

# INTERSTATE SANITATION COMMISSION

*A TRI-STATE ENVIRONMENTAL AGENCY*



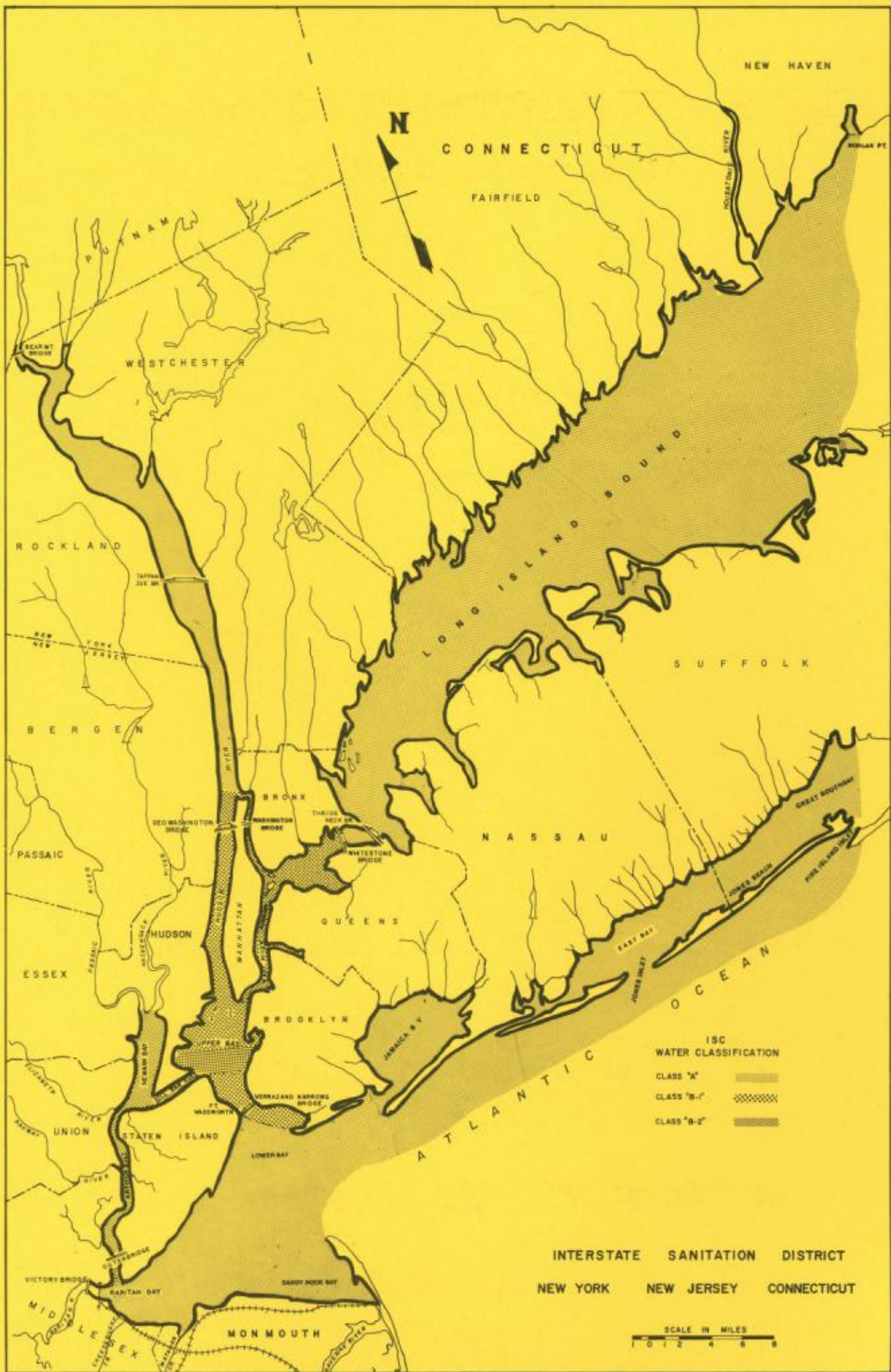
1995

ANNUAL REPORT

NEW YORK

NEW JERSEY

CONNECTICUT





# INTERSTATE SANITATION COMMISSION

*A TRI-STATE ENVIRONMENTAL AGENCY*



1995

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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Sidney J. Holbrook  
Jeannette A. Semon

January 24, 1996

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

—  
Acting Director -  
Acting Chief Engineer  
Howard Golub

Your Excellencies:

The Interstate Sanitation Commission respectfully submits its report for the  
year 1995.

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



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

As the ISC enters its sixtieth year of environmental protection on behalf of this region, 1995 emerges as a year of special pride to the Commission. We were gratified that our member States -- New York, New Jersey and Connecticut -- continue to recognize the value of the Commission's programs and activities by pledging their fiscal support.

With this vote of confidence, the Commission was able to move its testing, sampling, regulatory and enforcement programs forward with renewed vigor and intensity -- and it clearly has been a year of achievement.

The ISC was proud to have been chosen to spearhead and coordinate a massive regional nutrients research project on behalf of the New York-New Jersey Harbor Estuary Program. This effort has been successfully completed and the data are now being used to analyze the cause and effect relationship between inputs and water quality. This will enable us to prioritize efforts to combat the root causes of oxygen depletion in the Harbor Complex.

In the area of enforcement and litigation, we continue to regard the issue of discharge permits for the 14 New York City wastewater treatment plants as a matter of the highest priority. We are working diligently to resolve this most complicated and intricate proceeding which still involves the issues of floatables control, flow, and plant capacity. These are issues that concern and affect our entire region -- issues that must be resolved successfully with requirements that will ensure cleaner waters for our citizens throughout this tri-state area.

Again, this year, I want to reiterate the Commission's long-standing concern over operations at the Fresh Kill Landfill. We continually monitor the situation in Staten Island so that floatable control measures -- e.g., the building and operating of enclosed barge unloading facilities -- are proceeding on schedule, per the Consent Order which the ISC fought long and hard to obtain.

Overall, I wanted to express the Commission's deep commitment and sense of responsibility for protecting the environmental integrity of all the waterways within our District. As part of that commitment, the ISC continues its heavy involvement with the New York-New Jersey Harbor Estuary Program and the Long Island Sound Study, so that plans for improving and upgrading these environmentally sensitive waters are integrated -- and management actions monitored -- to achieve maximum effectiveness and efficiency.

In the coming year and into the 21st Century, we look forward to working with our member States and to earning the continued support of tri-state legislators in order that we may pursue -- and achieve -- the Commission's long-term goals including the opening of more and more sites for both commercial and recreational activities such as swimming, fishing, and shellfishing throughout the ISC District.

A handwritten signature in black ink, appearing to read "Frank A. Pecci". The signature is fluid and cursive, with a large initial "F" and "P".

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



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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.

In the late 1880s, facilities for treating sanitary wastes began to become operational. By the 1930s, of the 1.61 billion gallons per day (BGD) of sanitary and industrial sewage being discharged within the Interstate Sanitation District, approximately 1/3 was receiving primary treatment and the remaining 2/3 was flowing into the Region's waters untreated. The ISC has been instrumental in getting wastewater treatment facilities built and upgraded to prevent pollution in the District's waters. During 1995, approximately 2.5 BGD of treated sewage discharged in the Interstate Sanitation District is receiving secondary treatment. Yet to be addressed are the untreated discharges from combined sewer overflows (CSOs) and storm sewers, and approximately 0.6 to 2 MGD of raw sewage discharges.

Notwithstanding the significant environmental gains that have been made in recent years, a tremendous amount of work remains to be done. In the past several years, due to a great degree to ISC's year-round disinfection requirement which went into effect in 1986, thousands of acres of shellfish beds have been opened on a year-round basis and, during the last six bathing seasons, only a few beach closings occurred due to elevated levels of coliform bacteria or wash-ups of debris. However, due to a combination of factors including, but not limited to, habitat loss, hypoxia, and overfishing by commercial and recreational interests, bag limits and minimum size restrictions for several finfish species (i.e., black sea bass and porgy) were promulgated by the coastal states. During 1995, a restricted season for winter flounder was put into effect in the Atlantic Ocean and Long Island Sound. On a positive note, striped bass populations have rebounded and the minimum length was reduced to 32 inches in New York.

The Commission's budget and staff remain significantly reduced from the levels of fiscal year 1988-1989. While programs must remain curtailed, the Commission staff has been diligent to fulfill the technical and administrative responsibilities. In general, the ambient and effluent water quality sampling programs remain drastically reduced 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 Commission continues to lecture at local schools and colleges on subjects dealing with coastal pollution, oceanography, sampling and data collection, and related Commission activities. For the past four years, law student internships have been awarded in conjunction with Pro Bono Students/New York and New Jersey.

This year, the Commission participated in the Fifth Annual Shad Festival on the banks of the Harlem River in Upper Manhattan and in the Fourth Annual Little Red Lighthouse Festival on the Hudson River beneath the George Washington Bridge. An exhibit and information booth were maintained by the staff for both of these events. A staff member was a judge for the 1995 Science and Technology Expo -- a New York City borough-wide competition. The Commission regularly interacts with 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 1994 through November 1995. 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. ISC's long-standing goal of making more areas available for swimming and shellfishing remains a high priority. The Commission's programs include enforcement, minimization of the effects of combined sewers, participation in the National Estuary Program, compliance monitoring, pretreatment of industrial wastes, toxics contamination, land-based alternatives for sewage sludge disposal, ocean disposal of dredged material, 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 \$4.19 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.
- 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.
- continued involvement to ensure implementation of the final settlement for a long-term solution to prevent debris from entering the waterways as a result of the unloading operations at New York City's Fresh Kills Landfill.
- involvement in a New York State Department of Environmental Conservation enforcement proceeding against New York City's North River treatment plant on various issues of environmental concern.

- involvement with the Brooklyn Navy Yard Resource Recovery Facility adjudicatory hearing.

Opening presently closed waters for swimming continues to be a high ISC priority and 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.

For the eighth 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.

ISC continued its active participation as a 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. The Commission successfully completed a project that had ISC in the lead role of coordinating an extensive nutrients data collection program under the auspices of the HEP. The final report for this project was approved by the US EPA during April 1995. The Commission, at the request of US EPA, prepared an index of existing monitoring programs pertinent to the HEP. This work was presented at a monitoring workshop in August at Rutgers University in New Brunswick, New Jersey.

Since the final Comprehensive Conservation and Management Plan (CCMP) for the LISS was issued and signed in 1994, the Commission has been actively involved with implementation actions. Issuance of the final CCMP for the HEP is expected early in 1996. 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 efforts to ensure that these programs are integrated and the problems prioritized.

ISC continued to monitor waste discharges from public and private treatment plants to check compliance with discharge permit limitations. Several field investigations were also conducted in response to citizens' water pollution complaints. Using the ISC research vessel, the R/V Natale Colosi, the Commission participated, for a fifth consecutive year, in a multi-



agency intensive survey in Long Island Sound to continue to document dissolved oxygen conditions.

Since 1981, the Commission has been involved with the US Army Corps of Engineers' (ACOE) 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 V was held during February 1995. 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.

On a parallel with the dredged material issue, the Commission is 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.

ISC's laboratory is now located to the campus of The College of Staten Island (CSI). Besides its normal operations, the laboratory 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 all recommended procedures of the US Food and Drug Administration.

ISC's library holdings continue to be updated and provide an accessible regional depository of air and water quality related subjects. It's up-to-date, as well as historical holdings, has 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. However, 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 1995, ISC again participated in the Ozone Health Message System to alert the public of unhealthy ambient air conditions. Based on information received from its member States, the Commission disseminated health messages to radio and television stations, as well as to government agencies in the Region.

During the 12 months from October 1994 through September 1995, the Commission received 140 air pollution complaints -- a decrease of 31% over the previous 12-month period. As has been the case in the past, most of the calls originate from Staten Island; this year, 96% of all complaints were received from Staten Island. New Springville was the neighborhood that registered the most complaints. The odor categories of "garbage" and "ammonia/cat urine" were the most often reported -- collectively representing 53% 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 1995, more than \$4.19 billion was allocated for 217 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: more than \$232.3 million for 45 completed projects, more than \$3.2 billion for 110 projects in progress, and more than \$766.5 million for 62 future projects. These expenditures are being used for engineering studies, 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.

While great expenditures on the infrastructure have resulted in significant improvements throughout the District these past years, 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 (CSOs) 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. ISC has been advocating the use of increased street sweeping as a short-term, interim floatables control measure until other short-term measures and long-term structural and/or nonstructural measures are in place and operational.

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, pilot

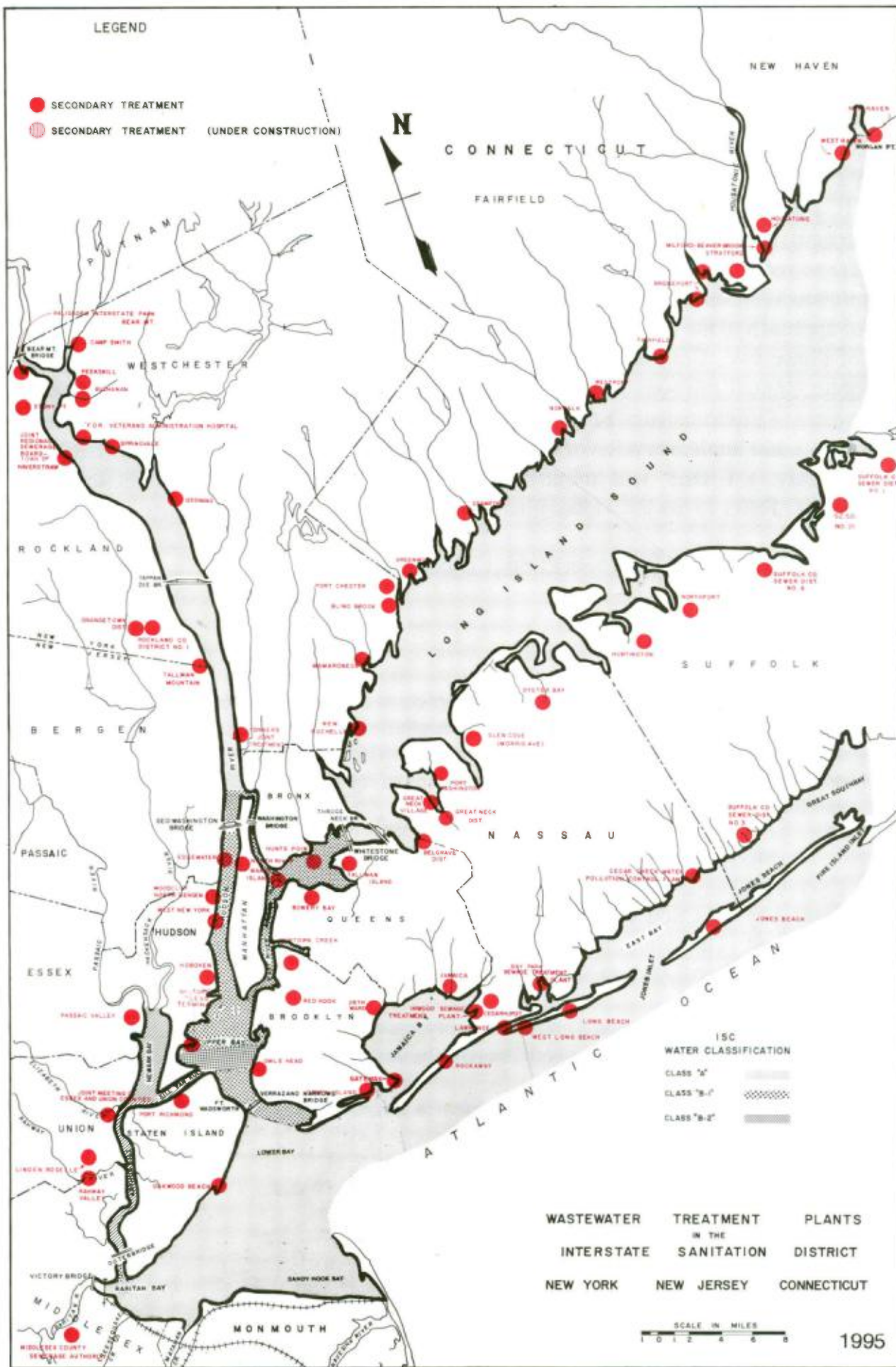
projects and related environmental conditions. Therefore, the information in this section is that which was available and accurate through November 1995.

