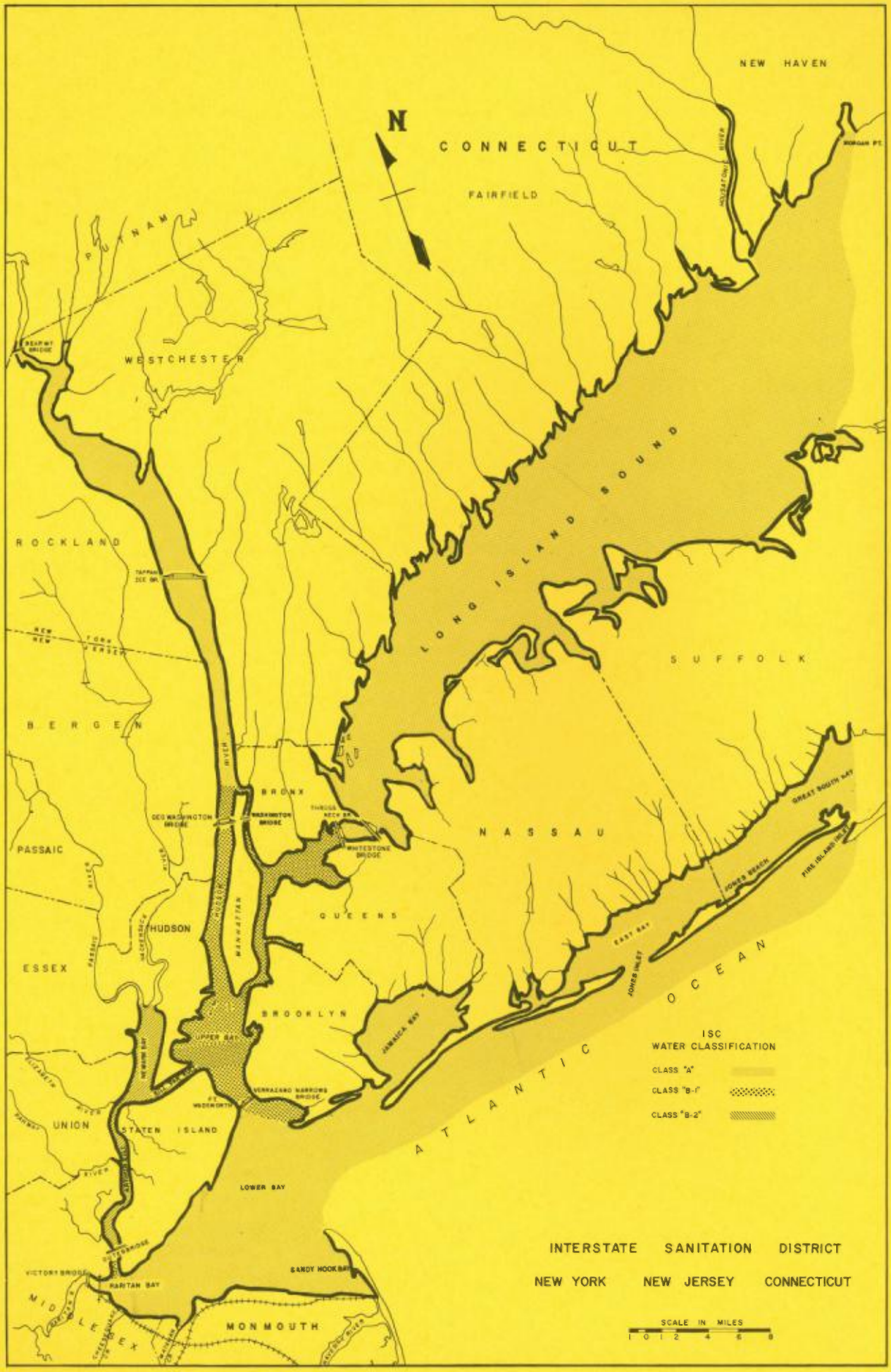
INTERSTATE SANITATION COMMISSION

A TRI-STATE ENVIRONMENTAL AGENCY

1987

ANNUAL REPORT

NEW YORK NEW JERSEY CONNECTICUT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CLASS "B-2"
INTERSTATE SANITATION DISTRICT
NEW YORK NEW JERSEY CONNECTICUT
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R E P O R T

