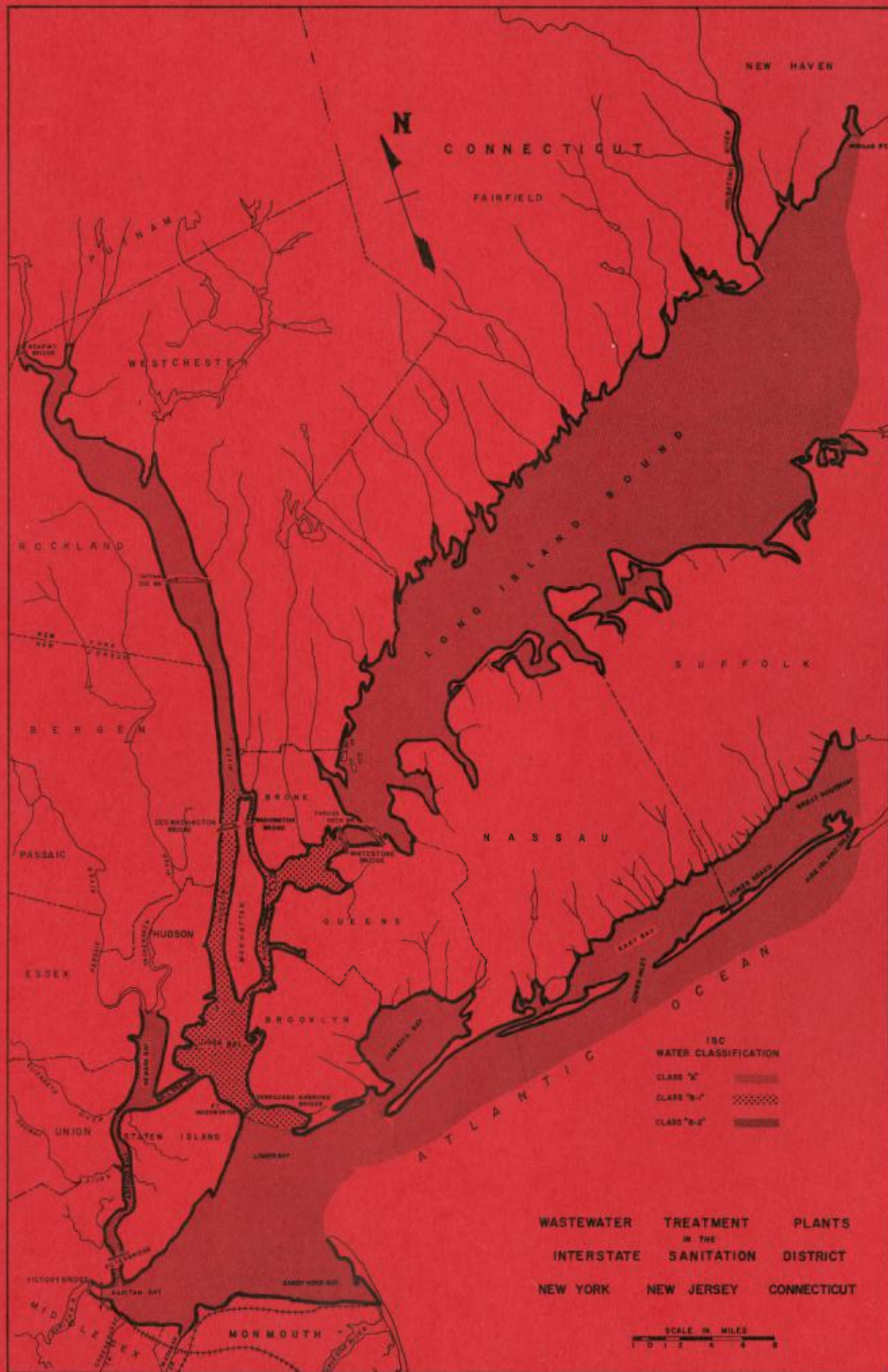
1996

ANNUAL REPORT

NEW YORK

NEW JERSEY

CONNECTICUT



INTERSTATE SANITATION COMMISSION

A TRI-STATE ENVIRONMENTAL AGENCY



1996
REPORT
OF THE
INTERSTATE SANITATION COMMISSION
ON THE
WATER POLLUTION CONTROL ACTIVITIES
AND THE
INTERSTATE AIR POLLUTION PROGRAM

INTERSTATE SANITATION COMMISSION

A TRI-STATE ENVIRONMENTAL AGENCY

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January 24, 1997

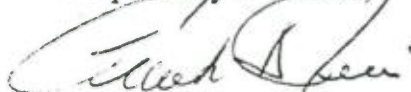
To Her Excellency, Christine Todd Whitman
His Excellency, George E. Pataki
His Excellency, John G. Rowland
and the Legislatures of the States of New Jersey, New York, and
Connecticut

Your Excellencies:

The Interstate Sanitation Commission respectfully submits its report for the
year 1996.

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.

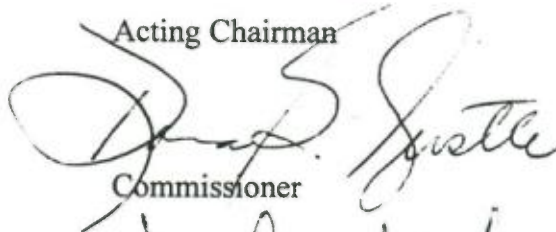
Respectfully submitted,



For the State of New Jersey

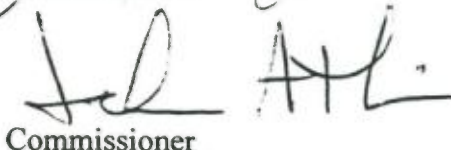
Acting Chairman

For the State of New York



Commissioner

For the State of Connecticut



Commissioner

**STATEMENT OF THE CHAIRMAN
OF THE
INTERSTATE SANITATION COMMISSION**

As the ISC moves forward into its seventh decade of environmental protection within our tri-state region, I am pleased to be able to report that the optimism I had expressed in last year's Annual Report has been amply justified. I can state with pride that this Commission has registered notable progress in many of our areas of major concern.

ISC sampling, testing, regulatory and enforcement programs -- including litigation -- are proceeding with vigor and marked effectiveness throughout our New York-New Jersey-Connecticut Metropolitan area.

Conducted at the request of the New Jersey Department of Environmental Protection, our extensive sampling in the Raritan Bay/Sandy Hook Bay area has played a pivotal role in gathering the data needed to keep New Jersey's multi-million dollar shellfishing industry operating safely on a year-round basis. In addition, I am happy to note that our efforts were deeply appreciated by the NJ DEP and they have requested that the Commission continue this sampling program in New Jersey shellfish waters for the 1996-1997 season -- a request that the ISC is honoring.

I also want to note that, in addition to being a member of the Long Island Sound Study's Management Committee, for each of the last six years, ISC has played a key role in sampling for the Long Island Sound Study with the goal of amassing the necessary data to document hypoxic conditions within the Sound. This, in turn, will lead the Study's managers to a formula that will directly improve the water quality of the Sound by the implementation of appropriate and effective strategies for nitrogen removal.

We are continuing to keep the issue of floatables control high on our agenda. Specifically, in connection with the matter of discharge permits for the 14 New York City wastewater treatment plants, we welcomed the EPA's intervention and its expression of many of the same concerns as the ISC regarding the scope and degree of floatables control. The resultant agreement is far superior to previously proposed floatables programs to which ISC objected.

As to the long-standing litigation regarding the Fresh Kills Landfill, despite laws being enacted to close the landfill by the end of the year 2001, the Commission has every intention of remaining fully involved. New York City has indicated that it will seek relief from the Consent Order -- to which ISC is a party -- requiring that enclosed barge unloading

facilities be constructed at the landfill. Whatever the outcome, this Commission will insist that operations at the landfill be conducted to prevent debris from entering the waters and defiling the beaches and shorelines of New Jersey and New York.

And finally, I wanted to express my pleasure with the recognition of the importance of the ISC's mission as evidenced by gubernatorial appointments of several new Commissioners representing New Jersey and New York. Not only do they bring a fresh enthusiasm to our Commission, but also a rich background of practical experience in environmental matters including those dealing with regulatory affairs, solid waste, storm water management, recycling, sewage treatment, land development, education and public outreach programs.

In a continued spirit of cooperation with our member States, in 1997 this Commission looks forward to building greater, stronger environmental safeguards -- to the benefit of our entire tri-state region's economy and the integrity of our waterways.

A handwritten signature in cursive script, reading "Frank A. Pecci". The signature is written in dark ink and is positioned above the printed name.

Frank A. Pecci
Acting Chairman
Vice-Chairman, New Jersey

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**

*

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I. EXECUTIVE SUMMARY

In the mid-1930s, when interstate conflicts began to arise regarding pollution in the waters surrounding and shared by the States of New York, New Jersey and Connecticut, the Tri-State Treaty Commission recommended the establishment of a body to control and abate water pollution. Following their recommendation, the Tri-State Compact establishing the Interstate Sanitation District and the Interstate Sanitation Commission were enacted in 1936, with the Consent of Congress. The ISC initially consisted of the States of New York and New Jersey; the State of Connecticut joined the Commission in 1941. Originally dealing only with matters concerning water pollution, air pollution was added to the scope of the Commission's activities in 1962. In 1970, the Commission was designated as the official planning and coordinating agency for the New Jersey-New York-Connecticut Air Quality Control Region.

Although facilities for treating sanitary wastes in this region began as early as the 1880s, by the 1930s, environmental protection was still severely lacking. Fully two-thirds of the sanitary and industrial sewage generated each day within this Commission's District was returned to the waterways untreated! Meanwhile, the one-third of the daily flow of 1.61 billion gallons per day (BGD) — which was the flow in those years — was receiving only primary treatment. Thus, one can well imagine the health threat this region was facing. However, once the ISC was established, the construction and upgrading of wastewater treatment facilities became one of the Commission's highest priorities. Clearly, much progress has been made in this area but, as we approach the end of the century, this region faces the major challenge of controlling untreated discharges from combined sewer overflows (CSOs) and storm sewers; this now accounts for a significant portion of current raw sewage discharges.

On an optimistic note, this Commission is gratified with the great progress that has been achieved in re-establishing the purity of the region's waterways over the past decade. The ISC takes pride that, due in a large measure to the Commission's requirement for year-round disinfection, thousands of acres of shellfish beds are now opened on a year-round basis as opposed to only during the few warm weather months. Also, in recent years, tri-state residents have suffered far fewer beach closings due to elevated levels of coliform bacteria or wash-ups of harmful medical debris. Unfortunately, other factors have come into play — such as overfishing, which has caused restrictions to be imposed, including bag limits and minimum size requirements. However, a positive sign that bears mention is the fact that striped bass populations have sharply rebounded in just the past few years.

While the Commission's budget and staff remain significantly reduced from the levels of the late 1980s and programs must remain accordingly curtailed, the staff has been diligent in fulfilling the technical and administrative responsibilities. In general, the ambient and effluent water quality sampling programs remain at a reduced level and, except for the Staten Island odor complaint answering service and limited investigations, the air pollution programs have been virtually eliminated.

All of the Commission's programs are goal-oriented to address specific environmental deficiencies 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 shellfishing, opening waters for swimming, the development of water quality and/or effluent criteria, and other needs that may arise. As changes occur throughout the Region, ISC is concerned that they are done in an environmentally sound manner.

The Commission remains committed to conducting an aggressive public involvement, education and outreach program. ISC regularly testifies at public hearings and meetings on various issues of concern throughout the Region. The ISC staff continues to lecture at local schools and colleges on subjects dealing with coastal pollution, oceanography, sampling and data collection, and related Commission activities. During the past seven years, the Commission has been a sponsor for Our World Underwater which gives young scholars the opportunity to get nationwide exposure to diverse organizations involved with the marine environment. Over the past four years, law student internships have been awarded in conjunction with Pro Bono Students America/New York and New Jersey. Additionally, the Commission regularly interacts with many professional, civic, environmental, and citizens' organizations.

This report provides a record of the water and air pollution activities of the Interstate Sanitation Commission for the period December 1995 through November 1996. To address the environmental problems within its area of jurisdiction, the Commission has focused on technical assistance, enforcement, planning, laboratory analysis, monitoring, and coordination.

WATER POLLUTION

The Commission's water pollution abatement programs continue to provide assistance for the effective coordination of approaches to regional problems. Making more areas available for swimming and shellfishing — a long-standing ISC goal — remains a high priority for the Commission. The ISC's programs include enforcement, minimization of the effects of combined sewers, participation in the National Estuary Program, 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.

Throughout the District, planning and construction is under way to provide water pollution control and abatement from municipal and industrial wastewaters discharging into the ISC's District waters. It is estimated that more than \$4.07 billion has been allocated by municipalities in the District for projects recently completed, in progress, and planned for the future.

During this past year, the Commission has been involved in several legal actions which are detailed in the Legal Activities section of this report and are highlighted as follows:

- continued participation as a party in the New York State Department of Environmental Conservation adjudicatory hearing on the State Pollutant Discharge Elimination System (SPDES) permits which that department issued for the 14 New York City water pollution control plants.
- continued commitment to safeguarding the waters and shorelines from debris escaping from the Fresh Kills Landfill located on Staten Island.
- involvement in an enforcement proceeding against New York City's North River treatment plant on various issues of environmental concern.
- a final settlement with Hudson County, New Jersey, communities as to upgrading or eliminating their treatment plants to meet Commission and federal water quality standards.
- involvement with the Brooklyn Navy Yard Resource Recovery Facility adjudicatory hearing.

Opening presently closed waters for swimming continues to be a high ISC priority. Since completing its region-wide combined sewer overflow report in 1988, the Commission is continuing to work toward its goal of insuring compatible CSO requirements on a regional basis. ISC has begun compiling a report outlining each states' CSO abatement requirements and the actions taken by District municipalities to comply with those requirements.

For the ninth consecutive year, ISC has continued to update its region-wide inventory of development projects within the District. Among other things, this inventory contains estimates of the amount of sewage that will be generated by proposed projects. This information is invaluable in determining whether the infrastructure — the sewage treatment plants and the sewer systems — has the capacity to accept additional wastewater from the construction of residential and mixed-use buildings, as well as hotels, marinas and recreational facilities.

The Commission remains an active member of the Management Committees for the Long Island Sound Study (LISS) and the New York-New Jersey Harbor Estuary Program (HEP), in addition to involvement on various work groups for these studies. In October 1996, the Governors of New Jersey and New York issued the Joint Dredging Plan for the Port of New York and New Jersey. This bi-state action represents a partnership between both States, New York City, the federal government and the Port Authority of New York and New Jersey. A commitment of \$130 million will address water pollution control, dredged material disposal projects, contamination reduction at point sources, beneficial reuse, and decontamination technologies for dredged material, and temporary transportation projects. The New York State Clean Water/Clean Air Bond Act of 1996 (\$1.75 billion) has also dedicated funds for management programs, plans and projects in the NY-NJ harbor area. The Port of New Jersey Revitalization, Dredging, Environmental Cleanup, Lake Restoration, and Delaware Bay Area Economic Development Bond Act of 1996 (\$300 million) will focus funds on construction of dredged material disposal facilities, decontamination technologies

and dredging of navigational channels in the New Jersey-New York Harbor area. Although a separate program from the HEP, New York State's Hudson River Estuary Management Program also deals with management of the Hudson River estuary; the Clean Water/Clean Air Bond Act of 1996 has designated \$25 million to implement that program's plan.

The Commission has been actively involved with implementation actions contained in the final Comprehensive Conservation and Management Plan (CCMP) for the LISS that was issued and signed in 1994. In October, the Governors of New York and Connecticut met to affirm their commitment to the actions set forth in the CCMP. Issuance of the final CCMP for the HEP is expected in 1997. Ultimately, the effectiveness of these management actions and the ability to provide essential information that can be used to refocus management decisions will be needed. The Commission will continue its commitment to working with these estuary programs.

ISC continued to monitor waste discharges from public and private treatment plants to check compliance with discharge permit limitations. Using the ISC research vessel, the R/V Natale Colosi, the Commission participated, for a sixth consecutive year, in a multi-agency intensive survey in Long Island Sound to continue to document dissolved oxygen conditions. At the request of NJ DEP, the Commission collected water quality samples needed by NJ DEP to check the bacterial conditions of the shellfish waters of Raritan and Sandy Hook Bays during the winter and spring of 1995-1996.

Since 1981, the Commission has been involved with the US Army Corps of Engineers' Dredged Material Disposal Management Plan for the Port of New York and New Jersey. Sponsored by US EPA - Region II, ACOE - New York District, NJ DEP and NYS DEC, Dredged Materials Management Forum VI was held during February 1996. All stakeholders throughout the region must be included in an effort to develop solutions that balance dredging requirements of the Port of New York and New Jersey with sound environmental and economic disposal alternatives. By consensus of its organizers, the Dredged Materials Forum has been incorporated into the HEP. The chairpersons of the Forum's workgroups were designated as the Dredged Material Management Integration Workgroup. The Commission is taking an active role by participating on the Mud Dump Site Workgroup.

The Commission remains an active participant on the New Jersey-New York Clean Ocean and Shore Trust (COAST) Committee which is a bistate/bipartisan group with a broad mandate to protect the natural resources of the estuary and the New York Bight.

Besides conducting its normal day-to-day operations, the ISC laboratory — located on the campus of The College of Staten Island (CSI) — will be collaborating with CSI on environmental projects of mutual concern. The ISC laboratory is certified by New York State and New Jersey, and has continued to participate in the US EPA's Water Pollution Laboratory Evaluation Program and Water Supply Microbiology Performance Evaluation Study. The ISC laboratory also conforms with the recommended procedures of the US Food and Drug Administration.

ISC's library holdings 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-at-law, and environmental and public awareness groups, as well as to government agencies across the nation.

AIR POLLUTION

The Commission's air pollution monitoring and response programs remained drastically reduced this past year due to budgetary restrictions. ISC 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.

During 1996, ISC continued to take part 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 health messages to radio and television stations, as well as to government agencies in the region.

During the 12 months from October 1995 through September 1996, the Commission received 86 air pollution complaints — a decrease of 39% over the previous 12-month period. As in the past, most of the calls originate from Staten Island; this year, 93% of all complaints were received from Staten Island. The Annadale section of Staten Island was the neighborhood that registered the most complaints. The odor categories of "garbage" and "oil/gasoline" were the most often reported — collectively representing 47.6% of the total.

It is unfortunate that the ISC's Staten Island field office remains closed — a situation that has existed since June 1989 when, due to budget cuts, the Commission was forced to lay off its entire air pollution field staff and close the Staten Island field office. The 24-hour-a-day, 7-day-a-week answering service (718-761-5677) has been maintained and the Commission investigates as many complaints as its resources will allow. ISC also forwards complaints to the appropriate enforcement and health agencies.

II. WATER POLLUTION

GENERAL

During 1996, more than \$4.07 billion was allocated for 229 water pollution control projects in the Interstate Sanitation District which were either completed, in progress, or planned for the future. These monies were allocated in the following manner: nearly \$177.9 million for 41 completed projects, more than \$3.047 billion for 102 projects in progress, and more than \$845.4 million for 86 future projects. These expenditures are being used for engineering studies and experiments, CSO abatement projects, 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 industries for pollution control.

These enormous expenditures on the infrastructure have resulted in significant improvements throughout the District these past years; however, a great deal of work still remains to be done. The Commission has long advocated the necessity of adequate infrastructure in order for receiving water quality to be improved, or at least maintained, as well as for "use impairments" to be minimized.