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)



15C  
WATER CLASSIFICATION

CLASS "A"

CLASS "B-1"

CLASS "B-2"

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

SCALE IN MILES  
0 1 2 4 6 8

1995

## 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 the 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. Subsequently, CT DEP will modify individual NPDES discharge permits to ensure compliance. Refer to the individual plant write-ups for status reports.

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

#### Projects in Progress

Construction is currently 70% complete at the West Side plant. The re-estimated cost of \$44 million is being used to finance rehabilitation of all units, as well as for installing new pumps and instrumentation at this 25 MGD secondary treatment facility. An approximate phased operational start-up is planned for the period between September 1995 and September 1996.

The Bridgeport drainage basins (comprising 3,880 acres) have an ongoing multi-year CSO improvement program. Anticipated to cost \$27 million, this work is 55% 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. Partial operational start-up began during June 1992.

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.

An engineering study is under way to assess process modifications required for nutrient removal at both facilities.



## 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 at \$28 million, the proposed rehabilitation start-up of the East Side plant has again been postponed to the spring of 1996. Besides the rehabilitation of the preliminary, primary, and secondary treatment units; modernization of the electrical and mechanical equipment, as well as pumps and instrumentation; are planned. The construction is expected to take three years.

It is proposed that both plants share sludge disposal facilities which will cost \$22.4 million. Sludge processing will be sited at the East Side plant.

## Fairfield, Connecticut (Fairfield County)

### Projects in Progress

An engineering study addressing I/I reduction at an estimated cost of \$1 million is ongoing. Estimates for I/I corrective construction are \$16 million.

This facility is presently operating under a State Consent Order to install BNR equipment and eliminate I/I. Approximately \$4.5 million will be needed in order to implement BNR capabilities. Nitrogen reduction will be accomplished by aeration tankage modifications -- fine bubble diffusers with sponge media. Construction is 80% complete and it is planned to be operational during early 1996.

## Greenwich (Grass Island), Connecticut (Fairfield County)

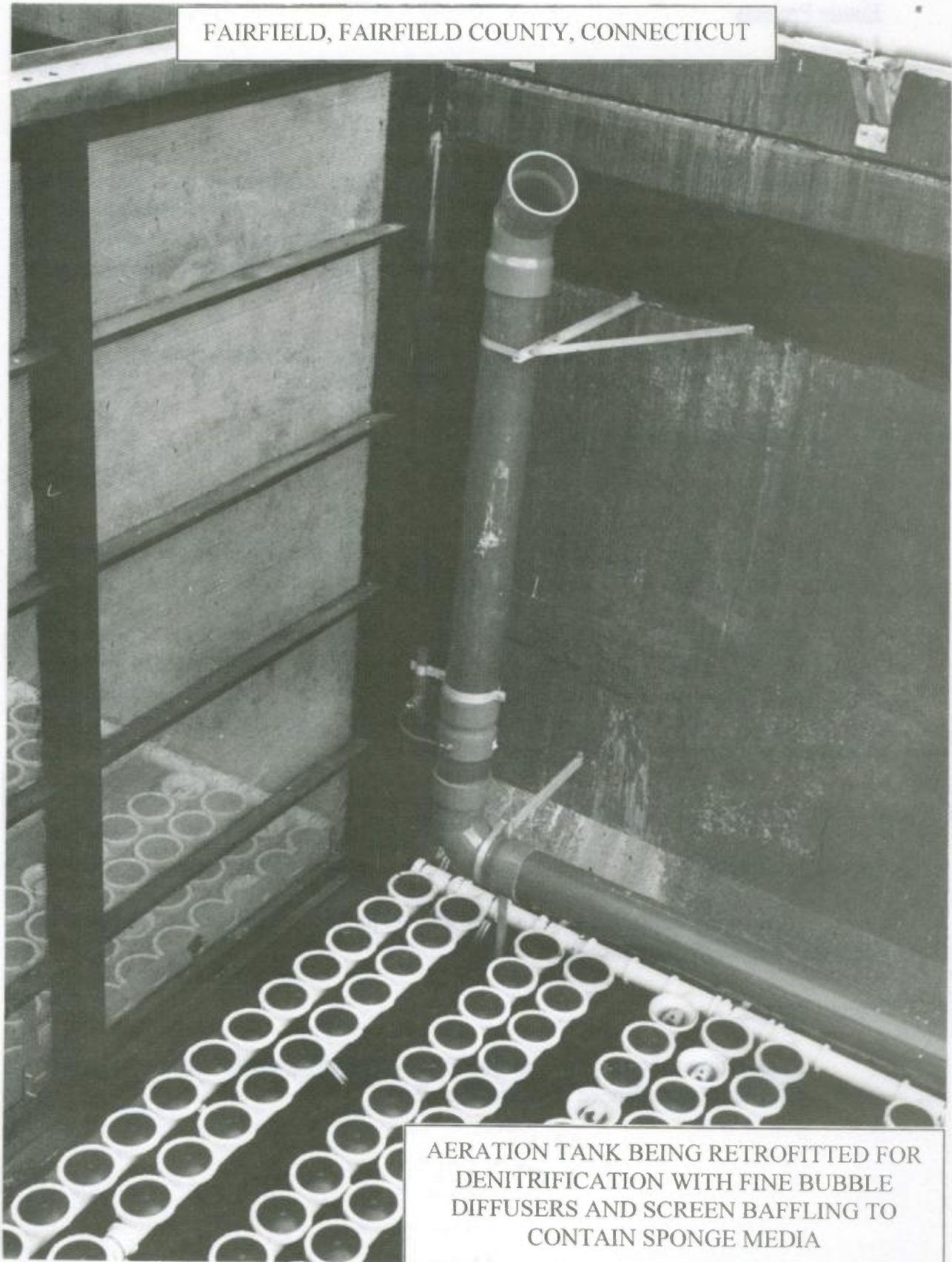
### Projects in Progress

Engineering studies are under way to address interim nutrient removal modifications (\$80,000) and I/I (\$1.4 million).

### Future Project

At an estimated cost of \$25 million, a solids handling facility will be installed. A construction start-up is planned for December 1995.

FAIRFIELD, FAIRFIELD COUNTY, CONNECTICUT



AERATION TANK BEING RETROFITTED FOR  
DENITRIFICATION WITH FINE BUBBLE  
DIFFUSERS AND SCREEN BAFFLING TO  
CONTAIN SPONGE MEDIA



### Milford - Beaver Brook, Connecticut (New Haven County)

#### Project in Progress

Retrofitting of the aerators for nitrogen removal is 30% complete. The re-estimated \$2.1 million installation includes fine bubble diffusers, dividing walls to create anoxic zones, new centrifugal blowers, air lines, a return system with new pumps, and a computerized control system.

### Milford - Housatonic, Connecticut (New Haven County)

#### Project in Progress

Plant modifications for nitrogen reduction are nearly complete (95%). The final cost estimate is \$600,000.

#### Future Projects

Presently at the design stage, a new pump station is planned. In addition to this anticipated construction, is the installation of 8,000 linear feet of new sewer lines. Start-up dates and cost estimates are not available.

### 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.

Engineering studies are under way that are addressing odor controls and a supervisory control and data acquisition system master plan.

Sewer separation construction will continue until combined sewers (544,000 linear feet) discharging to New Haven Harbor is eliminated. An estimated completion date is well into the next century (2015), with costs amounting to \$130 million.

An estimate of \$8 million was made for the installation of anoxic zones, mixers, and recycle pumps in the secondary aeration tanks. The secondary treatment facilities are concurrently being modified with fine bubble diffusers to provide nitrogen removal. The BNR retrofit is anticipated to be on line during December 1995.

EAST SHORE WATER POLLUTION ABATEMENT  
FACILITY, NEW HAVEN COUNTY, CONNECTICUT

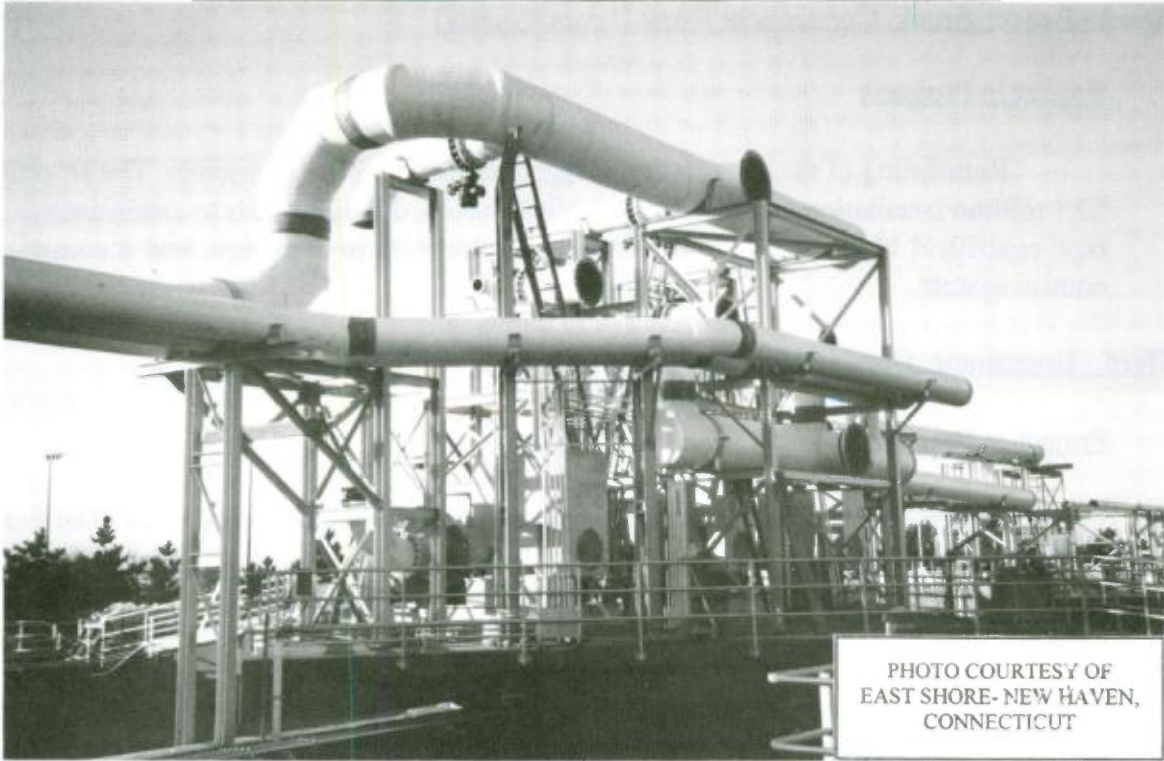


PHOTO COURTESY OF  
EAST SHORE- NEW HAVEN,  
CONNECTICUT

NEWLY INSTALLED BLOWERS WITH ASSOCIATED PIPING  
(ABOVE) AND AERATION TANK ( BELOW) BEING  
RETROFITTED FOR DENITRIFICATION WITH FINE BUBBLE  
DIFFUSERS

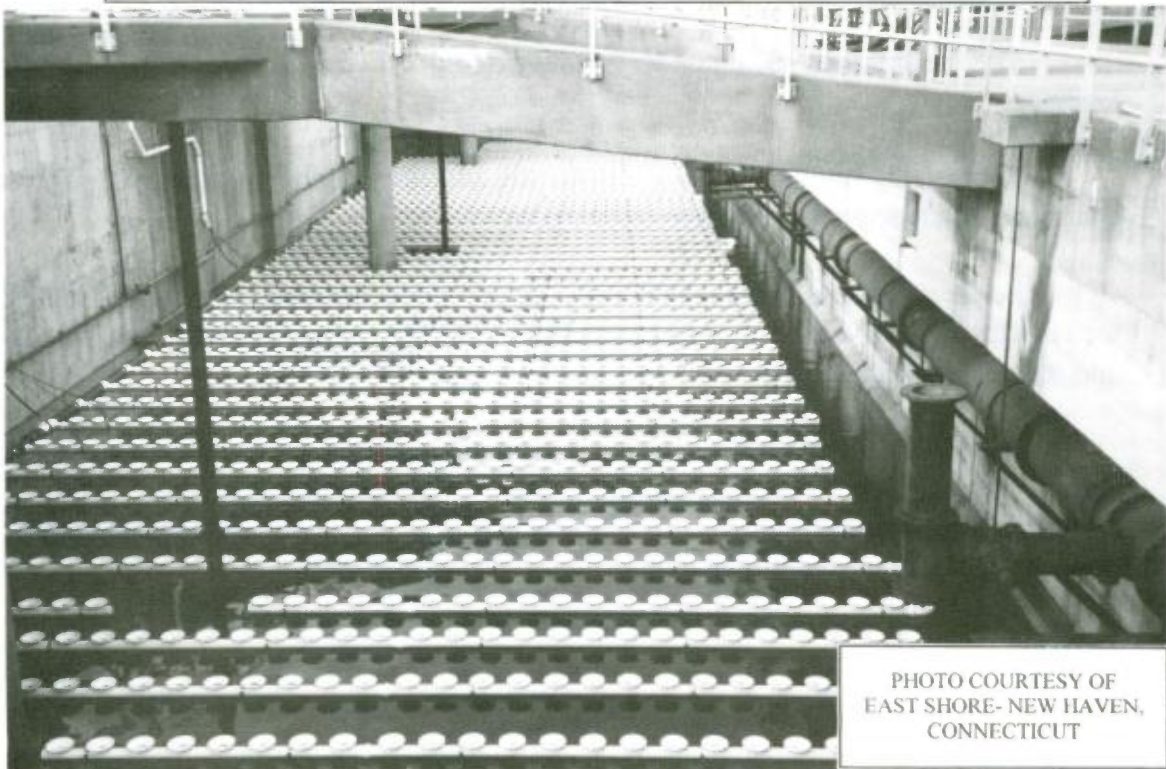


PHOTO COURTESY OF  
EAST SHORE- NEW HAVEN,  
CONNECTICUT

### Future Projects

Several additional engineering studies are proposed which will address alternative standby power for the main sewage pumps, plant-wide instrumentation upgrades, and a CSO study.

### Norwalk, Connecticut (Fairfield County)

#### Completed Project

At a re-estimated cost of \$860,000, the secondary process was retrofitted for biological nutrient removal. The existing aeration tankage was modified with fine bubble diffusers, internal baffles, mixers and pumps. This work was completed during December 1994.

#### Projects in Progress

Expenditures of \$1.5 million are estimated for all collection system improvements and rehabilitation. Sewer separation work is ongoing.

Design work for the plant capacity expansion to 20 MGD is ongoing. The plans are being based on the water quality modeling of Norwalk Harbor.

#### Future Project

Estimated costs for a two-year construction schedule have not been finalized as of this writing. Expenditures are dependent upon permit limitations and modeling results. The project will increase the capacity of this 15 MGD secondary facility to 20 MGD. An approximate cost for all expansions and upgrades is estimated at \$40 million.

### Stamford, Connecticut (Fairfield County)

#### Completed Project

Recently completed, a \$408,000 improvement to the sludge thickeners included covers and an odor control system.

