

INTERSTATE SANITATION COMMISSION

A TRI-STATE ENVIRONMENTAL AGENCY



NEW YORK



NEW JERSEY



CONNECTICUT

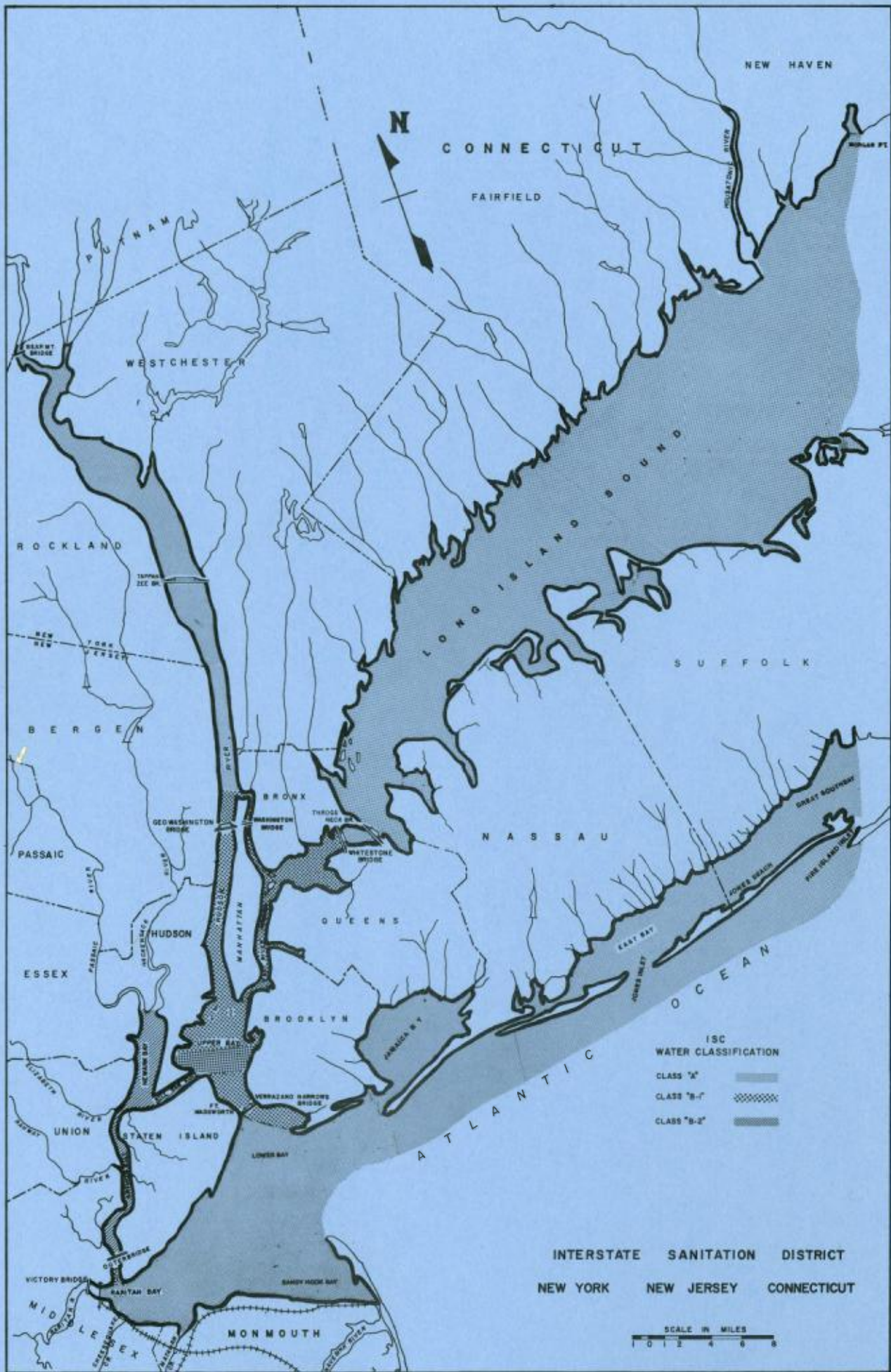
1994

ANNUAL REPORT

NEW YORK

NEW JERSEY

CONNECTICUT



ISC
WATER CLASSIFICATION

CLASS "A"

CLASS "B-1"

CLASS "B-2"

INTERSTATE SANITATION DISTRICT
NEW YORK NEW JERSEY CONNECTICUT

SCALE IN MILES
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INTERSTATE SANITATION COMMISSION

A TRI-STATE ENVIRONMENTAL AGENCY



1994

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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John Atkin
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Jeannette A. Semon

Acting Director -
Acting Chief Engineer
Howard Golub

January 24, 1995

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

Your Excellencies:

The Interstate Sanitation Commission respectfully
submits its report for the year 1994.

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

Even though we are still in a long, hard period of budgetary restrictions, it is with deep satisfaction that I look back on 1994 as a turning point in which the Commission was able to move confidently forward with well-rounded and successful programs in sampling, testing, regulation and enforcement. While we were gratified that our state appropriations were not cut during this past year, we look forward to a much-needed and much-merited funding increase so that a more complete agenda of environmental programs -- programs that had been curtailed during the past five years -- can be restored and put into high gear. Within sight are the Commission's goals of achieving further improvements in water quality -- leading to additional waterways being opened to such activities as year-round shellfishing, and more sites throughout the entire tri-state region being revived and utilized for both commercial and recreational purposes.

I am pleased to report that our protracted litigation in Hudson County, New Jersey, has reached a final and successful conclusion. As a result, all of the wastewater treatment plants in this sensitive area of the Hudson have now been upgraded and are operating at the secondary treatment level -- to the benefit of the environment and the residents of New York and New Jersey.

In addition, it is gratifying to note that the Commission's long-standing philosophy of pollution prevention is bearing fruit, having been selected as one of the methods for floatables control from combined sewer overflow (CSO) discharges from New York City. This is a matter of the highest priority to the Commission, since CSO control is the area that must next be addressed to achieve additional improvements in the waterways throughout our tri-state region.

It is also a source of pride to the Commission that, as part of the New York-New Jersey Harbor Estuary Program, the ISC was chosen to coordinate a massive nutrients data collection project. All parties agree that this is vitally needed information if we are to determine the cause and effect relationship of nutrients within the region's waters. It is an essential step for devising and shaping a long-term regional control strategy for this vast area which encompasses the entire New York-New Jersey Harbor Complex, including the western portion of Long Island Sound.

Finally, in the wake of our impressive ribbon-cutting ceremony this past October that marked the official opening of the Commission's relocated laboratory -- now on the campus of The College of Staten Island -- I wanted to reiterate my enthusiasm for the success of the unique academic/governmental relationship that now exists between the Commission and the

College. In addition to affording the Commission new and modern facilities to conduct its testing and analyses, we look forward to a program of collaborative research with the College. It is our hope that it will open the way to a greater understanding of water and air pollution problems -- an understanding leading to environmental solutions that will benefit the entire population throughout our tri-state region.

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

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

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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 was 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.

Facilities for treating sanitary wastes began to become operational in the late 1880s. 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 1994, 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.

While significant environmental gains have been made in recent years, more 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; very few beach closings due to elevated levels of coliform bacteria or wash-ups of debris have occurred during the last five bathing seasons; and the presence of many and varied finfish stocks have been available for commercial and recreational harvest.

As the result of that fiscal year's 35% budget cut and subsequent cuts to the ISC budget, operations at the Commission have been severely curtailed since July 1989. The present staff is slightly more than 50% of its size from that of fiscal year 1988-1989. Despite these reductions, the staff has performed to its utmost 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 not done at the expense of the environment.

The Commission continues to conduct an aggressive public involvement, education and outreach program. ISC regularly testifies at public hearings and meetings on various issues of concern throughout the region. ISC continues to lecture at local colleges on subjects dealing with coastal pollution, oceanography, sampling and data collection, and related Commission activities. During the past five years, the Commission has been a sponsor for Our World Underwater which gives young scholars the opportunity to get nationwide exposure to diverse organizations involved with the marine environment. For the past three 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 Fourth Annual Shad Festival on the banks of the Harlem River in Upper Manhattan and in the Eleventh Annual New Jersey Environmental Exposition in Somerset, New Jersey. An exhibit and information booth were maintained by the staff for both of these events. The Commission also regularly interacts with a number of professional, civic, environmental, and citizens' organizations.

This report provides a record of the water and air pollution activities of the Interstate Sanitation Commission. 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 including coordinating the data collection effort for nutrients, 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.

A great deal of planning and construction is under way and will provide water pollution control and abatement from municipal and industrial wastewaters discharging into District waters. It is estimated that over \$4.62 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:

- party status 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.
- active involvement with Hudson County, New Jersey, communities as to upgrading or eliminating their treatment plants to meet Commission and federal water quality standards.
- achieving a 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 towards its goal of insuring compatible CSO requirements on a regional basis.

For the seventh consecutive year, ISC's region-wide inventory of development projects within the District has been amassing pertinent information. 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 interacting on various work groups for these studies. The Commission took the lead role in coordinating an extensive nutrients data collection program under the auspices of the HEP. These projects involved the collection of water samples during dry and wet weather conditions at wastewater treatment facilities, pump stations, area rivers including the Hackensack, Hudson, Passaic and Raritan as well as the Atlantic Ocean.

The final Comprehensive Conservation and Management Plan (CCMP) for the LISS was issued and endorsed by the Governors of New York and New Jersey and the US EPA Administrator. Issuance of the draft CCMP for the HEP is imminent. 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.

In November 1993, the Commission coordinated a meeting to address bathing beach closure practices that presently exist in the tri-state region. Early this year, the ISC issued a report on the conference. This was an unfunded program identified by the Pathogens Work Group of the HEP; ISC agreed to perform the work and supply the results to the HEP.

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 fourth consecutive year, in a multi-agency intensive survey in Long Island Sound from the Bronx, New York eastward to Norwalk, Connecticut, in order 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. An ISC staff member has been serving as chairman of the Public Involvement Coordination Group since 1987. Sponsored by US EPA - Region II, ACOE - New York District, NJ DEP and NYS DEC, Dredged Materials Management Forums III and IV were held during March and July, respectively. 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.

ISC's laboratory, recently relocated to the campus of the College of Staten Island (CSI), is now operational. Besides its normal analyses, 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. Its up-to-date, as well as historical holdings, have been sought and made available to the academic community, consulting engineering firms, attorneys-at-law, and environmental and public awareness groups, as well as to government agencies across the nation.

AIR POLLUTION

The Commission's air pollution monitoring and response programs remained drastically reduced this past year due to budgetary restrictions. 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 1994, 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 1993 through September 1994, the Commission received 202 air pollution complaints -- an increase of 26% over the previous 12-month period. As has been the case in the past, most of the calls originate from Staten Island; this year, 188 out of 202 calls originated from Staten Island. 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 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

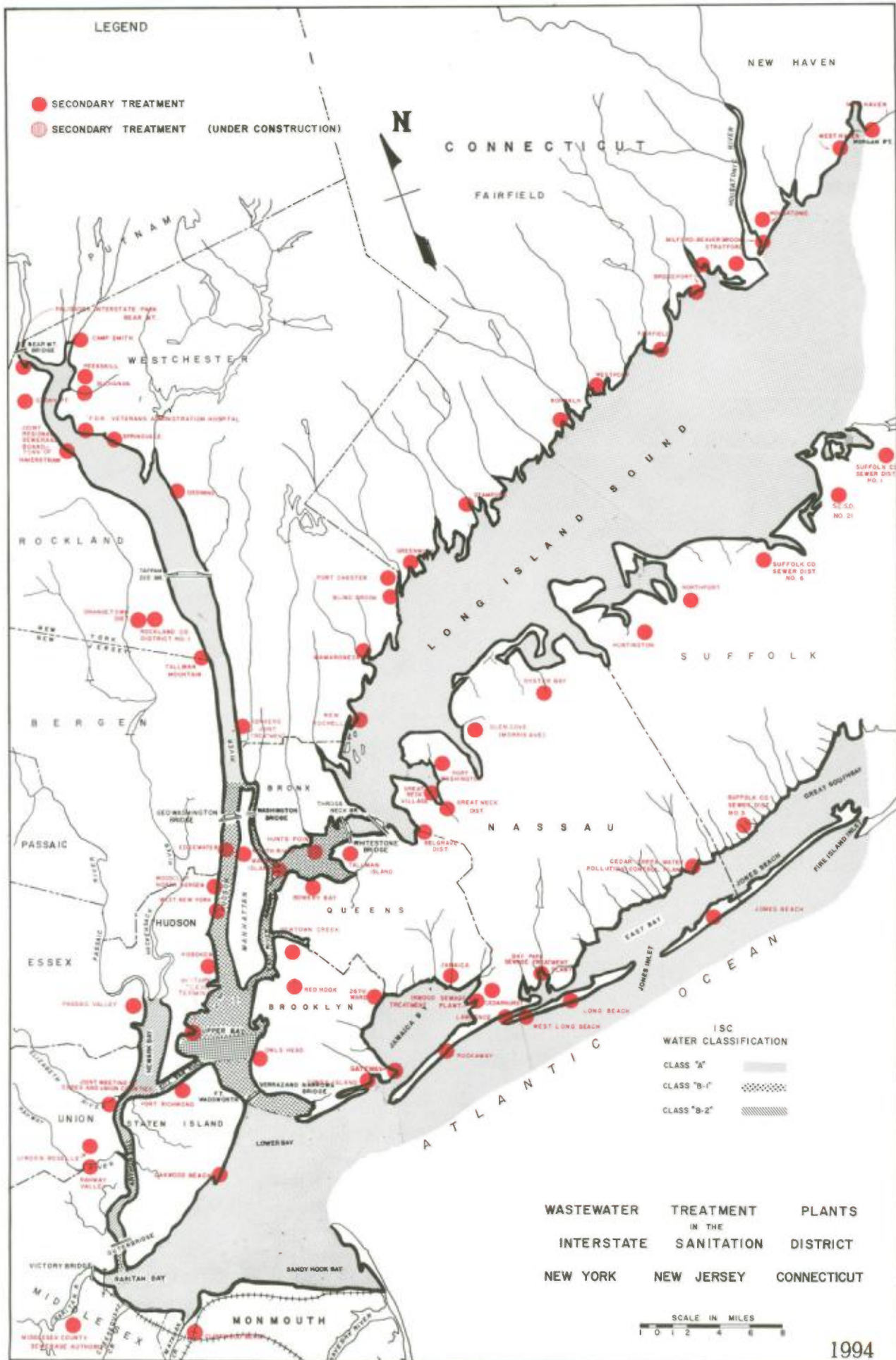
During 1994, over \$4.62 billion was allocated for 186 water pollution control projects in the Interstate Sanitation District which were either completed, in progress, or planned for the future. These monies were allocated in the following manner: nearly \$746.3 million for 35 completed projects, over \$2.84 billion for 86 projects in progress, and nearly \$1.04 billion for 65 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, there is still much room for improvement. It has always been the Commission's contention that if adequate infrastructure is in place, receiving water quality can be improved, or at least maintained, as well as "use impairments" minimized. During 1994, all primary sewage treatment plants in the District have been upgraded to secondary treatment or have diverted their flows to regional plants for treatment.