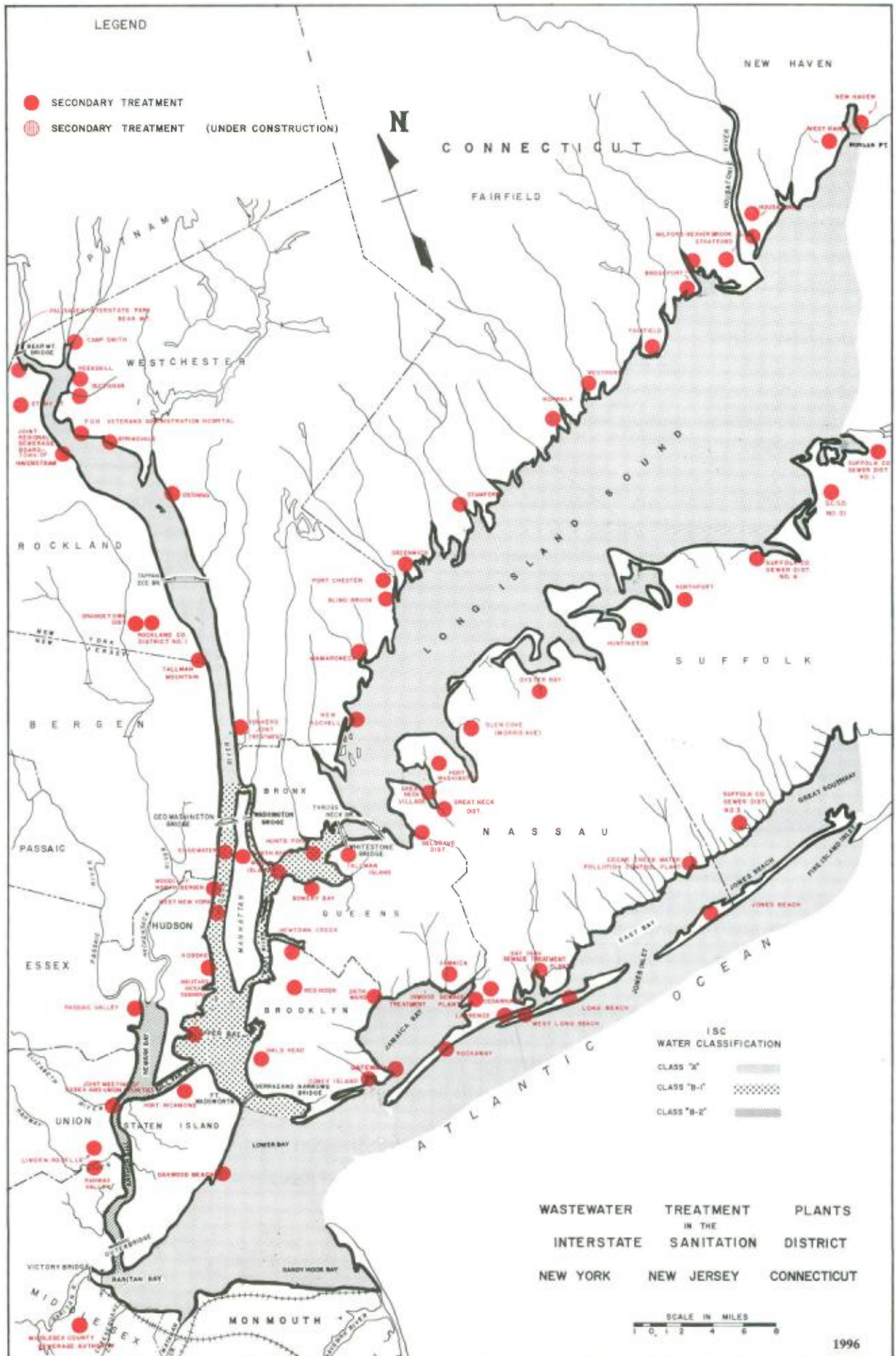
With secondary treatment now in place, the elimination of combined sewer overflows or the amelioration of their adverse effects is necessary to achieve further significant improvements. Several communities have ongoing programs to separate sanitary and storm sewers. Other structural alternatives have been initiated, such as swirl concentrators and retention tanks. On several selected tributaries, New York City has installed booms to contain CSO discharges and then deploys skimmer boats to collect the captured floatables. New York City is also constructing swirl concentrators and in-line storage capacity in the upper reach of the East River. CSO programs are under way throughout the District and ISC will be compiling data on the ongoing programs.

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 update format was designed to provide background, as well as the current status of construction, engineering studies and experiments, pilot projects and related environmental conditions. Therefore, the information in this section is that which was available and accurate through November 1996.

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

LEGEND

- SECONDARY TREATMENT
- ⊙ SECONDARY TREATMENT (UNDER CONSTRUCTION)



ISC
WATER CLASSIFICATION

CLASS "A" [light gray box]

CLASS "B-1" [cross-hatched box]

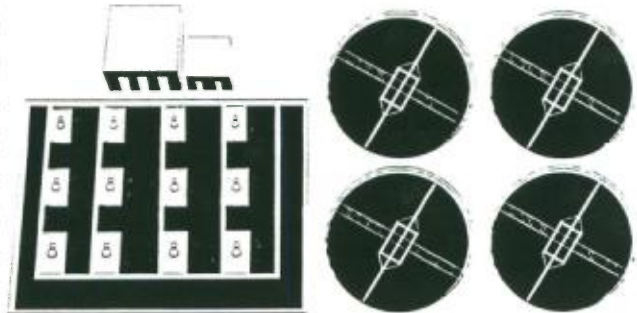
CLASS "B-2" [stippled box]

WASTEWATER TREATMENT PLANTS
IN THE
INTERSTATE SANITATION DISTRICT
NEW YORK NEW JERSEY CONNECTICUT

SCALE IN MILES
0 1 2 4 6 8

CONNECTICUT WATER POLLUTION CONTROL PLANTS

In order to control the hypoxia conditions in the study area, the Long Island Sound Study Policy Committee (consisting of the Regional Administrators of US EPA - Regions I and II, and the Commissioners of the State environmental departments in New York and Connecticut) adopted a "no net increase" policy for nitrogen discharges in December 1990, in order to reduce those loadings into Long Island Sound and the Upper East River. The Comprehensive Conservation and Management Plan, which was issued in 1994, adopted a phased approach to hypoxia management starting with the "no net increase" policy.



As part of phase two, Connecticut is allocating approximately \$18.1 million to reduce its aggregate, annual nitrogen load by 900 tons from the 1990 baseline. The Connecticut Department of Environmental Protection issued Consent Orders requiring nitrogen reduction assessments and implementation of retrofits at selected plants based on cost and feasibility. Ten of the twelve facilities discharging to the Interstate Sanitation District are incorporating interim and permanent denitrification processes. Subsequently, CT DEP will modify individual NPDES discharge permits to ensure compliance. Refer to the individual plant write-ups and the National Estuary Program section for additional information.

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

Projects in Progress

Construction is currently 99% complete at the West Side plant. The final cost of \$44.1 million is being used to finance rehabilitation of all units, as well as installing new pumps and instrumentation at this 25 MGD secondary treatment facility. Operation of various units have been put on line during the period 1993 through November 1996.

The Bridgeport drainage basins (comprising 3,880 acres) have an ongoing multi-year CSO improvement program. Re-estimated to cost \$30 million, this work is 70% complete. Eventually, 40 CSOs which discharge into Black Rock and Bridgeport Harbors will be eliminated. The 19 remaining CSOs will be monitored by a remote telemetering system.

The Water Pollution Control Authority has allocated about \$1.5 million per year for sewer system rehabilitation in both drainage basins; this agenda is ongoing.



PHOTO COURTESY OF
BRIDGEPORT WPCA

WEST SIDE WATER POLLUTION
CONTROL FACILITY
FAIRFIELD COUNTY
BRIDGEPORT, CONNECTICUT
AERATION BASINS (foreground) ON-
LINE AND UNDER CONSTRUCTION;
FINAL TANKS AND LONG ISLAND
SOUND(background)

An engineering study is under way to assess process modifications required for nutrient removal at both facilities. This work is 50% complete.

Future Projects

Both treatment facilities are operating under State Consent Orders to improve plant performance and attain secondary treatment capabilities. The Authority negotiated new compliance dates with the City of Bridgeport during 1994.

Re-estimated to cost \$35.9 million, the proposed rehabilitation of the East Side plant is scheduled to begin during November 1996. Agenda items include, but are not limited to, the rehabilitation of the preliminary, primary, and secondary treatment units, and modernization of the electrical/ mechanical equipment, as well as pumps and associated instrumentation. The construction is expected to be complete in late 1999.

It is proposed that both plants share sludge disposal facilities which are estimated to cost \$27.3 million. A sludge incinerator will be sited at the East Side plant. Force mains which are to be installed on land and under Bridgeport Harbor will convey sludge from the West Side plant to the East Side.

Fairfield, Connecticut (Fairfield County)

Projects in Progress

An engineering study addressing facility upgrades is expected to be completed in late 1996 (\$150,000). Design work for rehabilitation and expansion is slated to start by September 1997 (\$2.85 million).

This facility is presently operating under a State Consent Order to install BNR equipment and eliminate I/I. Approximately \$5 million will be needed in order to implement BNR capabilities. Nitrogen reduction will be accomplished by aeration tankage modifications — fine bubble diffusers with fixed film (sponge) media. This project was operational during August 1996.

Future Project

Additional rehabilitation and expansion of this facility will continue over a three-year period starting in January 1998. Estimates of \$40 million will be incurred; additional nitrogen removal retrofits will be implemented as needed.

Greenwich (Grass Island), Connecticut (Fairfield County)

Projects in Progress

Engineering studies are under way to address I/I (\$98,000) and interim nutrient removal modifications (re-estimated at \$350,000). These projects have proposed completion dates of January 1997 and March 1997, respectively.

Future Project

At an estimated cost of \$25 million, a solids handling facility will be installed. This proposal is currently being evaluated by the Connecticut DEP.

Milford - Beaver Brook, Connecticut (New Haven County)

Completed Project

Interim nitrogen removal is being accomplished by the addition of aeration tank baffles, fine bubble diffusers, new return pumps, blowers, and a main air line. The project is 99% complete as of this writing with only punch list and warrantee items to be resolved. Final costs of \$2,200,000 have been divided between the two Milford plants. Refer to the Housatonic WPCP write-up for additional information.

Milford - Housatonic, Connecticut (New Haven County)

Completed Project

Plant modifications for nitrogen reduction are complete. The project was completed during May 1996 and cost \$650,000.

Project in Progress

Under way since January 1996, a new pump station is being built and is 65% complete. Concurrently, more than 8,000 linear feet of new sewer lines are being installed. Final costs are estimated at \$3.6 million and is anticipated to be operational during January 1997.

New Canaan, Connecticut (Fairfield County)

Future Project

Although this 1.5 MGD secondary facility is located outside the Interstate Sanitation

District, the discharge waterway, Five Mile River, has a confluence with Long Island Sound. A plant expansion and upgrade with associated force main and gravity sewer lines is planned. Anticipated to begin construction in early 1997, costs are estimated at over \$15 million.

New Haven - East Shore, Connecticut (New Haven County)

Projects in Progress

This facility is operating under a State Consent Order to address nitrogen reduction loadings. The Consent Order requires an operational start-up during February 1997. A nitrogen reduction study was completed at a cost of \$965,000.

Engineering studies are under way that are addressing odor controls (\$1.3 million) and a supervisory control and data acquisition system master plan (estimated at \$76,000). Design work for both studies is complete and bids are being requested.

An estimate of \$6.9 million was made for the installation of anoxic zones, mixers, and recycle pumps in the secondary aeration tanks. The conversion of a two-train secondary activated sludge process to a four-train aerobic system is also being implemented. The secondary treatment facilities are concurrently being modified with fine bubble diffusers to provide nitrogen removal. This work is 90% complete and an approximate operational start-up is planned for January 1997.

Sewer separation construction will continue until combined sewers discharging to New Haven Harbor are eliminated. An estimated completion date is well into the next century (2015), with costs amounting to \$130 million. Approximately 35% of the work is complete.

Future Projects

Several additional engineering studies are proposed which will address alternative standby power for the main sewage pumps (FY '98), plant-wide instrumentation upgrades, and a long term CSO control plan (\$2 million) will be started during January 1997.

Plant upgrades are proposed to begin during June 1997. Estimated to cost \$8 million, the upgrades will address the primary treatment phase including the conversion of a monorake system to a 3-separate chain and flight sludge collection process; the replacement of all of the existing antiquated motor control centers; and the installation of covers on the primary tankage for odor control.

Norwalk, Connecticut (Fairfield County)

Projects in Progress

An estimated cost of \$37 million for a three-year construction schedule has been initiated. Construction recently began with an operational start-up planned for late 1999. The project will increase the capacity of this 15 MGD secondary facility to 20 MGD. Other plant unit upgrades include odor controls, a new chlorination system, and new tankage for all treatment phases.

At a re-estimated cost of \$1 million, collection system improvements and rehabilitation, as well as sewer separation work, is still under way and is 75% complete. Phased operational start-ups are scheduled for late 1996.

Stamford, Connecticut (Fairfield County)

Projects in Progress

Nitrogen loading reductions will be attained by retrofitting the aerators with diffused air bubblers. All construction phases are planned to begin during December 1996 at a re-estimated cost of \$3.1 million.

An engineering study for a revised facility plan is scheduled to begin during October 1996, with completion set for October 1997.

Stratford, Connecticut (Fairfield County)

Completed Projects

This facility was operating under a State Consent Order (September 1988) to evaluate and correct operating deficiencies. An evaluation for improving plant performance and an I/I study were completed during this year. All milestones of the Order have been met.

Under way since October 1993, an estimated \$4 million trunk line replacement was completed during the spring of 1996.

West Haven, Connecticut (New Haven County)

Completed Project

This plant is operating under a State Consent Order to complete necessary plant rehabilitation, perform collection system upgrades and eliminate overflows. The final completion date for these projects is anticipated for late 1996. These upgrades include a new

aerated grit chamber, new lab and lunch rooms, site upgrades and re-paving, new generator and electrical units, and new injection pumps for the incinerator. Final costs for all items will be approximately \$5 million.

Projects in Progress

Two pump stations are being upgraded. A plant-wide electrical upgrade is in the design phase; this will replace all of the existing antiquated motor controls. The cost is estimated at \$1 million and will be complete by late 1997.

Collection system rehabilitative work is 70% complete. The estimated \$6 million project began in 1993. I/I lining, metering and monitoring are ongoing.

Future Projects

Estimated to cost between \$2 and \$3 million, an odor control system will be installed plant-wide. The odor source buildings will be ventilated, treated and released through a bio-filter with scrubbers. This should eliminate or lessen impacts on the surrounding neighborhood.

A phased approach to upgrade eight pumping stations city-wide is planned to begin during October 1997. At a cost of \$3.5 million, four stations will be renovated. The remaining four stations (\$2 million) will be renovated on an as needed basis.

Westport, Connecticut (Fairfield County)

Completed Project

Completed in April 1996, nutrient removal modifications consisted of timers on the aerators, baffles and full-radius skimmers in the secondary clarifiers, a new flow-splitting box, addition of a polymer feed upstream of the secondary clarifiers, and a new sludge washing system. The construction costs for this retrofit were \$520,000.

Projects in Progress

This facility is presently operating under a State Infiltration/Inflow Abatement Order. An I/I evaluation is nearly complete. Repairs and corrective work are scheduled to carry on through 1998, at an estimated cost of \$250,000 per year.

Currently in the design phase, the replacement of the primary digester cover is planned. The construction of this project is estimated to cost \$400,000.

NEW JERSEY WATER POLLUTION CONTROL PLANTS

Bayshore Regional Sewerage Authority, New Jersey (Monmouth County)

Completed Projects

The Bayshore Regional Sewerage Authority has completed its obligation to the State Administrative Consent Order (June 30, 1991) to complete the facility expansion and upgrade. Wastewater discharges from this facility are to an area of the Atlantic Ocean which is outside of the Interstate Sanitation District.

Final estimates of \$13 million were made for the new sludge dewatering facilities and an incineration upgrade. Full operation commenced during April 1996.

This 8 MGD secondary activated sludge plant has undergone expansion construction (98% complete) with associated upgrades to a capacity of 16 MGD utilizing a fine bubble process. A final estimated cost of \$49 million was incurred for all construction phases. The expanded facility was placed into operation during July 1996. Flows from Aberdeen Township (1.85 MGD) are now being treated at this facility.

Collection system upgrades are 99% complete. The Matawan pump station has been rehabilitated with new pumps, motors, controls, chemical feed and odor control equipment. The West Keansburg pump station was also renovated. Both stations were operational during May 1996.

Edgewater, New Jersey (Bergen County)

Completed Project

This facility has met all terms and requirements of the New Jersey DEP Administrative Consent Order to develop a combined sewer overflow control program. Engineering studies are under review.

Future Projects

Reconstruction of Pumping Station #3, as well as force main and trunk line sewer installations, are planned to begin during the spring of 1997. Final costs and operational dates were not available. Final design alternatives to connect these lines to the plant are being finalized.

Hoboken, New Jersey (Hudson County)

This plant is now under the auspices of the North Hudson Sewerage Authority (NHSA) and is called the Adams Street facility. Refer to write-up under the NHSA - Adams Street.

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

Completed Project

The Joint Meeting's sludge management plan, with subsequent improvements in sludge quality through an enhanced industrial pretreatment program, was re-evaluated for land-based alternatives. In order to produce a high quality pelletized sludge, an indirect thermal sludge drying facility was built. Completed in October, the facility is producing a final pelletized bio-solid suitable for beneficial reuse. A final cost of \$20 million was incurred.

Future Projects

Proposed projects include main sewage pump upgrades; and the rehabilitation of the anaerobic sludge digester, sludge storage tank and the screen house facility. These proposals are scheduled to begin during late 1996 or early 1997. Final cost estimates for all work is \$5.5 million.

Kearny Municipal Utilities Authority, New Jersey (Hudson County)

Future Project

During November 1990, this primary facility was converted to a pump station and diverted all flows to the PVSC regional facility for treatment. The Authority has applied for a Department of the Army authorization to install a submarine sanitary force main in Cedar Marsh. The purpose is to provide sewer service for this non-sewered area, as well as remove malfunctioning on-site sanitary systems and redirect existing point discharges to the PVSC collection system. Refer to the PVSC write-up for additional information.

Linden Roselle Sewerage Authority, New Jersey (Union County)

Completed Projects

At a final cost of \$1.2 million, a generator was replaced during January 1996. Completed in March 1996, the influent bar screens and gates were replaced at a cost of over \$93,000.

Projects in Progress

The Authority is presently operating under a State Administrative Consent Order (July 1992) to investigate effluent toxicity. Engineering studies are under way to address this issue by exploring industrial pretreatment impacts. Pretreatment controls will most probably be implemented by 1997.

Plant rehabilitative work under way includes new handrails (\$100,000) and the replacement of the underground electrical cables (\$120,000).

Future Project

The installation of four ultraviolet disinfection units is planned at an estimated cost of \$2 million.

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

Completed Project

A sludge end product storage building with associated odor control equipment and truck scale are nearly complete (95%). Scheduled to be operational during November 1996, costs are estimated at \$10.4 million.

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

Project in Progress

This facility is presently conducting negotiations with the New Jersey Department of Environmental Protection to upgrade the plant design flow to 3.4 MGD.

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

Completed Projects

Collection system improvements include upgrades to three pump stations (\$380,000). Additional design work to upgrade the remaining stations was completed during June 1996.

During the early 1990s, this facility was operated and maintained under the auspices of the Hoboken-Union City-Weehawken Sewerage Authority (HUCWSA). During 1995, this entity was renamed the Tri-City Sewerage Authority. As of November 1, 1996, this entity was again renamed the North Hudson Sewerage Authority and now maintains a second

WPCP under its jurisdiction. Both facilities have been renamed — Adams Street, formerly Hoboken, and River Road, formerly West New York. Refer to the NHSA-River Road write-up for additional information.

Projects in Progress

An engineering study with a three-year agenda began during 1995. It will address modeling of the interceptor system and will select alternatives, both structural and nonstructural, for the ultimate control of solids and floatables discharged to the Hudson River.

Installation of mechanical drives on the trickling filters was started in late 1996 with estimated costs of about \$250,000.

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

Completed Projects

As of November 1, 1996, the North Hudson Sewerage Authority became the official entity to operate and maintain this facility which was formerly known as West New York. The Adams Street facility (formerly named Hoboken) is also under the auspices of the Authority.

Refer to the North Hudson Sewerage Authority - Adams Street write-up for additional information.