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

311 WEST 43rd STREET • NEW YORK, N.Y. 10036

212-582-0380

January 22, 1988

To His Excellency, Thomas H. Kean
His Excellency, Mario M. Cuomo
His Excellency, William A. O'Neill
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 1987.

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 — Chairman

For the State of New York — Vice Chairman

For the State of Connecticut — Vice Chairman

INTERSTATE SANITATION COMMISSION

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STATEMENT OF THE CHAIRMAN
OF THE
INTERSTATE SANITATION COMMISSION

The Interstate Sanitation Commission views 1987 as a year of fulfilled promise -- a time of concrete accomplishment in our efforts to improve the environmental quality in the Tri-State Metroplitan Region. It has been a period that has seen all of our programs strengthened and moved forward.

Our increased emphasis on enforcement of the Commission's Compact and Regulations has been marked by success in the courts, as well as through negotiations. The efforts, in our litigation against the City of New York and against seven Hudson County, NJ municipalities, are proving a significant force for change and environmental progress.

In exercising our investigatory mandate, we have fine-tuned our activities in the areas of monitoring discharges, sampling the waters of our District, and conducting field investigations based on air and water pollution complaints. The launching of our new research vessel, the R/V Natale Colosi -- named after our late Chairman, the distinguished bacteriologist and environmentalist -- will enable us to continue to broaden the scope of our monitoring and sampling activities.

Our combined sewer overflow study is contributing updated and fresh information on this key source of pollution within our District. In conjunction with this, the Commission continued to move ahead in coordinating action among the States and municipalities in addressing the combined sewer overflow problem -- to achieve the greatest possible improvement in our water quality with the available funds.

It is gratifying to the Commission that the general public and the news media, in greater and greater numbers, are turning to the ISC for information and perspectives on a broad range of environmental matters.

Thanks to the great strides we've made in enforcement, research and regulation, the Interstate Sanitation Commission approaches its 52nd year with a renewed sense of vigor and the resolve to pursue our mission with determination, impartiality, and a clear-cut sense of purpose.

Frank A. Pecci
Chairman

C O N T E N T S

I L L U S T R A T I O N S

I. SUMMARY OF ACTIVITIES

The Interstate Sanitation District encompasses hundreds of miles of coastline in one of the most populated and heavily industrialized areas in the world; it is one of the world's busiest seaports. From the time of the earliest settlements, the District has been undergoing constant change. What is of upmost concern is to ensure that as changes occur, they are planned for and carried out in an environmentally sound manner.

The Interstate Sanitation Commission was created in 1936 by a compact between the States of New York and New Jersey for the abatement of existing water pollution and the control of future water pollution in tidal waters of the New York Metropolitan Area. The State of Connecticut joined the Commission in 1941. In 1962, air pollution was added to the scope of the Commission's activities and in 1970, the Commission was designated as the official planning and coordinating agency for the New Jersey-New York-Connecticut Air Quality Control Region.

This report, which is prepared each year, provides a record of the water and air pollution activities of the Interstate Sanitation Commission. It focuses on technical assistance, planning, enforcement, monitoring, laboratory analyses, and coordination activities provided by the Commission which lead to the resolution or amelioration of environmental problems within the Commission's water and air pollution areas of jurisdiction.