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 region-wide have already started 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. 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 1994.

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)



NEW HAVEN

CONNECTICUT

FAIRFIELD

WESTCHESTER

ROCKLAND

BERGEN

PASSAIC

ESSEX

UNION

MIDDLESEX

HUDSON

STATEN ISLAND

BROOKLYN

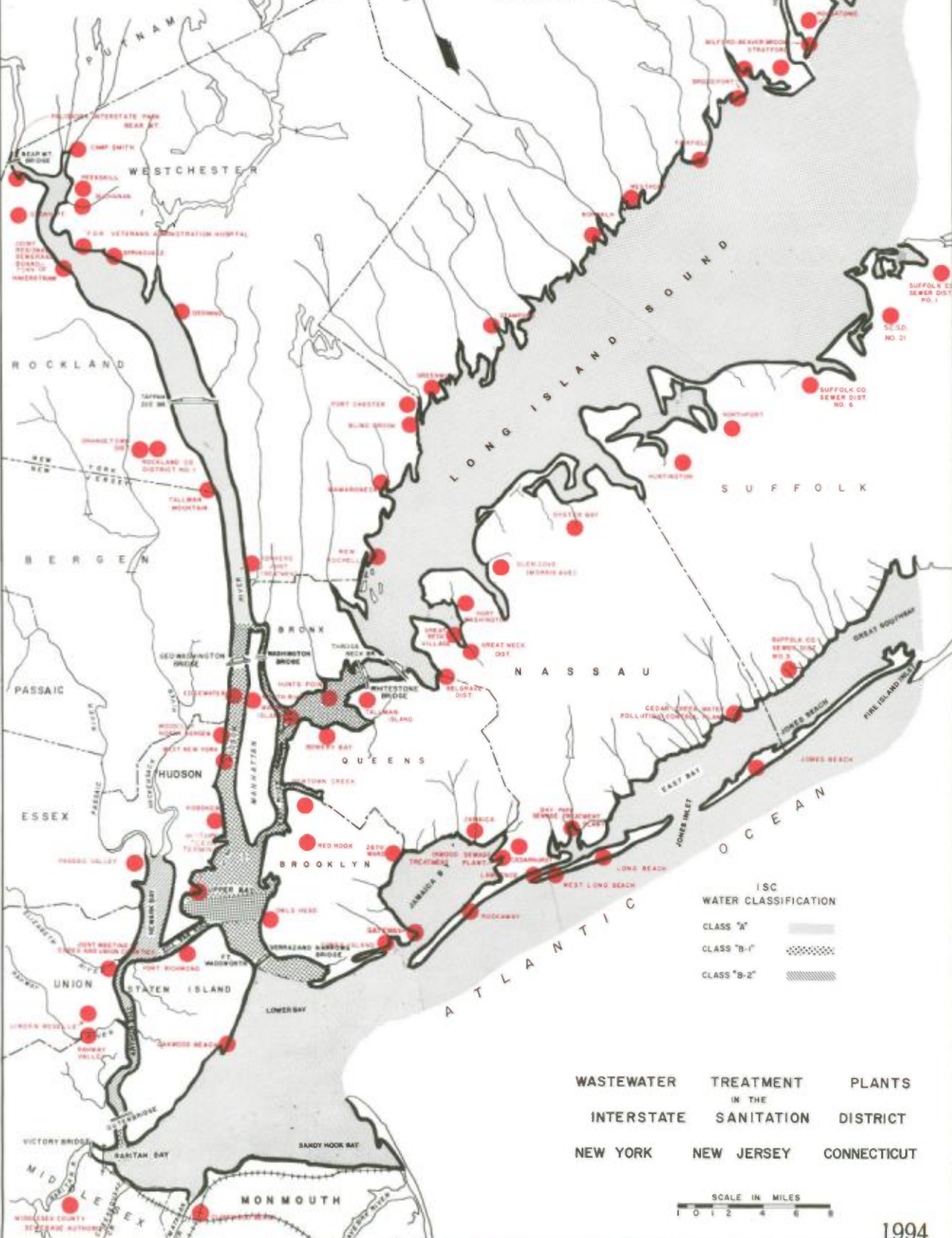
MONMOUTH

NASSAU

SUFFOLK

ATLANTIC

OCEAN



WASTEWATER TREATMENT PLANTS IN THE INTERSTATE SANITATION DISTRICT

NEW YORK NEW JERSEY CONNECTICUT



1994

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. In Connecticut, approximately \$18.1 million is being spent to reduce its aggregate, annual nitrogen load by 900 tons from the 1990 baseline. The Connecticut Department of Environmental Conservation 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)

Completed Projects

Rehabilitation of the chlorination facilities is complete at a cost of \$2.254 million. An operational start-up during September 1994 took place at both of the plants.

Projects in Progress

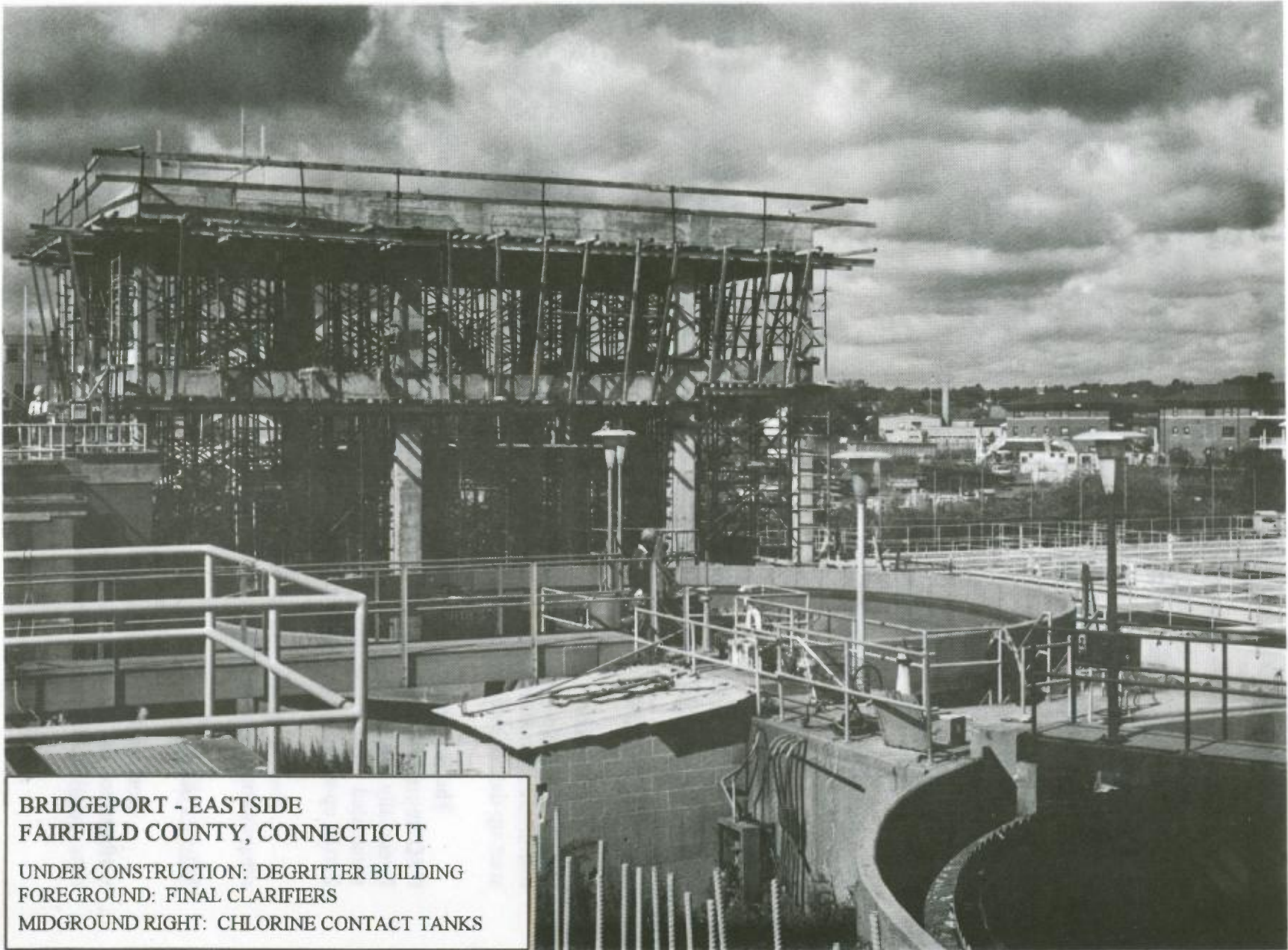
Construction is currently 40% complete at the West Side plant. The cost of \$35.2 million is being used to finance rehabilitation of all units, as well as new pumps and instrumentation at this 25 MGD secondary treatment facility. An approximate operational start-up date is planned for May 1996.

The Bridgeport drainage basins (comprising 3,880 acres) have an ongoing multi-year CSO improvement program. Anticipated to cost \$27 million, this work is 40% 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 Authority has allocated about \$1.5 million per year for sewer system rehabilitation in both drainage basins; this agenda is ongoing.

Future Projects

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



**BRIDGEPORT - EASTSIDE
FAIRFIELD COUNTY, CONNECTICUT**

UNDER CONSTRUCTION: DEGRITTER BUILDING

FOREGROUND: FINAL CLARIFIERS

MIDGROUND RIGHT: CHLORINE CONTACT TANKS

Re-estimated at \$27 million, the proposed rehabilitation start-up of the East Side plant has again been postponed to the spring of 1995. 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 (40% complete) at an estimated cost of \$1 million is ongoing. Very early cost estimates for I/I corrective construction are \$16 million; a schedule has yet to be proposed.

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 fixed film media. Construction is 3% complete and is planned to be operational by October 1995.

Greenwich (Grass Island), Connecticut (Fairfield County)

Completed Projects

As of June 30, 1994, all construction was completed for a capacity increase to 12.5 MGD and for rehabilitative work. Final costs accrued were \$44 million.

Design work is complete for the solids handling facilities.

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.

Milford - Beaver Brook, Connecticut (New Haven County)

Future Project

Retrofitting of the aerators for nitrogen removal is planned. The estimated \$650,000 installation will include fine bubble diffusers, dividing walls to create anoxic zones, new

blowers, air lines, a return system and related control equipment. An approximate construction start-up date is scheduled for the spring of 1995.

Milford - Housatonic, Connecticut (New Haven County)

Project in Progress

Recently under way are plant modifications for nitrogen reduction. The five-month project is estimated to cost \$800,000.

Future Project

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

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

Completed Projects

During 1994, the construction of a primary basin was added at a final cost estimate of \$3.3 million.

Modifications to the secondary clarifiers (baffles for denitrification) were completed; punch list items are still on the agenda. Additionally, the installation of baffles was completed in the existing and new tankage. Final costs were approximately \$5 million.

Flow metering of the return-activated sludge and storm flow diversions is complete. Costs are estimated at \$160,000.

Projects in Progress

This facility is operating under a State Consent Order (modified April 19, 1991) to address staff needs and facility maintenance, perform a solids production study, assess incinerator modifications, evaluate design concerns of various plant units, and install storm flow diversions.

Sewer separation construction is 30% complete and will continue until combined sewers (544,000 linear feet) discharging to New Haven Harbor are eliminated. As of this writing, the installation of 89,000 linear feet has been completed. Presently, design plans for an additional 36,000 linear feet are complete. An estimated completion date is well into the next century (2015) with costs accruing to \$130 million.