Projects in Progress

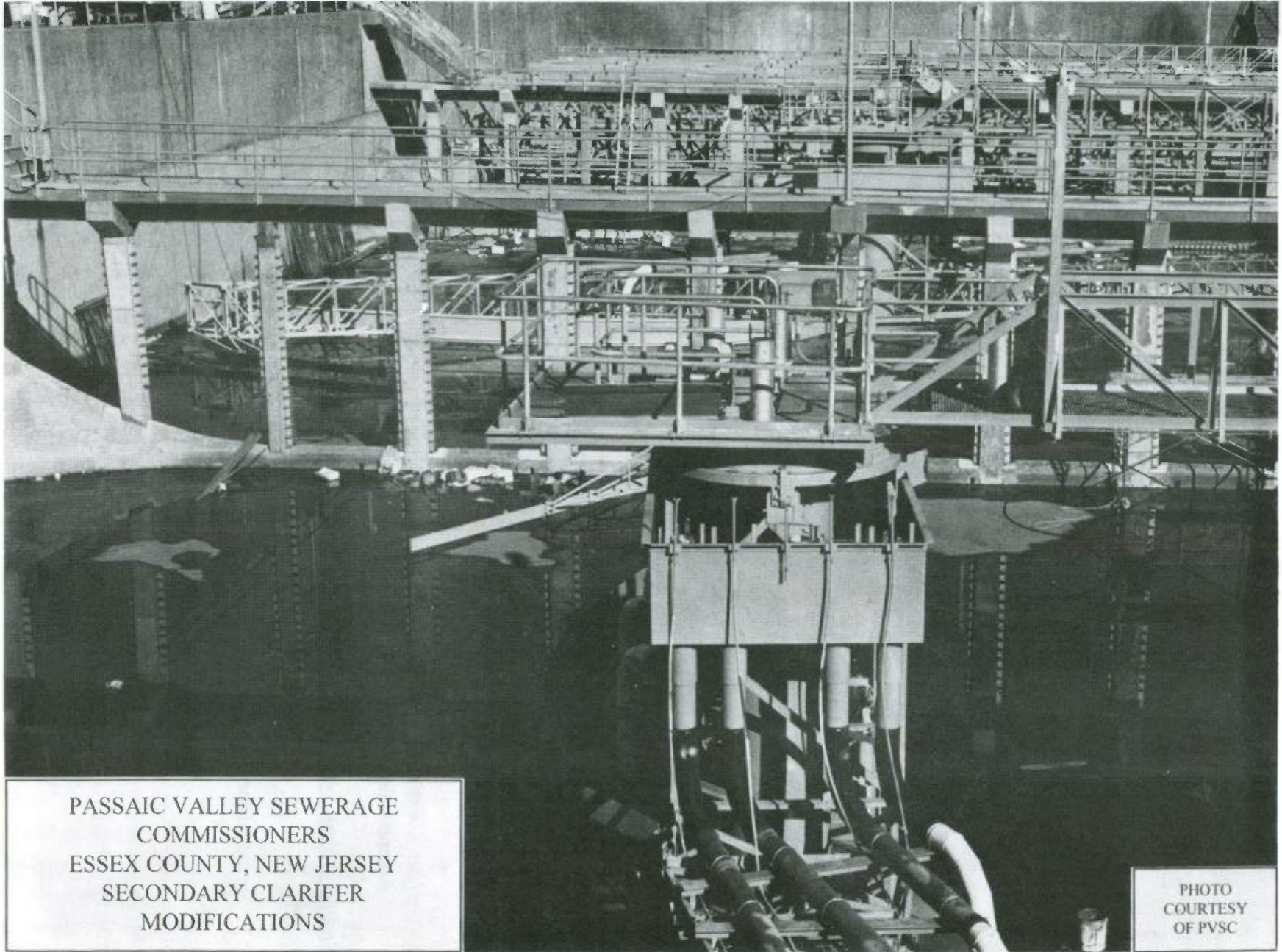
In light of the new management of this facility, all proposed plant modifications and collection system rehabilitative work that appeared in this forum are being reconsidered. Presently, an engineering study dealing with CSO abatement is under way.

Passaic Valley Sewerage Commissioners, New Jersey (Essex County)

Projects in Progress

This facility is operating under federal and State Consent Orders to address alternatives for beneficial reuse of bio-solids (September 1989) and to comply with effluent limitations.

An engineering study is under way to evaluate necessary modifications to the secondary processes.



PASSAIC VALLEY SEWERAGE
COMMISSIONERS
ESSEX COUNTY, NEW JERSEY
SECONDARY CLARIFER
MODIFICATIONS

PHOTO
COURTESY
OF PVSC

Modifications to two final clarifiers are 75% complete. The \$2.5 million project is planned to be operational during December 1996.

Future Projects

Several engineering studies are proposed which will address the conversion of the disinfection process from gas to hypochlorite, an electrical utilization study, and an upgrade of the existing oxygenation tanks.

Planned to begin during March 1997, a 2.5-year construction schedule will entail the replacement of existing mixers and gas recirculation compressors with new surface aerators, a new electric distribution system for the oxygenation tanks, and the installation of the oxygenation tankage instrumentation and controls. This work is estimated to cost \$27 million.

Rahway Valley Sewerage Authority, New Jersey (Union County)

Completed Project

Installation of a two-meter sludge dewatering press was completed and the press was put on line during March 1996. Final costs incurred were over \$343,000.

Projects in Progress

Construction of an employee facilities building and a belt thickener building are both under way. Construction of these buildings are currently at 85% complete and 5% complete, respectively. Total cost estimates are over \$1.72 million.

Future Project

Estimated to cost \$632,000, the installation of a sludge centrifuge has been proposed. An approximate operational start-up date is set for mid-1997.

West New York, New Jersey (Hudson County)

This plant is now under the auspices of the North Hudson Sewerage Authority and is called the River Road facility. Refer to write-up under the NHSA - River Road.

NEW YORK WATER POLLUTION CONTROL PLANTS

In accordance with the recommendations of the Long Island Sound Study, the New York State Department of Environmental Conservation gave local governments the option of imposing nitrogen limits for individual sewage treatment plant discharges, or creating an aggregate of limits for all plants within a given management zone. NYS DEC and NYC DEP reached full agreement on aggregate effluent limits for the four plants on the upper reach of the East River — Bowery Bay, Hunts Point, Tallman Island and Wards Island. NYC DEP also agreed to implement operational and process changes to maximize nitrogen removal, as well as to conduct pilot programs to test new processes and technologies. Six other NYC plants which discharge to the Hudson River, Lower East River and New York Harbor (refer to the map at the beginning of the Water Pollution section of this report) will incorporate nitrogen reduction controls and conduct self-monitoring programs.

NYS DEC has issued final SPDES permits to eight treatment facilities in Nassau and Suffolk Counties for aggregate limits which freeze the nitrogen loads of the dischargers based on 1990 loadings. Presently, all facilities are in compliance with the “no net increase” limits. BNR pilot proposals are being developed for Glen Cove and Kings Park (SCSD #6).

In Westchester County, NYS DEC has issued final permits to the four plants discharging to Long Island Sound — Blind Brook, Mamaroneck, New Rochelle and Port Chester. Their aggregate loading is set at the 1990 nitrogen discharge level. Voluntary reductions are being implemented through a BNR retrofit at the Blind Brook facility. The County has completed a feasibility study for nitrogen removal at all existing plants.

Refer to specific plant write-ups and the National Estuary Program section of this report for additional information.

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

Completed Projects

From November 1995 to date there have been additions and modifications to the central warehouse facilities at a cost of nearly \$6.7 million. Construction of two warehouse buildings and their associated piping, as well as auxiliary equipment to provide storage space for spare parts and maintenance materials is near completion.

Projects in Progress

Engine emissions improvements are scheduled for completion in late 1996 at cost of over \$4.4 million. This project encompasses the addition of emission control devices to the plant's dual-fuel engine generators, so as to adhere to the requirements of applicable laws and regulations promulgated by the Clean Air Act Amendments.

Additions and modifications to the central heating facilities are to be completed during mid-1997 at an estimate of over \$17.8 million. The principle features of the project include new heater and chiller equipment with associated piping and auxiliary equipment to provide plant-wide heating and cooling.

Scheduled for completion in 1998 with costs of over \$23.7 million, there are to be final modifications and additions to the sludge digestion facilities. The existing sludge digestion facilities, including both primary and secondary digesters, will be rehabilitated.

An administration center will be constructed within the existing main building, in addition to new shops for the facility's electrical and HVAC units, coupled with lavatory and lunchroom areas for plant personnel. Construction is planned to be complete during 1998 with costs amounting to over \$13.3 million.

Future Projects

Additions and modifications are to begin in 1997 on a fifth aeration tank, replacing the fluid bed reactor system. Estimated cost figures were not available.

Anticipated for January 1999, this facility will accept flows from the county-owned Inwood plant for treatment. The 2.5 MGD Inwood trickling filter plant is being phased out due to continuing operational problems. Refer to the Inwood write-up for additional details.

Belgrave, New York (Nassau County)

Future Project

BNR retrofits have been recommended by the Long Island Sound Study. In order to implement the CCMP, NYS DEC has established priority projects to reduce nitrogen loadings. Planned modifications at this facility are expected to incur capital costs of about \$2.34 million. A construction schedule was not available.

Blind Brook, New York (Westchester County)

Projects in Progress

An ongoing engineering study will investigate alternatives for preliminary treatment equipment upgrades, including the headworks and the automatic bar screens.

Estimated to cost \$1.4 million, a major electrical upgrade of the influent and effluent pumping equipment began on October 15, 1995. Construction is 50% complete and an operational start-up date is anticipated for April 1, 1997.

Future Project

Various plant refurbishings will begin during April, 1997. This two-year agenda will include replacement of primary tank sludge collection mechanisms, updating influent headworks, and automation of appropriate portions of the facility. Cost estimates are about \$6 million.

BNR retrofits have been recommended by the Long Island Sound Study. In order to implement the CCMP, NYS DEC has established priority projects to reduce nitrogen loadings. Planned modifications at this facility are expected to incur capital costs of about \$2.73 million. A construction schedule was not available.

Bowery Bay, New York (Queens County)

Projects in Progress

Stabilization - Step II design work, which addresses overall plant performance and alternatives to correct deficiencies, is commencing at an estimated cost of \$14 million.

Ongoing improvements to the existing facility at a re-estimated cost of \$5.147 million include installations and/or reconstruction of various treatment units including gas detection, pumps, the polymer system, secondary screens and return sludge metering.

The Rikers Island-South force main and pump station designs are ongoing (30% complete). Construction costs are estimated at \$9.2 million. The BQE pump station modifications are being addressed (\$200,000). City-wide telemetering installations and upgrades at various pump stations are ongoing.

This facility and the 13 other New York City municipal wastewater treatment plants are the subject of an ongoing hearing before a NYS DEC Administrative Law Judge. Refer to the Legal Activities section of this report for detailed information.

Collectively, a re-estimated cost of \$168.98 million is being spent at NYC plants for cake storage buildings (Hunts Point, North River, Oakwood Beach, 26th Ward, and Wards Island), emergency generators (Hunts Point, 26th Ward, and Wards Island) and associated feed equipment. These installations are nearly complete and the estimated cost includes expenditures for construction management.

A City-wide CSO abatement program is under way. 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.

A total of \$1.5 billion has been committed by New York City for a 10-year CSO program (currently in its ninth year). Structural and nonstructural solutions to the problem are being evaluated and prioritized. 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. Preliminary and final design work is being prepared for the swirl concentrators that will service Flushing Bay (bids expected during FY '97 - \$148.7 million). A retention tank, planned for Flushing Bay, will go to bid during 1997. An in-line storage pilot project located in the Hunts Point drainage basin is under construction (\$2.7 million).

The second geographical area addresses the needs of Jamaica Bay. Holding tanks and in-line storage are the agenda items. More than \$23 million is being spent for design work and construction costs are estimated at \$260 million.

The other areas of concern are the Inner New York Harbor and Outer New York Harbor. The plan for the Inner Harbor includes maximizing flow to the WPCPs, activation of the flushing tunnel in the Gowanus Canal (\$7.77 million - FY '97) with associated force mains (\$3.3 million - FY '97). Outer Harbor proposals include maximizing flow to the WPCPs and reducing CSOs and dry weather flows in Coney Island Creek (bids to be awarded for design during FY '97 - \$5.988 million).

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

Future Project

A BNR retrofit was recommended by the Long Island Sound Study. Planned modifications as delineated in NYC's Nitrogen Control Action Plan are expected to incur capital costs of about \$4.8 million and begin during January 1997. Additional expenditures of \$28.59 million would be needed to meet the goals of the Long Island Sound Study CCMP.

Buchanan, New York (Westchester County)

Future Project

The second phase of planned modifications for the main treatment plant is anticipated for 1997. Although cost figures are not yet available, upgrades will consist of replacing electrical control and instrumentation equipment.

Camp Smith, New York (Westchester County)

Completed Project

At a final cost of \$1.2 million, an upgrading of the entire facility was completed during November 1996. The work included repairs and upgrading of existing equipment, as well as the installation of new sewer lines and repairs to manholes. Additional new installations included, but were not limited to, emergency generators, new plastic media in the trickling filters, circulation pumps and controls, automatic influent and effluent samplers, continuous on-line chlorine analyzer and pH metering.

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

Completed Projects

Costing more than \$24.3 million, two construction phases were completed during the past calendar year. The installation of final screens, as well as the fire pump station were put on line. Rehabilitative improvements were completed on one primary tank; four new primary tanks were built.

The rehabilitation of seven pumping stations began during August 1994; they were on-line during August 1996. Final construction costs incurred amounted to more than \$8.6 million.

Projects in Progress

Design work for continued phased construction is anticipated to be complete by 1998. This facility was re-rated to a flow of 72 MGD during 1995 utilizing a secondary activated sludge process. The many construction phases include expansion of the special projects laboratory, improvements to engine emissions (clean burn and catalytic converters), central hot and chilled water systems, and the installation of four new boilers and new chillers. Additionally, rehabilitation will involve two primary digesters. Also, eight final tanks will be demolished and be replaced by six new units. These phases are fifty percent complete and will cost over \$49.34 million.

Future Projects

Final phases for this facility will address several rehabilitation and improvement contracts and are planned for the period 1997-1998. These projects will affect the following treatment stages: secondary gas compressors, dissolved air floatation, sludge dewatering, aeration tank covers, plant-wide instrumentation, landscaping and punch list items. Operational start-up dates are anticipated during the 1999-2000 period with costs estimated at over \$46.84 million.

Coney Island, New York (Kings County)

Projects in Progress

Several construction phases at this treatment facility have begun, and others are well under way. The phased construction is estimated at \$317.54 million and includes, but is not limited to, electrical systems, HVAC, plumbing, general plant maintenance, locker rooms, and a grit removal building. The facility upgrades are expected to be complete by September 1997.

At an estimated cost of \$66.37 million, a plant support facility consisting of a conglomeration of workshops has been divided into four contracts; these are ongoing.

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

Future Projects

Proposed for 1997 are structural modifications to handle additional dry and wet weather flows (\$55 million). In addition, a proposed pilot project will experiment with a new velocity flow meter.

Major plant modification contracts necessary for rerating the flow capacity of this facility is going to bid during the period of May to November 1997. During the same aforementioned period, bids are to go out for reconstruction of the ocean outfall and the building of a new laboratory and visitors center. These contracts are estimated at \$30.5 million, \$1.8 million and \$30 million, respectively.

FDR Veterans Administration Medical Center, New York (Westchester County)

Future Project

Proposed rehabilitation work includes the replacement of the existing distributor and distribution arms of the trickling filter. Construction starting dates and costs have not been determined.

Glen Cove, New York (Nassau County)

Future Project

BNR retrofits have been recommended by the Long Island Sound Study. In order to implement the CCMP, NYS DEC has established priority projects to reduce nitrogen loadings. Planned modifications at this facility are expected to incur capital costs of about \$3.43 million. A construction schedule was not available.

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

Completed Project

At a final estimated cost of over \$360,000 a new chlorine feed system was put on line during September 1996. This project also consisted of a chlorine contact tank replacement, replacement of sludge draw valves, a new flight system in the primary settling tank, and replacement of all three sludge return pumps and valves from the secondary clarifier. The sodium hypochlorite feed pumps were also relocated.

Future Projects

Engineering studies are being proposed for a five-year plan for upgrading the treatment plant by adding four new pump stations at a cost of about \$100,000 per year.

BNR retrofits have been recommended by the Long Island Sound Study. In order to implement the CCMP, NYS DEC has established priority projects to reduce nitrogen loadings. Planned modifications at this facility are expected to incur capital costs of about \$1.52 million. A construction schedule was not available.

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

Future Project

BNR retrofits have been recommended by the Long Island Sound Study. In order to implement the CCMP, NYS DEC has established priority projects to reduce nitrogen loadings. Planned modifications at this facility are expected to incur capital costs of about \$4.23 million. A construction schedule was not available.

Huntington Sewer District, New York (Suffolk County)

Completed Projects

During the past calendar year, the Union Place sanitary sewer repairs were completed (\$54,000). Repairs were also performed on the gas redrawing and sludge piping in the secondary digester. Final estimated costs of \$159,000 were being spent for an assortment of plant modifications including replacement of the equalization and sludge pumps, upgrading of the grit removal process and scavenger waste screens, and the replacement of building doors. The scavenger waste facility was also upgraded with new influent and cleanout manholes.

Projects in Progress

A high level alarm indicator to the secondary digester cover is currently under construction at a cost of \$10,000. This work is scheduled for completion during December 1996.

The Huntington Sewer District is in the process of updating the sewer use ordinance for both commercial and residential areas.

Future Projects

Improvements to the Huntington Farms pump station are estimated to cost \$250,000. Improvements to the wastewater collection system are estimated to cost \$370,000. Replacement of 2,000 linear feet of existing sanitary sewer is also on the agenda.

BNR retrofits have been recommended by the Long Island Sound Study. In order to implement the CCMP, NYS DEC has established priority projects to reduce nitrogen loadings. Planned modifications at this facility are expected to incur capital costs of about \$2.97 million. A construction schedule was not available.

Hunts Point, New York (Bronx County)

Projects in Progress

Reconstruction of various phases of the existing treatment facility is still ongoing. Additional installations such as actuator controls, flow meters on the sludge lines, gratings, railings, outdoor lighting and fencing were re-estimated to cost \$2.637 million (1995 quotes).

Collection system improvements, rehabilitation and renovations include work on several pump stations throughout the drainage basin. Design and ongoing construction vary from 0% to 99% degrees of completeness. Pump stations currently under modification are Riverdale (\$12.2 million), and Co-Op City (\$8 million). The City Island pump station is under construction and the Hunts Point Market pump station is in final design (\$2.6 million).

A BNR retrofit was recommended by the Long Island Sound Study. Planned modifications as delineated in NYC's Nitrogen Control Action Plan including a system for biological centrate treatment began during July. These projects are expected to incur capital costs of about \$3.4 million. Additional expenditures of \$44.73 million would be needed to meet the goals of the CCMP.

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

Future Project

Improvements to the existing plant and collection system, including installations and reconstruction of the final tanks and regulators, which were slated for fiscal year 1996, have been postponed.

Inwood, New York (Nassau County)

Projects in Progress

As a result of violations of the Inwood SPDES permit limitations for BOD and TSS, this facility is operating under a Consent Order which was negotiated between NYS DEC and Nassau County. The Order established milestones to determine the feasibility of upgrading and expanding, or converting to a pump station with subsequent treatment at another wastewater facility.

Recently completed, a facility plan details the conversion of this 2.5 MGD secondary plant to a pump station.

Future Project

Estimated to cost \$9 million, pump station conversion and the installation of force mains to divert flows to the Bay Park facility is planned to begin during April 1997. An operational start-up date, as per the Consent Order, is January 18, 1999. Refer to the Bay Park write-up for additional information.

Jamaica, New York (Queens County)

Completed Projects

Three completed engineering studies/experiments conducted by in-house staff addressed the testing of different blends of thickened sludges, a new type of plug valve, and a non-slip floor epoxy for the dewatering site.

Projects in Progress

Two ongoing experiments are being conducted by in-house staff and consulting engineers. The first incorporates the use of final tank baffles to reduce solids flowing over the final weir. The second involves grease containers, one and ten cubic yard volumes, with screens on the bottom to draw off water from the waste debris.

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

Future projects

NYC DEP is posing various improvements to this facility in order to comply with SPDES limitations and requirements. Construction will be performed in two phases with milestones as contained in the Consent Order. The first phase will entail new installations of the following treatment units: a primary tank splitter box, a primary tank, a primary force main, a return activated sludge and waste activated sludge pump station, a chlorine contact tank, odor controls, and an electrical substation. The second phase will include the new installations of various units such as a sludge thickener tank, odor controls, a maintenance building, a sludge dewatering and screening wing, emergency lighting and an influent screenings building extension. Bids were awarded for most of Phase 1 agenda items. Estimates for this phase are over \$96.9 million.

Planned for late 1998, the stabilization (alternatives to correct plant performance deficiencies) modifications are estimated to cost \$72 million (\$7.2 additional costs in construction management fees).

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

Completed Project

A \$15,000 engineering study which focused on metals removal from the final effluent was completed during this past September.

Jones Beach State Park Water Pollution Control Plant (Nassau County)

Completed Project

At a final cost of \$30,000, an 1,800 GPM comminutor was installed. The unit was put into operation on June 25, 1996.

Future project

Estimated to cost \$120,000, repairs are planned for the west digester. The rehabilitative work is scheduled for the 1996-1997 winter season.

Mamaroneck, New York (Westchester County)

Future projects

A \$500,000 computer upgrade is scheduled to begin during May 1997. This system will fully automate various plant processes.