WATER POLLUTION

The Commission's activities in water pollution abatement provided assistance in the coordination of approaches to regional pollution problems. In the forefront of the water pollution activities were enforcement, minimization of the effects of combined sewers, compliance monitoring, pretreatment of industrial wastes, toxics contamination, participation in an ongoing study of Long Island Sound, ocean disposal, and monitoring the ambient waters -- especially with regard to opening new areas for swimming and shellfishing.

Approximately $3.63 billion has been allocated by various municipalities within the District for planning and construction projects, which are well under way, to provide a higher degree of quality for discharged wastewater.

As part of a stepped-up enforcement program, the Commission is involved in several legal actions. In one of these actions, agreement was reached to remedy the littering of the waterways and beaches of Woodbridge, New Jersey and Staten Island, New

York. Details of the enforcement program are given in the Legal Activities section of this report.

A regionwide inventory of waterfront development projects within the District was prepared. A major concern is how additional wastewater from residential and mixed-use buildings, as well as hotels, marinas and recreational facilities, will be treated. Presently, the Commission is meeting with several municipalities to address this issue.

ISC is conducting a study giving a regional perspective to the combined sewer overflow problems that exist in the three member States.

As a participant on the Panel on Quality of New Jersey Coastal Waters, the ISC was actively involved in the preparation of a report on the state of the Hudson-Raritan Estuary. The Panel is comprised of regulatory and monitoring agencies, industries, sewerage authorities, and academia. The report will be published in January 1988.

Since 1981, the Commission has been involved with the U.S. Army Corps of Engineers' Dredged Material Disposal Management Plan for the Port of New York and New Jersey. Since September, a staff member has been serving as chairman of the Public Involvement Coordination Group.

ISC continued to monitor waste discharges from public and private treatment plants to check compliance with the permitted discharge limitations. In mid-year, the Commission's sampling program for the waters of the District concentrated on intensive surveys to meet the changing needs of the Commission and its member States. Details of these surveys are given in this report.

In order to sample and monitor the ambient waterways in a cost-effective and timely manner, the Commission acquired a 25-foot research vessel in October.

In July, a boat inspection trip was held in a portion of the Interstate Sanitation District to give government officials and the private sector a firsthand view of the progress and some of the environmental problems remaining in the District.

The Commission was awarded a grant by the U.S. EPA to continue work on the Long Island Sound Estuary Project which is part of the National Estuary Program.

The laboratory has maintained its status as a certified laboratory. Last year's purchase of a gas chromatograph/mass spectrophotometer greatly enhanced the laboratory's ability to analyze toxic substances in water, air, and sediment samples. The

laboratory continued to administer the practical examination to applicants for New York State Grades II and III Sewage Treatment Plant Operators' Certification.

AIR POLLUTION

The Commission continued its role as coordinator of the High Air Pollution Alert and Warning System in the New Jersey-New York -Connecticut Air Quality Control Region. Daily air quality and meteorological data were received at the ISC office and disseminated to all participating agencies.

ISC served as the host for the first of a series of meetings of environmental and health professionals from our member States and the U.S. EPA to discuss the new ozone procedure developed by New Jersey for advising the public of unhealthful conditions and to revise the interstate ozone alert system for implementation in the summer of 1988.

During the 12 months from October 1986 through September 1987, the Commission received 954 air pollution complaints -- a decrease of nearly 75% from the previous 12-month period. The vast majority of calls came from Staten Island residents. In order to respond in a timely and effective manner, the Commission maintained its 24-hour answering service and its Staten Island field office. This office is staffed seven days a week for at least one shift per day.

The Commission embarked on an air toxics program to determine air pollutants present during odor episodes and air stagnation events. ISC is also an Advisory Group member to a bi-state air toxics assessment project for Staten Island and nearby New Jersey, which is coordinated by the U.S. EPA.

This year, the Commission engaged in a broad range of air quality activities related to resource recovery. ISC gained party status and is scheduled to present expert testimony at the Brooklyn Navy Yard administrative hearing conducted by NYS DEC. The Commission held meetings and discussions and reviewed environmental impact statements with representatives of the three States to advance interstate considerations. The Commission is also a member of a task force set up by the NYS DEC to study the affects that a proposed Perth Amboy, New Jersey hazardous waste incinerator may have on New York State.