A re-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 to provide nitrogen removal; the work is approximately 60% complete.

Future Projects

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

Norwalk, Connecticut (Fairfield County)

Projects in Progress

This plant is operating under a 1987 State Consent Order to achieve discharge permit limitations and requirements.

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

At a re-estimated cost of \$860,000, the secondary process is being retrofitted for biological nutrient removal. The existing aeration tankage is being modified with fine bubble diffusers, internal baffles, mixers and pumps. This work is 50% complete and is expected to be operational by late 1995.

Design work for the plant capacity expansion to 20 MGD is planned for completion during December 1994. The plans are being based on the water quality modelling 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 modelling results. The project will increase the capacity of this 15 MGD secondary facility to 20 MGD. An approximate start-up is set for late 1995.

Stamford, Connecticut (Fairfield County)

Completed Projects

At a final estimated cost of \$6 million, the reduction of I/I and installation of an interceptor on Hope Street were completed.

Projects in Progress

Recently under way, a \$408,000 improvement to the sludge thickeners includes covers and an odor control system.

Future Project

Nitrogen loading reductions will be accomplished by retrofitting the aerators with diffused air bubblers. An estimate of \$3.11 million was made for all construction which is to begin during June 1996.

Stratford, Connecticut (Fairfield County)

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.

Interim denitrification construction is 20% complete. The re-estimated \$658,000 retrofit will be on-line during December 1994.

Under way since October 1993, a \$5 million trunk line replacement project is 10% 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.

A re-estimated \$5 million plant rehabilitation is 90% complete. Work continued on the primary and secondary clarifiers, secondary sludge thickeners (ceramic diffusion system), and the installation of blowers. Additionally, the following installations are under way: new equipment for the main station, an aerated grit chamber, generators and a chlorine contact tank. Concurrently, modifications (\$746,000) for nitrogen reductions are being initiated.

Collection system rehabilitative work, which began during May 1992, is addressing I/I, relief interceptors, and upgrading pump stations. I/I work has identified a major source of extraneous inflow as illegal basement sumps. Prioritizing West Haven's entire 6,890 acres

STRATFORD, FAIRFIELD COUNTY, CONNECTICUT



AERATION TANK BEING RETROFITTED FOR
DENITRIFICATION WITH FINE BUBBLE
DIFFUSERS AND BAFFLING

has led to the need for design work for storm sewer extensions and lateral hookups. Final costs are expected to reach a re-estimated \$8 million.

Future Project

Expected to begin during July 1995, a \$1 million electrical equipment modification is planned.

Westport, Connecticut (Fairfield County)

Projects in Progress

Collection system extensions, and 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 25% 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

Aberdeen Township Municipal Utilities Authority - Cliffwood Beach, New Jersey (Monmouth County)

Completed Projects

Re-estimated to cost nearly \$790,000 a pump station was built on the original plant site. During December 1994, all flows were diverted to the Bayshore Regional Sewerage Authority facility for treatment. An additional \$836,300 was spent to install 11,250 linear feet of force main to convey all wastewater flows. The collection system expenditures included the costs for the River Gardens drainage basin.

This facility is operating under an amended State Administrative Consent Order (April 23, 1992) to cease effluent discharges to Whale Creek and Raritan Bay and to establish an Atlantic Ocean outfall by January 25, 1995.

Refer to the Bayshore Regional Sewerage Authority and the Aberdeen Township River Gardens STP write-ups for additional information.

Aberdeen Township Municipal Utilities Authority - River Gardens, New Jersey (Monmouth County)

Completed Project

A new pump station was built on this site to convey wastewater flows to the Bayshore Regional Sewerage Authority's facility via the Cliffwood Beach collection system. Costs were re-estimated to be nearly \$288,000.

This facility is operating under an amended State Administrative Consent Order (April 23, 1992) to cease discharge of treated effluents to Matawan Creek and to establish an ocean outfall by January 25, 1995.

Refer to the Bayshore Regional Sewerage Authority and the Aberdeen Township Cliffwood STP write-ups for additional information.

Bayshore Regional Sewerage Authority, New Jersey (Monmouth County)

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.



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

INDIRECT THERMAL SLUDGE DRYERS

PHOTO COURTESY OF
JOINT MEETING OF ESSEX
AND UNION COUNTIES

Projects in Progress

Two major upgrades are under way. The first deals with the oxygenation process (\$7.9 million) in which the compressors and the submerged deep shaft mixers/diffusers with surface aerators and all associated instrumentation will be replaced. The second involves thickener odor controls, air ducts, covers and scrubbers (\$3 million).

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

Project in Progress

The River Road interceptor sewer is being installed (65% complete) along the Hudson River waterfront from the Woodcliff plant northward to the border of Edgewater. The re-estimated \$2.9 million collection system expansion is anticipated to be complete during January 1995. The project also includes sewer separation work in the Hillcrest neighborhood.

Passaic Valley Sewerage Commissioners, New Jersey (Essex County)

Future Project

Under the ODBA, this facility must implement interim and long-term sludge disposal alternatives. To this end, PVSC is exploring beneficial reuses and possible privatization contracts for long-term management.

Rahway Valley Sewerage Authority, New Jersey (Union County)

Projects in Progress

Several engineering studies are nearly complete which address different aspects of the treatment process including primary building rehabilitations, a sand filter press, a curing bunker for dewatered sludge, and ultraviolet disinfection facilities. Additional studies under way or proposed include CSO abatement (final - \$141,000), sand filtration (current), secondary process improvements (proposed at \$61,000), and a proposed sludge dewatering study (\$15,000).

Rehabilitation of the service building facade is under way at a cost of over \$246,000. Baffles are being installed in the final clarifiers at an estimated cost of \$40,000. Refurbishing of the chlorination system to sodium hypochlorite is 75% complete (\$11,900).

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

Future Projects

CSO abatement plans include screening facilities at two major outfalls. Other construction proposals include an employee facility (\$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 combined sewer overflow controls (\$60,000), noise abatement (\$30,000) and odors (\$35,000).

Projects in Progress

The dechlorination facilities are being improved with the addition of sodium bisulfate storage tanks, monitoring equipment, and metering pumps. All of the aforementioned agenda items, as well as a new building to contain all equipment, are estimated to cost \$160,000.

Future Project

Correction of excessive I/I is planned. A construction schedule has not yet been established.

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 - Regions 2 and 3 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 - Region 2 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 - Region 1 has proposed to Nassau and Suffolk Counties individual permits which freeze the nitrogen loads of specific dischargers based on 1990 loadings. The counties have countered with an aggregate limit; negotiations are ongoing.

In Westchester County, NYS DEC - Region 3 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)

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.

Two major construction phases -- the primary treatment facilities and the odor controls -- are scheduled for completion during December 1994. Estimated at over \$40.2 million, four new primary sedimentation tanks are being built and the existing tanks are being rehabilitated. The principal features of the odor control improvements include a screen building extension, modification of the scavenger waste facility and the installation of enhanced odor controls and associated piping and auxiliary equipment.

Anticipated to be completed in 1995, emission control devices are being installed in the main dual-fuel engine generators. It will cost over \$4 million in order to comply with federal Clean Air Act requirements. Concurrently, two warehouses are being built at a cost of over \$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 shall 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)

Project in Progress

Re-estimated to cost \$4.1 million, a trickling filter utilizing a multimedia sand filter and renovations to the existing filter pump station are 35% complete. An approximate operational start-up date is May 15, 1995.

Blind Brook, New York (Westchester County)

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)

Projects in Progress

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

Ongoing improvements to the existing facility at a re-estimated cost of \$5.64 million include installations and/or reconstruction of various units including pumps, digester roofs, the polymer system, and secondary screens.

The Rikers Island force main and pump station designs and/or construction are ongoing; cost estimates are \$9.2 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.

City-wide, there are eight dewatering facilities with associated dockage (completed cost: \$20 million) for the transport (sludge vessel fleet: rehabilitation costs at \$3 million) of liquid sludge. This system went on line during June 1992, subsequent to implementation of the federal Ocean Dumping Ban Act. The dewatering plants are located at Bowery Bay, Hunts Point, Jamaica, Oakwood Beach, Red Hook, Tallman Island, 26th Ward and Wards Island.

Collectively, over \$214.7 million is being spent at these plants for cake storage buildings, emergency generators and associated feed equipment. These installations range from 37% to 93% completeness and the estimated cost includes expenditures for construction management. Anticipated completion dates are set for March 1995. Refer to the individual plant write-ups for additional information.

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 seventh 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. During fiscal years 1995 and 1996, construction costs and demonstration projects are anticipated to cost over \$72.2 million. Tributaries of the East River will also have holding tanks and in-line storage. Preliminary design work has begun.

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

The other areas of concern are the Inner and Outer New York Harbor. The plan for the Inner Harbor includes maximizing flow to the WPCPs (\$4.537 million - FY '95),

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)

Future Projects

The second phase of planned modifications for the main treatment plant is anticipated for 1995. Although cost figures are not yet available, upgrades will consist of replacing electrical control and instrumentation equipment.

Collection system upgrades involving a survey of all manholes was recently completed. Estimated to cost \$50,000, plans and specifications are being finalized.

Camp Smith, New York (Westchester County)

Projects in Progress

An inflow investigation is under way to assess extraneous volumes entering the sanitary and storm sewers. Design work began for the rehabilitation of an emergency generator.

Future Project

Estimated to cost about \$1.5 million, an upgrading of the entire facility is anticipated to begin during the fall of 1995.

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

Projects in Progress

Capacity expansion construction is ongoing. This facility was re-rated to a flow of 56 MGD utilizing a secondary activated sludge process. Eighty-five percent of an estimated \$39 million phased construction program is complete. This project includes new final screens, a fire protection loop system, primary tank expansions and engine emission controls.

Expenditures of \$104.7 million are planned for the final construction phases which will increase capacity from 56 MGD to 72 MGD. Agenda items include additions to all primary and secondary treatment units, as well as an expansion of the special projects laboratory. These projects are just under way and/or under final design.

Cold Spring Harbor Laboratory, New York (Nassau County)

Completed Project

As of April 12, 1994, this facility diverted all wastewater flows (0.075 MGD) to Nassau County's Cedar Creek Water Pollution Control Plant for treatment. The pump station conversion was completed at a cost of about \$0.5 million. Approximately 2.5 miles of force main (\$1 million) was installed to convey all flows.

Refer to the Cedar Creek write-up for additional information.

Coney Island, New York (Kings County)

Projects in Progress

Several construction phases at this treatment facility have begun and others are well under way. The treatment units including the primary settling tanks, a sludge force main, an engine generator, digester facilities, thickeners, aeration facilities, disinfection equipment, and final settling and sludge thickening tanks are 100% complete (\$620 million). Other plant upgrades and modifications are 81% complete: electrical, HVAC, and plumbing, plant maintenance, locker rooms, and a grit removal building. This facility is expected to be complete by 1997.

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

Future Projects

At an estimate of \$66.37 million, a plant support facility consisting of a conglomeration of workshops is slated for 1995.

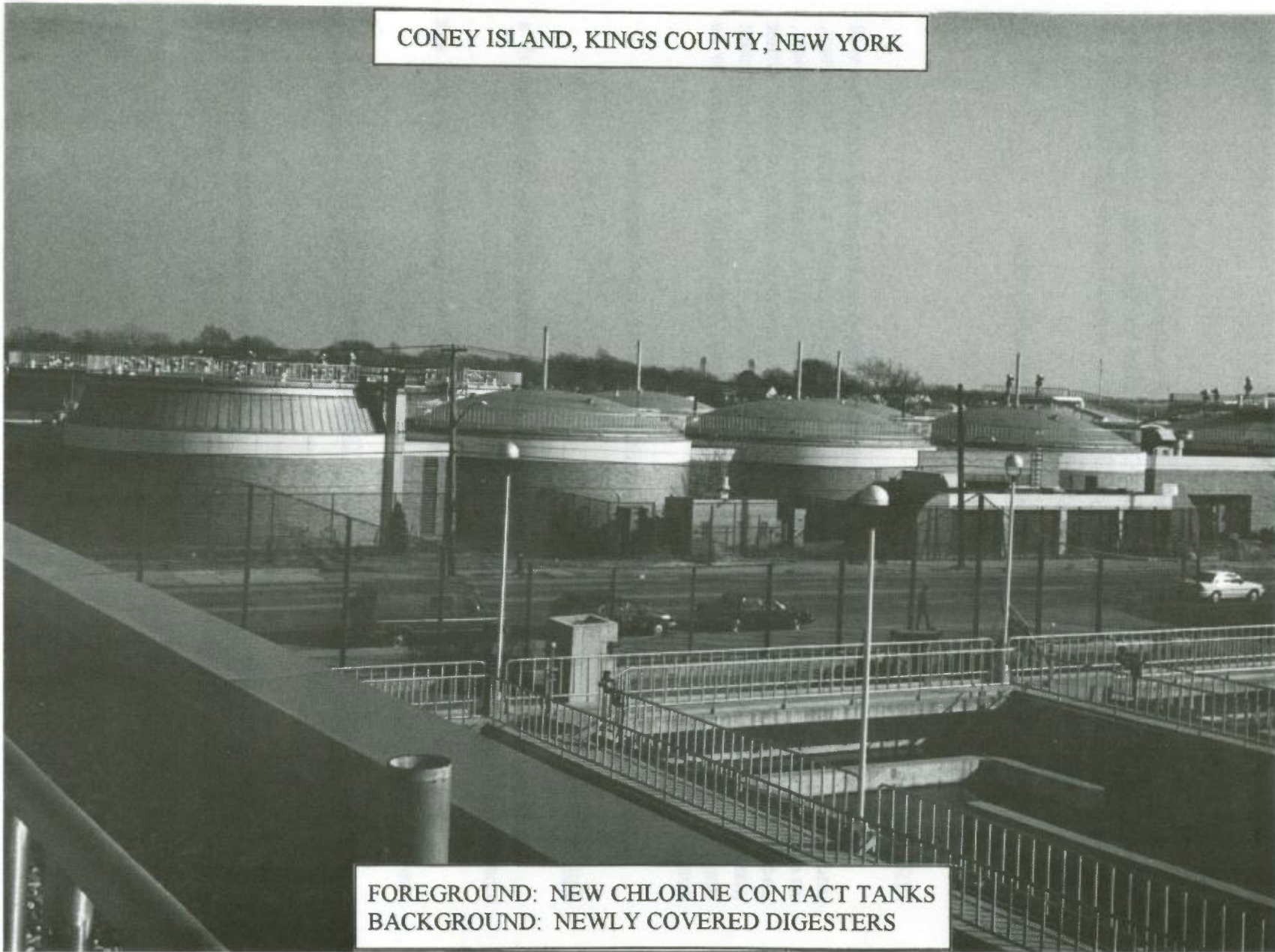
Proposed for 1996 are structural modifications to handle additional dry and wet weather flows (\$55 million).