BNR retrofits have been recommended by the Long Island Sound Study. In order to implement the CCMP, NYS DEC has established priority projects to reduce nitrogen loadings. Planned modifications at this facility are expected to incur capital costs of about \$10.3 million. A construction schedule was not available.

New Rochelle, New York (Westchester County)

Projects in Progress

On December 12, 1986, NYS DEC imposed a sewer extension moratorium on the New Rochelle Sewer District; this ban is still in effect. This plant is operating at or above its permitted flow capacity. With anticipated development, such as Davids Island which is located in Long Island Sound, there is concern of insufficient plant capacity, as well as the ability to meet effluent requirements. An SSES and an I/I reduction study are ongoing. This work is expected to cost \$500,000.

This facility is operating under a State Consent Order to accomplish collection system rehabilitation and eliminate two sewer overflows. The New Rochelle Sewer District; which comprises Larchmont, a small section of Mamaroneck, New Rochelle, and Pelham Manor; anticipates a cost of \$1 million for all construction phases.

Recently under way, an interim upgrade of the facility — including new pumping equipment, and replacement of the mechanical works in the primary, final and thickener tankage — is 10% complete. This \$5 million project, which is expected to be complete in September 1997, also includes a new odor control system.

Future projects

Two modernization projects are planned for 1997. Upgrading of the multiple hearth furnaces with new air pollution controls is estimated to cost \$8 million. Secondly, a \$500,000 computer upgrade is scheduled; this system will fully automate various plant process operations.

BNR retrofits have been recommended by the Long Island Sound Study. In order to implement the CCMP, NYS DEC has established priority projects to reduce nitrogen loadings. Planned modifications at this facility are expected to incur capital costs of about \$16.7 million. A construction schedule was not available.

Newtown Creek, New York (Kings County)

Projects in Progress

Ongoing reconstruction at the Manhattan pumping station, as well as installations

(electric, HVAC, plumbing, etc.) and associated force main replacements, has been re-estimated to cost more than \$15 million.

Upgrading and expansion construction to incorporate a secondary treatment system utilizing step aeration with a reduced contact time is under way. These interim measures are necessary so that the facility can operate until a new facility plan is implemented. With a 12-year construction schedule, estimates of \$31.9 million were made for all design and construction phases. However, design work, facility planning and subsequent construction for interim upgrades are estimated at \$5 million. The interim upgrade work began during July 1993 and is scheduled for completion during March 1998. The major aspects include modifications to the engine generator stack heights, miscellaneous building and equipment system upgrades (i.e., odor control, tankage covers, digester cleaning and piping, various tank reconstructions, etc.), water main and drainage improvements, and landscaping.

The treatment enhancement pilot program, under way since October 1995, is experimenting with different polymers to improve the primary and secondary treatment phases.

The Taaffe Place pump station is under construction at a re-estimated cost of \$9 million. The Canal Street pump station rehabilitation is ongoing (more than \$1.91 million).

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

Future Project

BNR retrofits have been recommended by the Long Island Sound Study. In order to implement the CCMP, NYS DEC has established priority projects to reduce nitrogen loadings. Planned modifications at this facility are expected to incur capital costs of about \$63.9 million. A construction schedule was not available.

Northport, New York (Suffolk County)

Completed Project

Estimated at a final cost of \$5,000, a new influent pump and associated hardware were installed and went on line during the early 1996 winter season.

Project in Progress

The State-imposed sewer hookup moratorium was allowed to expire on August 31, 1994. A study was completed and recommends capacity expansion. Extraneous flows are being eliminated before plant modifications can be implemented. Sewer lines identified with

I/I problems (i.e., antiquated, misaligned, and/or root infiltration) are being cleaned, televised and relined.

North River, New York (New York County)

Projects in Progress

This facility is operating under a State Consent Order (July 1, 1992) to address issues of capacity, odor, and air emissions. Plant modifications are still under way to address odor control problems. Reconstruction of the primary and final settling tanks, rehabilitation of the digesters, aeration tank covers, odor control equipment and construction management is estimated to cost more than \$95.9 million. Refer to the Legal Activities section of this report for additional information.

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

Future Projects

Expenditures of more than \$24 million are planned which will affect all support treatment equipment. These installations, inspections and repairs will affect electrical, instrumentation and control systems; HVAC; and dock storage facilities. An alternate odor abatement system (\$15 million) will go to bid during FY '98.

Oakwood Beach, New York (Richmond County)

Projects in Progress

Construction of the Richmond Avenue pump station is nearly complete. Several other pump stations, including Cannon Avenue and Mason Avenue, are slated for rehabilitation work in late 1996 at a cost of \$2.1 million each.

Refer to the Bowery Bay write-up for information on the City-wide CSO project.

Future Project

Reconstruction work is planned for the main facility, including the plant plumbing system. This work is scheduled to start in late 1996 at a cost of \$70,000.

Orangetown Sewer District, New York (Rockland County)

Completed Project

This facility is operating under a State Consent Order (March 5, 1991) to complete



ORANGETOWN WASTEWATER
TREATMENT PLANT
ROCKLAND COUNTY, NEW YORK
RECENTLY INSTALLED COVERS FOR
TRICKLING FILTERS AND SETTLING
TANKS

an SSES (completed 1993), to institute a short-term plan to improve the existing trickling filters, and to upgrade and expand the plant capacity to 12.75 MGD. Construction was completed in October 1996. Final costs were estimated at \$8 million for all construction phases including a primary clarifier, a trickling filter, and a secondary clarifier, as well as refurbishing miscellaneous mechanical equipment.

Ossining, New York (Westchester County)

Projects in Progress

Engineering studies addressing a furnace upgrade is 5% complete.

During the fall of 1995, construction began for the installation of two new high speed centrifuges for sludge dewatering, two new sludge belt conveyors, and a new ash enclosure building. The construction costs for all items (80% complete) is about \$1.9 million. An approximate operational start-up date is October, 1996. A plant-wide conversion to natural gas is ongoing and is 70% complete. Approximately \$1 million will be incurred for a computer upgrade (5% complete) which will fully automate various plant processes.

Future Project

In order to meet new federal and state air regulations, furnace upgrades to a multiple hearth system are expected to begin during September 1997, at costs of about \$1.5 million.

Owls Head, New York (Kings County)

Completed Projects

Installation of a plant computer network has been ongoing since September 1994. A late 1996 start-up is expected; costs amounted to \$2 million.

An engineering study involved with the thermophilic digester operation was completed during June 1996.

The Avenue V pump station improvements and reconstruction were completed during August 1995. During 1996, this pump station was evaluated for additional repairs to the piping and gate valves.

Projects in Progress

Pump station upgrades are being conducted at the following locations: Van Brunt (near completion), 2nd Avenue and Nevins (10% complete), and Hamilton Avenue (near completion). No cost estimates have been provided for these upgrades.

At costs re-estimated at \$227.52 million (1995 quotes), construction upgrading is nearly complete. The work includes digester facilities, an engine generator, a pump and powerhouse, an outfall to Upper New York Bay, disinfection facilities, waterfront facilities for the sludge barge berthing area, and primary facilities. Construction, scheduled for late 1996 to mid-1997, includes reconstruction of the grit and screening building, as well as the installation of a sluice gate and weir and upgrades to the plant electrical systems.

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

Future Project

Future contracts, both construction and consultation/construction management, are being evaluated for punch list items and landscaping. Estimated costs for these projects are about \$15.88 million.

Oyster Bay Sewer District, New York (Nassau County)

Future Projects

The installation of standby generators at two pump stations is proposed at an estimated cost of \$60,000.

BNR retrofits have been recommended by the Long Island Sound Study. In order to implement the CCMP, NYS DEC has established priority projects to reduce nitrogen loadings. Planned modifications at this facility are expected to incur capital costs of about \$1.88 million. A construction schedule was not available.

Peekskill, New York (Westchester County)

Project in Progress

Automation of all processes, including remote pump stations, is currently under construction (5% complete). The estimated costs are \$1 million and the operational start-up is anticipated for May 1997.

Future Project

In order to address wastewater flows that impact potable water supplies in the Croton watershed, proposals have been made to expand this facility to 20 MGD.

Port Chester, New York (Westchester County)

Project in Progress

Bids were received and awarded during November for the installation of the continuous emissions monitoring equipment on the sludge furnace stacks. Estimated construction costs are over \$215,000 with an operational start-up anticipated for late 1997.

Future Project

BNR retrofits have been recommended by the Long Island Sound Study. In order to implement the CCMP, NYS DEC has established priority projects to reduce nitrogen loadings. Planned modifications at this facility are expected to incur capital costs of about \$5.7 million. A construction schedule was not available.

Port Richmond, New York (Richmond County)

Projects in Progress

I/I work is ongoing with allocated funds of \$1.28 million. Various pump station improvements are being implemented. In particular, the Mersereau Avenue pump station construction is still ongoing.

Reconstruction and installations costing about \$1.984 million are ongoing and involve the final treatment phases including digester storage transfer pumps, the digester pump mixing system, various sludge pumps, hypochlorination monitoring, and roof top heating systems.

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

Future Projects

Engineering studies that were planned for 1996 include an energy conservation and instrumentation assessment and an SSES (\$2.313 million). These studies have been postponed.

Modifications and improvements to the existing plant have been postponed. The planned expenditures of about \$1.171 million would address the replacement of degritter pumps and reconstruction of primary tanks. Reconstruction is planned for five tide gates at a cost of \$303,000. Additionally, the installation of climber screens is proposed at a cost of \$675,000.

Port Washington, New York (Nassau County)

Future Project

BNR retrofits have been recommended by the Long Island Sound Study. In order to implement the CCMP, NYS DEC has established priority projects to reduce nitrogen loadings. Planned modifications at this facility are expected to incur capital costs of about \$4.54 million. A construction schedule was not available.

Red Hook, New York (Kings County)

Future Projects

Plant modifications and additions are planned which will address electrical, HVAC, and plumbing at costs of \$14.875 million.

The Gowanus force main and flushing tunnel, as well as necessary dredging, will cost about \$5.3 million; bids are scheduled to be awarded during May 1997.

BNR retrofits have been recommended by the Long Island Sound Study. In order to implement the CCMP, NYS DEC has established priority projects to reduce nitrogen loadings. Planned modifications at this facility are expected to incur capital costs of about \$10.33 million. A construction schedule was not available.

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

Rockaway, New York (Queens County)

Projects in Progress

Modifications to various treatment units are still under way at estimated costs of \$2.321 million.

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

Future Projects

An SSES (\$1.98 million) and a stabilization study (\$518,000) proposed for this facility have been postponed.

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

Projects in Progress

Under way during this past August, several capital improvement projects are being implemented. New structures that are being built include a main pump station, a machine shop, and screening facilities. A total cost estimate of \$5.7 million includes the replacement of the anaerobic digester cover and centrifuges.

Springvale Sewerage Corporation, New York (Westchester County)

Completed Projects

At a final cost of \$30,000, a new chlorine contact basin and a new comminutor were installed.

Staten Island University Hospital, South, New York (Richmond County)

Future Project

It is planned that this facility divert flows to the New York City DEP's Oakwood Beach WPCP for treatment via the Hylan Boulevard Interceptor; dates and costs have not yet been finalized. Refer to the Oakwood Beach write-up for additional information.

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

Projects in Progress

This facility is operating under a State Consent Order (June 1990) to ensure secondary effluent limitations, complete the collection system renovations, and conduct a wasteload allocation study in Port Jefferson Harbor.

The replacement of various gravity sewer lines throughout the collection system has recently begun (10% of an estimated \$300,000) during this past year. Additional installations are under way to eliminate I/I problems.

A plant evaluation was conducted to determine the possibility of increasing the flow capacity (presently 2.5 MGD) while maintaining all permit limitations and requirements. This work is being reviewed by NYS DEC.

Future Projects

If approved by NYS DEC, additional treatment units will be added to accommodate

any additional flow requests from commercial and residential developments. The estimated \$3 million phased construction costs will be borne by those applying for hookups. Preliminary treatment designs propose the use of a tertiary process with a flow capacity of 0.25 MGD.

BNR retrofits have been recommended by the Long Island Sound Study. In order to implement the CCMP, NYS DEC has established priority projects to reduce nitrogen loadings. Planned modifications at this facility are expected to incur capital costs of about \$1.01 million. A construction schedule was not available.

Suffolk County Sewer District #3, Bergen Point, New York (Suffolk County)

Completed Project

The addition of two final clarifiers was completed during October 1996 at a final cost of \$6.8 million.

Projects in Progress

A building is being constructed to house three units for scavenger waste pre-treatment. This project is 50% complete and the estimated costs are \$500,000. Concurrently, the aeration tankage diffusers are being replaced at a cost of \$3.3 million (90% complete).

A \$20,000 RFP is being finalized for sludge disposal options. In-house interceptor flow studies are continuing in order to determine if additional I/I reduction is necessary. A consulting engineer is compiling an inventory of all air pollution sources to assure compliance with applicable regulations (\$25,000). Consulting engineers are conducting an energy audit. The City College of New York, in association with the New York State Energy Research and Development Authority, is conducting an independent study involving the utilization of sludge incinerator ash for a variety of applications (\$600,000).

Future Project

Equipment replacement and infrastructure repairs are in the design phase with costs estimated at about \$3 million. As of this writing, there are no construction start-up dates.

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

Project in Progress

In-house engineering staff are investigating equipment and operational changes in order to improve reliability. According to Suffolk County DPW, process control changes

have already been successful in decreasing effluent nitrogen levels.

Future Projects

A \$1.6 million equipment renovation is planned. However, construction has been postponed pending negotiations with NYS DEC. Safety equipment upgrades will be addressed on a priority basis.

BNR retrofits have been recommended by the Long Island Sound Study. In order to implement the CCMP, NYS DEC has established priority projects to reduce nitrogen loadings. Planned modifications at this facility are expected to incur capital costs of about \$700,000. A construction schedule was not available.

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

Project in Progress

This sewer district is currently operating under a State Consent Order (June 1990) to assure continued compliance and conduct a wasteload allocation study in Port Jefferson Harbor. The County is currently negotiating with NYS DEC regarding satisfaction of the Order.

Tallman Island, New York (Queens County)

Projects in Progress

A BNR retrofit was recommended by the Long Island Sound Study. Planned modifications as delineated in NYC's Nitrogen Control Action Plan are expected to incur capital costs of about \$4.5 million and began during January 1996. Additional expenditures of \$13.61 million would be needed to meet the goals of the CCMP.

Pump station construction at Lawrence and Peck Streets (re-estimated at \$6.36 million) with associated force main began during November 1994 and is ongoing. The 15th Avenue pump station modifications (\$220,000) are 96% complete.

Engineering studies presently under consideration include subjects such as thickener performance enhancement and biological nutrient removal.

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

Future Projects

Plant modifications are planned for several treatment units at total costs of \$1.638

million.

Engineering studies and pilot projects that are planned will address energy conservation and instrumentation upgrades and stabilization. This work is estimated to cost approximately \$24.1 million.

26th Ward, New York (Kings County)

Future Projects

Step one of a stabilization study will begin during FY '97 (\$800,000). Approximately \$750,000 has been allocated for installations or reconstruction at the Broad Channel pumping station. The Howard Beach pumping station recently went to contract and upgrading is ready to begin.

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

Wards Island, New York (New York County)

Projects in Progress

Engineering studies costing \$2.35 million are under way to determine plant expansion logistics and to conduct an SSES. Estimated to cost \$3.66 million, additional pilot studies to reduce nitrogen loadings will focus on sludge age and biological centrate treatment.

An interim plant upgrade and capacity expansion of 275 MGD began during FY '95. These interim measures are necessary so that the facility can maintain permit compliance and improve operating conditions for a variety of processes. All of the activities will take place on the existing plant site and at the Manhattan and Bronx grit chambers.

The major aspects of the interim upgrade comprising three phases include modifications to the chlorine contact tank, replacement of the disinfection system, upgrading of the plant electrical system, headworks replacement, elimination of two stormwater discharges, a skimmings handling facility, a primary sludge pumping facility, main sewage pump headworks, renovation of the process air system, solids handling, and new metering systems. The grit chambers will be renovated with automated equipment, flow metering and odor controls. Phase 3 will address the plant heating system, new influent gates, final sedimentation tank upgrades, and personnel and administration building upgrades. The two-year construction schedule will incur costs of more than \$98.17 million. An ultimate capacity expansion to a flow of 330 to 350 MGD will follow the interim phase sometime in the next century.

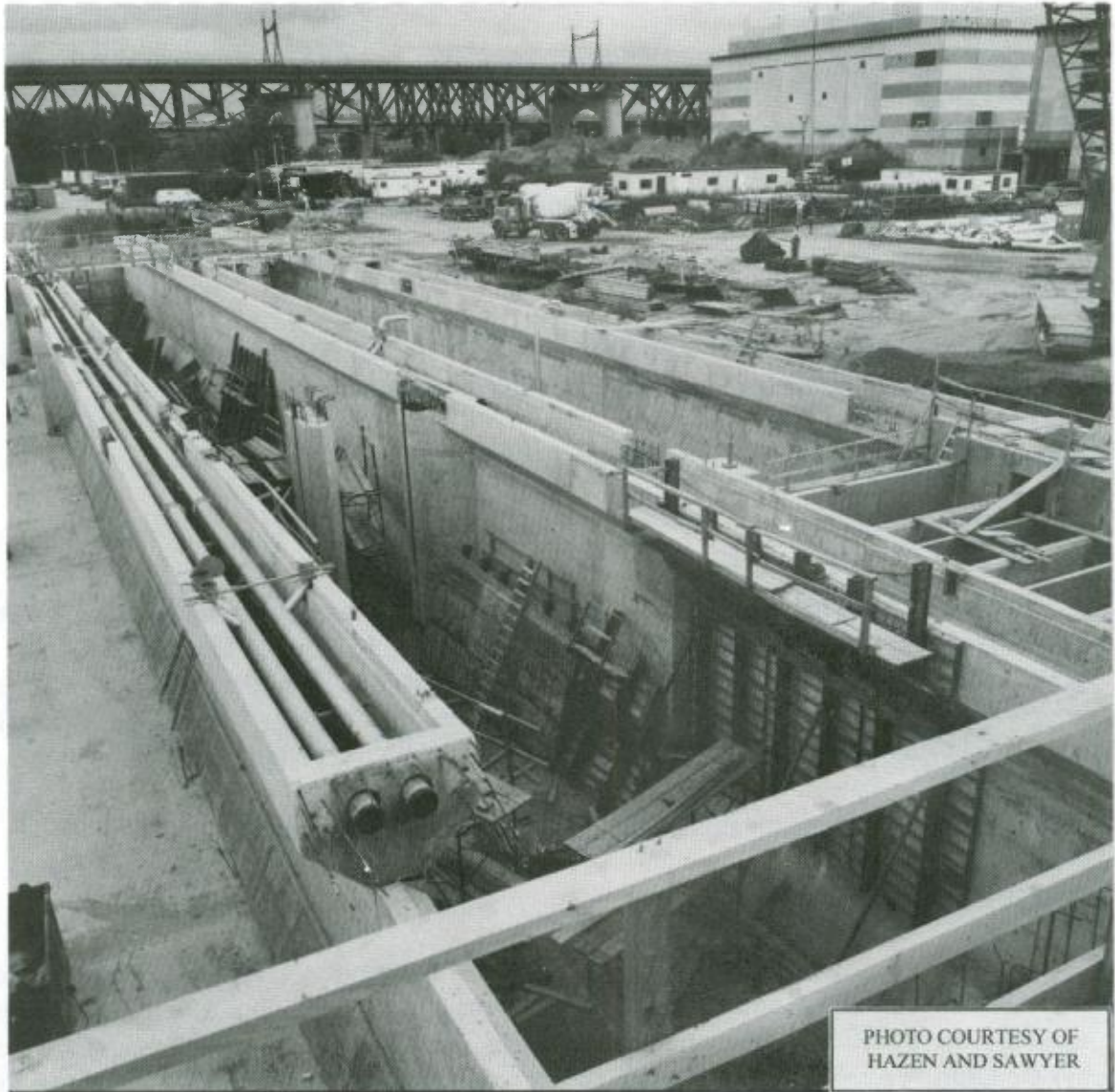


PHOTO COURTESY OF
HAZEN AND SAWYER

WARDS ISLAND WATER POLLUTION
CONTROL PLANT, NEW YORK
COUNTY, NEW YORK
FINAL SETTLING TANKS AND
AERATION TANKS

Planned modifications as delineated in NYC's Nitrogen Control Action Plan include increased sludge age and biological centrate treatment. These projects are expected to incur capital costs of about \$3.6 million and began during July 1996. Additional expenditures of \$77.21 million would be needed to meet the goals of the CCMP.

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

Future Projects

Bids will be accepted during FY '98 for additional upgrades. Estimated bids of \$60 million are expected for various reconstruction and modifications throughout the plant.