II. WATER POLLUTION

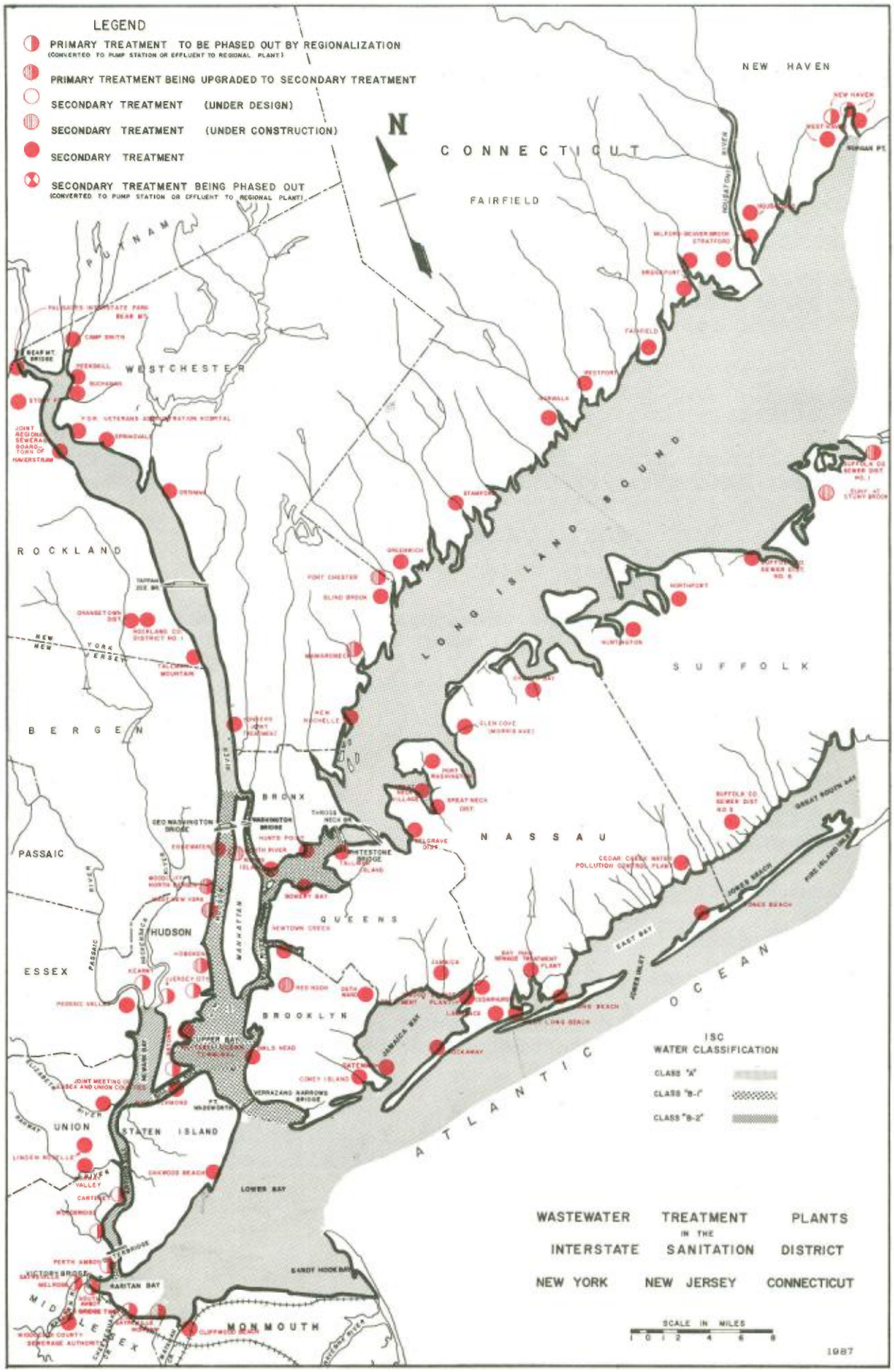
GENERAL

During 1987, approximately $3.63 billion was allocated for 149 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: $800 million for 29 completed projects, $1.38 billion for 75 projects in progress, and $1.45 billion for 45 future projects. These expenditures are being used for constructing new facilities and upgrading existing facilities in order to provide adequately treated effluents for discharge into District waters. These figures do not include the monies spent by industries for pollution control.

Since the Commission's founding in 1936, the reduction of untreated sewage entering the District waters has been drastically reduced. During 1987, approximately 45 MGD of raw discharge was eliminated from District waterways; this flow is now receiving primary treatment with disinfection. Only about 2 MGD of sewage is presently discharged to District waters untreated; in 1936, 1,066 MGD was released untreated. The few primary treatment plants still existing in the District are either in the process of upgrading to secondary treatment or being phased out by regionalization. Whereas, in 1936 only 2 MGD of sewage received secondary treatment, 2,411 MGD presently receives that degree of treatment.

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, and consulting engineering firms. The information in this section is that which was available through November 1987.

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 Appendix A.


LEGEND
PRIMARY TREATMENT TO BE PHASED OUT BY REGIONALIZATION
(CONVERTED TO PUMP STATION OR EFFLUENT TO REGIONAL PLANT)
PRIMARY TREATMENT BEING UPGRADED TO SECONDARY TREATMENT
SECONDARY TREATMENT (UNDER DESIGN)
SECONDARY TREATMENT (UNDER CONSTRUCTION)
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PUTNAM
ROCKLAND
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ATLANTIC OCEAN
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WATER CLASSIFICATION
CLASS "A"
CLASS "B-1"
CLASS "B-2"
WASTEWATER TREATMENT PLANTS