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.

CONEY ISLAND, KINGS COUNTY, NEW YORK



FOREGROUND: NEW CHLORINE CONTACT TANKS
BACKGROUND: NEWLY COVERED DIGESTERS

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

Projects in Progress

Estimated to cost \$457,000, upgrade work is being performed on the influent pump station to enhance treatment processes. Concurrently, repair and cleaning of the primary and secondary digesters is ongoing at a cost of \$256,400. These projects are anticipated to be complete by 1995.

Future Project

Engineering studies are proposed for capital improvements on a multi-year, phased construction schedule. Start-up dates are not available.

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

Project in Progress

Rehabilitation of the Shelter Rock pump station is 15% complete at an estimated cost of \$221,600.

Huntington Sewer District, New York (Suffolk County)

Completed Project

The scavenger waste equalization tanks were cleaned at a final cost of \$34,000.

Future Projects

Estimated costs of \$289,000 will address an assortment of plant modifications including replacement of the equalization and sludge pumps, and upgrading of the grit removal process and scavenger waste screens.

Hunts Point, New York (Bronx County)

Projects in Progress

Reconstruction of various phases of the existing treatment facility, such as the primary screens and electrical supports, is estimated to cost \$4.784 million.

Collection system improvements, rehabilitations and renovations include several pump stations throughout the drainage basin. Design and ongoing construction are at different degrees of completeness (0% to 99%) and will cost over \$12.96 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, including installations and reconstruction of the final tanks, are slated for fiscal year 1995 at a cost of \$8.252 million.

Inwood, New York (Nassau County)

Completed Projects

An engineering study consisting of a process performance evaluation of the plant's operating systems was completed in-house with the assistance of a consulting engineer.

Repairs to the secondary anaerobic digesters were completed. The final cost for this work was \$1.05 million.

Jamaica, New York (Queens County)

Projects in Progress

New primary tanks and associated support equipment are being constructed at costs estimated at over \$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 are being implemented under these costs.

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

Long Beach Water Pollution Control Plant, New York (Nassau County)

Completed Project

Plant modification requirements imposed upon this facility under federal and State Consent Orders to attain secondary treatment levels expired on August 31, 1994. In lieu of major upgrades, a private contractor is on-site to process all sludge generated. The contractor operates a mobile dewatering facility and hauls the final product.

Metro-North Railroad (Harmon Shop), New York (Westchester County)

Completed Projects

Final costs amounting to \$720,000 provided for the installation of an oil/water separator at the locomotive fuel pad, demolition of the old treatment plant building, relining of the outfall pipe, and conversion of the disinfection facilities to liquid sodium hypochlorite.

Mount Loretto Homes, New York (Richmond County)

Project in Progress

At the present time, this septic system consists of three holding tanks servicing about 1,000 people. Construction plans call for hooking up to the New York City sewer system in the Oakwood Beach drainage basin; however, final dates have not been established.

Refer to the Oakwood Beach write-up for additional information.

New Rochelle, New York (Westchester County)

Completed Project

At an estimated final cost of \$2.7 million, sludge dewatering and pumping improvements were completed. The work included the replacement of a filter press and swing pumps, as well as the installation of a third filter press.

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 is comprised of Larchmont, a small section of Mamaroneck, New Rochelle, and Pelham Manor; anticipates a cost of \$1 million for all construction phases.

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 over \$15 million.

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

Future Projects

Upgrading and expansion construction to incorporate a secondary treatment system utilizing step aeration with a reduced contact time has been postponed until September 1995. 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 has a fiscal year '96 rehabilitation schedule (\$1.6 million).

Recommendations of the stabilization study will be implemented during fiscal year 1995 at costs of nearly \$36 million.

Northport, New York (Suffolk County)

Future Projects

The State-imposed sewer hookup moratorium was allowed to expire on August 31, 1994. A study was completed and recommends capacity expansion; however, a construction schedule, costs and start-up dates have not been 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. Refer to the Legal Activities section of this report for additional information.

Plant modifications are 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 are estimated to cost over \$95.9 million. Anticipated completion dates are scheduled for September 1995.

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

Future Projects

Expenditures of over \$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)

Projects in Progress

Construction of the West Branch interceptor system is ongoing. The Richmond Avenue pumping station is under construction. Work includes electric, HVAC, and plumbing installations at an estimated cost of \$13.5 million. Several other pump stations are slated for rehabilitation work during FY '96. The Hylan Boulevard Interceptor System is about to be installed.

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

Future Projects

The planned Mason Avenue pump station (FY '96) will cost about \$2.345 million.

Engineering studies that are planned include an energy conservation and instrumentation assessment, 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 75% complete and operational levels are expected to be attained by December 1994. Costs are estimated at \$8 million for adding extra units of treatment such as a primary clarifier, a trickling filter, and a secondary clarifier, as well as refurbishing miscellaneous mechanical equipment.

Ossining, New York (Westchester County)

Completed Project

A new ash enclosure building was completed at a final cost of approximately \$230,000.

Projects in Progress

A conversion to natural gas in lieu of fuel oil is under way (10% complete) for two heating boilers and two multiple hearth incinerators. The construction includes the installation of two new high speed centrifuges for sludge dewatering, two new sludge belt conveyors and a new ash enclosure building. The cost for all items is about \$1.65 million.

Owls Head, New York (Kings County)

Projects in Progress

At costs estimated at \$216 million, construction upgrading is anticipated to be complete by May 1995. 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.

Pump station improvements and reconstruction are under way at costs of over \$15.59 million.

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 1995. 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)

Completed Project

At a final cost of \$90,000, gaseous chlorine was replaced by liquid chlorine for the disinfection system.

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)

Completed Projects

Variable frequency pump drives and an intercom/paging system were installed at an estimated final cost of \$82,000.

An I/I study was completed and a report is due during December 1994.

Port Richmond, New York (Richmond County)

Projects in Progress

I/I work is ongoing with allocated funds of \$1.28 million. Pump station improvements are under way. The Mersereau Avenue facility is at the preliminary design stage. The Nautilus Court pump station is 35% complete (\$447,000).

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

Future Projects

Engineering studies are scheduled for 1996, including an energy conservation and instrumentation assessment and an SSES (\$2.313 million).

Modifications and improvements to the existing plant are slated for fiscal year 1995 (\$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.

Princess Bay, New York (Richmond County)

Future Project

It is anticipated that construction of the sewer main for Hylan Boulevard will start in 1995. Upon completion, all flows will be diverted for treatment at the Oakwood Beach WPCP. Decommission/demolition of the Princess Bay facility is scheduled for 1996.

Refer to the Oakwood Beach WPCP write-up for additional information.

Red Hook, New York (Kings County)

Projects in Progress

Modifications and additions to the plant are anticipated to be complete during the winter of 1995, at an estimated cost of \$41.53 million.

Three pump stations are under construction (0%, 35%, and 90% complete) at costs of about \$2.036 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 1995 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 under way at a cost 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 1995.

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

Projects in Progress

Construction is 65% complete for the installation of additional piping to provide sufficient capacity during peak wet weather flow conditions. The \$15 million project also includes upgrading and expansion of 11 existing pump stations.

Recently under way is a conversion from gaseous chlorination to a liquid chlorine system. The \$450,000 project is anticipated to be operational by May 1995.

Staten Island University Hospital, New York (Richmond County)

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)

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 completed 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.

Recently under way is a collection system rehabilitation involving various sewer lines; cost estimates are approximately \$150,000.

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.

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

Completed Project

Phased construction renovations are 100% complete throughout the plant. A final estimate of \$4.7 million was made for the work which began in January 1990. A major portion of this project deals with the stabilization of the outfall pipe to the Atlantic Ocean.

Projects in Progress

An RFP is being finalized (\$20,000) for sludge disposal options. In-house interceptor flow studies are being conducted in order to determine I/I reduction. One project is currently being planned (\$300,000). Consultant assistance for sludge incinerator compliance was completed; results from the testing are forthcoming.

Future Project

Re-estimated at \$6 million, a 24-month schedule has been set for the installation of two final clarifiers with a planned operational date during the spring of 1997.

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

Projects in Progress

In-house engineering staff are investigating equipment and operational changes in order to improve reliability. According to Suffolk County DPW, process control changes have 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, S.U.N.Y., 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 (\$5 million) with associated force main began during November 1994.

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

Future Projects

Plant modifications are planned for several installations and primary screen reconstruction 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).

Stabilization design work will commence during 1995 (\$2 million) at the Spring Creek stormwater retention facility.

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 and address plant expansion and an SSES.

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

Future Projects

An interim plant expansion to a capacity of 275 MGD is planned to begin during FY '95. The two-year construction schedule will incur costs of about \$60 million. An ultimate capacity expansion to a flow of 330 to 350 MGD will follow the interim phase sometime in the next century. Construction of a sludge composting facility (\$23.7 million) and a grit/screening transfer building (\$10 million) are planned to begin during 1996.

During 1995, \$1.242 million in improvements and modifications to the existing treatment units are planned. Additional plans call for the installation of an emergency backup generator (\$7.888 million), and reconstruction of various units (\$1.612 million).

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

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

Project in Progress

An engineering study is under way to determine the cost and feasibility of adding a second trickling filter to this 1.5 MGD secondary plant. If approved, a construction start-up would be during the fall of 1995.

Woodbrook Village, New York (Richmond County)

Future Project

It is anticipated that construction of the sewer mains will be completed during December 1994, with subsequent flow diversions to the Oakwood Beach WPCP. It is proposed that the existing plant be decommissioned and demolished in 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.

A diesel engine drive process air blower replaced an electrical unit at a final estimated cost of \$2.659 million, including all consultant fees.

An SSES was completed (\$15 million) and a report was submitted to NYS DEC in January 1994. This SSES was conducted as part of the Stipulation of Settlement signed by ISC, NYS DEC and Westchester County. This settlement addressed the water quality issues raised in a September 1989 adjudicatory hearing.

Projects in Progress

As part of the Interim Decision issued by the NYS DEC Administrative Law Judge in the aforementioned 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 30% complete. Expenditures of \$10 million will provide for two swirl concentrators and disinfection facilities at the South Yonkers main plant.

Additional plant upgrades include replacement of the mechanical bar screens and conveyors (5% complete - \$800,000) and odor abatement equipment for the primary thickener and dewatering facility (\$3.5 million).

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 1995.

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 June 1997.

EFFLUENT AND AMBIENT WATER QUALITY MONITORING

During this past year, the Commission's monitoring programs of the District's effluents and ambient waters were maintained, but continued at a considerably reduced level due to budget constraints and a reduced staff. The Commission's laboratory is equipped to conduct a full range of tests. 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 fourth 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.

During the course of the year, ISC's field inspectors conducted investigations in response to citizen complaints of water pollution. ISC worked with the appropriate agencies to resolve the problems in the most expeditious manner.

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. The laboratory is now fully operational, has been inspected as part of the aforementioned certification programs, and is processing samples. The Commission and the College are also planning to utilize the modern laboratory facilities for collaborative research efforts that will benefit the environment and citizens throughout the tri-state region.

SPECIAL INTENSIVE SURVEY

1994 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 three 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 1994 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 three summers, CT DEP and NYC DEP also conducted sampling programs in areas of the Sound.

A map and listing of the station locations and descriptions are on the following pages. The 1994 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.

For the 1994 season as a whole, dissolved oxygen conditions in the area surveyed by ISC were, on average, similar to those of the 1993 season and slightly lower than the 1992 season. Greater variability in the measurements was, however, observed in 1994 as compared to previous years. Simply put, the highs were higher and the lows were lower than in the past. For example, on five occasions, individual DO readings in bottom waters were below 1.0 mg/l -- lower than the 2.1 and 1.1 mg/l minimums recorded during 1992 and 1993 seasons, respectively.