West Long Beach Sewer District, New York (Nassau County)

Future Project

An engineering study was recently completed which determined the cost and feasibility of adding a second trickling filter to this 1.5 MGD secondary plant. A construction start-up is planned for early 1997. The work will entail the installation of a new trickling filter and a multipurpose clarifier. The additional tankage will enable the facility to have a totally redundant system. Total estimated costs are \$2 million.

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

Completed Projects

Phases 1, 2, 3, and 5 of a combined sewer overflow and regulator rehabilitation project were completed during the period 1990 through July 1994, inclusive. These phases included the installation of swirl concentrators and disinfection capabilities, collection system improvements, pump station improvements, and the replacement of 2,000 linear feet of 60-inch diameter pipe for added wet weather capacity.

Phase 4 of the CSO and regulator rehabilitation was completed during early 1996. Expenditures of \$10 million provided for two swirl concentrators and disinfection facilities at the South Yonkers main plant.

Odor abatement controls for the primary thickener and dewatering facilities were on line during March 1996. Total costs incurred were over \$3.5 million.

A report was issued regarding an in-house disinfection study. The dye application protocol that will be used in the Hudson River was recently approved by NYS DEC. Field tests will commence during the spring of 1997.

Projects in Progress

As part of the Interim Decision issued by the NYS DEC Administrative Law Judge in a 1991 adjudicatory hearing, an odor study (65% complete) is being conducted. An interim odor report was submitted to NYS DEC - Region 3 during January 1992; the final report is contingent upon increased flows to the plant.

Two upgrading projects have recently started (2% complete). First, the aeration tankage is being replaced with fine pore diffusers at a cost of \$3.5 million. The second deals with the primary treatment odor controls. Estimated to cost \$9.5 million, flat aluminum covers with mist scrubbers will be installed. These projects are anticipated to be operational during December 1997 and January 1998, respectively.

Future Projects

At an estimated cost of \$5.6 million, the dewatering facility will be expanded. Construction is slated to begin during January 1997. This expenditure will provide for additional truck loading bays, sludge cake hoppers, additional odor control and various equipment enhancements. Additional projects include rehabilitation of the dual-fuel engine and digester mixing equipment (\$10.5 million). A total plant automation scheme is planned at an estimated cost of \$1.25 million.

EFFLUENT AND AMBIENT WATER QUALITY MONITORING

The Commission continued its monitoring programs of the District's effluent wastewater discharges and ambient waters this year. Due to budget constraints and a limited staff, these programs were continued at reduced levels. ISC's laboratory performs analyses on samples collected at municipal, private and industrial wastewater treatment facilities, as well as on samples from ambient water quality surveys.

For the sixth consecutive year, the Commission's research vessel, the R/V Natale Colosi, was used to conduct the sampling needed to document hypoxic (low dissolved oxygen) conditions in Western Long Island Sound and the Upper East River. Performed in support of the Long Island Sound Study, this monitoring project was conducted from July through mid-September, in cooperation with several other agencies. Shortly after completion of this year's sampling in Long Island Sound, the R/V Natale Colosi was moved to the New Jersey State Marina at Leonardo to facilitate ISC's participation in a cooperative effort with the New Jersey Department of Environmental Protection. In this survey, surface water quality samples were collected to assess the sanitary condition of shellfish beds in Raritan and Sandy Hook Bays. All samples were collected subsequent to storm events between November 1995 and May 1996. The Commission will conduct sampling in the bays again throughout the 1996-1997 winter and spring seasons.

ISC's laboratory is certified by New York State and New Jersey and continues to participate in the US EPA Water Pollution Laboratory Evaluation Program and Water Supply Microbiology Performance Evaluation Study, as well as the New York State Department of Health Non-Potable Water Bacteriology Proficiency Test. The ISC laboratory also conforms with all recommended procedures of the US Food and Drug Administrations National Shellfish Sanitation Program.

Investigations of private and municipal facilities involve a six-hour period of sampling 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 of the parameters specified in the facilities discharge permits are performed in the ISC laboratory. The data generated from these investigations are used to determine compliance with ISC's Water Quality Regulations and with each facility's N/SPDES discharge permit.

The Commission's laboratory has been located on the campus of The College of Staten Island since late 1993. In addition to the necessary, day-to-day analyses performed at the laboratory, the Commission and the CSI will be collaborating on research projects whose results would benefit the environment and the citizens throughout the tri-state region.

SPECIAL INTENSIVE SURVEYS

1996 Ambient Water Quality Monitoring in Long Island Sound to Document Dissolved Oxygen Conditions

To address the ongoing need for data on the hypoxic conditions in Long Island Sound, the US EPA - Region II again requested that the Commission conduct an intensive ambient water quality survey in support of the Long Island Sound Study. To that end, the ISC participated in a cooperative sampling effort with other government agencies during the critical summer season. The data collected by ISC greatly enhanced the existing data sets and provided consistent weekly data for Western Long Island Sound and the Upper East River. The data will also be used to measure the effectiveness of management activities and programs implemented under the Comprehensive Conservation and Management Plan. The ISC has conducted similar surveys in Long Island Sound for the past five summers.

The survey was performed using the R/V Natale Colosi, the ISC's 25-foot diesel-powered research vessel. The sampling logistics were determined at a meeting of the Long Island Sound Study Monitoring Work Group, of which ISC is a member. A map and a listing of the station locations are on the following pages.

The 1996 survey consisted of 12 weekly sampling runs conducted from July through mid-September. Eighteen stations were sampled weekly for temperature, salinity and dissolved oxygen. Temperature, salinity and dissolved oxygen (DO) were determined in situ. 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 equidistant depths.

Samples for chlorophyll-a, an indicator of algal production, were collected one meter below the surface on alternate runs. These were properly stored and preserved for analysis at the ISC laboratory. All sampling, sample preservation and analyses were done according to procedures accepted by the US EPA. Results were summarized and were forwarded weekly to US EPA - Region II's Long Island Sound Office, the Connecticut DEP Bureau of Water Management, the NYS DEC Division of Marine Resources, and the Town of North Hempstead Planning Board. The data is available from the Commission offices and will be entered into ODES, an EPA database.

Dissolved oxygen levels are a measure of the ecological health of a water body. Just as people and animal life on land require atmospheric oxygen to breathe, fish and other aquatic life consume oxygen from the surrounding water. A dissolved oxygen concentration of 5 mg/l is considered to be protective of most aquatic life. According to ISC regulations, a "Class A" water body must have a minimum dissolved oxygen content of 5 mg/l.

In general, fewer stations met the 5 mg/l standard for dissolved oxygen during 1996 than in 1995. In the summer of 1995, 94% of the surface readings and 48% of the bottom readings met the ISC "Class A" water classification requirement. In the summer of 1996, 78% of the surface readings

INTERSTATE SANITATION COMMISSION

1996 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
A3	25	40-50-30	73-45-18	Hewlett Point South of "29" F1 G 4 Sec
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 R "40" F1 G 4 Sec
B2	20	40-56-06	73-39-12	Matinecock Point 1.6 nm North of Gong "21" F1 G 4 Sec
B3M	19	40-55-12	73-38-42	Matinecock Point 0.7 nm North of Gong "21" F1 G 4 Sec
B4	15	40-54-24	73-38-06	Matinecock Point South of Gong "21" F1 G 4 Sec
C1	19	40-57-18	73-34-48	Oak Neck Point 1.8 nm North of C "19"
C2	35	40-59-06	73-30-00	Lloyd Point 1.5 nm North of Bell "15" F1 4 Sec
DI1	10	40-53-33	73-46-24	Davids Island North of "10A" Nun
DI2	6	40-53-40	73-46-00	Davids Island East of R "4" Nun
H-A3	3	40-55-24	73-43-12	Delancy Point South of C "1"
H-B	12	40-54-48	73-42-54	0.7 nm Southeast of Daymarker F1 R 4 Sec
H-C	8	40-51-54	73-40-30	Hempstead Harbor East of R "6" Bell
H-C1	11	40-53-12	73-41-42	Hempstead Harbor 2 nm East of Sands Point
H-D	7	40-50-42	73-39-36	Hempstead Harbor East of C "9"

and 22% of the bottom readings met the 5 mg/l standard. The 1996 conditions are similar to observations made in 1994, when 78% of the surface and 35% of the bottom readings met the 5 mg/l standard. The pie charts included in this section display the 1996 findings.

Very low dissolved oxygen levels, generally 3 mg/l or less, produce a condition known as hypoxia. At these levels, very few types of fish can survive and the ecosystem can support only a few hardy species. Fortunately, hypoxic conditions in the bottom waters of Long Island Sound were less severe this summer than in 1995 or 1994. Only 18 % of the 1996 bottom DO readings were below 3 mg/l, as opposed to 22% in 1995 and 33% in 1994. In addition, the minimum bottom DO concentration occurred at the end of August, later than in 1994 and 1995.

The range between the minimum and maximum weekly readings in the surface waters remained wide throughout the summer, indicating a lack of mixing. This corresponds with the lack of large storms directly affecting the Sound during the summer of 1996. Weekly averages and ranges of DO for the surface and bottom waters are presented graphically in this section.

Surface DO levels were lowest in the western portions of the Sound, and consistently increased to the east. The average summer surface DO concentration at Station A1, near the Whitestone Bridge, was 3.8 mg/l. At Station C2, in the mid-Sound, the average summer surface DO concentration was 5.9 mg/l. These results are graphically displayed in this section of the report. There are several explanations for this phenomenon. First, population density is high in the far Western Sound, and declines to the east. High population density brings with it high loads of oxygen demanding wastewater. As one proceeds east, the population living along the Sound decreases, reducing oxygen demand. In addition, the narrow channels of the far Western Sound prevent mixing with better oxygenated waters. As the Sound widens to the east, circulation and dissolved oxygen levels tend to improve.

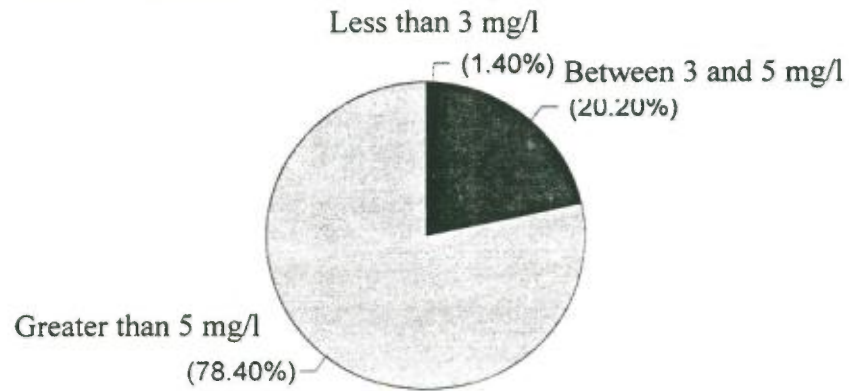
The importance of circulation in maintaining a healthy dissolved oxygen concentration can be seen by comparing a station in a narrow harbor to one in the open Sound. Station H-D, deep inside Hempstead Harbor, had an average surface DO concentration of 3.7 mg/l. At Station H-C, at the mouth of Hempstead Harbor, the average surface DO concentration was 5.9 mg/l. The average surface DO concentration at Station H-C1, located in open waters about two miles north of Station H-C, was 7.6 mg/l. These results are also shown graphically.

The Long Island Sound Study, which released its Comprehensive Conservation Management Plan in 1994, has identified human activities which may contribute to low levels of DO. Primarily, the Sound is impacted by nitrogen loadings from point and non-point discharges. This excess nitrogen acts like a fertilizer, spurring the temporary growth of algae. When the algae dies, it settles to the bottom of the waterbody, where it is degraded by oxygen-consuming bacteria.

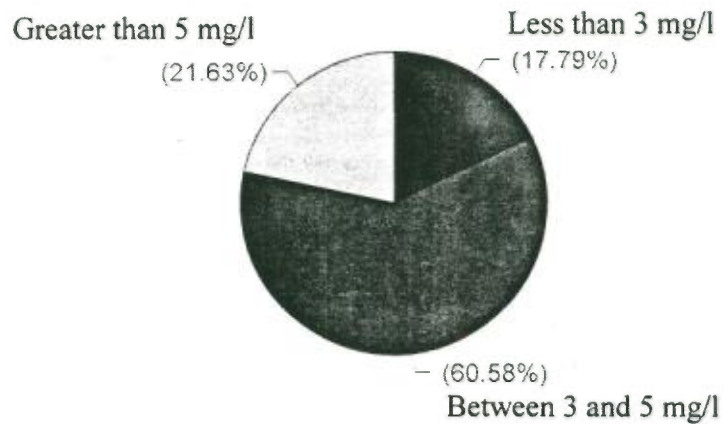
The CCMP, signed by the Governors of both Connecticut and New York, as well as the Administrator of US EPA, seeks to remedy this situation by reducing nitrogen discharges from sewage treatment plants and other point and non-point sources. On October 31, 1996, the two

Long Island Sound -- 1996 Dissolved Oxygen Monitoring Surface and Bottom Waters*

Surface Waters



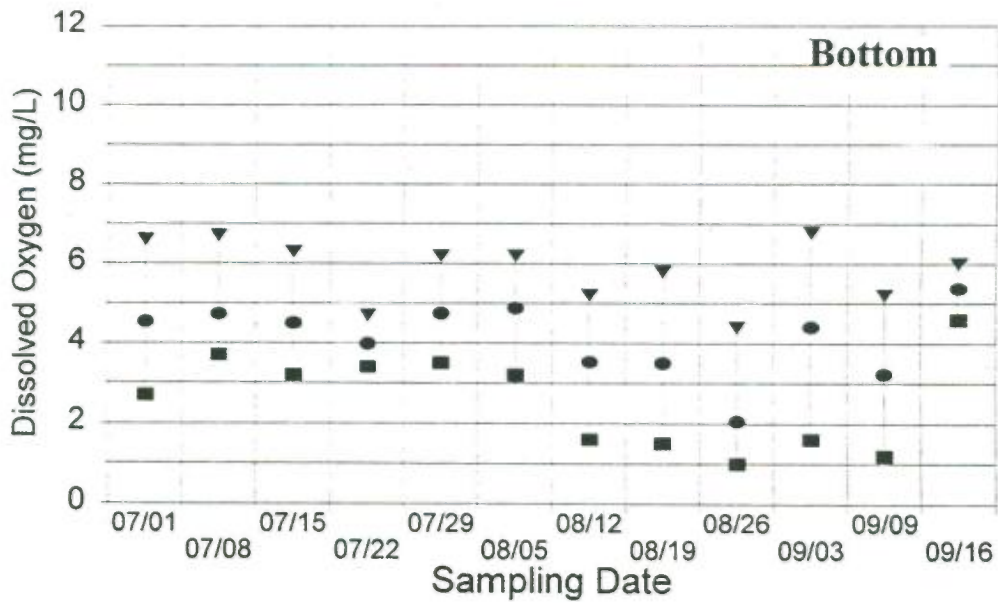
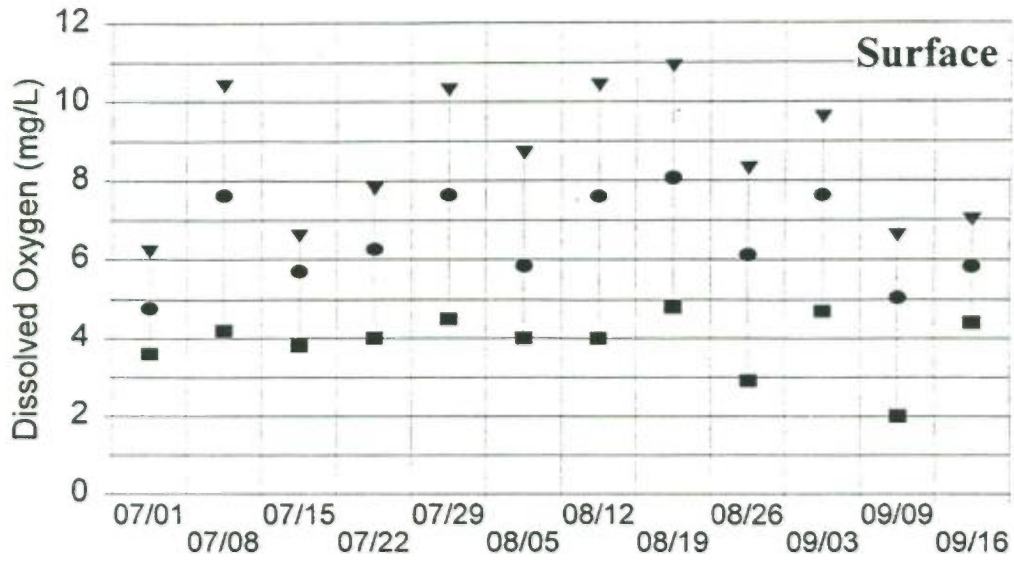
Bottom Waters



* Shown as a percentage of 208 individual readings per depth taken at 18 ISC stations during the study period.

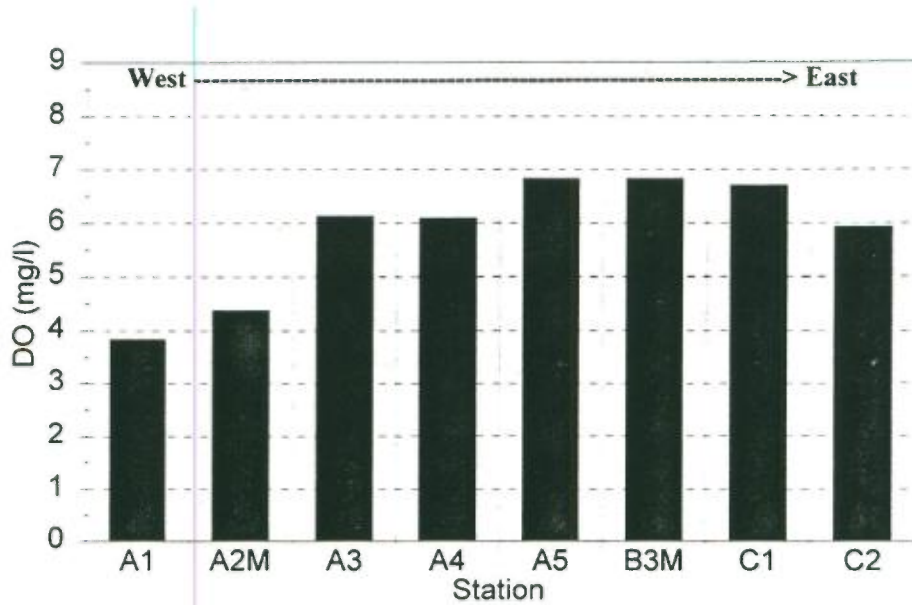
Long Island Sound -- 1996 Dissolved Oxygen Monitoring

Surface and Bottom Waters:
Average and Range of all 18 ISC Stations

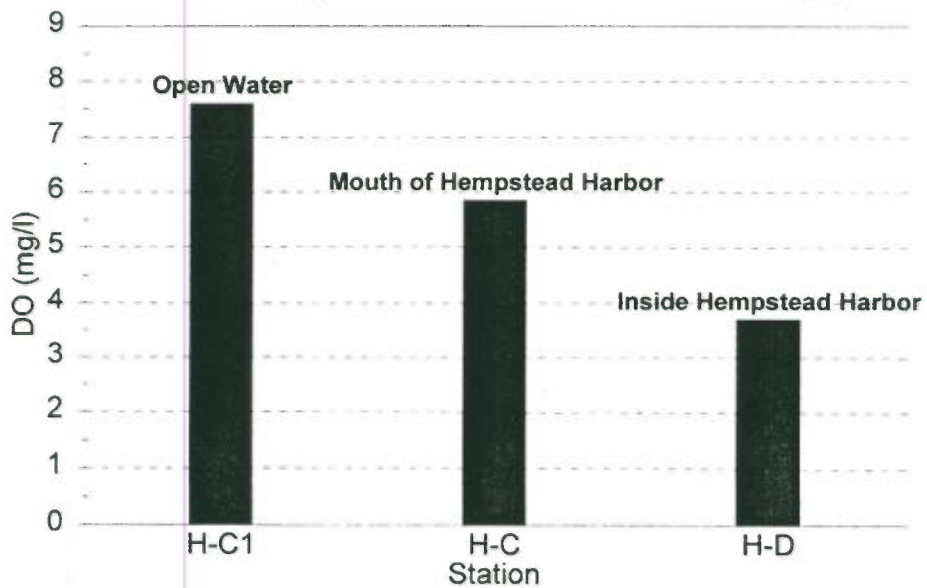


■ Minimum ▼ Maximum ● Average

Average Surface Dissolved Oxygen* For Selected Mid-Sound Stations



Open Waters vs. Inner Harbor 1996 Average Surface Dissolved Oxygen*



governors held a “Re-Commitment Ceremony” to reiterate their commitment to the Long Island Sound Agreement.