IN THE
INTERSTATE SANITATION DISTRICT
NEW YORK NEW JERSEY CONNECTICUT
SCALE IN MILES
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CONNECTICUT WATER POLLUTION CONTROL PLANTS

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

Projects in Progress

Several engineering studies are well under way for upgrading and/or expanding both plants. Ongoing facility plans, CSO assessments, and ultimate sludge disposal processes are being researched.

About $60,000 in rehabilitative expenses were incurred so far for rebuilding and replacing equipment in the main plants, as well as in the pump stations.

These plants are operating under federal and State Consent Orders to rehabilitate and maintain the facilities.

Greenwich, Connecticut (Fairfield County)

Completed Projects

The North Mianus sewer project, encompassing 126 homes, was completed at a final cost of $2.4 million.

An I/I study was completed and a report issued. Final costs amounted to $935,000.

Project in Progress

Starting November 1, 1987, Greenwich is conducting a $235,000 facilities plan study. The plan will make recommendations for plant upgrading.

Milford - Beaver Brook, Connecticut (New Haven County)

Completed Project

A construction upgrade is 100% complete. The $575,000 job included sludge handling modifications, belt press installation, chlorination units, scum decanting facilities, and an emergency generation building.

Project in Progress

This facility is under State and federal Consent Orders to attain secondary treatment levels and accept partial flows from the Town Meadows plant.

For additional information, see the Milford - Town Meadows write-up.

Milford - Gulf Pond, Connecticut (New Haven County)

Completed Projects

As of February 13, 1987, this facility was permanently closed and all flows diverted to the Milford - Housatonic plant for treatment.

This facility was operating under federal and State Consent Orders to cease discharge; all Order dates have been met.

See the Milford - Housatonic write-up for additional information.