INTERSTATE SANITATION COMMISSION

1994 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" Fl G 4 Sec
A4	35	40-52-18	73-44-06	Sands Point East of "25" Fl G 2.5 Sec
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" Fl G 4 Sec
B2	20	40-56-06	73-39-12	Matinecock Point 1.6 nm North of Gong "21" Fl G 4 Sec
B3M	19	40-55-12	73-38-42	Matinecock Point 0.7 nm North of Gong "21" Fl G 4 Sec
B4	15	40-54-24	73-38-06	Matinecock Point South of Gong "21" Fl 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" Fl 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 Fl 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"

For waters classified by the Commission as "Class A," such as those in the survey area, a minimum DO standard of 5 mg/l is the requirement. The pie charts (see page 47) show that this standard was usually met in the surface waters, but not the bottom waters, of the survey area. Of the 216 individual readings obtained during the season in bottom waters, two-thirds did not meet the ISC Class A standard, and one-third were below 3 mg/l.

Among the individual stations, average surface DO for the season ranged from a low of 4.3 mg/l (station A1) to a high of 7.2 mg/l (stations A5 and B4). For bottom waters, the average DO ranged from a low of 3.5 mg/l (stations A2M, A5, B2, and H-B) to a high of 5.1 mg/l (station A4). The low DO values were not confined to any specific region within the survey area.

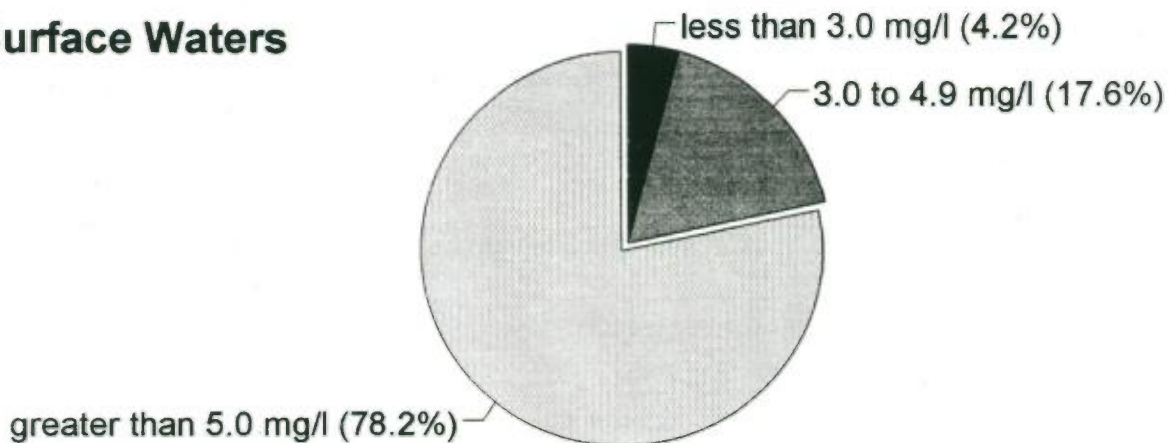
Weekly averages and ranges of dissolved oxygen at the surface and bottom waters of all 18 stations are also presented (see page 48). In general, DO levels showed a gradual decline to mid-summer lows followed by a gradual recovery. The primary exception to this trend was the peak in surface DO on the first of August. 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 not unusual for a marked decrease in DO to be observed in mid-summer, the levels which were reached in 1994 were lower than in 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.

DO levels are measured because they are a good indicator of the ecological health of a waterbody. Waters with little or no oxygen (e.g., less than 3 mg/l) are considered "hypoxic", and can lead to the death of marine organisms, such as clams, lobsters, and even fish, that are unable to move to other healthier areas. 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.

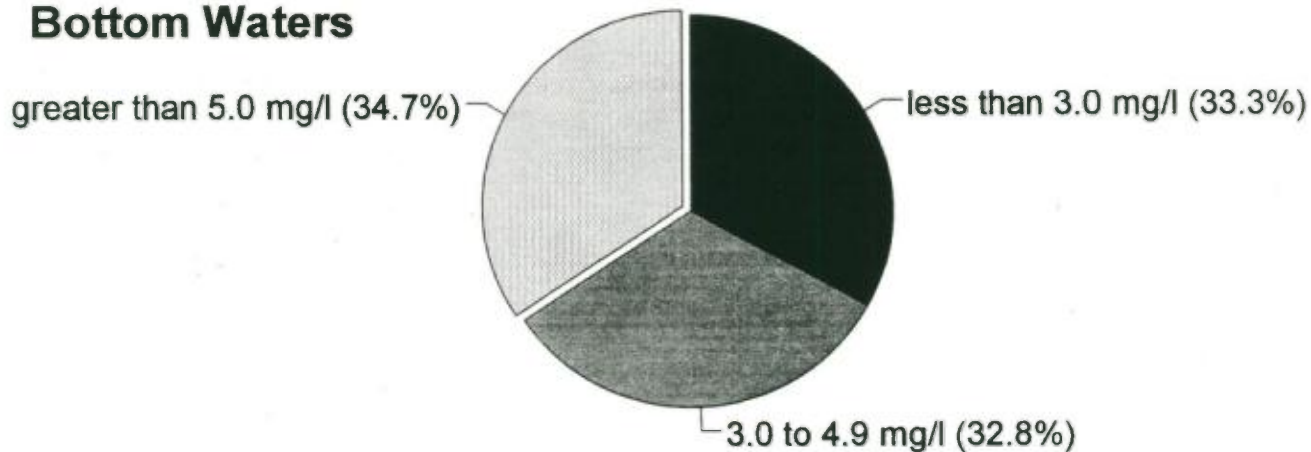
The Long Island Sound Study, which released its Comprehensive Conservation Management Plan in 1994, has identified human activities which may contribute to low levels of DO. Primarily, the Sound is impacted by nitrogen loadings from point and non-point discharges. This excess nitrogen acts like a fertilizer,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

Western Long Island Sound -- 1994 Dissolved Oxygen Monitoring Surface and Bottom Waters*

Surface Waters

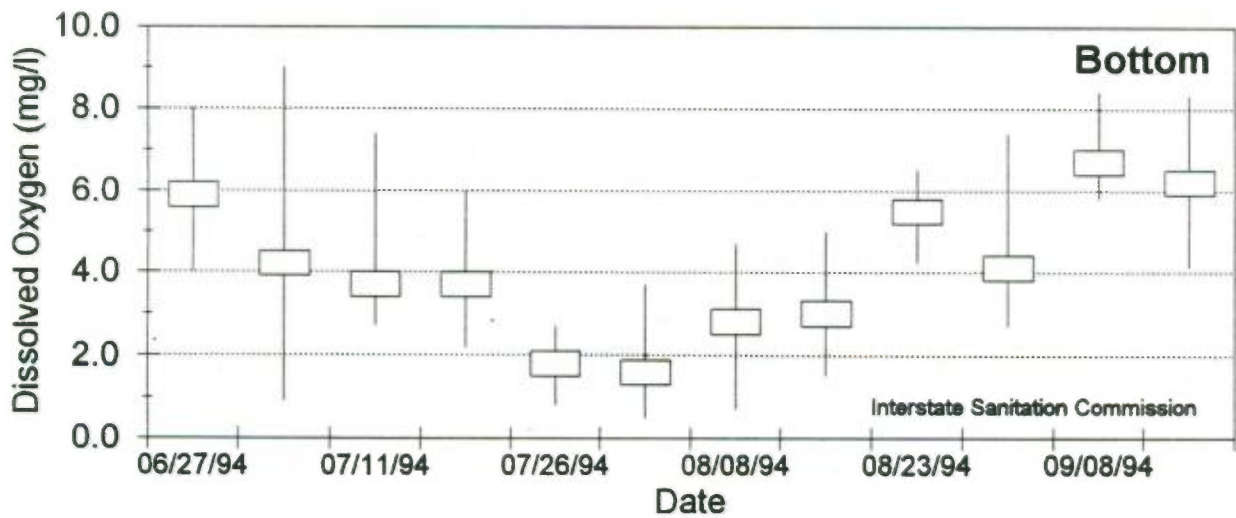
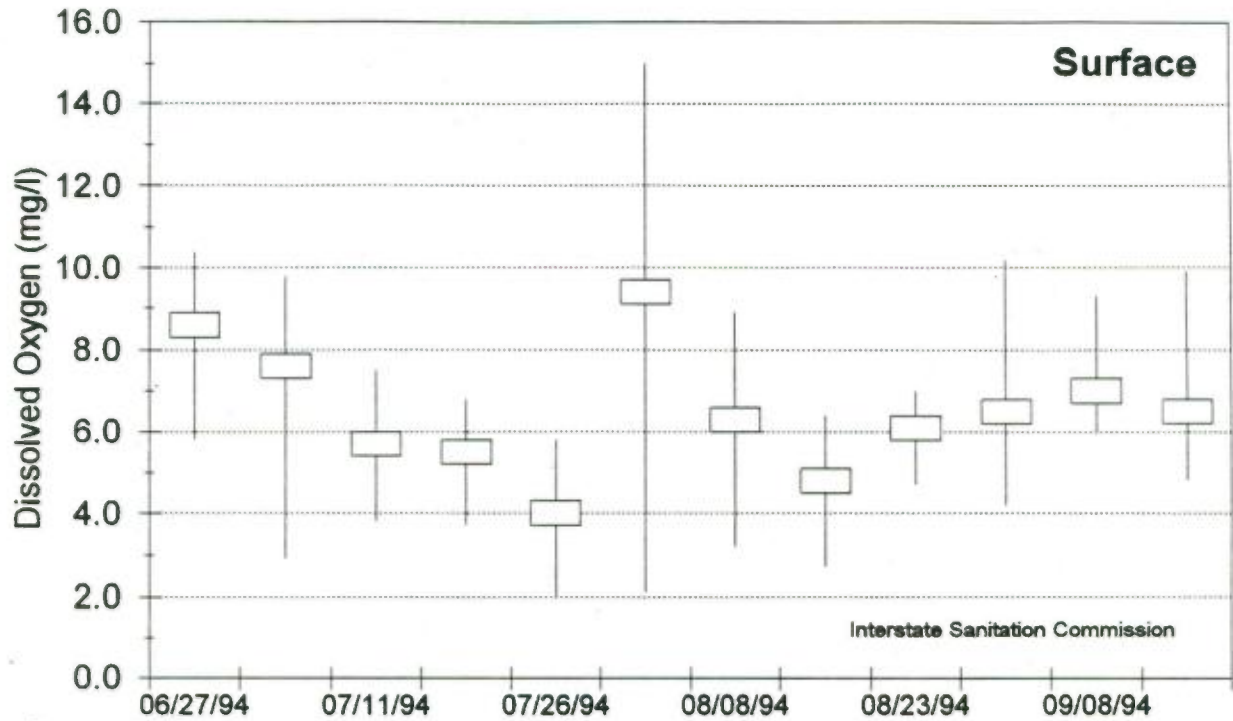


Bottom Waters



*Shown as percentage of 216 individual readings per depth taken among 18 ISC stations during the study period

Western Long Island Sound -- 1994
Dissolved Oxygen Monitoring
 Surface and Bottom Waters:
 Average and Range of all 18 ISC Stations
 for each Sampling Run



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 non-point sources.

ENVIRONMENTAL EXPOSITIONS, FESTIVALS AND SPONSORSHIPS

Fourth 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 Fourth Annual Shad Festival on April 24, 1994. 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.

Eleventh Annual New Jersey Environmental Exposition

This year, the Commission was again invited as a guest exhibitor at the Eleventh Annual New Jersey Environmental Exposition on October 17 and 18, 1994 at the Garden State Exhibit Center in Somerset, New Jersey. As the State's only environmental conference and trade show, the exposition afforded ISC representatives an opportunity to disseminate literature and discuss environmental matters with a broad cross-section of business people and governmental officials. In addition, the Commission was able to offer attendees a comprehensive picture of ISC programs, goals and achievements. The ISC continued to volunteer its participation in the New Jersey Environmental Internship Program. In this way, undergraduates can gain practical experience in various disciplines such as computer science, engineering, laboratory procedures and analyses, and water quality monitoring techniques by land and sea.

Our World Underwater

The ISC has enjoyed a long-standing relationship with Our World Underwater, a non-profit corporation focusing on educational opportunities for young people going into various fields of marine science, such as marine biology and oceanography. Its programs include a Scholarship Society to support a gifted student for a year to study, experience and

interact with a wide range of professionals involved in and related to the field of scuba diving.

Since the Commission began its relationship with Our World Underwater, all scholarship recipients have enjoyed a "hands-on" experience. Since none of the recipients hosted by ISC were from this region, their experience was compounded by this being their first visit to the Northeast, as well as by them also being afforded the opportunity to view this urban environment from the water.

American People Ambassador Program

The American People Ambassador Program was started under President Eisenhower, and all the succeeding presidents have been honorary heads of the program. The group arranges face-to-face meetings with professionals of the scientific and technical community around the world with their American counterparts. The Commission entertained a group of eight Russian officials -- high level officials of the mayor, deputy mayor and governor type, and also people who were in charge of the public works for these different entities. They were very interested in technical, non-technical and legal issues. They had many questions and it proved to be an excellent interchange of information and ideas.

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 over 300 organizations including not-for-profits, 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 eight 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.

The Commission's interns have engaged in tasks as varied as drafting language for affidavits, attending case conferences, drafting correspondence, participating in telephone conferences, and doing basic research. All 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 proved to be welcome additions to ISC's legal counsel.