A recent study commissioned by the Management Committee of the Long Island Sound Study concluded that a decrease in dissolved oxygen levels in the Western Sound during the 1980s took place despite no increase in discharges of nitrogen into the Sound. Clearly, more research is needed to achieve a better understanding of the hypoxic conditions in Long Island Sound.

1995- 1996 Microbiological Surveys in the Shellfish Harvesting Waters of Raritan and Sandy Hook Bays

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 750,000 acres of 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 ISC to assist in sample collection in Raritan and Sandy Hook Bays during the 1995-1996 winter and spring seasons.

In accordance with criteria established by the US Food and Drug Administration’s National Shellfish Sanitation Program, sampling runs were planned in order to collect the data needed to assess the microbiological quality of the shellfish waters. The cruises were initiated by storm events with an intensity of at least 0.1 inch of rain. A window of 72 hours subsequent to the rain gave ample time to document the effects of the runoff. All samples were collected from surface waters at 36 sampling stations. A map and a listing of the sampling stations are on the following pages. The samples were transported by NJ DEP personnel for analysis of fecal and total coliform bacteria densities to the BMWCA laboratory located at Leeds Point, New Jersey.



During late October 1995, the R/V Natale Colosi was moved to and berthed at the Leonardo State Marina which is operated by the NJ DEP, Division of Parks and Forestry, State Park Service. During November, representatives of the BMWCA were aboard the R/V Natale Colosi to assess and fine tune the exact areas of concern in the bays. From November 1995 until mid-April 1996, five surveys were completed. From mid-April until early June, the R/V Natale Colosi was berthed at the Monmouth Cove Marina and during that time period, six additional survey runs were conducted.

All sample collection, storage and delivery to the Leeds Point 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 1996-1997 winter and spring seasons.

INTERSTATE SANITATION COMMISSION
1995 - 1996 SAMPLING STATION LOCATIONS FOR THE MICROBIOLOGICAL
SURVEYS IN
THE SHELLFISH HARVESTING WATERS OF RARITAN AND SANDY
HOOK BAYS

SAMPLE NUMBER	STATION NUMBER	LATITUDE (DD MM SS)	LONGITUDE (DD MM SS)	DESCRIPTION
1	916A	40 25 49	74 03 21	Leonardo State Marina
2	916C	40 26 37	74 02 48	White/orange "C" Can
3	916D	40 27 04	74 02 29	~ 800 yards East of Earle NWS
4	93A	40 27 55	74 01 33	~ 800 yards SSW of Sandy Hook Point
5	78	40 28 25	74 01 43	~ 800 yards NNW of Sandy Hook Point
6	73	40 28 56	74 01 50	~ 0.9 nm NNW of Sandy Hook Point
7	43	40 29 26	74 02 00	~ 1.3 nm NNW of Sandy Hook Point
8	38	40 29 58	74 02 10	~ 1.85 nm NNW of Sandy Hook Point
9	36	40 29 45	74 03 21	~ 2.2 nm NW of Sandy Hook Point
10	47	40 29 05	74 04 31	~ 2.7 nm NW of Sandy Hook Point
11	49A	40 28 55	74 05 27	~ 2.65 nm N of Port Monmouth
12	50	40 28 40	74 06 44	~ 1.7 nm N of Ideal Beach
13	29A	40 28 58	74 08 11	~ 1.2 nm N of Point Comfort
14	28	40 28 45	74 09 25	NW of Point Comfort
15	26A	40 28 30	74 10 40	~ 1.0 nm N of Conaskonk Point
16	24A	40 28 20	74 11 52	Keyport Harbor
17	56	40 27 56	74 11 43	Keyport Harbor
18	61A	40 27 23	74 11 35	Keyport Harbor
19	62	40 27 35	74 10 25	~ 1.0 nm N of Conaskonk Point
20	63B	40 27 46	74 09 07	West of Point Comfort
21	86A	40 27 28	74 07 44	East of Point Comfort
22	88A	40 27 10	74 06 17	Ideal Beach
23	97B	40 26 53	74 04 51	~ 0.9 nm N of Port Monmouth
24	97A	40 27 00	74 03 53	White/orange "D" Can
25	918	40 27 41	74 02 38	~ 0.6 nm NNE of Earle NWS (east pier head)
26	914D	40 27 35	74 01 14	~ 0.7 nm W of Sandy Hook (flag pole)
27	910E	40 27 28	74 00 27	~ 0.2 nm SW of Sandy Hook (flag pole)
28	908C	40 26 40	74 00 23	Horseshoe Cove
29	906C	40 26 08	73 59 51	Horseshoe Cove
30	906B	40 25 40	74 00 06	Spermacetti Cove
31	906A	40 25 15	74 00 18	~ 0.8 nm E of Atlantic Highlands Day marker
32	907	40 25 06	74 00 44	~ 0.4 nm E of Atlantic Highlands Day marker
33	908	40 25 10	74 01 15	Atlantic Highlands Day marker
34	910A	40 25 32	74 01 48	~ 0.3 nm N of Atlantic Highlands Day marker
35	912	40 25 58	74 02 26	~ 0.9 nm N of Atlantic Highlands Day marker
36	914	40 25 59	74 02 48	~ 0.9 nm N of Leonardo

NATIONAL ESTUARY PROGRAM

The National Estuary Program (NEP) was established in 1984 and provides assistance to estuaries of national significance that are threatened by pollution, development or overuse. The NEP provides federal assistance to develop a Comprehensive Conservation and Management Plan (CCMP) for designated estuaries. Presently, more than 20 estuaries located along the Atlantic, Pacific and Gulf of Mexico coastlines, as well as in Puerto Rico, are developing or implementing CCMPs. Within the Interstate Sanitation 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 is being carried out by the US EPA - Regions I and II. The New York-New Jersey Harbor Estuary Program is being coordinated by the US EPA-Region II.

The Commission continued to actively participate as a member of the Management Committees and various work groups for the Long Island Sound Study (LISS) and the New York-New Jersey Harbor Estuary Program (HEP). The New York Bight Restoration Plan, whose preparation was required by Congress in 1987, was incorporated into the HEP because the two systems are linked within the larger ecosystem. The Dredged Material Management Plan has also been incorporated into the HEP. The Commission has been involved with these plans since their inception.

In September 1994, the final CCMP for the LISS was signed by the Governors of the States of New York and Connecticut, and the Administrator of the US EPA. The Plan details priority areas of concern: education, low dissolved oxygen, toxins, pathogens, floatables, living marine resources, land use/development and public involvement. It will be essential, on an ongoing basis, to determine the effectiveness of management actions and programs implemented. For future years, it will be necessary to provide pertinent information that can be used to evaluate and, if necessary, refocus management decisions. On October 31, 1996, the Governors of New York and Connecticut met to affirm their commitment to the actions set forth in the CCMP. The re-signing ceremony took place on the shores of western Long Island Sound — on the campus of the State University of New York Maritime College, Fort Schuyler, in the Bronx, New York.

The draft CCMP for the HEP was issued in February 1995. The plan addresses the following issues of concern: habitat and living resources, toxic contamination, dredged material, pathogen contamination, floatable debris, nutrients and organic enrichment, rainfall-induced discharges, and public involvement/education. During September 1996, environmental groups reached an agreement with the federal government to close the Mud Dump Site by September 1, 1997. This action sets a definitive date for the cessation of ocean disposal activities and the necessity to implement all viable alternatives. The final CCMP is anticipated to be issued in early 1997 and will be amended to reflect this accelerated implementation schedule.

As a member of the Management Committees and various work groups for the aforementioned studies, ISC is keenly aware of the data needs that exist both for ambient waters and

for point and non-point sources. Besides coordinating with these programs, which also have representation from ISC's three member States, the Commission will continue to coordinate its sampling activities and schedules with the environmental departments of these States in order that the needs of the Region are best met with the limited resources available to all agencies.

Through voter referendums in both New York and New Jersey States, environmental bond acts were passed in 1996. In the \$1.75 billion New York State Clean Water/Clean Air Bond Act of 1996, \$200 million was designated for the LISS implementation. Both the New York and New Jersey environmental bond acts earmark significant resources to the HEP for harbor pollution control — the New York act designated \$25 million to implement the CCMP for the HEP and \$185 million of the \$300 million New Jersey act is specified for dredging related projects in the New Jersey/New York port area.

COMBINED SEWER OVERFLOWS

Subsequent to the Commission's 1988 CSO inventory report, the 1989 region-wide CSO Planning Conference, and technical meetings with State environmental departments and US EPA, the Commission continues to investigate which pollutants are amenable to control at CSOs. The Commission is keeping abreast of the National and State CSO strategies, including the development of wet weather effluent requirements for CSOs and how they would be applied in this region. ISC is also addressing CSO control through its participation in the New York-New Jersey Harbor Estuary Program.



This year, the Commission undertook a project to compile information on the status of CSO progress in ISC District; this project is a follow-up to the aforementioned 1988 CSO report. While this project is still in its early stages, the Commission will be compiling information on dates, milestones, implementation, etc., for those entities with CSOs. ISC will also be putting information into a geographic information system (GIS) that is compatible with the work that is being done on GIS by ISC's member states. After an initial compendium of the information is prepared, ISC will continuously update the data. The Commission will also be supplying the information to the HEP and LISS.

The ISC 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 their action. The Commission then works with that department to determine the most expeditious manner to alleviate the violation. During the 12-month period ending September 30, 1996 a total of 57 outfalls were inspected during dry weather; none had any discharge during the ISC's inspections.

PUBLIC EDUCATION AND OUTREACH

The Commission remains committed to conducting an aggressive public involvement, education and outreach program. ISC continues to lecture at local schools and colleges on a variety of environmental topics and Commission activities. In addition to its day-to-day activities, the remainder of this section outlines some of the ISC's involvement in this area.

1996 Science and Technology Expo

The purpose of the Science and Technology Expo is to foster creativity and student interest in the sciences. Sponsored by the New York Academy of Sciences, for the third consecutive year, a staff member volunteered as a judge. The Expo was held on April 26 and 27, 1996. Exhibits were displayed and judged in Manhattan for all high schools located throughout all five New York City boroughs. A total of 584 projects were submitted for competition; the first place winner was awarded a prize of \$10,000. For many students this is an early entry into the world of science and the first opportunity to interact with professional role models.

Law Student Internships

Since February 1992, the ISC has been part of the Pro Bono Students America/New York and New Jersey (PBSA/NY & NJ) database. The database includes a network of more than 300 organizations including not-for-profits, government, courts and private firms. One of the most significant developments in recent years is the development of pro bono programs and PBSA is one of the primary groups organizing this effort. The ISC is also listed with area law school career placement offices through which students seek paid part-time employment. As the ISC must consider fiscal limitations, the opportunity to work with PBSA has proven mutually beneficial to both the ISC and the student participants. Over the years, the Commission has attracted approximately a dozen students from area law schools.

Most of the students have worked for course credits as externs. The legal externship program allows a student to earn two course credits for 190 - 210 hours, or 13 - 15 hours per week, for a semesters work while being supervised by a mentor attorney. Time sheets are kept and a reflective journal is maintained by the student. At the end of a semester, written evaluations must be submitted to the law school. An ongoing evaluation of student work product is essential and the Commissions interns have engaged in tasks as varied as drafting affidavits, attending case conferences, drafting correspondence, participating in conference calls, and engaging in basic research. All selected students have specifically requested a placement with the Commission or with an environmental organization. Some have had chemistry backgrounds or experience with water quality work. Unfortunately, students cannot continue placement for credit beyond one semester, requiring constant turnover. The Commissions participation in the program has resulted in ISC getting students who have provided valuable assistance to ISC's legal Counsel while the students are gaining valuable practical experience on a wide variety of topics.

The students have found their assignments rewarding and invaluable to their careers. The participants have commented that they were given the opportunity to apply the skills which they were learning in the classroom, and the experience provided them with a perspective which greatly enhanced their understanding of the legal concepts being taught.

Our World Underwater

The ISC has enjoyed a long-standing relationship with Our World Underwater, a non-profit corporation focusing on educational opportunities for young people going into various fields of marine science, such as marine biology and oceanography. Its programs include a Scholarship Society to support a gifted student for a year to study, experience and interact with a wide range of professionals involved in and related to the field of scuba diving. In this way, a positive contribution can be made to the protection of and foster involvement in the underwater realm.

Since the Commission began its relationship with Our World Underwater in 1989, all scholarship recipients have enjoyed a "hands-on" experience. This year's recipient was from North Carolina and took an active role in assisting staff aboard the R/V Natale Colosi during one of the summer surveys on Long Island Sound. Since none of the recipients hosted by ISC have been from this region, their experience is compounded by this being their first visit to the Northeast, as well as by them also being afforded the opportunity to view this urban environment from the water.

Career Day 1996

On June 5th, approximately 450 students in grades 6 through 8 at P.S. 83 in the Bronx received an introduction to the world of work as well as life lessons from a wide variety of professionals. The many disciplines included business, entertainment, law enforcement, public service, health and the environment. A Commission staff member represented the governmental/environmental aspects of the work-a-day-world detailing historical and timely water quality issues affecting the tristate metropolitan area. A forum such as this type contributes to a successful adulthood and gives the opportunity to young people to interact with role models that can help develop plans for their future careers.

III. AIR POLLUTION

GENERAL

The Commission has engaged in an interstate air pollution program since 1962. Over the years, the program has focused on investigations, applied research, and advocacy of regional viewpoints on environmental issues. The ISC continues to receive air pollution complaints. This year, as in the past, the complaints came almost exclusively from Staten Island. For the 12-month period ending September 30, 1996, a total of 86 air pollution complaints were received, a decrease of 39% from the previous 12-month period.

For the ninth consecutive year, the Commission participated in the regional Ozone Health Message System that is activated during the summer months. Health advisories were issued within the region, primarily by the New Jersey Department of Environmental Protection. The public is informed of the health advisories through communications from wire services and radio and television stations. ISC also sent the advisories it received to the environmental and health agencies of all member States.

Pollutant values and meteorological conditions did not warrant activation of the High Air Pollution Alert and Warning System in the New Jersey-New York-Connecticut Air Quality Control Region, which ISC has coordinated since 1970.

AIR POLLUTION COMPLAINTS

Staten Island, especially the western portion in the vicinity of the New York-New Jersey border and the areas near the Fresh Kills Landfill, generates more citizens' complaints than any other area in the Commission's jurisdiction. From 1982 until 1989, when budget cuts forced its closing, the Commission operated a field office on Staten Island. The field office received hundreds of odor complaints annually. The ISC staff assigned to that office responded to and investigated citizens complaints — including nights, weekends and holidays. The necessity of reactivating ISC's air pollution response staff and the Staten Island office is clearly illustrated by the frustrations expressed to ISC by citizens. Reactivation can only occur by the full restoration of funding to the Commission.

ISC's 24-hour-a-day, 7-day-a-week answering service (718-761-5677) has been maintained and complainants are contacted during regular office hours. When available, ISC personnel are dispatched to investigate ongoing complaints and, when warranted, Commission personnel are contacted during non-office hours. The ISC also contacts the appropriate enforcement agencies and health departments to perform follow-up.

For the 12-month period ending September 30, 1996, the Commission received a total of 86 complaints. This represents a decrease of 39% compared to the previous 12-month period. Of the

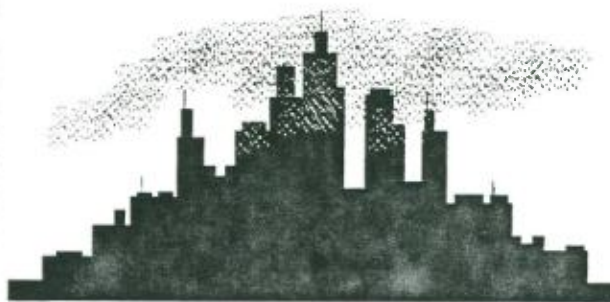
86 complaints received, a total of 80 — or 93% of the complaints — originated from Staten Island. The accompanying tables enumerate the complaints categorized by the community from which they originated and by the type of odor.

Five Staten Island communities were the source of at least five complaints to the Commission during this period. Annadale reported the most complaints, with a total of ten. Over the years, the majority of the complaints received by the ISC come from the same group of communities. A total of six complaints were received from other New York City boroughs and New Jersey.

Odors were classified into nine categories. The "garbage" category was reported most frequently, representing almost 40% of the total. Over the past ten years, the "garbage" category has dominated the complaints. In each of the past 10 years — except for the 1990-1991 period when the "garbage" category was second in the number of complaints received with approximately 9% of the total — this category annually registered the most complaints with the number of complaints ranging from 20% to 40% of the calls received annually.

OZONE HEALTH MESSAGE SYSTEM

For the ninth 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, from May to September, when higher concentrations of ozone occur.



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.

During 1996, the Commission continued to participate in this program, although at a somewhat reduced level due to budgetary constraints. ISC 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 ISC relayed "health advisory" messages to the appropriate

DISTRIBUTION OF AIR POLLUTION COMPLAINTS BY COMMUNITY
FROM OCTOBER 1995 TO SEPTEMBER 1996

COMMUNITY	COMPLAINTS	
	NUMBER	% TOTAL
Annadale	13	15.2
Tottenville	12	14.0
New Springville	10	11.6
Arden Heights	8	9.3
Huguenot	6	7.0
New Brighton	2	2.3
Oakwood	2	2.3
Port Ivory	2	2.3
Port Richmond	2	2.3
Travis	2	2.3
Other Staten Island*	21	24.4
Non-Staten Island**	6	7.0
TOTAL	86	100.0

* Represents communities from which only one complaint was reported.

** Represents complaints received from other New York City boroughs and from New Jersey.

DISTRIBUTION OF AIR POLLUTION COMPLAINTS
 BY TYPE OF ODOR
 FROM OCTOBER 1995 TO SEPTEMBER 1996

TYPE OF ODOR	COMPLAINTS	
	NUMBER	% OF TOTAL
Garbage	34	39.5
Oil/Gasoline	7	8.1
Burning Rubber/Plastic	3	3.5
Cat Urine/Ammonia	6	7.0
Sulfur/Eggy	1	1.2
Chlorine	11	12.8
Others*	24	27.9
TOTAL	86	100.0

*Represents odors that were not identified specifically by the complainants.

government environmental and health agencies. Individual States issue their own health messages which identify specific counties where ozone levels are a special health threat. During 1996, it was not necessary for ISC to issue a region-wide Ozone Health Message.

REGIONAL AIR POLLUTION WARNING SYSTEM

The Interstate Sanitation Commission 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 Commission Counsel's functions fall into two general areas. The first is that of furnishing advice and counsel as those activities relate to the day-to-day operations of the Commission and its Commissioners. The second category consists of the legal elements of Commission policy, and particular matters of current interest in water and air pollution abatement. Although the first grouping encompasses significant work, it is seldom of the sort that would warrant specific mention in this annual report. The second grouping, which includes active legal matters in both administrative and court forums, may continue or recur and requires attention in successive annual reports. The bulk of this report is accordingly devoted to these items of major interest — both those that recur and those that deserve special note as activities during the past year.

Throughout 1996, the Commission sought to preserve the environmental achievements gained over the past few years. With the assistance of the United States Environmental Protection Agency, the ISC succeeded in obtaining broad directives that will assist in ensuring that the waters in and around the New York-New Jersey Harbor will be protected from floatable debris. As further incentive to those whose operations could contribute to water pollution from floatable debris, the Commission is preparing a compendium of entities with combined sewer overflows in the Interstate Sanitation District, including the status of CSO abatement projects. The Commission continued its commitment to safeguarding the waters and shorelines from debris escaping from the Fresh Kills Landfill located on Staten Island by having ISC field personnel conduct regular inspections. These inspections enabled the Commission to lend support to contentions that operations at the landfill were less than optimal and led to a federal Court mandate to institute certain safeguards.

Efforts to add secondary treatment to wastewater systems for certain municipalities that lacked them has ultimately proved successful. The Consent Decrees entered into with Hudson County, New Jersey, municipalities — Hoboken, Jersey City, Bayonne, and the Township of North Bergen — are in the process of being terminated.

Legitimate concerns about inconsistencies in the reported flows at some municipal treatment plants in New York City prompted scrutiny from citizen groups and legislators alike. The Commission continues to maintain that the use of independent consultants can only assist in ensuring the integrity of a plants operation.