Milford - Harbor, Connecticut (New Haven County)

Completed Projects

As of September 29, 1986, this facility was permanently closed and all flows diverted to the Milford - Beaver Brook plant for treatment. In February 1987, all flows were diverted to the Milford - Housatonic plant for treatment.

This facility was operating under federal and State Consent Orders to cease discharge; all Order dates have been met.

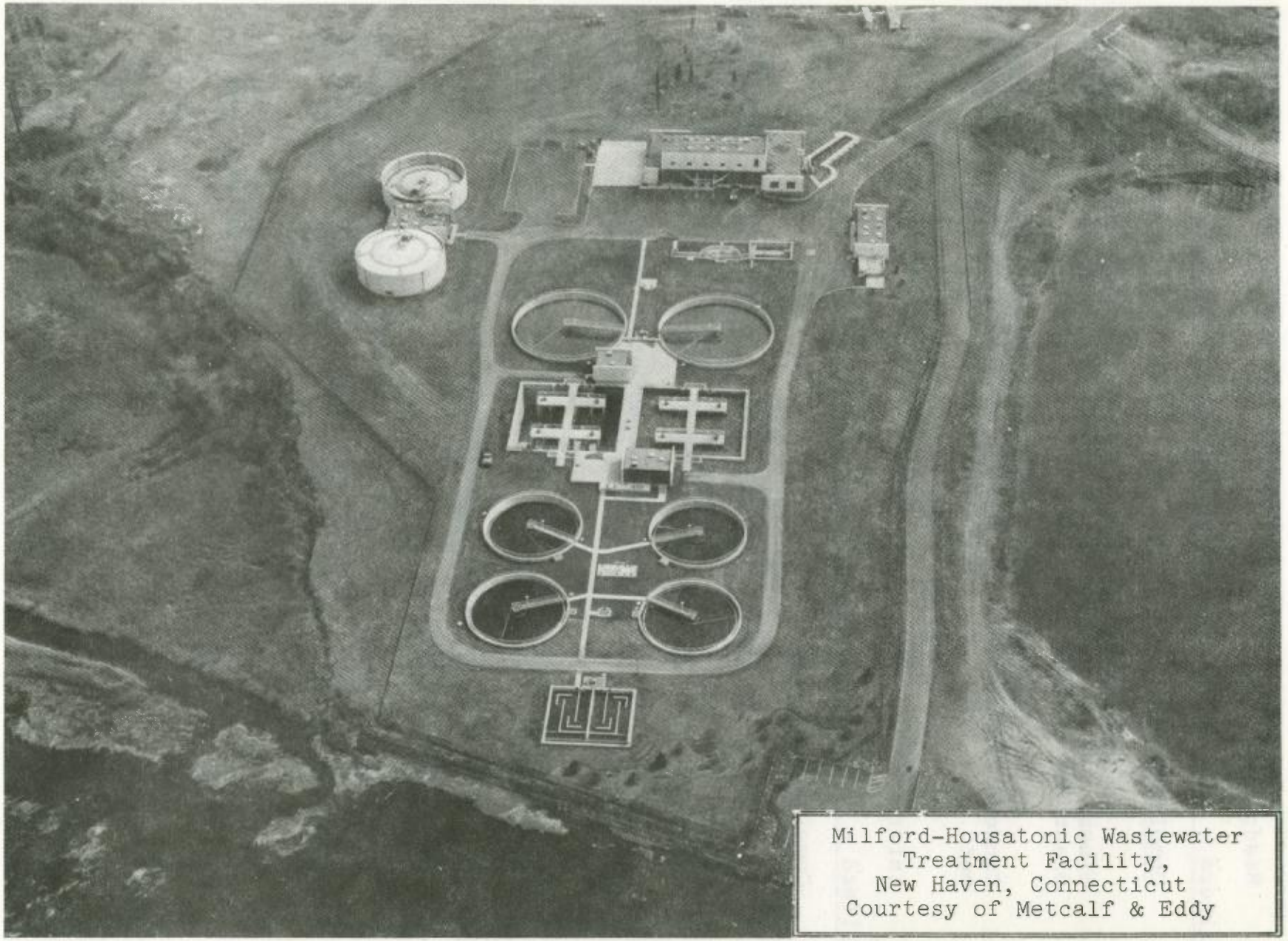
See the Milford - Housatonic write-up for additional information.