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, 21 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.

The draft CCMP for the HEP is currently under development and is expected to be issued by the end of February 1995. The plan will address 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.

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 its member 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.

Current Bathing Beach Closure Practices in New York, New Jersey and Connecticut: Review and Recommendations

Concern had been expressed over the differences in the criteria which each state applies to its bathing beaches; these differences sometimes extend to the states' constituent counties. One of the unfunded projects that is part of the HEP Pathogens Work Plan is a project relating to the uniformity (or non-uniformity) of current closure policies for bathing beaches. ISC undertook the project and organized a meeting that took place on November 17, 1993, in Manhattan.

The meeting was attended by representatives of state, county and municipal environmental and health agencies, as well as by public awareness groups and the public. Discussions and presentations addressed bathing beach criteria, and procedures for assessing water quality and for closing beaches. Information on beach closures during the past several bathing seasons around the region was also reported. General discussions dealt with state and federal regulations, a national indicator organism, national beach monitoring and closure policies, and whether there is a need for regional uniformity/compatibility.

The information presented at this meeting was summarized by ISC and supplied to the NY-NJ HEP as input for the program's Comprehensive Conservation and Management Plan early in 1994. ISC was asked to coordinate any follow-up meetings that may take place. A summary of the bathing beach closure criteria and protocols in each state is presented on the following pages.

Report on Existing Monitoring Programs for the NY-NJ Harbor Estuary Program

The HEP Policy Committee determined that the CCMP should include a section on existing monitoring programs affecting the Harbor area -- habitat, living marine resources, water quality, etc. US EPA asked ISC, and the Commission responded affirmatively, and prepared and submitted the report to the HEP.

BEACH MONITORING AND CLOSURE CRITERIA WITHIN THE INTERSTATE SANITATION DISTRICT

STATE	Connecticut	New Jersey	New York
TESTING FREQUENCY	weekly	weekly	at discretion of local permitting official
INDICATOR ORGANISM	enterococcus	fecal coliform	total coliform -or- fecal coliform
TEST METHOD	membrane filtration	membrane filtration -or- multiple tube fermentation	membrane filtration -or- multiple tube fermentation
STANDARD(S) [organisms per 100 ml]	<p>a. a single sample shall not exceed 61</p> <p>b. the running geometric mean of 5 samples in a 30-day period shall not exceed 33</p>	<p>a. a single sample shall not exceed 200</p>	<p>a. total coliform - log mean for 5 or more samples in a 30-day period shall not exceed 2400 -and- 20% of samples in a 30-day period shall not exceed 5000 -or-</p> <p>b. fecal coliform - log mean of 5 or more samples in a 30-day period shall not exceed 200 -and- a single sample shall not exceed 1000</p>
OTHER CRITERIA	<p>a. sanitary survey</p> <p>b. rainfall</p> <p>c. floatable debris</p> <p>d. known contamination</p>	<p>a. sanitary survey</p> <p>b. known contamination</p> <p>c. aerial surveillance</p> <p>d. epidemiological evidence</p>	<p>a. sanitary survey</p> <p>b. rainfall/WQ model</p> <p>c. floatable debris</p> <p>d. medical debris</p> <p>e. known contamination</p> <p>f. epidemiological evidence</p>

BEACH MONITORING AND CLOSURE CRITERIA WITHIN THE INTERSTATE SANITATION DISTRICT (cont'd)

STATE	Connecticut	New Jersey	New York
<p>REQUIRED ACTION (if bacteriological standard is exceeded)</p>	<p>a. Resample and conduct survey for a single sample exceedence. Close beach if the survey reveals a sewage discharge condition. If the resample exceeds the standard but the survey is negative, consult with DOHS.</p> <p>b. If several exceedence of the geometric mean standard occur, consult with DOHS.</p>	<p>Resample and conduct sanitary survey. Close beach if the resample exceeds the standard or if the survey reveals a hazardous condition.</p>	<p>Resample and conduct sanitary survey. If the resample exceeds the standard or if the survey reveals a hazardous condition, consideration should be given to close the beach.</p>

NOTES:

Connecticut. The Connecticut Department of Health Services (DOHS) and the Connecticut Department of Environmental Protection instituted this *recommended* monitoring protocol in 1989. It has been adopted by most municipalities.

New Jersey. The New Jersey Department of Health and the New Jersey Department of Environmental Protection and Energy jointly administer this statewide *mandatory* beach monitoring program.

New York. The New York State Department of Health's State Sanitary Code states that no bathing beach shall be operated if it constitutes a potential hazard to health. *Monitoring is at the discretion of the local health department.* Nassau, Suffolk, and Westchester counties close beaches when standards are exceeded. New York City designates approval of beaches at the beginning of the season, based on previous years' water quality data and computer modeling. New York City also has a 12-hour rainfall advisory in effect for certain beaches.

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 modelling results and related information to the New York-New Jersey Harbor Estuary Program and other interested agencies.

More precise and timely data on the inputs and fates of nutrients within the Harbor are vitally needed in order to develop a comprehensive remediation plan. In order to accurately characterize the harbor, specific data are required in place of comparative data from other estuarine systems. The Harbor Complex is unique because of the tremendous nutrient loading it receives, as well as the extensive interactions among the waterways that comprise this system. Specifically, the study will determine the particulate and dissolved fractions of the nutrients throughout the Harbor Complex.

The Commission agreed to take the lead in coordinating, managing and participating in a comprehensive three part data collection and analysis program consisting of: 1) a reactivity study of organic carbon and nutrients, 2) routine monitoring of particulate and dissolved components of carbon and selected nutrients, and 3) a study of nutrient fluxes from bottom sediments.

The sampling sites for this study chosen by the HEM modelling contractor, in conjunction with the ISC and the HEP Nutrient Work Group, represent major inputs of nutrients to the Harbor Complex. Sampling stations are located on several waterways, in addition to municipal point sources including sewage treatment plants, combined sewer overflows (CSOs) and stormwater outfalls. The sampling schedule provided for some assessment of seasonal variations in the data. The sites for benthic fluxes are distributed within the NY-NJ Harbor system and were selected to represent the major sediment nutrient processes in the region. A map and a listing of the sampling station locations for the project are shown on the following pages.

The field sampling began March 10, 1994 and 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 from municipal treatment plants and wastewater pump station operators. The aforementioned samples were delivered by ISC to the Commission's contractor -- Academy of Natural Sciences of Philadelphia (ANSP) -- for subsequent analyses. A total of 160 samples (including 40 CSO/stormwater samples) were collected for reactivity and routine monitoring studies.

1994 NEW YORK-NEW JERSEY HARBOR EUTROPHICATION MODEL
DATA COLLECTION PROGRAM
SAMPLING POINTS FOR REACTIVITY/ ROUTINE MONITORING

Sewage Treatment Plants - New Jersey

Bergen County Utilities Authority, Bergen County
Joint Meeting of Essex & Union Counties, Union County
Linden Roselle Sewerage Authority, Union County
Passaic Valley Sewerage Commissioners, Essex County
Rahway Valley Sewerage Authority, Union County
Middlesex County Utilities Authority, Middlesex County

Sewage Treatment Plants - New York

Hunts Point, Bronx County
Coney Island, Kings County
Newtown Creek, Kings County
Owls Head, Kings County
Red Hook, Kings County
26th Ward, Kings County
North River, New York County
Wards Island, New York County
Bowery Bay, Queens County
Jamaica, Queens County
Rockaway, Queens County
Tallman Island, Queens County
Port Richmond, Richmond County
Oakwood Beach, Richmond County
Yonkers Joint Treatment, Westchester County

Ambient Waterways

Hudson River Inflow @ City of Poughkeepsie Water Treatment Plant
Ocean Boundary #1 (Top/Bot.) 40°25'06" 73°53'24"
Ocean Boundary #2 (Top/Bot.) 40°27'24" 73°49'48" (Ambrose Lighthouse)
Ocean Boundary #3 (Top/Bot.) 40°31'00" 73°45'30"
Passaic River @ Elmwood Park, NJ 40°53'37" 74°07'46"
Hackensack River @ New Milford, NJ 40°56'52" 74°01'34"
Raritan River @ Bound Brook, NJ 40°33'34" 74°31'41"

Wet Weather Discharges

Stormwater NY #1: various stormwater sampling sites in NYC drainage basins
Stormwater NY #2: various stormwater sampling sites in NYC drainage basins
Stormwater NJ #1: storm outfall in North Bergen drainage basins
Stormwater NJ #2: storm outfall in Edgewater drainage basins
CSO - NY #1: Wards Island STP influent sampling point
CSO - NY #2: Bowery Bay STP influent sampling point
CSO - NY #3: Hunts Point STP influent sampling point
CSO - NJ #1: Jersey City - Pump Station
CSO - NJ #2: Joint Meeting of Essex & Union Counties - STP influent
CSO - NJ #3: Bayonne - Pump Station

The ANSP also collected and analyzed samples for the nutrient flux portion of the project. Nutrients flux samples were collected at 14 locations during the spring and summer of 1994. The draft report with the numerical results for the entire project is due in December 1994. This report includes a map and list of station descriptions for the project.

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 works with that department to determine the most expeditious manner to alleviate the violation.

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 closely interacted with NYC DEP, the lead agency in charge of developing the time-variable model. The Commission assisted NYC DEP in developing a pathogen abatement project using the time-variable model for the Pathogen Work Group. The Commission shared available information and provided recommendations for selecting loading zones and sensitivity analyses.

1994 NEW YORK-NEW JERSEY
HARBOR EUTROPHICATION MODEL
DATA COLLECTION PROGRAM

SEDIMENT FLUX STATION LOCATIONS

STATION NUMBER	LATITUDE (NORTH) D M S	LONGITUDE (WEST) D M S
1A	40-26-46	74-01-46
1B	40-26-39	74-01-44
2	40-28-05	74-05-58
3	40-29-18	74-10-48
4	40-29-55	74-06-53
5	40-28-54	74-04-59
6	40-36-24	73-53-14
7	40-38-37	73-48-57
8	40-40-47	74-02-55
9	40-40-12	74-07-58
10	40-50-13	73-58-41
11	40-54-56	73-55-33
12	40-46-36	73-51-15
13A	40-47-31	73-45-01
13B	40-47-37	73-45-34
14	40-50-04	73-47-50

Note: Stations 1A and 13A were sampled during the spring only.
Stations 1B and 13B were sampled during the summer only.

1994 NEW YORK-NEW JERSEY
HARBOR EUTROPHICATION MODEL
DATA COLLECTION PROGRAM

SEDIMENT FLUX STATION LOCATIONS

STATION NUMBER	LATITUDE (NORTH) D M S	LONGITUDE (WEST) D M S
1A	40-26-46	74-01-46
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4	40-29-55	74-06-53
5	40-28-54	74-04-59
6	40-36-24	73-53-14
7	40-38-37	73-48-57
8	40-40-47	74-02-55
9	40-40-12	74-07-58
10	40-50-13	73-58-41
11	40-54-56	73-55-33
12	40-46-36	73-51-15
13A	40-47-31	73-45-01
13B	40-47-37	73-45-34
14	40-50-04	73-47-50

Note: Stations 1A and 13A were sampled during the spring only.
Stations 1B and 13B were sampled during the summer only.

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). Presently, the ISC, in coordination with NYS DEC, is preparing a workplan to gather the necessary data for a shellfish transplant program from areas to be designated for that purpose by NYS DEC.

III. AIR POLLUTION

GENERAL

The Commission's interstate air pollution program has been conducted since 1962. 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, 1994, a total of 202 air pollution complaints were received, representing an increase of 26% over that of the previous 12-month period.

For the seventh 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 restoration of funding to the Commission.

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

For the 12-month period ending September 30, 1994, the Commission received a total of 202 complaints; this represents an increase of 26% compared to the previous 12-month period. Of the total number of complaints received, 93% 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.

Eleven Staten Island communities were the source of at least five complaints to the Commission during the period. Based on the descriptions reported by the citizens, odors were classified into nine categories as shown in the table. The "garbage", "chemical" and "ammonia/cat urine" categories were most frequently reported -- combined, these categories represented 60% of the total.

DISTRIBUTION OF AIR POLLUTION COMPLAINTS
BY COMMUNITY
FROM OCTOBER 1993 TO SEPTEMBER 1994

COMMUNITY	COMPLAINTS	
	NUMBER	% TOTAL
New Springville	17	8.4
Travis	16	7.9
Annadale	13	6.4
Great Kills	12	5.9
Tottenville	11	5.4
Huguenot	11	5.4
Arden Heights	11	5.4
New Dorp	7	3.5
Westerleigh	5	2.4
New Brighton	5	2.4
Eltingville	5	2.4
Other Staten Island*	76	37.6
Non-Staten Island**	14	6.9
TOTAL	202	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 1993 TO SEPTEMBER 1994

TYPE OF ODOR	COMPLAINTS	
	NUMBER	% TOTAL
Garbage	54	26.7
Chemical	36	17.3
Ammonia/Cat Urine	23	11.4
Natural Gas/Gassy	14	6.9
Oil/Gasoline	13	6.4
Burning Rubber/Plastic	9	4.5
Sewage	8	4
Fishy	3	1.5
Sulfur/Eggy	2	1
Orhers*	41	20.3
TOTAL	202	100.0

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

OZONE HEALTH MESSAGE SYSTEM

For the seventh 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 system was developed as a cooperative effort by environmental and health representatives from the Commission; 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 1994, 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. On a number of occasions during the summer of 1994, 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 1994, 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

During 1994, the Commission was successful in obtaining what promises to be a major inroad to preventing floatables from entering the waterways. The Commission has long advocated "pollution prevention" rather than "after-the-fact" cleanup. Following one week of testimony at an adjudicatory hearing that is part of the New York State Pollutant Discharge Elimination System (SPDES) permit matter, an agreement was reached to consider another remedy. The hearing focused on augmenting the City of New York's interim floatable strategy through a street cleaning proposal recommended by the Commission. The hearing was put off pending receipt of a satisfactory proposal from the City to clean up floatables by doing catch basin maintenance and implementing a replacement/repair program for catch basin hoods.