#### Future Project

Nitrogen loading reductions will be accomplished by retrofitting the aerators with diffused air bubblers. A re-estimate of \$2.7 million was made for all construction phases which are planned to begin during November 1996.



## Stratford, Connecticut (Fairfield County)

### Completed Project

Interim denitrification construction was completed during December 1995. The final costs amounted to \$560,000.

### Projects in Progress

This facility is 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 continued during this year.

Under way since October 1993, an estimated \$5 million trunk line replacement project is 60% complete.

## West Haven, Connecticut (New Haven County)

### Projects in Progress

This plant is operating under a State Consent Order to complete necessary plant rehabilitation, perform collection system upgrades and eliminate overflows. West Haven's Municipal Compliance Plan specifies the completion of substantial construction by November 1995.

The City is in the final steps of satisfying several parts of the State Consent Order including the completion of modifications to the treatment facility, collection system, and pumping stations. The nitrogen reduction modifications have been completed with the addition of fine bubble diffusers, mixers, recirculation pumps, and a new blower. A new aerated grit chamber was placed in operation during October 1995.

Collection system rehabilitative work, which began during May 1992, is addressing I/I, relief interceptors, and upgrading pump stations. By the end of 1995, three of 13 pump stations will have been refurbished. The remaining stations are being evaluated, prioritized, and scheduled for rehabilitation. I/I work has identified a major source of extraneous inflow as illegal basement sumps. Work is continuing, with two areas set for lining contracts. Additional I/I metering and monitoring will take place during 1996.

## Westport, Connecticut (Fairfield County)

### Projects in Progress

Collection system extensions, maintenance and rehabilitation work have been ongoing since 1985. Pump station rehabilitation, force main and interceptor repairs, as well as an average installation of nearly two miles of new gravity sewer lines per year are continuing.

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 for 1995 through 1998, at an estimated cost of \$250,000 per year.

Nearly 90% complete, nutrient removal modifications consist 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 are re-estimated at \$520,000.

## NEW JERSEY WATER POLLUTION CONTROL PLANTS

### Bayshore Regional Sewerage Authority, New Jersey (Monmouth County)

#### Completed Project

Final estimates of \$13 million were made for the new sludge dewatering facilities and an incineration upgrade. Full operation commenced during June 1995.

#### Projects in Progress

The Bayshore Regional Sewerage Authority is operating under a 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.

This 8 MGD secondary activated sludge plant is undergoing expansion construction (95% complete) with associated upgrades to a capacity of 16 MGD utilizing a fine bubble process. A re-estimate of \$49 million has been made for all construction phases. The expanded facility is planned to be in operation during January 1996. The additional capacity will enable the Bayshore Regional facility to treat flows from Aberdeen Township.

Collection system upgrades are 82% complete. The Matawan pump station is being rehabilitated with new pumps, motors, controls, chemical feed and odor control equipment. The West Keansburg pump station is being replaced. Both stations are planned to be operational by May 1996.

### Edgewater, New Jersey (Bergen County)

#### Project in Progress

This facility is operating under a New Jersey DEP Administrative Consent Order to develop a combined sewer overflow control program. Engineering studies are under way and are in compliance with all Order milestones.

#### Future Projects

Pumping Station #3 reconstruction and trunk sewer installation are estimated to cost \$1 million. Construction start-up dates have not yet been determined.



## Hoboken, New Jersey (Hudson County)

### Completed Project

A 24 MGD secondary treatment facility was built and was certified operational during 1995. The new facility incorporates trickling filters and ultraviolet disinfection. A final estimate of \$98 million has been made for all construction and punch list items. The expanded and upgraded plant also provides treatment for portions of Union City and Weehawken. For further information, refer to the Legal Activities section of this report.

### Projects in Progress

Ongoing collection system improvements include upgrades to three pump stations (\$300,000) and additional design work to upgrade the remaining stations.

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.

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

### Completed Project

On line and operational during July 1995, rehabilitation of an anaerobic digester was completed at a final cost of \$1 million.

### Project in Progress

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 beneficial reuse alternatives. In order to produce a high quality pelletized sludge, an indirect thermal sludge drying facility is being built. Construction is 85% complete with the facility scheduled for full-scale operation during the spring of 1996. Approximately \$20 million will be needed for this work.

### Future Projects

Additional proposed projects include a primary settling tank upgrade (\$7 million) and another anaerobic sludge digester rehabilitation (\$1 million). These projects are scheduled to begin during the spring of 1996.

Linden Roselle Sewerage Authority, New Jersey (Union County)

Project 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 be implemented by 1997.

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

Completed Projects

Two major upgrades were completed during May and October 1995, respectively. The first deals with the thickener odor controls, air ducts, covers and scrubbers (\$3 million). The second involves the oxygenation process (\$7.9 million) in which the compressors and the submerged deep shaft mixers/diffusers were replaced with surface aerators. All associated instrumentation was upgraded.

Project in Progress

Currently under way (5% complete) is the construction of a sludge end product storage building with associated odor control equipment. Scheduled to be operational during July 1996, costs are estimated at \$10.4 million.

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

Completed Projects

The River Road interceptor sewer installation was completed along the Hudson River waterfront -- from the Woodcliff plant northward to the border of Edgewater -- during July 1995. The final re-estimated cost was \$4 million. The project also included sewer separation work in the Hillcrest neighborhood.

Project in Progress

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





MIDDLESEX COUNTY UTILITIES AUTHORITY  
MIDDLESEX COUNTY, NEW JERSEY

THICKENERS WITH NEWLY INSTALLED  
ALUMINUM COVERS AND AIR SCRUBBER  
DUCT WORK

PHOTO COURTESY OF  
MIDDLESEX COUNTY  
UTILITIES AUTHORITY



## Rahway Valley Sewerage Authority, New Jersey (Union County)

### Completed Projects

Rehabilitation of the service building facade was completed at a cost of more than \$246,000. Baffles were installed in the final clarifiers at an estimated cost of \$40,000. Refurbishing of the chlorination system to sodium hypochlorite is complete (\$11,900).

### Projects in Progress

Engineering studies under way or proposed include sand filtration (current), secondary treatment process improvements (proposed at \$61,000), and a sludge dewatering study (proposed at \$15,000).

Collection system upgrades are under way, as well as in-line television inspections with subsequent cleaning and replacements.

### Future Projects

Estimated to cost \$2.228, million a construction agenda has been proposed to begin during 1996. The work will include a centrifuge for the sludge dewatering facility, gravity belt thickener, screw conveyor, a building for the screening facility and an employee facility upgrade (\$250,000), a salt storage facility, and a sewer line debris receiving facility (\$87,570).

## West New York, New Jersey (Hudson County)

### Completed Projects

Several engineering studies have recently been completed which address PCB's and dioxin (March '95) and mercury (December '94); costs were not available.

The dechlorination facilities were improved with the addition of sodium bisulfate storage tanks, monitoring equipment, and metering pumps. All of the aforementioned items, as well as a new building to contain all equipment, were completed during June 1995 at a final cost \$180,000.

### Projects in Progress

Engineering studies which involve nutrient loadings and effluent toxicity are under way.

## Future Projects

Correction of excessive I/I is planned. A construction start-up date of June 1996 is proposed for this \$5 million sewer system rehabilitation.

Nitrogen reduction studies are planned, but have no start-up agenda.

## 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 on page 8) 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.

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.

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

Two major construction phases -- the primary treatment facilities and the odor controls -- were substantially completed during 1995. Final costs of more than \$40.2 million provided four new primary sedimentation tanks and rehabilitation of the existing tankage. The principal features of the odor control improvements included a screen building extension, modification of the scavenger waste facility and the installation of enhanced odor controls with associated piping and auxiliary equipment.

#### Projects in Progress

The Bay Park sewage treatment plant has been engaged in a phased construction program since the 1980's to enhance treatment system capabilities and to modify and improve aspects of the facility that have exceeded their useful life.



Anticipated to be completed by late 1995, emission control devices are being installed in the main dual-fuel engine generators. It will cost more than \$4 million in order to comply with federal Clean Air Act requirements. Concurrently, two warehouses are being built at a cost of more than \$4.975 million. When complete, these buildings will provide storage for all backup equipment.

Central heating facilities and improvements to the sludge digestion tankage are scheduled for completion during 1996. These construction phases and equipment installations are estimated to cost nearly \$41 million.

#### Future Projects

A new plant administration building will be constructed within the existing main building. In addition to the new shops for electrical and HVAC units, new lavatory and employee lunchroom areas will be built. Final costs are estimated at almost \$13.4 million.

### Belgrave Water Pollution Control District, New York (Nassau County)

#### Completed Project

At a final cost of \$4.1 million, a trickling filter utilizing prefabricated plastic modules and renovations to the existing filter pump station were completed. The trickling filter went on line on July 19, 1995, and the pump station on September 14, 1995.

### Blind Brook, New York (Westchester County)

#### Projects in Progress

A recently started 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. An operational start-up date is anticipated for April 1, 1997.

#### Future Project

Funded by an Action Plan Demonstration Project grant from US EPA, a BNR retrofit was recommended by the Long Island Sound Study. Planned modifications are expected to cost about \$200,000. A construction schedule is not available.

## Bowery Bay, New York (Queens County)

### Completed Projects

Modifications to the Glendale pump station were completed during August at final costs of \$300,000. On August 11, 1995, the Park Drive East pump station and associated force main were completed. Final costs accrued amounted to \$3.29 million.

### 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. Construction costs are estimated at \$9.2 million and will get under way during 1996. The BQE pump station modifications are being addressed (\$200,000). City-wide telemetering installations and upgrades at various pump stations are 90% complete (\$4 million).

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, more than \$214.7 million is being spent at these plants for cake storage buildings, emergency generators 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 State standards for dissolved oxygen and coliform bacteria densities. 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 eighth year). Structural and nonstructural solutions to the problem are being evaluated and prioritized. The East River proposals include floatables capture,



holding tanks, 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. 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 '96) with associated force mains (\$3.3 million - FY '96). Outer Harbor proposals include maximizing flow to the WPCPs and reducing CSOs and dry weather flows in Coney Island Creek (design during FY '96 - \$5 million).

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

#### Buchanan, New York (Westchester County)

##### Completed Projects

An asphalt sludge drying lagoon with related piping and valves was constructed during 1995 at an estimated final cost of \$4,500. The sludge wet well pump was replaced at a final cost of \$5,500.

##### Future Project

The second phase of planned modifications for the main treatment plant is anticipated for 1996. 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

An inflow/infiltration investigation was completed for assessing extraneous volumes entering the sanitary and storm sewers.

##### Future Project

Estimated to cost about \$1 million, an upgrading of the entire facility is anticipated to begin during late 1995. The project includes repairs and upgrading of existing equipment,



as well as the installation of new sewer lines and repairs to manholes. Additional new installations include, but are 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)

#### 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. Seventy percent of an estimated \$73.66 million facility expansion program is complete. The many phases include new final screens, a fire pump house, expansion of the special projects laboratory, rehabilitation of one primary tank and the addition of four new tanks, 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. Additional rehabilitation will involve two primary digesters. Lastly, eight final tanks will be demolished and be replaced by six new units.

The rehabilitation of seven pumping stations began during August 1994; they are proposed to be on line during August 1997. All construction costs are estimated at more than \$8.6 million.

#### Future Projects

Several rehabilitation and improvement projects are planned for the years 1996 - 1998. These projects will affect the following treatment stages: secondary gas compressors, dissolved air floatation, sludge dewatering, aeration tank covers, and plant-wide instrumentation.

### Coney Island, New York (Kings County)

#### Projects in Progress

Several construction phases at this treatment facility have begun, and others are well under way. These plant upgrades and modifications are 80.6% complete. 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 1997.

At an estimate of \$66.37 million, a plant support facility consisting of a conglomeration of workshops has been divided into four contracts; these range from 15% to 48.5% completeness.

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

Future Project

Proposed for 1996 are structural modifications to handle additional dry and wet weather flows (\$55 million).

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.

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

Completed Projects

At a final cost of \$457,000, upgrade work to enhance treatment processes was performed on the influent pump station and its variable speed pumps. All work was completed on January 4, 1995. Repairs and cleaning of the primary and secondary digesters were also completed.

Projects in Progress

An estimated \$200,000 project is going to bid for upgrading the chlorine feed system and refurbishing a primary settling tank, recirculation pump house and pumps. These projects are anticipated to be complete by June 1996.

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

Completed Project

Rehabilitation of the Shelter Rock pump station was completed at an estimated cost of \$221,600.

Huntington Sewer District, New York (Suffolk County)

Projects in Progress

Re-estimated costs of \$159,000 are being spent (70% complete) 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 is also being upgraded with new influent pumps and cleanout manholes.

Design work is under way to replace 2,000 linear feet of existing sanitary sewers. Additionally, designs are being prepared for the installation of force main which will service four parcels of the Huntington Sewer District.

### Hunts Point, New York (Bronx County)

#### Completed Projects

The Rikers Island-North pump station went on line during January 1995 and accrued costs of about \$8.75 million. Additional mini-upgrades were completed at several pump stations: Metcalf (\$111,000), Orchard Beach (\$50,000) and White Plains Road (\$452,000).

#### Projects in Progress

Continuing reconstruction of various phases of the existing treatment facility is well under way. Additional installations such as actuator controls, flow meters on the sludge lines, gratings, railings, outdoor lighting and fencing are re-estimated to cost \$2.637 million and are 60.8% complete.

Collection system improvements, rehabilitation and renovations include work on several pump stations throughout the drainage basin. Design and ongoing construction are at different degrees of completeness (0% to 99%). The City Island pump station is under preliminary design (\$840,000) and the Hunts Point Market pump station is in final design (\$2.4 million).

Retrofits are being considered for BNR. Funding applications are being submitted under the Innovative and Alternative Program of the State Revolving Loan Program. Estimates to implement this modification are \$2 million. In addition, a proposed pilot project will address treatment of the centrate produced by sludge dewatering.

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

#### Future Projects

Improvements to the existing plant and collection system, including installations and reconstruction of the final tanks and regulators, are slated for fiscal year 1996.



## 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.

Presently under way is a facility plan to develop future alternatives for this 2.5 MGD secondary plant. The final project design is to be completed by September 1996 with substantial construction completed by January 18, 1999.

## Jamaica, New York (Queens County)

### Completed Projects

The Howard Beach and Rosedale pump station improvements and modifications were completed at costs amounting to more than \$10.26 million.

### Projects in Progress

New primary tanks and associated support equipment are being constructed at costs estimated at more than \$52 million. Selected alternatives of the completed stabilization study which include the addition of a primary settling tank, a new primary feed distributor, return sludge pumps, new main sewage pumps and discharge headers, and valving on all aeration piping is being implemented under these costs.

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

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

### Project in Progress

An engineering study is under way which is addressing metals removal from the final effluent; it is expected to be complete during September 1996.

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

### Completed Project

At a final cost of \$80,000, in-house repairs were made to the secondary clarifiers.

## 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.

Engineering studies are under way to prepare plans and specifications for various treatment plant unit upgrades (\$8.5 million) and furnace upgrades (\$5.5 million).

## 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, is 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 began recently. 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 Taaffe Place pump station is under construction at a re-estimated cost of \$9 million. The Canal Street pump station rehabilitation is 30% complete (more than \$1.91 million).

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

## Northport, New York (Suffolk County)

### Project in Progress

Estimated to cost \$5,000 (70% complete), a new influent pump and associated hardware are being installed and should be on line by January 1996.

### Future Projects

The State-imposed sewer hookup moratorium was allowed to expire on August 31, 1994. A study was completed and recommends capacity expansion. Sewer lines identified with I/I problems were cleaned and televised for future engineering recommendations. Approximate costs will be about \$100,000; a construction schedule nor start-up dates have yet to be finalized.