Milford - Housatonic, Connecticut (New Haven County)

Completed Projects

As of February 4, 1987, this 8 MGD secondary activated sludge plant went on-line. Sixteen million dollars was spent in order to provide secondary treatment to the Gulf Pond, Harbor, and Town Meadows drainage basins.

A final cost of $16.3 million was incurred to install new interceptors, force mains, 5 new pump stations, and rehabilitate two pump stations.



Milford-Housatonic Wastewater
Treatment Facility,
New Haven, Connecticut
Courtesy of Metcalf & Eddy

Milford - Town Meadows, Connecticut (New Haven County)

Completed Projects

As of September 1, 1987, this facility was permanently closed. All flows are being split and treated by the Beaver Brook and Housatonic plants.

This facility was operating under federal and State Consent Orders to cease discharge; all Order dates have been met.

See the Milford - Beaver Brook and Housatonic write-ups for additional information.

New Haven - Boulevard, Connecticut (New Haven County)

Project in Progress

Conversion of this primary plant to a pump station began in early 1987. The $9.1 million project -- a 34 MGD pump station and inlet works -- is scheduled to be operational by June 1988. This facility is operating under a State Consent Order to attain secondary treatment levels.

See the New Haven - East Shore write-up for additional information.

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

Project in Progress

Modifications are being made in order to handle the eventual loadings from the Boulevard and East Street plants. This 40 MGD secondary activated sludge plant is being outfitted with new belt filter presses, lime stabilization, a polymer system, screenings and grit removal, as well as odor control equipment. A substantial portion of the $8.5 million project is complete.

This plant is operating under a State Consent Order to attain secondary treatment levels.

Norwalk, Connecticut (Fairfield County)

Completed Project

Pump station rehabilitation work is complete at an estimated cost of $700,000.

Projects in Progress

This plant is operating under a State Consent Order to improve process efficiency and attain secondary treatment levels. Approximately $75,000 is committed to engineering studies to address this problem.

Sewer separation work is under way and will continue for several years. Dependent upon specific site logistics, an estimated $200,000 to $600,000 will be spent. The present collection system is 50% separated.

A re-estimated cost of $800,000 has been made for the renovation of two existing gravity thickeners and supporting equipment. This larger expenditure also includes final settling tank baffles, replacement of water strainers, rehabilitation of drum screens, a new scum boom and skimmer, and plant lighting.

Future Projects

An estimate of $5.3 million has been made in order to replace the incineration system, add one final clarifier, replace the ash handling system, and construct a new pump station with associated laterals.

Replacement and/or repair of sanitary sewers and interceptors will begin soon at an estimated cost of $450,000.

Stamford, Connecticut (Fairfield County)

Future Projects

The addition of a secondary clarifier, at an estimated cost of $2 million, is planned. The approximate construction start-up date is July 1, 1988.

This plant is operating under a State Consent Order to investigate plant capacities and make improvements, as necessary.

West Haven, Connecticut (New Haven County)

Projects in Progress

Both the I/I study and SSES are nearly complete.

Two and a half million dollars is estimated for upgrading dewatering and sludge handling facilities. This project began in April 1987 and is 40% complete.

This plant is operating under a State Consent Order to investigate plant capacities and make improvements, as necessary.

Westport, Connecticut (Fairfield County)

Project in Progress

Collection system expansion work is in progress. Rehabilitation of one pump station with installation of force mains and several small gravity sewer extensions is expected to cost $1.2 million.