Tangible success was achieved in a multi-party federal court case in New Jersey. The Commission not only collected penalties for the delays in completing the construction of the Hoboken plant, but also oversaw the successful completion of this plant that serves three municipalities.

With sustained input from the Commission and New York Lawyers In the Public Interest (NYLPI), the Concerned Citizens of Greenpoint (CCG), successfully obtained the services of a law firm to represent them pro bono. CCG is in the process of considering the options available to them in addressing water quality problems at the Newtown Creek WPCP.

In May 1994, the NYS DEC proposed amendments to the regulations that implemented the State Environmental Quality Review Act. The Commission commented on the proposed changes. The purpose of the proposed amendments was "to streamline and simplify the SEQRA process and to clarify certain provisions". In the main, the amendments relate to scope and add to the list of actions that will require environmental review. One example of streamlining is the caveat that if a potential environmental effect is not applicable or significant, it should not be raised in the Environmental Impact Statement. Other amendments recognized the need to update regulations as a result of statutory amendments.

The Commission continues its participation in a clearinghouse to attract area law students with environmental concerns to work as legal interns for course credit. Details of the program are given elsewhere in this report.

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

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 during 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 Order and proposed to implement it.

The ISC submitted a revised Consent Order 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 be 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 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 EBUF (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 NYS Coastal Zone Management Policy, and the NYC Waterfront Revitalization Policy. As of November 1994, the City was in compliance with the terms of the Consent Order and up-to-date with the schedule.

LITIGATION AGAINST HUDSON COUNTY 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 Clean Water Act, the Commission's regulatory standards are set forth in the NPDES permits issued by the State of New Jersey as a designated permit authority. The inclusion of ISC's regulations in such permits make the Commission's standards enforceable NPDES restrictions and a violation of the Clean Water Act. 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 US EPA 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 December 1993, a proposed settlement agreement was transmitted to the Hoboken-Union City-Weehawken Sewage Authority (HUCWSA). The agreement sought 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. When HUCWSA sought to have agreed upon penalties for one-third of the true penalty amount reconsidered, the plaintiffs withdrew their offer and, in January 1994, demanded full payment of all accrued stipulated penalties. 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 of close to \$8 million. 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 set a June trial date, failing any settlement. ISC went about the task of preparing witnesses who would testify at trial. Shortly after the conference and as preparation 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, 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 of \$2.8 million. The Hoboken plant was finally slated to be certified as fully operational on November 15, 1994.

NEW YORK CITY SEWAGE TREATMENT PLANT PERMIT HEARINGS

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 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.

Of the four issues (toxic effluent standards, industrial pretreatment, untreated discharges and plant capacity) certified in the Administrative Law Judge's (ALJ) 1989 preliminary ruling, two (toxic effluent standards and industrial pretreatment) had reached resolutions by 1991. Negotiations continued on the remaining issues. Nutrient removal became a fifth issue joined for adjudication 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.

Although plant capacity issues still need to be addressed, the nutrient removal issue was settled during 1994. Resolving untreated discharges is very close to a final solution.

Nutrients

During April 1994, the NYS DEC Commissioner issued a Fourth Interim Decision concurring with the recommendations of the ALJ in the Fourth Interim Hearing Report. The Commissioner's decision approved the nitrogen permit conditions for incorporation into the permits and ordered that the 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 permit 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.

Street Sweeping

After ISC's offer of proof on the efficacy of an enhanced street sweeping program as an interim remedy to reduce floatables, this issue was sustained on appeal. A March 1994 hearing date was set. Because the proceeding centered on cost with a directive from the NYS DEC Commissioner that the selection of an appropriate measure consider the effectiveness of removal, cost, environmental considerations and other benefits, some economic analysis by the parties was critical. There were different views offered by the City, ISC and EDF as to how much a street sweeping program would cost. The City posited a cost in the hundreds of millions of dollars; while the intervenors estimated a cost around ten million dollars.

By mid-February, the City had yet to provide the intervenors with their cost data. This occurred despite a progress report to the ALJ in December 1993, indicating that the ongoing pilot studies on the effect of enhanced street sweeping, as well as the effectiveness of replacing and maintaining catch basin hoods to reduce floatables, would yield hard data by the end of 1993 or early January 1994. Following discovery, and after the City filed pre-filed testimony at the end of April with the intervenors filing in May, the hearing commenced on June 7th and continued through June 10, 1994.

The hearing's commencement was preceded by the City's movement to preclude the intervenors from submitting any testimony concerning the benefits and costs of enhanced street sweeping as rebuttal testimony. After lengthy argument, both oral and written, the ALJ allowed the rebuttal testimony on cost to be submitted. Although the hearing was far from concluded, nor had even all of the City's witnesses been completed, the case was continued

until mid-July. ISC then filed its rebuttal testimony on cost in late June, assisted by an economist who validated the cost analysis.

Immediately after ISC's filing, NYS DEC approached the intervenors with a proposal that could settle the proceedings. Although NYS DEC's involvement in the proceeding had been adversarial to the intervenors since they believed the street sweeping proposal to be too costly, NYS DEC, nonetheless, believed the City was in violation of the June 1993 CSO Consent Decree and issued a Notice of Violation (NOV).

The City, through NYS DEC, offered a catch basin program as an alternative to street sweeping. This would be a way for the City to address the NOV. If, by the same token, the proposal addressed the interim remedy at issue in the administrative proceeding, it could be considered for a dual purpose. All parties agreed to await the City's proposal on catch basin maintenance and replacement which, if properly designed, could be as effective as street sweeping and less costly.

The City was on record in early November 1994 with a proposal that would cover 33,109 catch basins in dirty, unboomed drainage areas. This represents approximately one third of the catch basins in the City. Only 10% of the catch basins requiring extensive repair would be excluded from the program. The latter part of 1994 has been devoted to the City obtaining the necessary approvals and the intervenors interjecting minimum guidelines and control strategies. A mid-February 1995 date to reconvene the hearing has been agreed upon, if a satisfactory result is not attained beforehand.

ENFORCEMENT PROCEEDING AGAINST NORTH RIVER WATER POLLUTION CONTROL PLANT

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 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 (CWA) and must be enforced by the federal Court.

During 1993, the Coalition for a Livable West Side prevailed on a summary judgment 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

Although by late 1992, the City's recycling program had not been finally approved by NYS DEC, NYS DEC 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 Brooklyn Navy Yard Resource Recovery Facility (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. A fifth interim decision was issued in September 1993.

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.

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, he 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; they 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, he 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 NYC DOS 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 BNYRRF did demonstrate offsets; apartment incinerators were allowed as offsets; the baseline periods for municipal incinerators was 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
1 9 9 4

Plant	ISC Receiving Water Classification	Date of Const.	Flow MGD		Type of Treatment	Estimated Population Served
			Average	Design		
<u>CONNECTICUT</u>						
<u>Fairfield County</u>						
Bridgeport - East Side	B-1	1973+	7.7	12.0	Secondary (AS)	45,000
- West Side	B-1	1973+	22.6	30.0	Secondary (AS)	114,000
Fairfield	A	1982+	9.1	9.0	Secondary (AS)	45,000
Greenwich	A	1994+	9.0	12.5	Secondary (AS)	54,000
Norwalk	B-1	1980+	15.4	15.0	Secondary (AS)	80,000
Stamford	B-1	1991+	15.7	20.0	Secondary (AS)	90,000
Stratford	A	1992+	9.0	5	Secondary (AS)	50,000
Westport	A	1975+	1.9	2.8	Secondary (AS)	14,600
<u>New Haven County</u>						
Milford - Beaver Brook	A	1987+	2.0	3.1	Secondary (AS)	16,000
- Housatonic	A	1987	6.1	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+	8.1	12.5	Secondary (AS)	55,000
<u>NEW JERSEY</u>						
<u>Bergen County</u>						
Edgewater	B-1	1989+	3.63	6.0	Secondary (AS)	21,000
<u>Essex County</u>						
Passaic Valley Sewerage Commissioners	B-1	1988+	295.2	330.0	Secondary (AS)	1,500,000
<u>Hudson County</u>						
Hoboken	B-1	1993+	13.0	24.0	Secondary (TF)	60,000
North Bergen M. U. A. - Woodcliff	B-1	1990+	2.63	2.65	Secondary (TF)	20,000
West New York	B-1	1992+	8.47	10.0	Secondary (TF)	56,200
<u>Middlesex County</u>						
Middlesex County Utilities Authority	A	1991+	130.0	120.0	Secondary (AG)	752,000
<u>Monmouth County</u>						
Cliffwood Beach	A	1964	0.64	0.75	Secondary (AS)**	3,400
River Gardens	A	1974+	0.11	0.10	Secondary (AS)**	1,000
<u>Union County</u>						
Joint Meeting of Essex & Union Counties	B-2	1991+	70.2	85.0	Secondary (AS)	500,000
Linden Roselle Sewerage Authority	B-2	1989+	13.4	17.0	Secondary (AS)	60,000
Rahway Valley Sewerage Authority	B-2	1991+	29.5	35.0	Secondary (AS)	175,000
<u>NEW YORK</u>						
<u>Nassau County</u>						
Bay Park	A	1992+	53.7	70.0	Secondary (AS)	507,000
Belgrave Sewer District	A	1988+	1.43	2.0	Secondary (TF)	12,000
Cedar Creek	A	1993+	54.7	56.0	Secondary (AS)	504,000
Cedarhurst	A	1968+	0.84	1.0	Secondary (TF)	6,000
Cold Spring Harbor Laboratory*	A	1975	0.052	0.075	Physical/Chemical**	600
Glen Cove	A	1981+	4.14	8.0	Secondary (AS)	28,000
Great Neck Sewer District	A	1990+	2.67	3.8	Secondary (TF)	13,000
Great Neck Village	A	1988+	0.94	1.5	Secondary (TF)	9,000
Inwood	A	1989+	1.24	2.5	Secondary (TF)	8,000
Jones Beach	A	1990+	0.07	2.5	Secondary (TF)	Seasonal
Lawrence	A	1966+	1.27	1.5	Secondary (TF)	6,200

WASTEWATER TREATMENT PLANTS
DISCHARGING INTO
INTERSTATE SANITATION DISTRICT WATERS
1 9 9 4

Plant	ISC Receiving Water Classification	Date of Const.	Flow MGD		Type of Treatment	Estimated Population Served
			Average	Design		
<u>NEW YORK (Continued)</u>						
<u>Nassau County (Continued)</u>						
Long Beach	A	1990+	6.31	6.36	Secondary (TF)	40,000
Oyster Bay Sewer District	A	1992+	1.03	1.8	Secondary (TF)	8,500
Port Washington Sewer District	A	1991+	2.84	4.0	Secondary (TF)	30,000
West Long Beach Sewer District	A	1986+	0.67	1.5	Secondary (TF)	5,000
<u>New York City</u>						
<u>Bronx County</u>						
Hunts Point	B-1	1977+	150.3	200.0	Secondary (AS)	630,000
<u>Kings County (Brooklyn)</u>						
Coney Island	A	1965+	105.8	100.0	Secondary (AS)	602,000
Newtown Creek	B-1	1967	296.8	310.0	Secondary (AS)	1,039,000
Owls Head	B-1	1991+	130.8	120.0	Secondary (AS)	761,000
Red Hook	B-1	1987	44.8	60.0	Secondary (AS)	192,000
26th Ward	A	1975+	74.3	85.0	Secondary (AS)	271,000
<u>New York County (Manhattan)</u>						
North River	B-1	1986	178.3	170.0	Secondary (AS)	584,000
Wards Island	B-1	1979+	272.6	250.0	Secondary (AS)	1,004,000
<u>Queens County</u>						
Bowery Bay	B-1	1978+	123.5	150.0	Secondary (AS)	727,000
Jamaica	A	1978+	81.0	100.0	Secondary (AS)	632,000
Rockaway	A	1978+	23.4	45.0	Secondary (AS)	94,000
Talman Island	B-1	1979+	58.8	80.0	Secondary (AS)	388,000
<u>Richmond County (Staten Island)</u>						
Arthur Kill Correctional Facility**	B-2	1969	0.04	0.1	Secondary (AS)	1,000
Atlantic Village	A	1985	0.043	0.076	Secondary (AS)	-
Elmwood Park Condominiums	B-1	1974	1.5	2.0	Primary	20,000
IS-7*	A	1964	0.0045	0.021	Extended Aeration w/ Sand Filtration	1,000
Mount Loretto Home - Plants #1 & #2*	A	1962	0.041	-	Septic Tank	1,000
Oakwood Beach	A	1979+	28.1	40.0	Secondary (AS)	152,000
Point East Condos*	A	1986	-	0.16	Extended Aeration w/ Sand Filtration	300
Port Richmond	B-2	1979+	42.0	60.0	Secondary (AS)	172,000
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	0.021	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	1985+	0.023	0.04	Secondary (AS)	750
Treetop Village*	A	1985	-	0.25	Extended Aeration w/ Sand Filtration	-
Woodbrook Village*	B-1	1980	0.5	0.7	Extended Aeration	5,000
<u>Rockland County</u>						
Joint Regional Sewerage Board-Town of Haverstraw	A	1980+	4.92	8.0	Secondary (AS)	33,000
Orange & Rockland Utilities*	A	1984+	0.003	0.012	Secondary (AS)	Industrial
Orangetown Sewer District	A	1985+	8.8	8.5	Secondary (TF)	50,000