## 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 with 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.

## Oakwood Beach, New York (Richmond County)

### Completed Project

An energy conservation and instrumentation assessment was completed during July 1995.



### Projects in Progress

Construction of the West Branch interceptor system is ongoing. Several other pump stations are slated for rehabilitation work during FY '96. The Hylan Boulevard Interceptor System is being installed. The Canterbury Avenue pump station is nearly complete; cost figures are not available.

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

### Future Projects

Reconstruction work is planned for the main facility including the heating system, HVAC controls, flooring and drains in the screening room, secondary microstrainers, railings and walkways, and outdoor lighting. These agenda items, as well as the replacement of primary sludge pumps, are estimated to cost \$2.16 million.

Planned modifications at the Mason Avenue and Cannon Avenue pump stations are scheduled for 1996.

Engineering studies that are planned include a stabilization study (\$518,000) and an SSES (\$2.608 million).

## Orangetown Sewer District, New York (Rockland County)

### Projects in Progress

This facility is operating under a State Consent Order (March 5, 1991) to complete 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 is 98% complete and operational levels have been attained by several treatment units during 1995. Final costs are estimated at \$7.9 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 for the conversion to natural gas in lieu of fuel oil were completed (\$320,000) for two heating boilers and two multiple hearth incinerators. Design work for this project began during September. Engineering work costing \$220,000 for continuous emission monitoring is 90% complete. An operational date is anticipated for March 1996.

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 is about \$1.65 million. An approximate operational start-up date is November 1996.

#### Owls Head, New York (Kings County)

##### Completed Project

The Avenue V pump station improvements and reconstruction were completed during August at final costs of about \$15 million.

##### Projects in Progress

At costs re-estimated at \$227.52 million, construction upgrading is 91.2% 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.

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

##### Future Projects

Aeration tanks, final settling tanks, landscaping (FY '96) and computer controls will accrue costs of \$426 million and are anticipated to be operational in May 1996. Improvements to the engine generators are also planned during FY '96 at costs estimated at \$2.869 million.

#### Oyster Bay Sewer District, New York (Nassau County)

##### Future Project

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

#### Peekskill, New York (Westchester County)

##### Future Project

In order to address wastewater flows that impact potable water supplies in the Croton watershed, it is proposed to expand this facility to 20 MGD.

Port Chester, New York (Westchester County)

Project in Progress

Currently being prepared are final evaluations and plans for continuous emissions monitoring equipment on the sludge furnace stacks. Estimated construction costs are \$215,000. An operational start-up is anticipated for June 1996.

Port Richmond, New York (Richmond County)

Completed Project

The Nautilus Court pump station improvements were completed (\$447,000).

Projects in Progress

I/I work is ongoing with allocated funds of \$1.28 million. Various pump station improvements are being implemented. The Mersereau Avenue pump station construction is under way.

Ongoing reconstruction and installations costing about \$1.984 million 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 scheduled for 1996 include an energy conservation and instrumentation assessment and an SSES (\$2.313 million).

Modifications and improvements to the existing plant are slated for fiscal year 1996 (\$1.171 million) and include the replacement of degritter pumps and reconstruction of primary tanks. Tide gate 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.

Red Hook, New York (Kings County)

Completed Projects

*Rehabilitation construction at three pump stations located at Hamilton, Van Brunt and Nevins Streets was completed at costs of more than \$1.589 million.*



### Projects in Progress

Modifications and additions to the plant are nearly complete (94% to 99%) and will incur costs of about \$41.53 million.

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

### 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 \$4.816 million; scheduling has not yet been done.

As proposed by the Long Island Sound Study, a 1996 construction start-up is anticipated for BNR process modifications. Funding applications are being submitted under the Innovative and Alternative Program of the State Revolving Loan Program. It is estimated that \$2 million will be needed to finalize all retrofits.

## 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 costing \$1.98 million is planned. A stabilization study costing \$518,000 is proposed for 1996.

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

### Completed Projects

The conversion from gaseous chlorination to a liquid chlorine system was recently completed. The \$450,000 conversion was operational during October 1995.

Construction is complete for the installation of additional piping to provide sufficient

capacity during peak wet weather flow conditions. The \$15 million project also included upgrading and expansion of 11 existing pump stations.

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

##### Completed Project

Additional tankage for a capacity of 20,000 gallons was incorporated into this treatment facility at a final cost of \$83,000.

##### Future Projects

It is planned that this facility divert flows to the New York City DEP's Oakwood Beach plant 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)

##### Completed Project

The initial phase of collection system rehabilitation involving various sewer lines was completed. Additional costs of \$300,000 are proposed for replacement work, but schedules have not been prepared.

##### 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.

A plant evaluation was conducted to determine the possibility of increasing flow capacity while maintaining all permit limitations. This work is being reviewed by NYS DEC - Region 1. Another in-house study involving water quality in Port Jefferson Harbor is ongoing.

##### Future Project

If approved by NYS DEC - Region 1, additional treatment units will be added to accommodate any additional flow requests. 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.

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

#### Completed Project

Reconstruction of sewer lines (lining) to prevent infiltration in a portion of the collection system was completed (\$300,000).

#### Projects in Progress

Re-estimated at \$6.8 million, the installation of two final clarifiers with a planned operational date during July 1996 is 50% complete. Concurrently, the aeration tankage diffusers are being replaced at a cost of \$3.3 million (50% complete).

An RFP is being finalized (\$20,000) 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 on board to compile an inventory of all air pollution sources to assure compliance with applicable regulations (\$25,000).

#### Future Project

Construction of a screening building (\$284,000) is proposed for the scavenger waste facility. An approximate operational date is during the 1996 summer season.

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

#### Projects in Progress

In-house engineering staff is investigating equipment and operational changes in order to improve reliability. According to Suffolk County DPW, process control changes have been successful in decreasing effluent nitrogen levels.

#### Future Project

A \$1.6 million equipment renovation is planned. However, construction has been postponed pending negotiations with NYS DEC - Region 1.

### 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 negotiating with NYS DEC - Region 1 to finalize all requirements of the Order.

#### Tallman Island, New York (Queens County)

##### Projects in Progress

A \$2.0 million voluntary BNR pilot project is under way. Process modifications are planned in order to remove 30% to 50% of the nitrogen load.

Pump station construction at Lawrence and Peck Streets (re-estimated at \$6.36 million) with associated force main began during November 1994 and is 34% complete. The 15th Avenue pump station modifications (\$220,000) are 95% complete.

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 that are planned will address energy conservation and instrumentation upgrades and stabilization (\$518,000).

#### 26th Ward, New York (Kings County)

##### Future Projects

Reconstruction of new aeration and final settling tanks is scheduled at a cost of \$4.958 million. A stabilization study will start during FY '96 (\$800,000). Approximately \$4.939 million has been allocated for the installation or reconstruction of various pumps, process blowers, instrumentation for the polymer feed and chlorine control systems and main building roofs.

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.

An interim plant expansion to a capacity of 275 MGD began during FY '95 and is nearly 20% complete. The two-year construction schedule will incur costs of more than \$63.5 million. An ultimate capacity expansion to a flow of 330 to 350 MGD will follow the interim phase sometime in the next century.

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

#### Future Projects

Construction of a sludge composting facility (\$23.7 million) and a grit/screening transfer builds (\$10 million) are planned to begin during 1996.

During 1996, \$1.869 million in improvements and modifications to the existing treatment units are planned. The installation of dissolved oxygen metering and automatic ignition for the digester gas system are included in this cost estimate.

An engineering study to assess energy conservation measures and instrumentation upgrade is scheduled.

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

##### Future Projects

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. Construction is planned for early 1996 and will entail 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 \$1.5 million.

#### Woodbrook Village, New York (Richmond County)

##### Completed Project

As of December 1994, this facility diverted all wastewater flows (0.7 MGD) to the New York City DEP's Oakwood Beach Water Pollution Control Plant for treatment. The existing plant was decommissioned on January 13, 1995.

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

##### Completed Projects

Phases 1 and 2 of a combined sewer overflow and regulator rehabilitation project were completed during 1990 and 1991, respectively. Phase 1 included the installation of

swirl concentrators and disinfection capabilities at the North Yonkers pump station. Phase 2 addressed collection system improvements. Phase 3 was completed during April 1993. The work involved improvements to three pump stations. Final costs amounted to \$2.6 million.

Phase 5, a 7-month installation project, was completed in July 1994. The \$10 million job involved the replacement of 2,000 linear feet of 60-inch diameter pipe for added wet weather capacity.

Additional plant upgrades completed and operational by August 1995 include replacement of the mechanical bar screens, conveyors and accompanying plant equipment. Final costs amounted to \$1.7589 million.

### 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.

Phase 4 of the CSO and regulator rehabilitation is 80% complete. Expenditures of \$10 million will provide for two swirl concentrators and disinfection facilities at the South Yonkers main plant.

Installations of odor abatement equipment for the primary thickener and dewatering facility (more than \$3.5 million) are 70% complete.

### Future Projects

Coarse air diffusers in the aeration process will be replaced by fine pore diffusers at an estimated cost of \$3.5 million. The 18-month construction schedule is proposed to start during January 1996.

Estimated to cost \$9.5 million, aluminum covers with mist scrubbers will be installed on the primary and secondary treatment units for odor control. Work is anticipated to be complete by January 1998.

At an estimated cost of \$5.6 million, the dewatering facility will be expanded. Construction is slated to begin during January 1996.



## EFFLUENT AND AMBIENT WATER QUALITY MONITORING

During this past year, the Commission's monitoring programs of the District's effluent wastewater discharges and ambient waters were maintained, but continued at a considerably reduced level due to budget constraints and a limited staff. The Commission's laboratory, located on the campus of The College of Staten Island since December 1993, is equipped to analyze for a full range of water quality parameters. ISC's laboratory personnel perform analyses on the samplings and inspections conducted by field personnel at municipal and private wastewater treatment facilities, as well as for samples from ambient water quality surveys.

For the fifth consecutive year, the Commission's research vessel, the R/V Natale Colosi, was used for monitoring Western Long Island Sound and the Upper East River in support of the Long Island Sound Study. The sampling was performed to document hypoxic (low dissolved oxygen) conditions and was conducted from late June 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. This was done because the ISC is participating in a cooperative effort with the New Jersey Department of Environmental Protection; the Commission will be conducting bacterial water quality sampling in shellfish areas of Raritan and Sandy Hook Bays throughout the 1995-96 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 Administration's 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; those of industrial facilities generally involve a 24-hour period or a full day's production, if less than 24 hours. 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.

During December 1993, the Commission laboratory moved to The College of Staten Island's new campus located in the Willowbrook section of Staten Island, New York. Besides conducting the necessary, day-to-day analyses, the Commission and the College are planning to engage in collaborative research efforts that will benefit the environment and citizens throughout the tri-state region.

## SPECIAL INTENSIVE SURVEYS

### 1995 Ambient Water Quality Monitoring in Long Island Sound to Document Dissolved Oxygen Conditions

In order to address a continuing need for temporal and spatial water quality data in Long Island Sound to document hypoxic conditions, the US EPA - Region II once again requested that the Commission conduct an intensive ambient water quality sampling survey in support of the Long Island Sound Study. To that end, the ISC participated in a cooperative sampling effort with other governmental agencies during the critical summer season. The ISC had conducted similar surveys in Long Island Sound during the previous four summers. The data collected by ISC helped to fill existing monitoring gaps and provided a consistent weekly data base for Western Long Island Sound and the Upper East River.

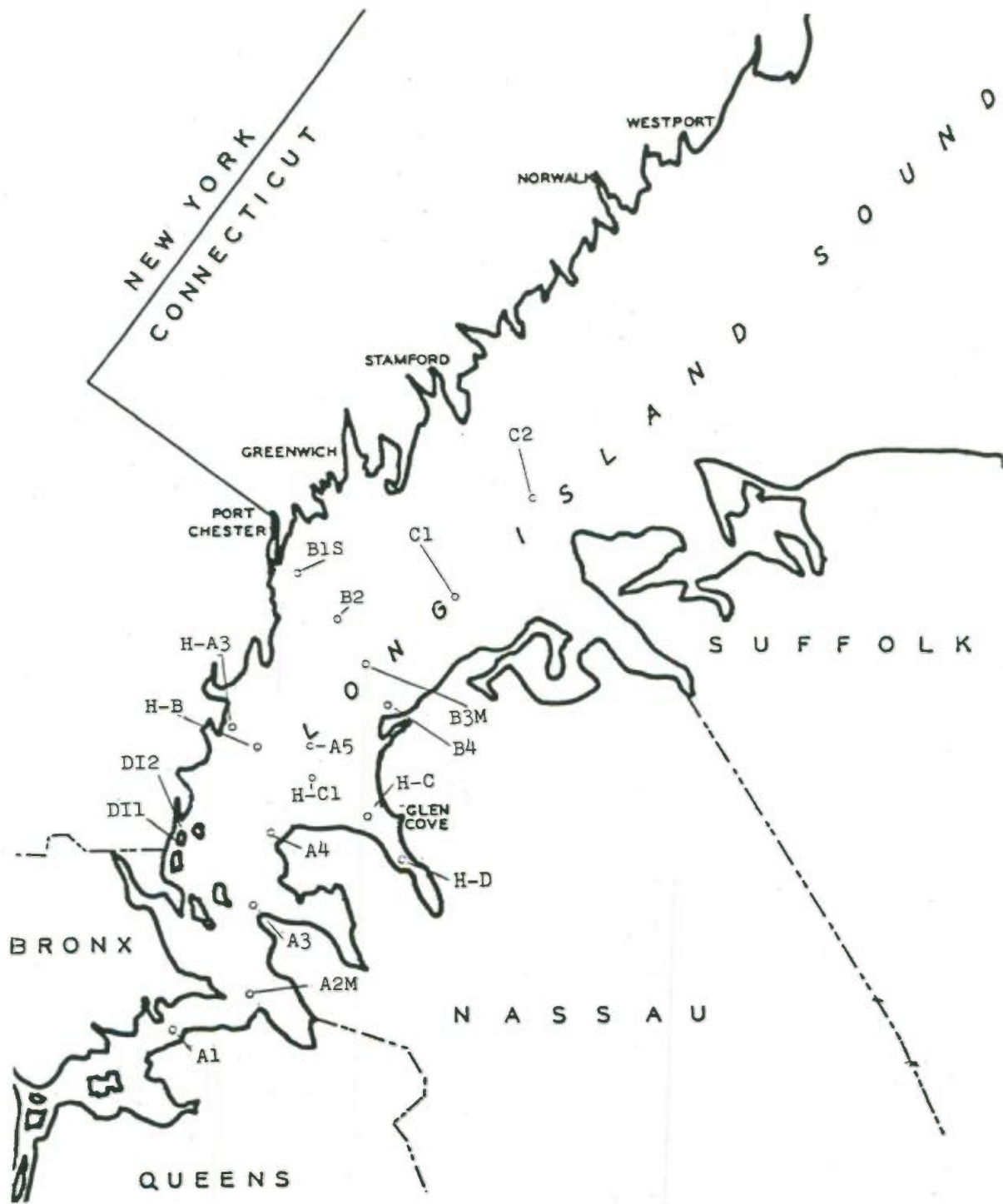
The surveys were performed using the R/V Natale Colosi, which is ISC's 25-foot diesel-powered research vessel. Four parameters -- temperature, salinity, dissolved oxygen and chlorophyll-a -- were sampled weekly at 18 stations during the 1995 summer season. The sampling logistics were determined at a meeting of the Long Island Sound Study Monitoring Work Group, of which ISC is a member. During that meeting, the spatial and temporal coverage of the sampling area was coordinated among the study participants. This past summer, as during the previous four summers, CT DEP and NYC DEP also conducted sampling programs in areas of the Sound. At the request of the US EPA-Long Island Sound office, additional data collection and observations were made during one sampling run in July. Readings were made off the Rye, New York, coastline in response to the Westchester County Health Department beach closures on July 8 and 9, 1995.