The ISC is diligent in insisting that the Commission's regulations are properly included in discharge permits throughout the Interstate Sanitation District. This became the subject of some concern in two discharge permits issued in New Jersey — one to an industrial facility and the other to a publicly-owned sewage treatment plant. In the matter involving the industrial facility, the Commission became a party to an adjudicatory hearing; the issue was satisfactorily resolved and the industry withdrew its request for a hearing. In the case pertaining to the publicly-owned sewage treatment plant, the Commission filed a Notice of Intent to Request an Adjudicatory Hearing in the

event that the Commission's requirements are not properly included in the permit; resolution of this issue is still pending.

The Commission continued its participation in a clearinghouse to attract area law students who are interested in environmental affairs to work as legal interns, gaining course credit and/or valuable experience in the process. This program has proven successful in that the interns gain valuable experience and the Commission gets assistance for its legal counsel.

LITIGATION AGAINST NEW YORK CITY'S OPERATION OF THE FRESH KILLS LANDFILL

During the spring of 1996, the Township of Woodbridge contacted the Commission and the State of New Jersey concerning medical waste and other debris that had washed up upon Woodbridge beaches. The Township of Woodbridge wished to bring a motion before the Court for relief. Commission field personnel had continued to monitor the garbage transfer, as well as other operations at the landfill in accordance with the dictates of the federally sanctioned Consent Decree. Reports from the field showed that New York City's operation of the landfill was spotty, at best, and that some of the interim measures which were labor intensive were erratic. This irregular behavior on the part of the City accounts for the position that the ISC and the co-plaintiffs have taken on building a permanent solution — the single-barge enclosed unloader (EBUF) — to the problem of floatables entering the waterways and washing up upon beaches.

The ISC filed affidavits in support of Woodbridge's motion and both the State of New Jersey and ISC appeared along with Woodbridge in federal Court. The plaintiffs presented sufficient evidence, with the aid of photographs and videotapes, to establish that there was medical debris washing up upon Woodbridge beaches and that some questions could be raised about whether the City was properly operating the landfill. The Township of Woodbridge prevailed in part of their request when the Court ordered that an independent monitor be appointed for a period of thirty days to examine whether the landfill was a source of the debris washing up upon Woodbridge beaches, and whether medical waste was escaping from the landfill. After the independent monitor filed his report in the late summer, confirming that some medical waste escaped from the landfill and that debris was escaping from the landfill, the Court ruled that the evidence was insufficient to establish that the landfill was the source of the medical waste and other debris on the Woodbridge beaches. Nonetheless, the Court did mandate that all parties endeavor to implement the recommendations for improvement made by the independent monitor.



Around the same time that the parties met to discuss how best to continue operation of the landfill, the legislatures of both New York State and New York City passed laws decreeing that the

landfill would close by the end of the year 2001. Consequently, the City informed the plaintiffs that they would make an application to the Court to be relieved of the obligation to build any enclosed barge unloader. During the summer of 1996, the City and State convened a joint task force to explore the various options available to the City, and to develop an accelerated plan to close the landfill. The report of that task force was issued at the end of November. Simultaneously, the plaintiffs advised the City that due to their inability to implement many of the recommendations, the plaintiffs would invoke certain provisions of the Consent Decree that gave them the right to have disputes resolved before a Special Master. After the City went on record before the Court that they would make an application for relief by mid December, the plaintiffs let it be known that they would forebear on resolving any disputes before the Special Master.

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. The Commission is willing to consider appropriate alternative solutions that offer the same safeguards as those of the enclosed barge unloader. The Commission is committed to ensuring that floatable debris is prevented from entering the waterways around the landfill. The background that leads up to the most recent events is presented below.

This suit (Township of Woodbridge v. City of New York, Civil No. 79-1060) relates to the waterborne debris that enters the District's waters as a result of the garbage unloading operations at the Fresh Kills Landfill. 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 is transported to the Fresh Kills Landfill by barge.

In 1986, the ISC 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 ISC's cross-motion for contempt in September 1987. After investigations were conducted by Commission 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 ISC's Water Quality Regulations. ISC 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 recommendations for alternative long-term measures by January 1, 1990.

The parties include ISC and co-plaintiffs Township of Woodbridge, State of New Jersey, Save Our Shores and Groups Against Garbage (both citizen groups); and the defendant, the City of New York. During 1995, the defendant moved to dismiss this action by plaintiffs-intervenors

Groups Against Garbage and Save Our Seas, Inc., t/a Save Our Shores, after the parties had tried unsuccessfully to locate the citizen groups. The Court removed them as parties to the litigation.

An evidentiary hearing was held in 1989 before a Special Master who found that while debris continued to enter the waterway, the parties could wait for the January 1, 1990 consultant's report. The Independent Consultant's reports issued 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 ISC submitted a revised Consent Decree to the parties in January 1991. The revisions, among other things, involved the retention of the Independent Monitor for as long as the current system will be utilized, an accelerated schedule for implementation of the single-barge enclosed unloader, an evaluation of the need for a second unloader within a reasonable time, and the continuation of the stipulated penalty provisions of the Consent Decree.

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.

During 1993, the City initiated the development and implementation of a facility design program. The City moved forward in 1994 and completed and documented preliminary civil, architectural, structural, mechanical and electrical designs for the enclosed barge unloading facility. Most significantly, the City prepared draft permit applications and regulatory compliance documents pertaining to solid waste regulations, SPDES and stormwater discharges during construction, the New York State Coastal Zone Management Policy, and the New York City Waterfront Revitalization Policy. As the actual date for building was only three years away, in 1995, the City finalized submissions of permit application and compliance documents to regulatory agencies. For fiscal year 1995, the City appropriated \$42 million for construction of the EBUF. Through May of 1997, \$20 million has been allocated for construction of an unloader that is to be completed by March 31, 1998.

In late 1995 and early 1996, the Court informed the parties that almost \$10,000 remained in a technical assistance grant made pursuant to the Consent Decree to citizen groups and the Township of Woodbridge. The Court sought comment on how the funds should be disbursed. The City objected to the monies being disbursed to the Township of Woodbridge. Since plaintiffs-intervenors Groups Against Garbage and Save Our Seas, Inc., t/a Save Our Shores, had been dismissed from litigation, ISC supported the monies being turned over to the only remaining group certified to receive technical assistance monies, the Township of Woodbridge. Ultimately the Court followed the recommendation of the Special Master to distribute the funds to the Township of Woodbridge.

LITIGATION AGAINST HUDSON COUNTY MUNICIPALITIES

As an indicator of the success of the Commission, the United States Environmental Protection Agency and the State of New Jersey, orders terminating certain Consent Decrees are under consideration. The ISC, US EPA and the State of New Jersey jointly entered into Consent Decrees with five Hudson County, New Jersey, municipalities to assure that the treatment plants complied with federal, state and interstate regulations. All have achieved full plant operation in compliance with final NPDES permit limits and ISC regulations.

In U.S. ISC v. Hoboken, et. al. Civil No. 79-2030, ISC sued in federal District Court in New Jersey to enforce ISC's Water Quality Regulations at treatment plants located in five Hudson County, New Jersey, municipalities. ISC intervened in the underlying Clean Water Act (CWA) enforcement action in 1986. The Commission sued to enforce its own Water Quality Regulations which set effluent limits for certain pollutants such as BOD, TSS and fecal coliform bacteria. ISC sought a ruling that the defendants were liable under the CWA for exceeding discharge limits imposed by the US EPA and NJ DEP acting under federal authority in the form of a National Pollutant Discharge Elimination System (NPDES) permit.

In accordance with the CWA, the Commissions regulatory standards are set forth in the NPDES permits issued by the State of New Jersey as a delegated permit authority. The inclusion of ISC's regulations in such permits make the Commissions standards enforceable NPDES restrictions and a violation of the CWA. In 1987, the court granted plaintiffs' motions for partial summary judgment on the issue of liability against defendants Bayonne, West New York, and North Bergen. The Judge held that the NPDES permits did not extend the municipalities' deadline for abiding by interim standards rather than secondary treatment limits. After lengthy negotiations with the plaintiffs, all of the defendants signed Consent Orders.

The parties involved are the United States and ISC, co-plaintiffs, and the following major defendants: the Hudson County Utilities Authority, Guttenberg, Weehawken, Union City, and the State of New Jersey, which was a necessary named defendant pursuant to the Clean Water Act.

Hoboken

The Hoboken plant and the Hoboken-Union City-Weehawken Sewage Authority (HUCWSA) agreed to undertake a construction program in order to provide compliant treatment to all sewage and wastewater flows. This included building the liquid train facility for secondary treatment. In mid-June 1994, a Stipulation and Order was prepared by ISC on behalf of all parties that amended the Consent Decree of January 1991. The Hoboken defendants originally agreed to complete the secondary treatment facilities and to reach effluent limits by January 8, 1993, but failed to meet this deadline. Amendments to the original Consent Decree established new dates for having the effluent pump station and the ultraviolet system for disinfection on-line. It was believed that the Hoboken plant would be certified as fully operational by the end of 1994. The certification, however, did not occur until 1995.

During the summer of 1995, the ISC participated in a Compliance Evaluation Inspection with the New Jersey Department of Environmental Protection. The inspection was designed to lead to a certification for the treatment plant. With the publication of the inspection, a facility that handles sewage for three municipalities has been successfully engineered toward completion.

NEW YORK CITY SEWAGE TREATMENT PLANT PERMIT HEARINGS

Of the issues certified for adjudication in 1989 by administrative decision, by the end of 1996, three issues continued unresolved — whole effluent toxicity, flow measurement and plant capacity (which, for purposes of expediency, the latter two issues are treated as one).

Background

This proceeding involves modifications to the SPDES permits for New York City's 14 sewage treatment plants. The issue which consumed most of 1996 — untreated discharges, or interim floatables abatement — culminated in the Commission filing an administrative appeal. The details of that administrative appeal are explained below under the section entitled floatables abatement. Some history of the proceeding is detailed below.

The ISC initiated a suit in State Supreme Court in Queens County, New York, in November 1988 (ISC v. Jorling), over the NYS DEC - Region 2's failure to hold a hearing prior to issuing SPDES permits for wastewater discharges from 14 sewage treatment plants operated by the New York City Department of Environmental Protection (NYC DEP). In a Judgment issued in April 1989, the Court held that the NYS DEC had acted arbitrarily and capriciously in not holding a hearing and ordered that an adjudicatory hearing be held. This proceeding is the hearing resulting from that Judgment. The petitioners in the state court case became intervenors in the ongoing permit proceeding.

The parties involved are the ISC and co-petitioners Natural Resources Defense Council (NRDC), Hudson River Fishermen's Association (HRFA), Sierra Club and the Environmental Defense Fund (EDF), as well as the NYS DEC and the NYC DEP.

Throughout 1995, several issues were in varying stages of discussion. Nutrient removal which had been certified as an issue in 1991, was settled during 1994. Nutrient removal became an issue following an appeal of its exclusion by the ALJ. On January 31, 1991, in the NYS DEC Commissioners interim decision, the Commissioner decided that nitrogen and nutrient removal were proper issues for adjudication and overruled the ALJ's decision.

A decision by the NYS DEC Commissioner in April 1994, approved the nitrogen permit conditions for incorporation into the SPDES permits and ordered that certain conditions take effect immediately. 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 take effect in 1996 and 1997, the City must 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 will then jointly determine the most appropriate new systems to implement in order to meet specified nitrogen reduction goals.

All 14 of the City treatment plants are included in the permits with the exception of North River because this facility is the subject of a federal lawsuit in which capacity, among other things, is at issue.

At those plants outside of the East River and Jamaica Bay, there will be monthly data collection programs initiated. The monthly sampling sites will include influent, primary effluent, final effluent and side streams. In the long-term, the Nitrogen Control Feasibility Plan will comprehensively analyze additional methods to meet much greater levels of nitrogen reduction for future discharges.

Floatables Abatement

The issue of untreated discharges was finally resolved during 1996. During January 1996, US EPA sought leave to review and comment upon a proposed Modification to the June 1992 CSO Consent Decree. Following the main thrust of ISC's argument, US EPA recommended expanded coverage of the Consent Decree by increasing the areas impacted and the number of catch basins utilized for an interim program. It had been agreed that catch basins presented a viable alternative to ISC's proposal for intensified street sweeping as an interim methodology for preventing floatables from entering the waterways. The Commission had appealed the June 1995 Modification, citing the limited areas covered and the additional time sought to accomplish what the City had promised to achieve by 1993; US EPA essentially agreed with the Commission.

US EPA's intervention brought yet another Modification in March 1996. The ISC asked for information about types of catch basins that had been newly introduced by the latest March 1996 Modification. The City's newest proposal would not have included hooding these catch basins. The Commission's concerns were resolved when ISC was invited to a site visit during which the many types of catch basins were viewed, the utility of using hoods in different types of catch basins was observed, and the cleaning procedure was witnessed. The Commission's remaining concerns had to do with the ease of reading and understanding the many permutations that the original June 1992 Consent Decree had gone through. Although the ISC suggested that this dilemma be addressed by using one document to incorporate all changes, the ALJ ruled that given the narrow focus of the Modification, no one could appreciate the scope and the details of the NYC DEP's CSO abatement program without first reading the June 1992 CSO Abatement Order.

The March 1996 Modification is a more rigorous program than the June 1995 Modification to the CSO Consent Decree. With US EPA's input, the City agreed to greater areal coverage of catch

basins and replacement of more catch basins than had been proposed in the 1995 document — clearly a superior program.

Whole Effluent Toxicity/Flow Measurement /Plant Capacity

Throughout the fall of 1996, the City indicated that they wished to initiate a dialog on the three remaining issues — whole effluent toxicity, flow measurement and plant capacity. As of early November, all potentially interested parties were contacted. The City advised the parties that NYS DEC was contacting the ALJ, who would certify the remaining issues he deemed appropriate for negotiation or adjudication. An early January 1997 conference was arranged.

ENFORCEMENT PROCEEDING AGAINST NORTH RIVER WATER POLLUTION CONTROL PLANT

Concerns have continued unabated about the precipitous 24 MGD drop in flow at the North River water pollution control plant that occurred in 1994. During February 1996, the ISC transmitted its comments on NYS DEC's October 1995 recommendations. The Commission's examination of events surrounding the flow drop at the North River water pollution control plant addressed flow reporting, calibration of flow meters, conservation, BOD, snow melt, and in-sewer monitoring. The Commission commended NYS DEC and sought to have NYS DEC's recommendation to involve an independent engineer implemented immediately. The independent engineer would be charged with responsibility for calibrating the entire flow metering system at New York City's sewage treatment plants, as the Commission felt that this issue had been inadequately examined.

In 1995, the Commission had become aware of an extraordinary drop in flow at the North River sewage treatment plant operated by the NYC DEP. The drop took on exceptional proportions because, while significant drops at New York City plants have not been uncommon, flow levels have usually returned to normal ranges. This was not the case with this particular drop. The North River water pollution control plant has a permitted dry weather flow capacity of 170 MGD. In the spring of 1994, the flow dropped by 24 MGD. Given the Commission's interest in issues concerning flow measurement and plant capacity, objective indicators were looked at to enable those concerned to explore answers. While the ISC was examining this phenomenon, others were also looking at it closely.

By the spring of 1996, concerns on the part of many continued unabated. The Manhattan Borough President, in a letter to NYC DEP, recommended an independent review of North River's flow measurement system as a way of bolstering confidence in NYC DEP's management of the plant. At the same time, NYS DEC in a reply to ISC's examination of the problem, represented that although supportive, they were still pondering the question of independent calibration of the City's treatment plants' flow meters. ISC has long espoused the position that given the City's own acknowledgements of inconsistencies in flow and the City's varying explanations, which have

included faulty calibration of meters, coupled with the dramatic 24 MGD drop in flow, it is reasonable to support the use of an independent outside entity to calibrate the system. At a New York State Senate Special Legislative Hearing held in June, the Commission testified and the ISC maintained the same position — independent calibration is required in order to ensure some indicia of reliability.

The City has indeed made a movement toward addressing the concerns of many about the drop and the questions that have been raised about the flow metering system. The Commission has met with the City and the City has agreed to share several reports of independent consultants mandated by Court Orders. Some have been received, and the ISC is awaiting others. The City has also made its Quarterly Conservation Reports available. It has been acknowledged that many of the conservation measures adopted were not in place at the time of the 24 MGD drop. NYS DEC continues to reassess its position on independent calibration. Despite the City's efforts, and an end-of-year meeting with a coalition of elected officials, deep concerns still persist that the only way to ensure some indicia of reliability is through calibration by an independent outside entity.

Lending further support to the importance of the operation at the North River sewage treatment plant, in September 1996 the United States Justice Department filed an amicus brief on behalf of the Coalition. The United States adopted a position that the ISC has held for some time now — *if flow to a plant is increased beyond maximum capacity, the result will be less than optimal pollutant removal and potential violation of permit-mandated removal standards. Continued flow at levels above the flow limit could impair pollutant removal efficiency...* The City had argued that the federal Court had no jurisdiction since flow was not a permitted parameter.

A Coalition of groups on the west side of Manhattan — concerned about prospective development and who had brought an action against the City in federal Court (the particulars are explored herein) — commissioned a consultant to conduct an examination of the plant flow. The ISC agreed to assist the Coalition in examining any patterns to ascertain whether or not this drop was indeed a phenomenon. The actual drop in flow had occurred in the spring of 1994, but was brought to light in 1995. US EPA and NYS DEC investigated the occurrence and ISC prepared a report of the Commission's findings which was shared with NYS DEC.

The Coalition for a Livable West Side, joined by Soundwatch, Inc.; New York City Environmental Quality, Inc.; Citizens United Against Riverwalk, Inc.; and Union Square Community Coalition, Inc. filed a complaint in federal Court on December 15, 1992, against the City of New York. The Commission provided technical expertise and assistance. This action followed the NYS DEC Commissioners decision denying ISC and the other plaintiffs party status in NYS DEC's enforcement action regarding permit violations at the City's North River water pollution control plant. The plaintiffs sought an injunction against additional hook-ups to both the North River and Wards Island treatment plant service areas until the quantity of sewage to those plants is reduced to an amount less than that stated in the SPDES permits, or until additional plant capacity is attained through construction. North River's permitted dry weather flow limit of 170 MGD had been exceeded for several months through January 1992. Similarly, the flow at Wards Island

exceeded its limit of 250 MGD. The complainants argued that dry weather flow limits are effluent standards within the meaning of the Clean Water Act and must be enforced by the federal Court.

With the addition of the United States Justice Department as an interested party, several important tenets await a ruling by the federal Court. Among the more important ones are the following: (1) flow limits contained in state permits are enforceable under the citizen suit provisions of the Clean Water Act, (2) citizen enforcement under the CWA is not limited to limitations on illegal discharges of specific pollutants, (3) flow limits are effluent standards under the CWA, and (4) violations of flow limits in North River and Wards Island are actionable in citizen suits.

BROOKLYN NAVY YARD RESOURCE RECOVERY FACILITY PERMIT HEARING

Anxious to gain City Council approval of an update to its solid waste management plan, in February 1996, the City administration agreed to a new environmental impact study for a proposed controversial incinerator at the Brooklyn Navy Yard. Opponents of the facility had blocked City Council approval of the solid waste plan because it did not include a new study.

The City administration also agreed to a City Council request that City-wide recycling of mixed paper start by June 1997, a year earlier than planned. The administration needed City Council approval of the solid waste plan so that it could apply to NYS DEC for a permit for the City's last remaining landfill — Fresh Kills on Staten Island — by a March deadline.

The Brooklyn Navy Yard Resource Recovery Facility (BNYRRF) has been a subject of sustained interest for several years. In the era of enhanced recycling, there are some who question the need for incineration. Those voices apparently won out in the summer of 1995 when the Mayor's Office of the City of New York, citing improvements in the City's recycling program, announced that plans for building an incinerator would be put on hold indefinitely.

The initial environmental impact statement on the BNYRRF had been done well before the commencement of an administrative hearing on permit requirements for the municipal solid waste page report detailing reasons to consider a new environmental impact statement. The Public Advocate had sought the assistance of the Commission to ensure the completeness of the record relied upon for their report, as well as with citing recent case law. It was following the issuance of a Resolution calling for a new environmental impact statement that the Mayor's Office took action to set aside the incinerator for the time being.

Although by late 1992 the City's recycling program had not been finally approved by NYS DEC, that agency had approved a comprehensive solid waste management plan (SWMP) for the City. The plan included initiatives for waste reduction, recycling and composting, as well as the Brooklyn Navy Yard "waste to energy" project.

In June 1996, NYS DEC approved a draft modified SPDES permit for a Brooklyn Navy Yard cogeneration project.