WASTEWATER TREATMENT PLANTS
DISCHARGING INTO
INTERSTATE SANITATION DISTRICT WATERS
1 9 9 4

Plant	ISC Receiving Water Classification	Date of Const.	Flow MGD		Type of Treatment	Estimated Population Served
			Average	Design		
<u>NEW YORK (Continued)</u>						
<u>Rockland County (Continued)</u>						
Palisades Interstate Park						
Bear Mountain Plant	A	1967+	0.03	0.25	Secondary (TF)	Seasonal
Tallman Mountain Plant	A	1968	-	0.01	Secondary (AS)	Seasonal
Rockland County Sewer District #1	A	1989+	20.73	26.0	Secondary (RD)	160,000
Stony Point	A	1985+	1.01	1.0	Secondary (AS)	10,000
<u>Suffolk County</u>						
Huntington Sewer District	A	1988+	1.89	2.5	Secondary (RD) (TF)	25,000
Northport	A	1973+	0.31	0.34	Secondary (AS)	3,500
Suffolk County Sewer District #1	A	1988+	0.65	2.5	Secondary (RD)	12,000
Suffolk County Sewer District #3	A	1989+	20.5	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	1.99	2.5	Secondary (BO)	20,000
<u>Westchester County</u>						
Blind Brook (Rye)	A	1985+	3.5	5.0	Secondary (AS)	25,000
Buchanan	A	1990+	0.23	0.50	Secondary (AS)	2,500
Coachlight Square Sewer Association*	A	1992+	0.028	0.05	Secondary (AS)	600
Mamaroneck	A	1993+	16.23	20.6	Secondary (AS)	80,000
Metro North (Harmon Shop)*	A	1985+	0.08	0.40	Physical/Chemical	500
New Rochelle	A	1982+	15.5	13.6	Secondary (AS)	80,000
Ossining	A	1981	6.6	7.0	Secondary (AS)	40,000
Peekskill	A	1980+	6.7	10.0	Secondary (AS)	35,000
Port Chester	B-1	1990+	4.2	6.0	Secondary (RD)	26,000
Springvale Apartments Company*	A	1991+	0.12	0.13	Secondary (RD)	1,000
Yonkers Joint Treatment	A	1988+	86.1	92.0	Secondary (AS)	500,000
<u>FEDERAL & MILITARY</u>						
Camp Smith - (Westchester Co.)	A	1988+	0.05	0.24	Secondary (TF)	2,400
FDR Veterans Administration Medical Center (Westchester Co.)	A	1982+	0.2	0.4	Secondary (TF)	2,500
Gateway National Recreation Area (Floyd Bennett Field, Kings Co.)	A	1981+	0.1	0.4	Secondary (TF)	5,000
Military Ocean Terminal (Hudson Co.)	B-1	1982+	0.1	0.18	Secondary (AS)	2,600

NOTES: Except for the ISC Receiving Water Classification, all information and data are supplied by the individual 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 1994

(AS) Activated Sludge

(BO) Biochemical Oxidation

(RD) Rotating Disc

(TF) Trickling Filter

SLUDGE PRODUCTION FROM WASTEWATER TREATMENT PLANTS
DISCHARGING INTO
INTERSTATE SANITATION DISTRICT WATERS
1 9 9 4

<u>Plant</u>	<u>Sludge(1) Generated Tons/year</u>	<u>Sludge Disposal Method</u>	<u>Future Disposal Method</u>
<u>CONNECTICUT</u>			
<u>Fairfield County</u>			
Bridgeport - East Side	44,000	Incineration (2)	Incineration
- West Side	90,000	Incineration (2)	Incineration
Fairfield	5,000	Compost	
Greenwich	7,500	Compost	
Norwalk	56,000	Incineration (2)	
Stamford	5,000 *	Incineration	
Stratford	8,000	Incineration (2)	
Westport	200	Incineration	
<u>New Haven County</u>			
Milford - Beaver Brook	860	Incineration (2)	
- Housatonic	1,500	Incineration (2)	
New Haven - East Shore	145,621	Incineration (2)	
West Haven	8,700	Incineration	
<u>NEW JERSEY</u>			
<u>Bergen County</u>			
Edgewater	2,740	Landfill	Beneficial Reuses
<u>Essex County</u>			
Passaic Valley Sewerage Commissioners	90,000	Landfill	Incineration
<u>Hudson County</u>			
Hoboken	13,000	Beneficial Reuse (2)	
North Bergen M. U. A. - Central (3)	8,400	Incineration (2)	
- Woodcliff	2,700	Incineration (2)	
West New York	4,000	Incineration (2)	
<u>Middlesex County</u>			
Middlesex County Utilities Authority	200,000	Land Applications	
<u>Monmouth County</u>			
Bayshore Regional(3)	-	Incineration	
Cliffwood Beach	-	Land Applications	
River Gardens	-	Land Applications	
<u>Union County</u>			
Joint Meeting of Essex & Union	12,191 *	Landfill	Beneficial Reuses
Linden Roselle Sewerage Authority	47,000	Landfill	Composting
Rahway Valley Sewerage Authority	20,460	Landfill	
<u>NEW YORK</u>			
<u>Nassau County</u>			
Bay Park	41,127	Landfill	
Belgrave Sewer District	1,235	Landfill	
Cedar Creek	36,711	Landfill	
Cedarhurst	-	-	
Cold Spring Harbor Laboratory	4,600	Landfill	
Glen Cove	4,500	Landfill	
Great Neck Sewer District	900	Landfill	
Great Neck Village	22	Landfill	
Inwood	12,145	-	

SLUDGE PRODUCTION FROM WASTEWATER TREATMENT PLANTS
DISCHARGING INTO
INTERSTATE SANITATION DISTRICT WATERS
1 9 9 4

<u>Plant</u>	<u>Sludge(1) Generated Tons/year</u>	<u>Sludge Disposal Method</u>	<u>Future Disposal Method</u>
<u>NEW YORK (Continued)</u>			
<u>Nassau County (Continued)</u>			
Jones Beach	-	-	
Lawrence	24 *	Compost	
Long Beach	547.5 **	Landfill (2)	
Oyster Bay Sewer District	867 **	Landfill	
Port Washington Sewer District	624 *	Incineration	
West Long Beach Sewer District	775	Bay Park	
<u>Bronx County</u>			
Hunts Point	98,732.7	Land Application/Landfill Cover	
<u>Kings County (Brooklyn)</u>			
Coney Island	(4)	Land Application/Landfill Cover	
Newtown Creek	(4)	Land Application/Landfill Cover	
Owls Head	(4)	Land Applications	
Red Hook	9,348	Landfill	
26th Ward	58,975.2	Land Application/Landfill Cover	
<u>New York County (Manhattan)</u>			
North River	(4)	Land Application/Landfill Cover	
Wards Island	130,709.2	Land Applications	
<u>Queens County</u>			
Bowery Bay	50,597.2	Land Application/Landfill Cover	
Jamaica	26,075.3	Land Application/Landfill Cover	
Rockaway	(4)	Land Applications	
Tallman Island	22,892	Land Application/Landfill Cover	
<u>Richmond County (Staten Island)</u>			
Oakwood Beach	10,344.9	Landfill	
Port Richmond	(4)	Landfill	
Princess Bay	700	Oakwood Beach	
Staten Island University Hospital, South	6,600	Oakwood Beach	
Woodbrook Village	6,540	Oakwood Beach	
<u>Rockland County</u>			
Joint Regional Sewerage Board-Town of Haverstraw	3,695	Landfill	
Orangetown Sewer District	4,500	Incineration	
Palisades Interstate Park Bear Mountain Plant	-	-	
Tallman Mountain Plant	-	-	
Rockland County Sewer District #1	2,457 *	Landfill	
Stony Point	26 *	Landfill (2)	
<u>Suffolk County</u>			
Huntington Sewer District	65 *	Landfill	
Northport	12	Incineration (2)	
Suffolk County Sewer District #1	7,500	Incineration (2)	
Suffolk County Sewer District #3	-	Incineration	
Suffolk County Sewer District #6	5,500	Incineration (2)	
Suffolk County Sewer District #21	20,700	Incineration (2)	
<u>Westchester County</u>			
Blind Brook (Rye)	730 *	Incineration (2)	
Buchanan	-		
Coachlight Square Sewer Association	-		
Mamaroneck	2,700 *	Incineration (2)	

SLUDGE PRODUCTION FROM WASTEWATER TREATMENT PLANTS
DISCHARGING INTO
INTERSTATE SANITATION DISTRICT WATERS
1 9 9 4

<u>Plant</u>	<u>Sludge(1) Generated Tons/year</u>	<u>Sludge Disposal Method</u>	<u>Future Disposal Method</u>
<u>NEW YORK (Continued)</u>			
<u>Westchester County (Continued)</u>			
Metro North (Harmon Shop)	-	-	
New Rochelle	2,800 *	Incineration	
Ossining	9,000	-	
Peekskill	3,650	-	
Port Chester	1,825 *	Landfill	
Springvale Apartments Company	-	-	
Yonkers Joint Treatment	19,187	Landfill	
<u>FEDERAL & MILITARY</u>			
Camp Smith - (Westchester Co.)	40	Beneficial Reuse (2)	
FDR Veterans Administration Medical Center (Westchester Co.)	292.0 +	Landfill	
Gateway National Recreation Area (Floyd Bennett Field, Kings Co.)	625.0 +	Landfill	
Military Ocean Terminal (Hudson Co.)	6,908	-	

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) Effluent discharge is outside the Interstate Sanitation District.

(4) Transferred by sea to dewatering facility for processing.

INTERSTATE SANITATION COMMISSION
FINANCIAL STATEMENT FY 1994

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, 1993 to June 30, 1994:

CASH BOOK BALANCE AS OF JUNE 30, 1993-----\$133,005.03

RECEIPTS

Connecticut - FY '94	\$ 3,333.00	
New York - FY '94	315,000.00	
New Jersey - FY '94	315,000.00	
EPA - FY '93	34,603.00	
EPA - FY '94	266,000.00	
Interest	4,177.59	
Miscellaneous Receipts	<u>5,020.75</u>	
TOTAL RECEIPTS		<u>943,134.34</u>
	Sub-Total	\$1,076,139.37

DISBURSEMENTS

TOTAL DISBURSEMENTS		<u>922,634.78</u>
CASH BOOK BALANCE ON June 30, 1994		\$153,504.59 =====
Insured Money Market Account	\$143,748.85	
Checking Account	<u>9,755.74</u>	
	\$153,504.59 =====	

G L O S S A R Y

ACOE	Army Corps of Engineers
ALJ	administrative law judge
ANSP	Academy of Natural Sciences of Philadelphia
BGD	billion gallons per day
BNR	biological nutrient removal
BOD	biochemical oxygen demand
BNY	Brooklyn Navy Yard
CCG	Concerned Citizens of Greenpoint
CCMP	Comprehensive Conservation and Management Plan
CSI	College of Staten Island
CSO	combined sewer overflow
CWA	Clean Water Act
DEC	Department of Environmental Conservation
DEP	Department of Environmental Protection
DOS	Department of Sanitation
DPW	Department of Public Works
EBUF	Enclosed barge unloading facility
EDF	Environmental Defense Fund
EPA	Environmental Protection Agency
FY	fiscal year
HEM	harbor-wide eutrophication model
HEP	Harbor Estuary Program
HRFA	Hudson River Fisherman's Association
HUCWSA	Hoboken-Union City-Weehawken Sewerage Authority
HVAC	heating, ventilating and air conditioning
I/I	infiltration/inflow
ISC	Interstate Sanitation Commission
ISD	Interstate Sanitation District
LISS	Long Island Sound Study
MGD	million gallons per day
NEP	National Estuary Program
NOV	Notice of Violation
NPDES	National Pollutant Discharge Elimination System
NRDC	Natural Resources Defense Council
N/SPDES	National/State Pollutant Discharge Elimination System
NYBRP	New York Bight Restoration Plan
NYLPI	New York Lawyers For the Public Interest
NYC	New York City
NYS	New York State
ODBA	Ocean Dumping Ban Act
PBS/NY & NJ	Pro Bono Students America/New York & New Jersey
POTW	publicly owned treatment works
PWG	Pathogens Work Group
R/V	research vessel
RFP	request for proposals
RRF	resource recovery facility

G L O S S A R Y
(C O N T I N U E D)

SEQRA	State Environmental Quality Review Act
SPDES	State Pollutant Discharge Elimination System
SSES	sewer system evaluation survey
STP	sewage treatment plant
SUNY	State University of New York
SWMP	Solid Waste Management Plan
TSS	total suspended solids
WPCP	water pollution control plant