A map and listing of the station locations and descriptions are on the following pages. The 1995 survey consisted of a total of 12 weekly sampling runs that were conducted from late June through mid-September. At all stations, measurements were taken by probe at multiple depths. Temperature, salinity and dissolved oxygen (DO) were determined on board using portable instrumentation. Samples for chlorophyll-a were collected on a subset of the runs from one meter below the surface, and 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. All results were summarized and were forwarded weekly to US EPA - Region II's Long Island Sound Office and to the NYS DEC's Division of Marine Resources.

In general, dissolved oxygen levels in Long Island Sound during 1995 were somewhat higher than in 1994. Last year, only 78.2% of the surface readings and 34.7% of the bottom readings met the ISC "Class A" water classification requirement of 5 mg/l. In 1995, 94% of the surface readings and 48% of the bottom readings met the 5 mg/l standard. The pie charts on page 47 graphically display the 1995 findings.

DO levels are measured because they are a good indicator of the ecological health of a waterbody. A dissolved oxygen concentration of less than 3 mg/l cannot support most forms of





**INTERSTATE SANITATION COMMISSION  
1995 LONG ISLAND SOUND STUDY  
SAMPLING STATIONS**

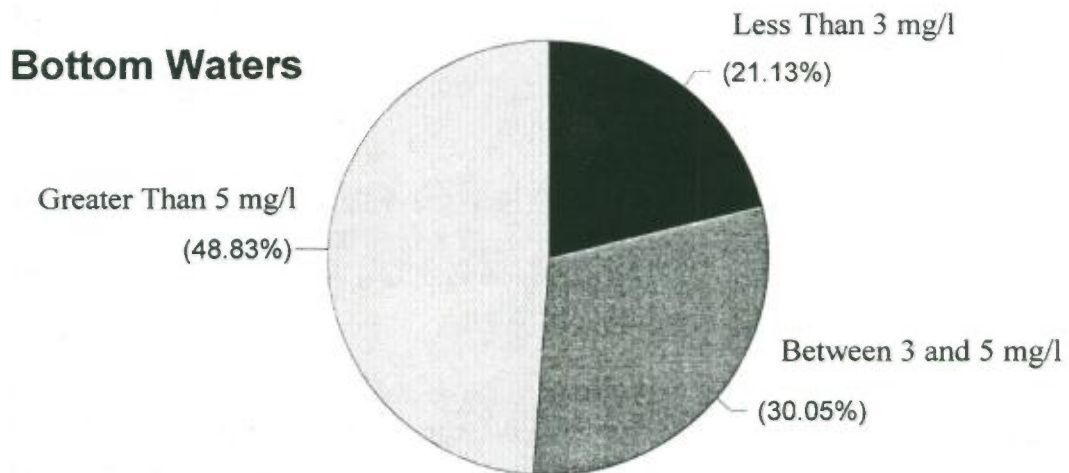
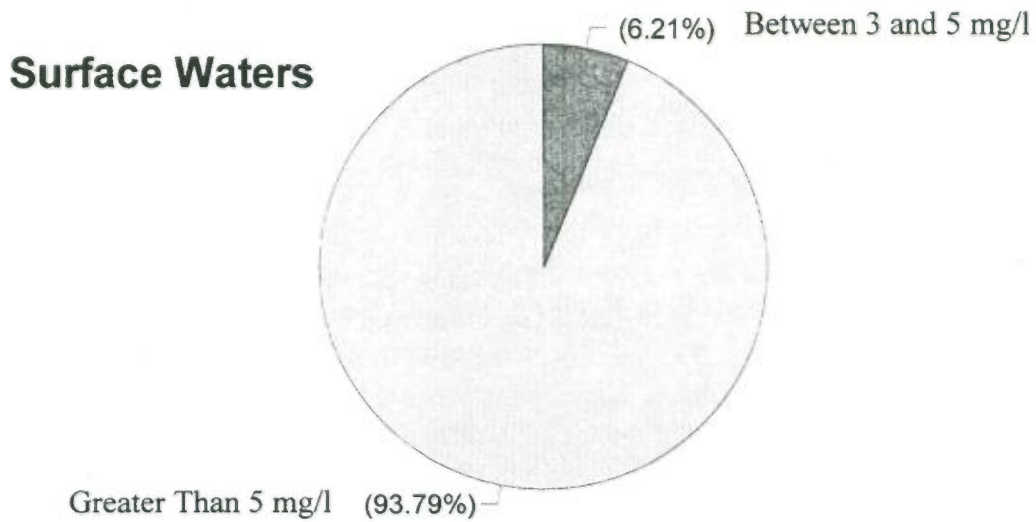


INTERSTATE SANITATION COMMISSION

1995 LONG ISLAND SOUND STUDY SAMPLING STATIONS

STATION	WATER COLUMN DEPTH (meters)	LOCATION		DESCRIPTION
		LATITUDE NORTH D M S	LATITUDE 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"

# Western Long Island Sound -- 1995 Dissolved Oxygen Monitoring Surface and Bottom Waters\*



\* Shown as percentage of 176 individual readings per depth taken at 18 ISC stations during study period



aquatic life. Large fish will avoid the area; crustacea will be sluggish; sessile organisms and juveniles of all taxa are put in mortal danger. This condition is called hypoxia. Hypoxia typically occurs in the lower reaches of a waterbody due to a lack of circulation with better oxygenated waters and high oxygen demand exerted by decaying organic matter on the bottom. Hypoxia was less prevalent in the bottom waters of Long Island Sound in 1995 than in 1994 or 1993. Only 21.6 % of the 1995 bottom DO readings were below 3 mg/l, as opposed to 33.3% in 1994. In addition, the minimum bottom DO concentration occurred at the beginning of August, later than in 1993 and 1994 -- the early summer season heat waves during past years were probably a main contributor. Factors affecting DO levels include, but are not limited to, temperature, salinity, precipitation, and wind. Increased temperatures lead to increased algal activity and also to stratification (and hence decreased mixing) of the water column.

Weekly averages and ranges of dissolved oxygen at the surface and bottom waters of all 18 stations are presented on page 49. In general, DO levels showed a gradual decline to midsummer lows followed by a gradual recovery. The primary exception to this trend was the peak in surface DO during mid-July. This temporary peak was probably caused by a burst of algal productivity, consistent with the high chlorophyll-a levels recorded by ISC at that time. Dissolved oxygen in the bottom waters reached their minimum levels at the end of July and beginning of August. While it is usual for a marked decrease in DO to be observed in midsummer, the levels which were reached in 1995 are consistent with previous years. It is also worth noting that the minimum bottom DO readings coincided with the timing of the surface peak. This helps illustrate the problem with blooms of algae. While their increased production can lead to a temporary boost and saturation of surface DO, these organisms' populations quickly exceed sustainable levels. Consequently, the precipitation and degradation of this dead organic matter leads to severe declines in bottom water DO. The results of ISC's survey were consistent with the findings of the other agencies participating in the study.

In the surface waters of the Sound, the range between the minimum and maximum weekly readings increased from the beginning of sampling in late June until late July, but then readings became more uniform. These uniform readings are an indication of mixing taking place in the upper waters of the Sound during the latter part of the summer.

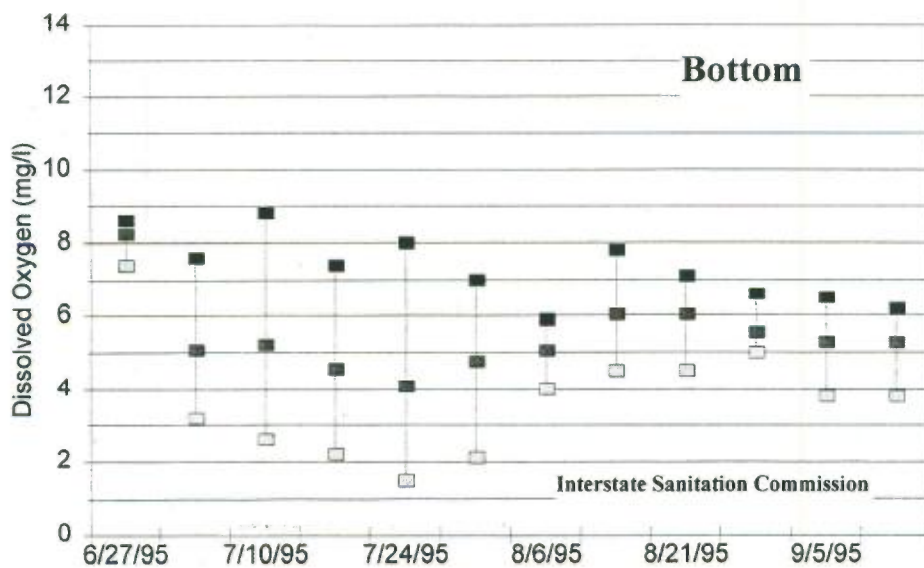
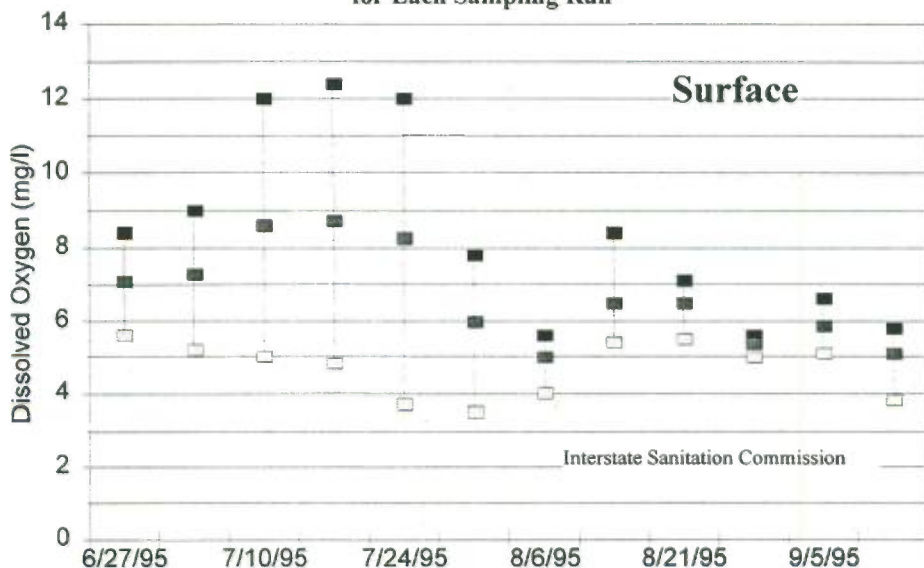
The 1995 data did not show the extreme variations of dissolved oxygen seen in early August of 1994, during which dissolved oxygen concentrations ranged between 2 and 15 mg/l. Very high and very low dissolved oxygen readings are usually the result of an algae bloom. The reduced variability in 1995 is a sign that algae blooms were much less severe than in 1994. This is most likely due to the dry weather conditions during the spring and summer of 1995. Runoff from rainfall transports many pollutants to the Sound and provides nutrients which spur the growth of algae. Dry periods reduce runoff with nutrients from entering the Sound and, thus, reduce algae growth.

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 nonpoint discharges. This excess



# Western Long Island Sound -- 1995 Dissolved Oxygen Monitoring

Surface and Bottom Waters:  
Average and Range of all 18 ISC Stations  
for Each Sampling Run



Date

■ Maximum   □ Minimum   ■ Average

nitrogen acts like a fertilizer, spurring the growth of algae and resulting in oxygen depletions. 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 nonpoint sources. Refer to the individual treatment plant status write-ups for additional information on the implementation of BNR technologies.

#### 1995 Microbiological Surveys in Shellfish Harvesting Waters in 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 1995-96 winter/spring seasons.

In accordance with the US Food and Drug Administration's National Shellfish Sanitation Program, up to fifteen ship cruises are planned in order to collect data and assess the microbiological quality of the shellfish waters. The cruises will be initiated by storm events with an intensity of at least 0.1 inch of rain. A window of 72 hours subsequent to the rain should give ample time to document the effects of the runoff. All samples will be collected from surface waters at 36 sampling stations. The samples will then be delivered for analysis of fecal and total coliform bacteria densities at the BMWCA laboratory located at Leeds Point, New Jersey.

During late October 1995, the R/V Natale Colosi was moved to 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. The exact stations and cruise plans are still being finalized.

All sample collection, storage and delivery to the Leeds Point laboratory will adhere to chain of custody procedures and follow standard operating methods as outlined in the NJ DEP Field Sampling Procedures Manual.

#### NATIONAL ESTUARY PROGRAM

Established in 1984, the National Estuary Program (NEP) 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), the New York-New Jersey Harbor Estuary Program (HEP), which also includes the New York Bight Restoration Plan (NYBRP).

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, toxics, 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.

In February 1995 the draft CCMP for the HEP was issued. 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. The final CCMP, incorporating the comments from the general public and environmental and health organizations, is expected to be submitted for HEP Policy Committee approval early in 1996.

As a member of the Management Committees and various work groups for the aforementioned studies, ISC is acutely aware of the data gaps/deficiencies that exist both for ambient waters and for point and nonpoint 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.

The Commission is actively participating in a project to address the amount of control needed for CSOs, stormwater and nonpoint sources in order to get beaches open for swimming. Details can be found in the Opening Waters for Swimming and Shellfishing section of this report.

#### Report on Existing Monitoring Programs for the New York-New Jersey Harbor Estuary Program

For nearly the entire 20th century, the New York-New Jersey Metropolitan Area has been monitored for a wide variety of parameters by numerous federal, county, local, state and interstate agencies for several mandated purposes. Collectively, ongoing monitoring has been conducted in order to assess and protect public health, to check compliance with all appropriate regulations, establish trends and, in general, routinely check environmental conditions. Most importantly the HEP must know what monitoring must take place to address the goals of the CCMP and,



subsequently, HEP must be able to assess whether these goals are being met and how to adjust/fine tune the existing monitoring programs so that management decisions can be made.

The Harbor Estuary Program recognizes that the identification of existing programs is a necessary first step for assessing the monitoring needs of the HEP. To this end, the US Environmental Protection Agency - Region II requested the Interstate Sanitation Commission to prepare such an inventory.

In July 1994, the Commission transmitted to the HEP that inventory entitled: Index of Ongoing Water Quality Monitoring Programs in the New York- New Jersey Harbor Estuary. At that time, extensive details of these programs (maps, frequency, parameters, etc.) were omitted as they were considered too voluminous for inclusion in the Comprehensive Conservation and Management Plan. However, during July 1995, the Commission was asked to update and expand the original text to include a greater level of detail, but not the detail that would eventually be needed. The ISC prepared this index with a complete bibliography and summary table. At the HEP Monitoring Workshop held at Rutgers University in New Brunswick, New Jersey, on August 22-23, 1995, a draft index was presented to the participants. To aid the workgroups, the summary table was distributed which included the programs, agencies, indicators, year of inception, and HEP module applicability (nutrients, pathogens, habitat, and toxics). The summary can be found on the following pages. At the workshop and at subsequent HEP meetings, ISC offered its services to coordinate the post CCMP monitoring and data management efforts.

#### 1994 Data Collection Program in Support of the Harbor-Wide Eutrophication Model for the New York-New Jersey Harbor Estuary Program

The New York City Department of Environmental Protection (NYC DEP) is currently developing the Harbor-Wide Eutrophication Model (HEM). This interactive water column-sediment model will be used to assess the dissolved oxygen balance of New York-New Jersey Harbor in relation to the fate of nutrient and organic inputs. The NYC DEP has agreed to the technical transfer of modeling results and related information to the New York-New Jersey Harbor Estuary Program and other interested agencies.