**WASTEWATER TREATMENT PLANTS DISCHARGING
INTO INTERSTATE SANITATION DISTRICT WATERS
1996**

	ISC RECEIVING WATER CLASSIFICATION	DATE OF CONSTR.	FLOW AVG. (MGD)	FLOW DESIGN (MGD)	TYPE OF TREAT- MENT	ESTIMATED POPULATION SERVED
<u>PLANT</u>						
<u>CONNECTICUT</u>						
<u>Fairfield County</u>						
Bridgeport -East Side	B-1	1996+	7.6	10.0	Secondary(AS)	44,000
-West Side	B-1	1996+	29.5	30.0	Secondary(AS)	112,000
Fairfield	A	1982+	8.8	9.0	Secondary(AS)	40,000
Greenwich	A	1994+	9.8	12.5	Secondary(AS)	35,000
Norwalk	B-1	1980+	15.7	15.0	Secondary(AS)	60,000
Stamford	B-1	1991+	16.1	20.0	Secondary(AS)	103,000
Stratford	A	1992+	10.7	11.5	Secondary(AS)	50,000
Westport	A	1975+	1.9	2.8	Secondary(AS)	14,600
<u>New Haven County</u>						
Milford -Beaver Brook	A	1987+	2.1	3.1	Secondary(AS)	19,000
-Housatonic	A	1987+	6.5	8.0	Secondary(AS)	21,500
New Haven -East Shore	B-1	1993+	33.9	40.0	Secondary(AS)	215,000
West Haven	B-1	1996+	7.9	12.5	Secondary(AS)	55,000
<u>NEW JERSEY</u>						
<u>Bergen County</u>						
Edgewater	B-1	1989+	3.0	6.0	Secondary(PO)	21,000
<u>Essex County</u>						
Passaic Valley Sewerage Commissioners	B-1	1988+	287.0	330.0	Secondary(AS)	1,300,000
<u>Hudson County</u>						
North Bergen M.U.A. -Woodcliff	B-1	1991+	2.7	2.9	Secondary(TF)	21,300
North Hudson Sewerage Authority						
-Adams Street (Hoboken)	B-1	1994+	11.2	48.0	Secondary(TF)	75,000
-River Road (West New York)	B-1	1992+	7.2	10.0	Secondary(TF)	38,000
<u>Middlesex County</u>						
Middlesex County Utilities Authority	A	1994+	124.4	147.0	Secondary(PO)	752,000
<u>Union County</u>						
Joint Meetings of Essex & Union Counties	B-2	1991+	68.2	85.0	Secondary(AS)	500,000
Linden Roselle Sewerage Authority	B-2	1989+	14.5	17.0	Secondary(AS)	70,000
Rahway Valley Sewerage Authority	B-2	1991+	29.5	40.0	Secondary(AS)	175,000

**WASTEWATER TREATMENT PLANTS DISCHARGING
INTO INTERSTATE SANITATION DISTRICT WATERS
1996**

	ISC RECEIVING WATER CLASSIFICATION	DATE OF CONSTR.	FLOW AVG. (MGD)	FLOW DESIGN (MGD)	TYPE OF TREAT- MENT	ESTIMATED POPULATION SERVED
<u>PLANT</u>						
<u>NEW YORK</u>						
<u>Nassau County</u>						
Bay Park	A	1992+	53.6	70.0	Secondary(AS)	496,160
Belgrave Sewer District	A	1995+	1.4	2.0	Secondary(TF)	12,000
Cedar Creek	A	1995+	51.6	72.0	Secondary(AS)	504,000
Cedarhurst	A	1968+	0.8	1.0	Secondary(TF)	6,000
Glen Cove	A	1981+	4.5	8.0	Secondary(AS)	29,000
Great Neck Sewer District	A	1990+	2.5	3.8	Secondary(TF)	13,400
Great Neck Village	A	1995	1.0	1.5	Secondary(TF)	9,000
Inwood	A	1989+	1.1	2.5	Secondary(TF)	7,651
Jones Beach	A	1990+	0.1	2.5	Secondary(TF)	Seasonal
Lawrence	A	1983+	1.3	1.5	Secondary(TF)	6,200
Long Beach	A	1994+	6.5	7.5	Secondary(TF)	38,000
Oyster Bay Sewer District	A	1992	1.1	1.8	Secondary(TF)	8,500
Port Washington Sewer District	A	1991+	2.7	4.0	Secondary(TF)	33,000
West Long Beach Sewer District	A	1986+	0.52	1.5	Secondary(TF)	5,000
<u>New York City</u>						
<u>Bronx County</u>						
Hunts Point	B-1	1977+	129.0	200.0	Secondary(AS)	629,927
<u>Kings County(Brooklyn)</u>						
Coney Island	A	1965+	104.3	100.0	Secondary(AS)	602,097
Newtown Creek	B-1	1967+	278.3	310.0	Secondary(AS)	1,039,294
Owls Head	B-1	1991+	125.2	120.0	Secondary(AS)	761,479
Red Hook	B-1	1987	38.0	60.0	Secondary(AS)	192,215
26th Ward	A	1975+	78.7	85.0	Secondary(AS)	271,240
<u>New York County(Manhattan)</u>						
North River	B-1	1986	156.3	170.0	Secondary(AS)	584,192
Wards Island	B-1	1979+	235.0	250.0	Secondary(AS)	1,004,213
<u>Queens County</u>						
Bowery Bay	B-1	1978+	124.8	150.0	Secondary(AS)	727,117
Jamaica	A	1978+	80.0	100.0	Secondary(AS)	632,148
Rockaway	A	1978+	24.2	45.0	Secondary(AS)	94,471

**WASTEWATER TREATMENT PLANTS DISCHARGING
INTO INTERSTATE SANITATION DISTRICT WATERS
1996**

	ISC RECEIVING WATER CLASSIFICATION	DATE OF CONSTR.	FLOW AVG. (MGD)	FLOW DESIGN (MGD)	TYPE OF TREAT- MENT	ESTIMATED POPULATION SERVED
<u>PLANT</u>						
<u>NEW YORK (con't)</u>						
<u>NEW YORK CITY (con't)</u>						
<u>Queens County</u>						
Tallman Island	B-1	1979+	59.1	80.0	Secondary (AS)	388,214
<u>Richmond County</u>						
<u>(Staten Island)</u>						
Atlantic Village**	A	1985	-	0.075	Secondary(AS)	-
Elmwood Park Condominiums*	B-1	1974	-	2.0	Primary	20,000
IS-7	A	1964	-	0.02	Secondary(AS)	1,000
Mount Loretto Home-Plants #1 & #2*	A	1962	0.041	0.041	Septic Tank	1,000
Oakwood Beach	A	1979+	30.0	40.0	Secondary(AS)	151,585
Point East Condominiums*	A	1986	-	0.16	Extended Aeration w/Sand Filtration	300
Port Richmond	B-2	1979+	41.0	60.0	Secondary(AS)	172,268
Princess Bay	A	1987	0.101	0.16	Extended Aeration w/Sand Filtration	700
PS-3	A	1969	-	0.004	Extended Aeration	1,000
PS-42	B-2	1967	-	0.002	Secondary(AS)	1,100
Saint Joseph's School*	A	1963	-	0.02	Septic Tank with Sand Filtration	1,200
Staten Island University Hospital. South*	A	1995+	0.051	0.06	Secondary(AS)	-
Treetop Village*	A	1985	-	0.25	Extended Aeration w/Sand Filtration	-
<u>Rockland County</u>						
Joint Regional Sewerage Board -Town of Haverstraw	A	1989+	5.0	8.0	Secondary(AS)	33,000
Orange & Rockland Utilities*	A	1984	0.003	0.01	Secondary(AS)	105
Orangetown Sewer District	A	1985	9.3	12.8	Secondary(TF)	46,800
Palisades Interstate Park						
-Bear Mountain Plant	A	1967+	0.033	0.30	Secondary(TF)	20,000
-Tallman Mountain Plant	A	1968	0.010	0.01	Secondary(AS)	Seasonal
Rockland County Sewer District #1	A	1995+	23.8	26.0	Secondary(RD)	160,000
Stony Point	A	1985+	1.06	1.0	Secondary(AS)	12,000

**WASTEWATER TREATMENT PLANTS DISCHARGING
INTO INTERSTATE SANITATION DISTRICT WATERS
1996**

	ISC RECEIVING WATER CLASSIFICATION	DATE OF CONSTR.	FLOW AVG. (MGD)	FLOW DESIGN (MGD)	TYPE OF TREAT- MENT	ESTIMATED POPULATION SERVED
<u>PLANT</u>						
<u>NEW YORK (con't)</u>						
<u>Suffolk County</u>						
Huntington Sewer District	A	1988+	1.6	2.5	Secondary(TF)	25,000
Northport	A	1972+	0.29	0.34	Secondary(AS)	3,500
Suffolk County Sewer District #1	A	1988+	0.7	2.5	Secondary(RD)	12,000
Suffolk County Sewer District #3	A	1989+	20.1	30.0	Secondary(AS)	215,000
Suffolk County Sewer District #6	A	1973+	0.59	2.0	Secondary(AS)	6,000
Suffolk County Sewer District #21	A	1989	2.0	2.5	Secondary(BO)	20,000
<u>Westchester County</u>						
Blind Brook (Rye)	A	1985+	3.7	5.0	Secondary(AS)	30,000
Buchanan	A	1990+	0.22	0.5	Secondary(AS)	2,400
Coachlight Sq. Condo. Asso. Inc.*	A	1992+	0.03	0.05	Secondary(AS)	210
Mamaroneck	A	1993+	16.6	20.6	Secondary(AS)	80,000
Metro North (Harmon Shop)*	A	1985+	-	0.4	Physical/Chemical	500
New Rochelle	A	1982+	15.9	13.6	Secondary(AS)	80,000
Ossining	A	1981	6.4	7.0	Secondary(AS)	40,000
Peekskill	A	1980+	6.9	10.0	Secondary(AS)	35,000
Port Chester	A	1990+	4.3	6.0	Secondary(RD)	25,000
Springvale Sewerage Corporation*	B-1	1991+	0.11	0.13	Secondary(RD)	1,500
Yonkers Joint Treatment	A	1988+	96.8	92.0	Secondary(AS)	476,900
<u>Federal and Military</u>						
Camp Smith (Westchester County)	A	1988+	0.057	0.24	Secondary(TF)	2,400
FDR Veterans Administration Medical Center (Westchester County)	A	1982+	0.19	0.4	Secondary(TF)	Patient Count
Gateway National Recreation Area (Floyd Bennet Field, Kings County)	A	1981+	0.122	1.0	Secondary(TF)	5,000
Military Ocean Terminal (Hudson County)	B-1	1982+	0.09	0.18	Secondary(AS)	2,500

NOTES: Except for the ISC 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

(AS) Activated Sludge (BO) Biochemical Oxidation (PO) Pure Oxygen

(RD) Rotating Disc (TF) Trickling Filter

**SLUDGE PRODUCTION FROM
WASTEWATER TREATMENT PLANTS DISCHARGING
INTO INTERSTATE SANITATION DISTRICT WATERS**

1996

<u>PLANT</u>	SLUDGE (1) GENERATED TONS/YEAR	SLUDGE PERCENT SOLIDS	SLUDGE DISPOSAL METHOD
<u>CONNECTICUT</u>			
<u>Fairfield County</u>			
Bridgeport -East Side	44.000	6	Incineration(2)
-West Side	90.000	6	Incineration(2)
Fairfield	5.000	18	Compost/Landfill
Greenwich	6.500	16	Compost/Landfill
Norwalk	70,473	5	Incineration(2)
Stamford	*5.415	-	Landfill
Stratford	32.333	6.5	Trucked Out
Westport	199.5	-	Incineration(2)
<u>New Haven County</u>			
Milford -Beaver Brook	388	1.5	Incineration(2)
-Housatonic	1.785	18	Incineration(2)
New Haven -East Shore	-	-	Incineration(2)
West Haven	*2.000	27	Incineration/Landfill
<u>NEW JERSEY</u>			
<u>Bergen County</u>			
Edgewater	2.700	20	Incineration(2)
<u>Essex County</u>			
Passaic Valley Sewerage Commissioners	76.000	55	Landfill
<u>Hudson County</u>			
North Bergen M.U.A. -Woodcliff	3.700	9	Incineration(2)
North Hudson Sewerage Authority			
-Adams Street (Hoboken)	10.220	25	Beneficial Reuse(2)
-River Road (West New York)	2.972	4.52	Beneficial Reuse (2)
<u>Middlesex County</u>			
Middlesex County Utilities Authority	200.000	27	Beneficial Reuses
Joint Meetings of Essex & Union Counties	2.000,000	0.5	Landfill

**SLUDGE PRODUCTION FROM
WASTEWATER TREATMENT PLANTS DISCHARGING
INTO INTERSTATE SANITATION DISTRICT WATERS**

1996

<u>PLANT</u>	SLUDGE (1) GENERATED TONS/YEAR	SLUDGE PERCENT SOLIDS	SLUDGE DISPOSAL METHOD
<u>NEW JERSEY (con't)</u>			
<u>Union County</u>			
Linden Roselle Sewerage Authority	46.000	5	Compost
Rahway Valley Sewerage Authority	18.636	18.9	Landfill
<u>NEW YORK</u>			
<u>Nassau County</u>			
Bay Park	41.113	19.49	Landfill
Belgrave Sewer District	1.625	5.3	Landfill
Cedar Creek	37.179	19.3	Landfill
Cedarhurst	-	-	Compost
Glen Cove	3.865	22	Landfill
Great Neck Sewer District	1,000	24	Landfill
Great Neck Village	22	4	Landfill
Inwood	8,928	3.1	Landfill
Jones Beach	-	-	Trucked Out
Lawrence	*22	-	Compost
Long Beach	*555	26	Landfill(2)
Oyster Bay Sewer District	+868	4	Trucked Out
Port Washington	*1,100,000	32	Incineration
West Long Beach	775	5	Bay Park
<u>New York City</u>			
<u>Bronx County</u>			
Hunts Point	101.679	27	Land Application/Landfill Cover
<u>Kings County(Brooklyn)</u>			
Coney Island	(3)		Land Application/Landfill Cover
Newtown Creek	(3)		Land Application/Landfill Cover
Owls Head	(3)		Land Application
Red Hook	8,599	27	Landfill
26th Ward	73.688	27	Land Application/Landfill Cover

**SLUDGE PRODUCTION FROM
WASTEWATER TREATMENT PLANTS DISCHARGING
INTO INTERSTATE SANITATION DISTRICT WATERS**

1996

<u>PLANT</u>	SLUDGE (1) GENERATED TONS/YEAR	SLUDGE PERCENT SOLIDS	SLUDGE DISPOSAL METHOD
<u>NEW YORK (con't)</u>			
<u>New York City (Manhattan)</u>			
North River	(3)		Land Application/Landfill Cover
Wards Island	108.036	27	Land Applications
<u>Queens County</u>			
Bowery Bay	48.888	27	Land Application/Landfill Cover
Jamaica	21.826	27	Land Application/Landfill Cover
Rockaway	(3)		Land Applications
Tallman Island	19.281	27	Land Application/Landfill Cover
<u>Richmond County (Staten Island)</u>			
Oakwood Beach	21.248		Landfill
Port Richmond	(3)		Landfill
Princess Bay	-	-	Oakwood Beach
Staten Island University Hospital. South	28.000	25	Offsite
<u>Rockland County</u>			
Joint Regional Sewerage Board - Town of Haverstraw	2.833	123.4	Landfill
Orange & Rockland Utilities	-	-	-
Orangetown Sewer District	3.750	23	Incineration
Palisades Interstate Park			
Bear Mountain Plant	-	-	-
Tallman Mountain Plant	-	-	-
Rockland County Sewer District #1	2.400	20	Landfill
Stony Point	585	18	Landfill
<u>Suffolk County</u>			
Huntington Sewer District	+393	20.0	Landfill
Northport	+1.087	3	Incineration(2)
Suffolk County Sewer District #1	+7.093	3	Incineration(55%), Landfill(45%)

**SLUDGE PRODUCTION FROM
WASTEWATER TREATMENT PLANTS DISCHARGING
INTO INTERSTATE SANITATION DISTRICT WATERS
1996**

<u>PLANT</u>	SLUDGE (1) GENERATED TONS/YEAR	SLUDGE PERCENT SOLIDS	SLUDGE DISPOSAL METHOD
<u>NEW YORK (con't)</u>			
<u>Suffolk County (con't)</u>			
Suffolk County Sewer District #3	66,153	26	Incineration(55%), Landfill(45%)
Suffolk County Sewer District #6	+4,068	2.5	Incineration(55%), Landfill(45%)
Suffolk County Sewer District #21	+21,530	1.6	Incineration(55%), Landfill(45%)
<u>Westchester County</u>			
Blind Brook (Rye)	-	-	Pumped to Port Chester
Buchanan	+4,941	2.5	Trucked Out
Coachlight Sq. Condo. Asso. Inc.	-	-	Trucked Out
Mamaroneck	*2,700		Pumped to New Rochelle
Metro North (Harmon Shop)	-	-	-
New Rochelle	*2,800	-	Incineration
Ossining	9,000	20	Incineration
Peekskill	3,650	3	Sent to Ossining
Port Chester	4,880	5	Incineration/Landfill
Springvale Sewerage Corporation	1,193	-	Trucked Out
Yonkers Joint Treatment	37,039	26.7	Lime Stabilization(2)
<u>Federal and Military</u>			
Camp Smith (Westchester County)	18	15	-
FDR Veterans Administration Medical Center (Westchester County)	-	-	Trucked Out
Gateway National Recreation Area (Floyd Bennet Field, Kings County)	-	-	Landfill
Military Ocean Terminal (Hudson County)	2,119	1	-

NOTES: All information and data are supplied by the individual operating entities and are presented as supplied.

(-) Denotes no information.

(*) Reported as dry tons per year.

(+) Estimated volume.

(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.

**INTERSTATE SANITATION COMMISSION
FINANCIAL STATEMENT FY 1996**

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, 1995 to June 30, 1996:

CASH BOOK BALANCE AS OF JUNE 30, 1995 \$1,024,408.12

RECEIPTS

Connecticut - FY '96	\$ 65,000.00
New York - FY '96	315,000.00
New Jersey - FY '96	315,000.00
EPA - FY '95	70,600.00
EPA - FY '96	217,500.00
Interest	49,268.73
Miscellaneous Receipts	<u>5,095.72</u>

TOTAL RECEIPTS 1,037,464.45

Sub-Total \$2,061,872.57

DISBURSEMENTS

TOTAL DISBURSEMENTS 964,158.28

CASH BOOK BALANCE ON JUNE 30, 1996 \$1,097,714.29

U.S. Treasury Bills	\$ 848,066.36
Insured Money Market Accounts	237,498.54
Checking Accounts	<u>12,149.39</u>
	<u>\$1,097,714.29</u>

GLOSSARY

ACOE	Army Corps of Engineers
ALJ	administrative law judge
ANSP	Academy of Natural Sciences of Philadelphia
BGD	billion gallons per day
BMWCA	Bureau of Marine Water Classification and Analysis
BNR	biological nutrient removal
BNY	Brooklyn Navy Yard
BOD	biochemical oxygen demand
CCMP	Comprehensive Conservation and Management Plan
COAST	Clean Ocean and Shore Trust
CSI	College of Staten Island
CSO	combined sewer overflow
CWA	Clean Water Act
DEC	Department of Environmental Conservation
DEP	Department of Environmental Protection
DO	dissolved oxygen
DPW	Department of Public Works
EBUF	enclosed barge unloading facility
EDF	Environmental Defense Fund
EPA	Environmental Protection Agency
FY	fiscal year
GIS	geographic information system
HEP	Harbor Estuary Program
HRFA	Hudson River Fisherman's Association
HUCWSA	Hoboken-Union City-Weehawken Sewerage Authority
HVAC	heating, ventilating and air conditioning
I/I	infiltration/inflow
ISC	Interstate Sanitation Commission
ISD	Interstate Sanitation District
LISS	Long Island Sound Study
MGD	million gallons per day
NEP	National Estuary Program
NHSA	North Hudson Sewerage Authority
NJPDES	New Jersey Pollutant Discharge Elimination System
NPDES	National Pollutant Discharge Elimination System
NRDC	Natural Resources Defense Council
N/SPDES	National/State Pollutant Discharge Elimination System
NYC	New York City
NYS	New York State

GLOSSARY

(continued)

ODES	Ocean Data Evaluation System
PBSA/NY & NJ	Pro Bono Students America/New York & New Jersey
R/V	research vessel
RFP	request for proposals
RRF	resource recovery facility
SCSD	Suffolk County Sewer District
SPDES	State Pollutant Discharge Elimination System
SSES	sewer system evaluation survey
STP	sewage treatment plant
SUNY	State University of New York
SWMP	Solid Waste Management Plan
T/A	trading as
TSS	total suspended solids
WPCP	water pollution control plant