The Commission was approved by the HEP to take the lead in coordinating, managing and participating in a comprehensive three-part data collection and analysis program consisting of a reactivity study of organic carbon and nutrients, routine monitoring of particulate and dissolved components of carbon and selected nutrients, and a study of nutrient fluxes from bottom sediments.

The field sampling was completed on October 21, 1994. All samples for the reactivity and routine monitoring studies were collected by the ISC and the NYC DEP staffs, with the assistance of municipal treatment plant and pump station operators. The aforementioned samples were analyzed by the ISC's contractor -- Academy of Natural Sciences of Philadelphia (ANSP). The ANSP also collected and analyzed samples for the nutrient flux portion of the project.



## EXISTING MONITORING PROGRAMS IN THE NEW YORK HARBOR COMPLEX AND BIGHT

Program Description <sup>1</sup>	Agency	geographic scope	indicators	year of inception	HEP applicability <sup>2</sup>				comments
					N	P	H	T	
Citizen's Water Quality Monitoring	ALS	NY Harbor Complex	Conventional WQ	1991					
Dredged Material Disposal Site (Mud Dump) Monitoring	COE EPA	Mud Dump site (NY Bight Apex)	sediment: toxics	1986					
NPDES Compliance for Municipal & Industrial Effluents	ISC NJ DEP NYS DEC	Regional	conventional WQ coliforms toxics <sup>3</sup>	1940's 1972					
Long Island Sound DO Monitoring Program	ISC	East River stations	conventional WQ	1991					
Bathing Beach Monitoring	Nassau Co. H.D.	North and South shore beaches	coliforms	1968					
Cooperative Coastal Monitoring Program	NJ DEP	NJ coastal waters	pathogens, coliforms	1974					
Shellfish Growing Areas Classification/Certification	NJ DEP	Sandy Hook Bay to Cape May	coliforms	1912					
Ambient / Estuarine WQ Monitoring	NJ DEP	NJ coast: Raritan to Delaware Bay	conventional WQ, coliforms, metals, nutrients	1989					
Bathing Beach Monitoring	NJ DEP local health depts.	New Jersey coastal beaches	coliforms	1986					
NY Harbor Water Quality Survey	NYC DEP	NY Harbor Complex	Water: conventional, toxics, nutrients, coliforms Sediment	1909					
Bathing Beach Monitoring	NYC DOH	NYC beaches	coliforms	1937					

# EXISTING MONITORING PROGRAMS IN THE NEW YORK HARBOR COMPLEX AND BIGHT

Program Description <sup>1</sup>	Agency	geographic scope	indicators	year of inception	HEP applicability <sup>2</sup>				comments
					N	P	H	T	
Long Term Hudson River PCB Analysis Project	NYS DEC	Hudson River	tissue: PCBs	1977					
Shellfish Sanitation and Certification Program	NYS DEC	Raritan Bay Atlantic Ocean embayments	coliforms	~1920s					
Chemicals in Fish, Shellfish and Crustacea of the NY / NJ Harbor Estuary	NYS DEC	NY marine waters	Water: conventional, toxics, nutrients, coliforms Tissue: toxics Sediment: toxics	1975					
Hudson River Fish/Sediment PCB Analysis Project	NYS DEC	Hudson River	Species, PCB's pesticides	1993					
NY Marine Waters Striped Bass PCB Project	NYS DEC	Long Island Waters	population PCB'S	1985					
Study of Striped Bass in the Marine District of New York State	NYS DEC	Jamaica Bay Little Neck Bay	population conventional WQ	1985					
Bathing Beach Monitoring	Rockland Co. DOH	Hudson River	coliforms	1985					
Bathing Beach Monitoring	Suffolk Co. H.D.	South shore beaches	coliforms	1960					
Passaic River Flood Control	NOAA	Newark Bay	benthic fish	1993-94					

*Presented at the HEP Monitoring Workshop, August 22-23, 1995, New Brunswick, N.J.*



## EXISTING MONITORING PROGRAMS IN THE NEW YORK HARBOR COMPLEX AND BIGHT

Program Description <sup>1</sup>	Agency	geographic scope	indicators	year of inception	HEP applicability <sup>2</sup>				comments
					N	P	H	T	
Water Resources Data - New Jersey	USGS	Statewide	conventional WQ, pathogens, metals, nutrients	1961					
Bacteriological Survey	NPS	NYC and Sandy Hook	coliforms, conventional WQ	1978					
NY Bight WQ Monitoring Program	EPA	NY Bight coastal NJ & LI	conventional WQ pathogens	1976					
R-EMAP (Regional Environmental Monitoring and Assessment Program)	EPA	NY Harbor Complex Bight Apex	Sediment: toxics	1993					
Continuing Basic Records - New York	USGS	Statewide	conventional WQ, pathogens, metals, nutrients	1989					
Bathing Beach Monitoring	Westchester Co. H.D.	Hudson River	conventional WQ coliforms nutrients	1970					

**notes:**

1. Information confirmed as of August 1995, unless otherwise indicated.
2. N = nutrients, P = pathogens/CSOs, H = habitat, T = toxics/dredged materials; applicability to HEP CCMP program monitoring to be evaluated by work groups.
3. As required, on a case-by-case basis.

The final data report with the numerical results for the entire project was submitted by the ANSP to the ISC and the HEP Nutrients Workgroup (NWG) on March 10, 1995. On March 21, 1995 the Commission hosted an HEP Nutrients Workgroup meeting for the ANSP to make a presentation of the results. The report was approved by the NWG and, in April 1995, was approved by the US EPA.

## 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 ISC is involved in developing strategies within the region for CSO abatement. Without violating the CSO strategies of its member States and US EPA's national CSO strategy, the Commission's aim is to insure compatible region-wide CSO requirements.

The Commission has an ongoing program of inspecting CSOs to determine whether they are discharging during dry weather. When dry weather discharges are discovered, the incident is reported to the appropriate State environmental department for 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, 1995 a total of 37 outfalls were inspected during dry weather; none had any discharge during the ISC's inspections.

## OPENING WATERS FOR SWIMMING AND SHELLFISHING

### Swimming

Opening presently closed areas for swimming continues to be an ISC priority. The results of ISC's 1988 and 1990 Hudson River coliform surveys showed that further remedial actions must take place before the waters can reach the quality required for swimming. The Commission will continue to emphasize the need for CSO, stormwater and nonpoint runoff control to allow swimming in those areas of the District, such as the Hudson River and Raritan Bay, that are so classified.

ISC has continued to work, through its participation on the National Estuary Programs in this region, to ensure that the problems are prioritized. Throughout the past year, the Commission continued to interact with NYC DEP and HEP -- NYC DEP being the agency in charge of developing the time-variable model. The Commission shared available information and provided recommendations for selecting loading zones and sensitivity analyses, and subsequently submitted detailed comments on the project draft report prepared by the NYC DEP's modeling contractor.



As a member of the HEP Pathogens Work Group, ISC has been and will continue to take an active role in developing the regional priorities and strategies for opening presently closed areas for swimming.

### Shellfishing

It is an ISC goal to keep open the waters in the District that are used for shellfishing and to get presently closed areas open for shellfishing. To that end, the Commission will continue to work with the States' environmental and/or health departments to determine the areas that must be sampled to remain open or to be opened. The Commission will continue to coordinate with its three member States and commit available resources to sampling and analyses for this purpose. The areas include those used (or to be used) for direct harvesting, depuration and transplant (relay).

Details of the ongoing sampling programs, conducted in coordination with the environmental departments of ISC's member states, can be found in the Special Intensive Surveys section of this report.

## 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 in this area, the remainder of this section outlines some of the other activities that were conducted this year.

### 1995 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 second year, a staff member volunteered as a judge. The Expo was held on March 25, 1995; exhibits were displayed and judged concurrently in five New York City high schools located in all five boroughs. Commission staff took part in the Bronx Borough Expo. For many students this is an early entry into the world of science and the first opportunity to interact with professional role models.

### Fifth Annual Shad Festival

On the banks of the Harlem River in Inwood Hill Park in Upper Manhattan, the ISC staff maintained an exhibit and information booth at the Fifth Annual Shad Festival on April 30, 1995. With hundreds of attendees, water pollution control and abatement programs were discussed with the public, as well as with festival participants from state and federal agencies, environmental groups, and citizen organizations.



Sponsored by the City of New York's Parks and Recreation Department and the Manhattan Urban Park Rangers, the festival celebrates a rite of spring -- shad fishing on the Hudson River. In recent years, the commercial fishery, as well as recreational landings, have been maintained.

#### Association of Engineers and Scientists

The Association of Engineers and Scientists assists "new" Americans in technical retraining and updates. The Commission interacted with a group of Russian scientists this year. This group took part in a mini course taught by the Commission laboratory director. The course dealt with the use of flame techniques with the atomic absorption instrumentation.

#### Law Student Internships

Since February 1992, the ISC has been part of the Pro Bono Students America/New York and New Jersey (PBS/NY & NJ) database. The database includes a network of more than 300 organizations including not-for-profit, government, courts and private firms. The ISC is also listed with area law school career placement offices through which students seek paid part-time employment.

Through PBS/NY & NJ, the Commission has attracted a dozen students from area law schools. A law graduate worked pro bono for six months, simply to gain experience. Another student was compensated by a school fellowship that funded work in a public benefit setting. 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 semester's 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 Commission's 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 Commission's 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.

#### Fourth Annual Little Red Lighthouse Festival

At the site of Jeffrey's Hook Lighthouse in Fort Washington Park in northern Manhattan, the ISC staff maintained an exhibit and information booth at the Fourth Annual Little Red Lighthouse Festival on October 14, 1995. Estimated to have had several hundred attendees, water pollution issues were discussed with the public and other festival participants.

### III. AIR POLLUTION

#### GENERAL

Since 1962, the Commission has engaged in an interstate air pollution program. Over the years, the program has focused on investigations, applied research, and advocating 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, 1995, a total of 140 air pollution complaints were received, representing a decrease of 31% over that of the previous 12-month period.

For the eighth 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 that 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 of disagreeable odors and airborne pollutants 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 and 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, and 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 and, when available, ISC personnel are dispatched to investigate ongoing complaints. 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, 1995, the Commission received a total of 140 complaints; this represents a decrease of 31% compared to the previous 12-month period. Of the total number of complaints received, 96% originated from Staten Island.

As shown in the accompanying tables, the complaints were categorized by the community from which they originated and by the type of odor.

Ten Staten Island communities were the source of at least five complaints to the Commission during the period. For the last ten years including the current period, New Springville has reported the most complaints to the Commission offices. Four or less complaints were reported from more than 20 additional Staten Island areas. A total of six complaints were received from other New York City boroughs and New Jersey.

Based on the descriptions reported by the citizens, odors were classified into nine categories as shown in the table. The "garbage" and "ammonia/cat urine" categories were most frequently reported -- combined, these categories represented 53% of the total. Over the past ten years, the "garbage" category has dominated the complaints. This odor was reported the most during eight of the past 10 years; representing 9% to 35% of the calls received annually.

## OZONE HEALTH MESSAGE SYSTEM

For the eighth consecutive year, the Ozone Health Message System was activated to alert the public of unhealthy levels of ozone existing in the atmosphere of the Metropolitan Region. The



DISTRIBUTION OF AIR POLLUTION COMPLAINTS  
BY COMMUNITY  
FROM OCTOBER 1994 TO SEPTEMBER 1995

COMMUNITY	COMPLAINTS	
	NUMBER	% TOTAL
New Springville	18	12.9
Annadale	12	8.6
Travis	11	7.9
Great Kills	8	5.7
Tottenville	7	5.0
New Dorp	7	5.0
Huguenot	7	5.0
Arden Heights	6	4.3
Richmond	5	3.6
Port Ivory	5	3.6
Other Staten Island*	48	34.2
Non-Staten Island**	6	4.2
TOTAL	140	100.0

\* Represents communities from which less than 5 complaints were 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 1994 TO SEPTEMBER 1995

TYPE OF ODOR	COMPLAINTS	
	NUMBER	% TOTAL
Garbage	44	31.4
Ammonia/Cat Urine	30	21.4
Oil/Gasoline	9	6.4
Chemical	9	6.4
Natural Gas/Gassy	8	5.7
Sewage	7	5.0
Burning Rubber/Plastic	5	3.6
Sulfur/Eggy	3	2.1
Fishy	1	1.0
Others*	24	17.0
TOTAL	140	100.0

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

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 are experienced.

During 1995, the Commission's participation continued, although at a somewhat reduced level due to budgetary constraints. ISC took an active role in alerting the public to unhealthful conditions. From mid-July to the first week of August, when elevated levels of ozone existed in parts of the Metropolitan Area, the ISC relayed "health advisory" messages to the appropriate government environmental and health agencies. Independently, the individual States issue their own health messages that identify specific counties where ozone levels are a special health threat. During 1995, it was not necessary for ISC to issue a region-wide Ozone Health Message.

Since ozone irritates the respiratory system and may cause decreased lung function, this pollutant especially affects the elderly and those with pre-existing lung disease. Healthy adults and children may feel the effects during high ozone days. Adverse effects may include shortness of breath, chest pain, throat and eye irritation, and wheezing. Whenever ozone reaches unhealthy levels, the public is advised against strenuous outdoor activities and physical exertion such as jogging, ball playing, and running.

#### 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 and/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 activities of Counsel can be divided into two general categories. One is furnishing advice and legal services related to the day-to-day operations of the Commission. While this work is significant, those items of which this work is composed it is seldom of the kind that would warrant specific mention in an annual report. Accordingly, no further mention will be made here of those activities. The other category is composed of legal elements of Commission policy and matters of particular current interest in the water and air pollution programs and activities of the Commission. Such items may continue or recur, and so require attention in successive annual reports. The bulk of this report is devoted to these several items of major interest -- both those which recur and those which deserve special note as activities during the past year.

During 1995, the Commission fought to maintain the environmental gains achieved over the past few years. In particular, protecting the waterways from floatable debris within the Harbor as well as preventing floatable debris from reaching the New Jersey shores. Substantial effort to achieve ISC's goals took the form of participation in an administrative proceeding directed at the examination of whether or not the interim controls that had been proposed were being implemented quickly enough, and whether they were sufficient to achieve appropriate goals. Significant efforts were also directed at making known the Commission's commitment to maintaining federally sanctioned remedies required for Fresh Kills Landfill on Staten Island, New York.

In the summer, the ISC, along with NJ DEP, participated in the final Compliance Evaluation Inspection necessary for the certification of the Hoboken, New Jersey, sewage treatment plant. This facility, which processes the sewage for three municipalities, is now properly equipped and operating to meet permit requirements.

The Commission provided technical information and assisted the Concerned Citizens of Greenpoint (CCG) in securing guidance from a law firm in further investigating difficulties with odors in the Greenpoint section of Brooklyn. Although the firm is no longer representing CCG, they have continued to work toward their goal of making improvements to the environment in their area.

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 summer of 1995, the City initiated discussions with the parties to this lawsuit — discussions designed to eviscerate the federally sanctioned Consent Decree entered into by all the parties, including the City of New York, in 1993. The Consent Decree's objective was to provide



for a permanent solution for the control of floatable debris entering the Arthur Kill and washing up upon New Jersey shores. The decree mandated the construction of a single-barge enclosed unloading facility (EBUF). Before the first unloader was completed an evaluation of the necessity for a second unloader was to be done and a report submitted advising the plaintiffs of the City's decision regarding the need for a second enclosed unloader. The City has taken the position that they need not build any unloading facility and, without adequate explanation of the substitutions, has sought the plaintiffs' support in seeking to amend the Consent Decree by substituting what they represent are more cost effective measures. The City has also advised the parties and the NJ DEP that, failing an acceptable accommodation to them, they will file lawsuits against 25 New Jersey municipalities/sewage authorities for alleged CSO violations. None of the prospective or remaining parties in this case — the ISC, the State of New Jersey, the New Jersey Department of Environmental Protection, and the Township of Woodbridge — have offered to join with the City in undoing the Consent Decree. In fact, all of the plaintiffs have gone on record opposing the City's position. A chronology of events leading up to this challenge is detailed 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.

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. The City continues to be in compliance with the terms of the Consent Decree and up-to-date with the scheduled milestones.

#### LITIGATION AGAINST HUDSON COUNTY MUNICIPALITIES

In this matter, the Commission has been successful in assuring compliance with its regulations and with the Clean Water Act (CWA) at treatment plants in five Hudson County, New Jersey municipalities.

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 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 Clean Water Act 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 Commission's 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 Commission's 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 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

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. An abbreviated chronology of the events leading up to this is detailed below.

During December 1993, a proposed settlement agreement was transmitted to the Hoboken-Union City-Weehawken Sewage Authority (HUCWSA) seeking stipulated penalties for HUCWSA's noncompliance with the milestones set out in the 1991 Consent Decree. Those milestones would have allowed HUCWSA to achieve permit limits. While the plaintiffs were committed to seeing the Hoboken plant comply with water quality standards mandated by the CWA and ISC Regulations, there was equal concern that the defendants not be allowed to ignore reasonable schedules and deadlines that had been mutually agreed upon.

The federal court was formally notified of the plaintiffs' demand. While the plaintiffs were in the process of filing a motion demanding all penalties, HUCWSA filed a motion in federal District Court for relief under the force majeure provisions of the Consent Decree. HUCWSA alleged that delays and circumstances encountered by them during construction of the sewage treatment facility constituted force majeure (irresistible force) and excused them from stipulated penalties during the delay periods. The plaintiffs made a motion for an order denying the force majeure claim and for an order adjudging that, because the defendants failed to comply with the terms of the Consent Decree, they were liable for the full stipulated penalties. A lengthy detailed chronology of all force majeure claims was analyzed as part of the plaintiffs' supporting affidavits, giving the plaintiffs confidence that they would prevail.

During May 1994, the case was conferenced before the judge who, failing any settlement, set a June trial date. Shortly after the conference and as preparation for trial was ongoing, the



HUCWSA made virtually the same settlement offer which had been made and reneged upon in October 1993; that offer was rejected. A second offer was accepted.

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. These amendments established new dates for having an ultraviolet system for disinfection on-line; established new dates for completing the effluent pump station; required the continuation of monthly reports; and agreed to an accommodation of the stipulated penalties assessed by the United States, ISC, and NJ DEP from April 1992 through June 1994. 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.

### NEW YORK CITY SEWAGE TREATMENT PLANT PERMIT HEARINGS

Of the issues certified for adjudication in 1989 by administrative decision, by 1995, four issues continued unresolved — whole effluent toxicity, flow measurement and plant capacity (which, for purposes of expediency, are treated as one), and untreated discharges. Untreated discharge was the subject of an administrative ruling in October 1995.

This proceeding involves modifications to the SPDES permits for New York City's 14 sewage treatment plants. The issue which consumed most of 1995 -- 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. A history of the entire 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 City of New York 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.

While four issues were in varying stages of discussion during 1995, a fifth issue, 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 Commissioner's 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 of the City 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

Floatables abatement did not enjoy the same ease of settlement and later inclusion into the SPDES permits as had nutrient removal. When it appeared that there remained substantial disagreement among the intervenors on the issue of interim remedies for CSO/floatables control measures — the intervenors, believing that the City had put forth a program with significant end-loading, postponing solutions well into the next century, with minimal effort in the short-term — NYS DEC and the City announced the signing of a CSO Consent Order in June 1992.

ISC and EDF dissented from that Consent Order, filing administrative appeals. In 1994, ISC's offer of proof on the efficacy of an enhanced street sweeping program as an interim remedy to reduce floatables was sustained. This meant that ISC had met the burden required to proceed forward with a hearing. During the first week of the hearing, the intervenors were approached with a proposal of possible settlement by NYS DEC. It was learned during the hearing that NYS DEC had filed a notice of violation (NOV) against the City for failing to meet the schedule for implementing the CSO abatement programs agreed upon in the 1992 Consent Order which was incorporated into the permits. It was also learned, that early information gathered on catch basin maintenance, was said to have demonstrated to NYC DEP and NYS DEC that it had the potential for being an effective interim remedy and might be less costly than street sweeping. It was believed that if the City were to agree to a comprehensive catch basin program that met with the approval of NYS DEC, that program could settle the outstanding NOV issues and substitute for the proposed enhanced street sweeping program as an interim remedy. It was with that understanding that the adjudicatory hearing was adjourned for a short while to attempt settlement.



The City's proposal to modify the June 1992 Consent Order (the Modification) was presented in June 1995. The Modification included only a third of the City's unboomed drainage areas but, more significantly, the Modification sought additional time to survey, inspect, inventory and clean catch basins — a program that was to have been completed by the City by September 1993. When confronted by the obvious backsliding, the City took the position that at the time of the signing of the June 1992 Consent Order, *they had neither the present intent, nor the money to execute what they had committed themselves to do*. ISC took the position that cleaning catch basins that require cleaning, and doing inspections to determine whether a catch basin has a hood in place, is part of regular operation and maintenance. Moreover, the City agreed to do just that when the City signed the June 1992 Consent Order. ISC and EDF dissented from the proposed Modification, arguing, among other things, that the City should properly cover an area larger than the one proposed — the Modification would leave approximately 40% of City generated floatables untouched; that notice should be provided to those states affected by the discharge proposed in the draft SPDES permit (if accepted, the Modification would become part of the permit); and that the City should be subject to stipulated penalties for failure to adhere to an agreed upon schedule. The City had not only failed to meet an earlier schedule they agreed to, but had proposed a Modification that would accomplish less than originally agreed upon. An ALJ agreed to an Issues Conference where the parties could discuss and possibly settle outstanding issues, or make a case that there remained substantive and substantial issues to be adjudicated. ISC and EDF participated in the Issues Conference after the City refused even to consider coverage for the untouched two-thirds of the City's drainage basins. Following the submittal of briefs and argument, the ALJ ruled in October that the proposed Modification was sufficient as an abatement measure. The ISC and EDF have appealed to the NYS DEC Commissioner.

#### ENFORCEMENT PROCEEDING AGAINST NORTH RIVER WATER POLLUTION CONTROL PLANT

In early 1995, the Commission became aware of an exceptional 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 plant have not been uncommon, flow levels have usually returned to normal ranges. This was not the case with this particular drop. The North River sewage treatment plant has a permitted 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.

A Coalition of groups on the west side of Manhattan concerned about prospective development, who had brought an action against the City in federal court (the particulars are explored below), 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 this year. US EPA and NYS DEC investigated the occurrence and ISC, after consulting with



flow measurement experts, prepared a report of the Commission's findings which was shared with NYS DEC.

US EPA concluded that there was no actionable criminal violation of law. NYS DEC issued a report in October 1995, finding that there was no evidence to support dry weather bypassing of sewage; the flow reduction suggests aggressive water conservation measures; and that the possibility of under-reporting of plant flows due to plant flow meter errors could not be ruled out. NYS DEC also recommended, among other things, that funding be provided by the City to enable NYS DEC to hire an independent consultant to perform a comprehensive review and inspection of the North River WPCP's venturi meters and secondary ultrasonic flow measurements. The review should include calibration frequency and maintenance procedures, and findings should be reported directly to NYS DEC. Thereafter, twenty-five percent (25%) of all future calibrations should be conducted by the independent consultant. ISC has long espoused an independent consultant to do calibration of flow meters as well as to do periodic intermittent monitoring and reporting to NYS DEC. Some background on the Coalition's actions is detailed below.

The Coalition for a Livable West Side, joined by Southwatch, 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 Commissioner's decision denying ISC and the other plaintiffs party status in NYS DEC's enforcement action regarding permit violations at the City's North River sewage treatment 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 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.

During 1993, the Coalition for a Livable West Side prevailed on a summary judgement motion on the issue of liability. The federal district court found that the CWA imposes strict liability where the facts show that permit levels are exceeded. The City moved for a stay and argument was heard in 1994. The City argued that they should be permitted to carry out remedial measures to correct exceedences well into the year 2000 and beyond. The Court denied the City's motion, commented on the level of enforcement on the part of the State toward the City, and directed the parties to agree on a management committee to bring some measure of accountability to the scheduling of milestones.



## BROOKLYN NAVY YARD RESOURCE RECOVERY FACILITY PERMIT HEARING

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 this past summer 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 (detailed below) on permit requirements for the municipal solid waste incinerator. In May 1995, the Office of the Public Advocate of the City of New York, issued a seventy-one 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.

The City submitted a revised proposal which called for the disposal of ash residue from the BNYRRF at an out-of-state landfill. It was because of this new proposal that the administrative hearing on permit requirements for a municipal solid waste incinerator was reopened in late 1992. In late December 1992, the ALJ issued rulings following consideration of the significant modifications of the City's 1989 SWMP, including its recycling proposals as well as the ash disposal plan. A fifth interim decision was issued in September 1993.

Among the many issues raised, the ALJ found that none were ripe for adjudication and, accordingly, no further hearings needed to be held. The issues raised were ash residue disposal; recycling proposals; compliance of the City's Recycling Plan with a legal requirement for source separation by September 1, 1992; the suitability of a co-applicant with the City to receive the requested permits; changes in the draft air and solid waste permits for the proposed facility; a new health risk assessment; the preclusion of the proposed site based on its eligibility for inclusion in the National Register of Historic Places; and the dredging of Wallabout Channel to accommodate barge and tug traffic.

The ALJ's findings were predicated upon the view that none of the issues raised met the substantive and significant standard to require adjudication. Nonetheless, the ALJ recommended that it would be appropriate to incorporate additional conditions into the circumstances under which permits might be issued. Among the more significant of the twelve recommendations were: the City must demonstrate full compliance with recycling tonnages and with source separation; the City



incorporate amendments to fund a community oversight committee and provide real-time, continuously monitored data telemetered directly to the NYS DEC - Region 2 offices; ultimate approval authority should be vested with a member of NYS DEC's executive staff; draft permits should be amended to incorporate prohibitions regarding the staging of barges outside the enclosed barge basin and spillage of solid waste into the surface waters; amendments to add industrial waste and consumer batteries to the list of excluded wastes; and prior to any permit issuance, the City must provide the ALJ and the parties with a detailed and comprehensive summary of its intensive recycling program.

The Fifth Interim Decision of September 9, 1993, resolved the appeals from the ALJ's December 1992 Rulings. Significantly, the NYS DEC Commissioner found that public policy concerns balance in favor of establishing a stipulated penalty to be imposed whenever there is a finding that any recycling condition has been violated. Moreover, there were adequate assurances concerning the co-applicant's reliability to comply with permit terms. The Commissioner also removed the ALJ's recommendation that there be ultimate approval authority vested with a member of NYS DEC's executive staff. The Commissioner ruled that since consumer batteries were already excluded in the draft permit, it need not be a permit condition. Finally, the Commissioner supplemented the ALJ's ruling with the exclusion of industrial waste. The prohibitions against spillage of solid waste into surface waters was added as a permit condition.

All motions to reopen the hearing were ruled upon in October 1993 and denied. In December 1993, NYS DEC established the procedures to be followed prior to the issuance of Permits to Construct. First, the City must demonstrate that offsets can be obtained. Second, the New York City Department of Sanitation will distribute the City's proposal to all parties. Third, comments will be accepted for 30 days. Finally, NYS DEC will prepare a response.

During April 1994, NYS DEC made a decision on the City's offset plan which the intervenors had commented upon. Among other things, the decision determined that the BNYRRF did demonstrate offsets; apartment incinerators were allowed as offsets; the baseline periods for municipal incinerators were accepted; and the Clean Air Act Amendments of 1990 did not apply. These were the positions that most of the intervenors had not fully supported. Lastly, another incinerator, Southwest Brooklyn, must be closed, rather than modified, to achieve offsets.





**WASTEWATER TREATMENT PLANTS DISCHARGING  
INTO INTERSTATE SANITATION DISTRICT WATERS  
1995**

	ISC RECEIVING WATER CLASSIFICATION	DATE OF CONSTR.	FLOW AVG. (MGD)	FLOW DESIGN (MGD)	TYPE OF TREAT- MENT	ESTIMATED POPULATION SERVED
<b><u>PLANT</u></b>						
<b><u>CONNECTICUT</u></b>						
<b><u>Fairfield County</u></b>						
Bridgeport -East Side	B-1	1973+	6.5	10.0	Secondary(AS)	44,000
-West Side	B-1	1973+	22.3	30.0	Secondary(AS)	112,000
Fairfield	A	1982+	7.5	9.0	Secondary(AS)	35,000
Greenwich	A	1994+	7.6	12.5	Secondary(AS)	54,000
Norwalk	B-1	1980+	13.6	15.0	Secondary(AS)	80,000
Stamford	B-1	1991+	13.3	20.0	Secondary(AS)	90,000
Stratford	A	1992+	9.3	11.5	Secondary(AS)	50,000
Westport	A	1975+	1.5	2.8	Secondary(AS)	14,600
<b><u>New Haven County</u></b>						
Milford -Beaver Brook	A	1987+	1.8	3.1	Secondary(AS)	19,000
-Housatonic	A	1987+	5.3	8.0	Secondary(AS)	21,500
New Haven -East Shore	B-1	1993+	36.6	40.0	Secondary(AS)	215,000
West Haven	B-1	1988+	7.35	12.5	Secondary(AS)	50,000
<b><u>NEW JERSEY</u></b>						
<b><u>Bergen County</u></b>						
Edgewater	B-1	1989+	3.0	6.0	Secondary(PO)	21,000
<b><u>Essex County</u></b>						
Passaic Valley Sewerage Commissioners	B-1	1988+	263.0	330.0	Secondary(AS)	1,500,000
<b><u>Hudson County</u></b>						
Hoboken	B-1	1994+	10.9	24.0	Secondary(TF)	75,000
North Bergen M.U.A. -Woodcliff	B-1	1991+	2.5	2.9	Secondary(TF)	21,100
West New York	B-1	1992+	9.1	10.0	Secondary(TF)	56,000
<b><u>Middlesex County</u></b>						
Middlesex County Utilities Authority	A	1994+	107.5	147.0	Secondary(PO)	752,000
<b><u>Union County</u></b>						
Joint Meetings of Essex & Union Counties	B-2	1991+	57.7	85.0	Secondary(AS)	500,000
Linden Roselle Sewerage Authority	B-2	1989+	12.1	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  
1995**

	ISC RECEIVING WATER CLASSIFICATION	DATE OF CONSTR.	FLOW AVG. (MGD)	FLOW DESIGN (MGD)	TYPE OF TREAT- MENT	ESTIMATED POPULATION SERVED
<b><u>NEW YORK</u></b>						
<b><u>Nassau County</u></b>						
Bay Park	A	1992+	53.6	70.0	Secondary(AS)	484,900
Belgrave Sewer District	A	1995+	1.3	2.0	Secondary(TF)	12,000
Cedar Creek	A	1995+	54.0	72.0	Secondary(AS)	504,000
Cedarhurst	A	1968+	0.8	1.0	Secondary(TF)	6,000
Glen Cove	A	1981+	4.4	8.0	Secondary(AS)	27,000
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)	8000
Jones Beach	A	1990+	0.1	2.5	Secondary(TF)	Seasonal
Lawrence	A	1983+	1.2	1.5	Secondary(TF)	6,200
Long Beach	A	1994+	5.9	7.5	Secondary(TF)	38,000
Oyster Bay Sewer District	A	1992	1.0	1.8	Secondary(TF)	8,500
Port Washington Sewer District	A	1991+	2.6	4.0	Secondary(TF)	32,000
West Long Beach Sewer District	A	1986+	0.5	1.5	Secondary(TF)	5,000
<b><u>New York City</u></b>						
<b><u>Bronx County</u></b>						
Hunts Point	B-1	1977+	133.9	200.0	Secondary(AS)	629,900
<b><u>Kings County(Brooklyn)</u></b>						
Coney Island	A	1965+	101.3	100.0	Secondary(AS)	602,100
Newtown Creek	B-1	1967+	279.3	310.0	Secondary(AS)	1,039,300
Owls Head	B-1	1991+	124.1	120.0	Secondary(AS)	761,500
Red Hook	B-1	1987	39.8	60.0	Secondary(AS)	192,200
26th Ward	A	1975+	73.3	85.0	Secondary(AS)	271,200
<b><u>New York County(Manhattan)</u></b>						
North River	B-1	1986	156.3	170.0	Secondary(AS)	584,200
Wards Island	B-1	1979+	241.8	250.0	Secondary(AS)	1,004,200
<b><u>Queens County</u></b>						
Bowery Bay	B-1	1978+	115.9	150.0	Secondary(AS)	727,100
Jamaica	A	1978+	82.8	100.0	Secondary(AS)	632,100
Rockaway	A	1978+	22.8	45.0	Secondary(AS)	94,500
Tallman Island	B-1	1979+	56.1	80.0	Secondary(AS)	388,200

**WASTEWATER TREATMENT PLANTS DISCHARGING  
INTO INTERSTATE SANITATION DISTRICT WATERS  
1995**

	ISC RECEIVING WATER CLASSIFICATION	DATE OF CONSTR.	FLOW AVG. (MGD)	FLOW DESIGN (MGD)	TYPE OF TREAT- MENT	ESTIMATED POPULATION SERVED
<b><u>NEW YORK (con't)</u></b>						
<b><u>Richmond County</u></b>						
<b><u>(Staten Island)</u></b>						
Atlantic Village**	A	1985	-	0.075	Secondary(AS)	-
Elmwood Park Condominiums*	B-1	1974	-	2.0	Primary	20,000
IS-7	A	1964	0.005	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+	26.4	40.0	Secondary(AS)	151,600
Point East Condominiums*	A	1986	-	0.16	Extended Aeration w/Sand Filtration	300
Port Richmond	B-2	1979+	37.4	60.0	Secondary(AS)	172,300
Princess Bay	A	1987	0.07	0.16	Extended Aeration w/Sand Filtration	500
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+	0.042	0.06	Secondary(AS)	750
Treetop Village*	A	1985	-	0.25	Extended Aeration w/Sand Filtration	-
Woodbrook Village**	B-1	1980	0.51	0.70	Extended Aeration	5,000
<b><u>Rockland County</u></b>						
Joint Regional Sewerage Board - Town of Haverstraw	A	1979+	4.2	8.0	Secondary(AS)	33,000
Orange & Rockland Utilities*	A	1984	0.003	0.01	Secondary(AS)	105
Orangetown Sewer District	A	1985	7.6	8.5	Secondary(TF)	52,000
<b><u>Palisades Interstate Park</u></b>						
Bear Mountain Plant	A	1967+	0.014	0.30	Secondary(TF)	20,000
Tallman Mountain Plant	A	1968	0.003	0.01	Secondary(AS)	Seasonal
Rockland County Sewer District #1	A	1995+	18.7	26.0	Secondary(RD)	160,000
Stony Point	A	1985+	0.89	1.0	Secondary(AS)	12,000
<b><u>Suffolk County</u></b>						
Huntington Sewer District	A	1988+	1.6	2.5	Secondary(TF)	25,000
Northport	A	1972+	0.27	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+	0.62	2.0	Secondary(AS)	10,000
Suffolk County Sewer District #21	A	1989	2.16	2.5	Secondary(BO)	20,000



**WASTEWATER TREATMENT PLANTS DISCHARGING  
INTO INTERSTATE SANITATION DISTRICT WATERS  
1995**

	ISC RECEIVING WATER CLASSIFICATION	DATE OF CONSTR.	FLOW AVG. (MGD)	FLOW DESIGN (MGD)	TYPE OF TREAT- MENT	ESTIMATED POPULATION SERVED
<b><u>NEW YORK (con't)</u></b>						
<b><u>Westchester County</u></b>						
Blind Brook (Rye)	A	1985+	2.8	5.0	Secondary(AS)	25,000
Buchanan	A	1990+	0.18	0.5	Secondary(AS)	2,400
Kings Ferry Sewer Association*	A	1992+	0.03	0.05	Secondary(AS)	600
Mamaroneck	A	1993+	13.7	20.6	Secondary(AS)	80,000
Metro North (Harmon Shop)*	A	1985+	0.04	0.4	Physical/Chemical	500
New Rochelle	A	1982+	13.6	13.6	Secondary(AS)	80,000
Ossining	A	1981	6.1	7.0	Secondary(AS)	40,000
Peekskill	A	1980+	6.2	10.0	Secondary(AS)	35,000
Port Chester	A	1990+	2.8	6.0	Secondary(RD)	26,000
Springvale Apartments Company*	B-1	1991+	0.11	0.13	Secondary(RD)	1,000
Yonkers Joint Treatment	A	1988+	74.3	92.0	Secondary(AS)	476,000

**Federal and Military**

Camp Smith (Westchester County)	A	1988+	0.024	0.24	Secondary(TF)	2,400
FDR Veterans Administration Medical Center (Westchester County)	A	1982+	0.19	0.4	Secondary(TF)	2,500
Gateway National Recreation Area (Floyd Bennet Field, Kings County)	A	1981+	-	0.4	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

\*\* Flow was diverted to a secondary treatment plant in 1995

(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  
1995**

<u>PLANT</u>	SLUDGE (1) GENERATED TONS/YEAR	SLUDGE PERCENT SOLIDS	SLUDGE DISPOSAL METHOD
<b><u>CONNECTICUT</u></b>			
<b><u>Fairfield County</u></b>			
Bridgeport -East Side	44,000	6	Incineration(2)
-West Side	90,000	6	Incineration(2)
Fairfield	5,000	20	Landfill
Greenwich	6,000	18	Compost/Landfill
Norwalk	56,000	5	Incineration(2)
Stamford	*5,000	-	Landfill
Stratford	32,333	6.5	Incineration
Westport	199.5	-	Incineration(2)
<b><u>New Haven County</u></b>			
Milford -Beaver Brook	-	-	Incineration(2)
-Housatonic	1,500	17	Incineration(2)
New Haven -East Shore	137,069	5	Incineration(2)
West Haven	8,000	30	Incineration
<b><u>NEW JERSEY</u></b>			
<b><u>Bergen County</u></b>			
Edgewater	2,700	20	Incineration(2)
<b><u>Essex County</u></b>			
Passaic Valley Sewerage Commissioners	106,000	55	-
<b><u>Hudson County</u></b>			
Hoboken	10,220	25	Beneficial Reuse(2)
North Bergen M.U.A. -Woodcliff	3,600	9	Incineration(2)
West New York	3,366	4.09	Beneficial Reuse (2)
<b><u>Middlesex County</u></b>			
Middlesex County Utilities Authority	200,000	27	Beneficial Reuses

**PLANT**

**NEW JERSEY (con't)**

**Union County**

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

**1995**

	SLUDGE (1) GENERATED TONS/YEAR	SLUDGE PERCENT SOLIDS	SLUDGE DISPOSAL METHOD
Joint Meetings of Essex & Union Counties	2,000,000	0.5	Landfill
Linden Roselle Sewerage Authority	40,000	5	Compost
Rahway Valley Sewerage Authority	22,514	17.36	Landfill

**NEW YORK**

**Nassau County**

Bay Park	41,871	19.61	Landfill
Belgrave Sewer District	1,350	6	Landfill
Cedar Creek	39,000	20	Landfill
Cedarhurst	-	-	-
Glen Cove	3,865	22	Landfill
Great Neck Sewer District	1,000	24	Landfill
Great Neck Village	22	5	Landfill
Inwood	11,609	2.9	-
Jones Beach	-	-	Trucked Out
Lawrence	*23	-	Compost
Long Beach	*353	-	Landfill(2)
Oyster Bay Sewer District	+868	4	Trucked Out
Port Washington	*1,100,000	-	Incineration
West Long Beach	775	5	Bay Park

**New York City**

**Bronx County**

Hunts Point	98,625	27	Land Application/Landfill Cover
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**Kings County(Brooklyn)**

Coney Island	(3)		Land Application/Landfill Cover
Newtown Creek	(3)		Land Application/Landfill Cover
Owls Head	(3)		Land Application
Red Hook	9,880	27	Landfill
26th Ward	67,002	27	Land Application/Landfill Cover

**PLANT**

**NEW YORK (con't)**

**New York County (Manhattan)**

North River	(3)		Land Application/Landfill Cover
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**SLUDGE PRODUCTION FROM  
WASTEWATER TREATMENT PLANTS DISCHARGING  
INTO INTERSTATE SANITATION DISTRICT WATERS  
1995**

	SLUDGE (1) GENERATED TONS/YEAR	SLUDGE PERCENT SOLIDS	SLUDGE DISPOSAL METHOD
Wards Island	122,433	27	Land Applications
<u>Queens County</u>			
Bowery Bay	45,989	27	Land Application/Landfill Cover
Jamaica	25,083	27	Land Application/Landfill Cover
Rockaway	(3)		Land Applications
Tallman Island	23,770	27	Land Application/Landfill Cover
<u>Richmond County (Staten Island)</u>			
Oakwood Beach	18,086		Landfill
Port Richmond	(3)		Landfill
Princess Bay	650		Oakwood Beach
Staten Island University Hospital, South	28,000	25	Offsite
Woodbrook Village	2,100		Oakwood Beach
<u>Rockland County</u>			
Joint Regional Sewerage Board - Town of Haverstraw	3,634	23.1	Landfill
Orange & Rockland Utilities	-	-	-
Orangetown Sewer District	3,891	25	Incineration
Palisades Interstate Park			
Bear Mountain Plant	-	-	-
Tallman Mountain Plant	-	-	-
Rockland County Sewer District #1	1,863	20	Landfill
Stony Point	695	17	Landfill
<u>Suffolk County</u>			
Huntington Sewer District	+393	21.2	Landfill
Northport	+1,043	3	Incineration(2)
Suffolk County Sewer District #1	+7,093	3	Incineration(55%), Landfill(45%)
<b><u>PLANT</u></b>			
<b><u>NEW YORK (con't)</u></b>			
<u>Suffolk County (con't)</u>			
Suffolk County Sewer District #3	59,790	27	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%)

**SLUDGE PRODUCTION FROM  
WASTEWATER TREATMENT PLANTS DISCHARGING  
INTO INTERSTATE SANITATION DISTRICT WATERS  
1995**

	SLUDGE (1) GENERATED TONS/YEAR	SLUDGE PERCENT SOLIDS	SLUDGE DISPOSAL METHOD
<b><u>Westchester County</u></b>			
Blind Brook (Rye)	*730	-	Incineration(2)
Buchanan	+3,625	2.24	-
Kings Ferry Sewer Association	-	-	Trucked Out
Mamaroneck	*2,700		Pumped to New Rochelle
Metro North (Harmon Shop)	200	5	-
New Rochelle	*2,800	-	Incineration
Ossining	9,000	-	Incineration
Peekskill	3,650	-	Sent to Ossining
Port Chester	*1,825	-	Incineration
Springvale Apartments Company	-	-	Trucked Out
Yonkers Joint Treatment	37,699	27.8	Lime Stabilization
<b><u>Federal and Military</u></b>			
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)	6,908	2	-

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 1995**

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, 1994 to June 30, 1995:

**CASH BOOK BALANCE AS OF JUNE 30, 1994** \$ 153,504.59

**RECEIPTS**

Connecticut - FY '95	\$ 3,333.00
New York - FY '95	315,000.00
New York - Pass through monies	
For the HEP Nutrients Study	9,384.00
New Jersey - FY '95	315,000.00
EPA - FY '94	119,000.00
EPA - FY '95	219,400.00
Interest	19,478.52
Pass through monies for the	
HEP Nutrients Study	341,926.00
Penalties from Hoboken case	768,000.00
Miscellaneous Receipts	<u>5,257.94</u>

TOTAL RECEIPTS 2,115,779.46

Sub-Total \$2,269,284.05

**DISBURSEMENTS**

TOTAL DISBURSEMENTS 1,244,875.93

**CASH BOOK BALANCE ON JUNE 30, 1995** \$1,024,408.12

U.S. Treasury Bills	\$ 558,004.13
Insured CD's	200,000.00
Insured Money Market Accounts	254,252.59
Checking Accounts	<u>12,151.40</u>
	<u><u>\$1,024,408.12</u></u>



## GLOSSARY

<b>ACOE</b>	Army Corps of Engineers
<b>ALJ</b>	administrative law judge
<b>ANSP</b>	Academy of Natural Sciences of Philadelphia
<b>BGD</b>	billion gallons per day
<b>BMWCA</b>	Bureau of Marine Water Classification and Analysis
<b>BNR</b>	biological nutrient removal
<b>BNY</b>	Brooklyn Navy Yard
<b>BOD</b>	biochemical oxygen demand
<b>CCG</b>	Concerned Citizens of Greenpoint
<b>CCMP</b>	Comprehensive Conservation and Management Plan
<b>CSI</b>	College of Staten Island
<b>CSO</b>	combined sewer overflow
<b>CWA</b>	Clean Water Act
<b>DEC</b>	Department of Environmental Conservation
<b>DEP</b>	Department of Environmental Protection
<b>DOS</b>	Department of Sanitation
<b>DPW</b>	Department of Public Works
<b>EBUF</b>	Enclosed barge unloading facility
<b>EDF</b>	Environmental Defense Fund
<b>EPA</b>	Environmental Protection Agency
<b>FDA</b>	Food and Drug Administration
<b>FY</b>	fiscal year
<b>HEM</b>	harbor-wide eutrophication model
<b>HEP</b>	Harbor Estuary Program
<b>HRFA</b>	Hudson River Fisherman's Association
<b>HUCWSA</b>	Hoboken-Union City-Weehawken Sewerage Authority
<b>HVAC</b>	heating, ventilating and air conditioning
<b>I/I</b>	infiltration/inflow
<b>ISC</b>	Interstate Sanitation Commission
<b>ISD</b>	Interstate Sanitation District
<b>LISS</b>	Long Island Sound Study
<b>MGD</b>	million gallons per day
<b>NEP</b>	National Estuary Program
<b>NOV</b>	Notice of Violation
<b>NPDES</b>	National Pollutant Discharge Elimination System
<b>NRDC</b>	Natural Resources Defense Council

**GLOSSARY**  
**(continued)**

<b>N/SPDES</b>	National/State Pollutant Discharge Elimination System
<b>NWG</b>	Nutrients Work Group
<b>NYBRP</b>	New York Bight Restoration Plan
<b>NYC</b>	New York City
<b>NYS</b>	New York State
<b>PBS/NY &amp; NJ</b>	Pro Bono Students America/New York & New Jersey
<b>R/V</b>	research vessel
<b>RFP</b>	request for proposals
<b>RRF</b>	resource recovery facility
<b>SPDES</b>	State Pollutant Discharge Elimination System
<b>SSES</b>	sewer system evaluation survey
<b>STP</b>	sewage treatment plant
<b>SUNY</b>	State University of New York
<b>SWMP</b>	Solid Waste Management Plan
<b>TSS</b>	total suspended solids
<b>WPCP</b>	water pollution control plant