Future Project

A re-estimate of nearly $1 million will be needed to build a new chlorine building, a garage, a septic receiving and holding building, and water re-use facilities. An approximate construction start-up date is July 1988.

NEW JERSEY WATER POLLUTION CONTROL PLANTS

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

Projects in Progress

A 201 Facilities Plan is under way. A stream water quality modeling project is also in progress. Cost estimates for the two engineering studies have been assessed at $145,000 and $200,000, respectively.

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

Project in Progress

A 201 Facilities Plan is under way to determine upgrading specifications. It will also contain recommendations regarding upgrading this plant or abandoning it with flows being diverted to the Cliffwood Beach plant. Cost estimates have been made at $145,000.

Bayonne, New Jersey (Hudson County)

Future Projects

The estimated cost to convert this primary facility to a pump station is $23 million. The flow will join those of the two Jersey City plants and will be treated at PVSC. Bids for all construction phases are scheduled to go out during December 1987. A construction start-up date is anticipated for the spring of 1988.

This plant is operating under a federal Consent Order to attain secondary treatment or cease discharge by July 1, 1988.

The Commission and the U.S. EPA are presently involved in litigation against Bayonne to ensure compliance with ISC and federal requirements. For further information, refer to the Legal Activities section of this report.

Bayshore Regional Sewerage Authority, New Jersey (Monmouth County)

Project in Progress

Construction has begun for odor control improvements which will be ready by February 1988. These improvements

will cost approximately $470,000.

Carteret, New Jersey (Middlesex County)

Projects in Progress

The CSO Elimination Program is more than 60% complete. This work includes sewer separation and rehabilitation of one pump station. The total project cost is about $8.873 million, of which the federal government's grant covers 55%.

Future Projects

An estimate of $9 million has been made for Carteret's portion of the South Bay Project. The work involves a 3.54 MGD pump station and almost 16,000 feet of force main installation; it has an anticipated August 1989 completion date. All flows will then be conveyed through Woodbridge for treatment at MCUA's secondary treatment plant prior to discharging to Raritan Bay.

See the MCUA and Woodbridge write-ups for additional information.

Edgewater, New Jersey (Bergen County)

Projects in Progress

This plant is operating under federal and State Consent Orders to attain secondary treatment levels.

Engineering and design work began in November 1987 for a 6 MGD secondary activated sludge plant with all supporting equipment. An estimate of $1.22 million has been made for the preconstruction work.

Future Project

Construction of the 6 MGD secondary activated sludge plant is anticipated to be complete in mid-1989. Two additional pump stations will be added to the collection system. A cost of $9.042 million doesn't include the pump station construction.

Hoboken, New Jersey (Hudson County)

Future Projects

From the Updated 201 Wastewater Facilities Plan for HCUA Area III, the selected plan chosen for Hoboken is to upgrade the existing primary facility to secondary treatment

with a design flow of 23.05 MGD. The expanded plant will also provide secondary treatment for portions of Union City and Weehawken.

The Commission and the U.S. EPA are presently involved in litigation against Hoboken to ensure compliance with ISC and federal requirements. For further information, refer to the Legal Activities section of this report.

Hudson County Utilities Authority, New Jersey (Hudson County)

Projects in Progress

Three drainage basins are in the HCUA's jurisdiction -- Area I consists of Jersey City (East and West), western North Bergen, Kearny Point, the western slope of Union City and Secaucus; Area II is comprised of Bayonne; and Area III is composed of Hoboken, Weehawken, eastern Union City, West New York, Guttenberg, and part of North Bergen.

Refer to each municipality's write-up for more detailed information.

The Commission and the U.S. EPA are presently involved in litigation against the Hudson County Utilities Authority to ensure compliance with ISC and federal requirements. For further information, refer to the Legal Activities section of this report.

Jersey City - East, New Jersey (Hudson County)

Future Projects

Both Jersey City plants -- East and West -- are under federal and State Consent Orders to complete construction and cease discharge by July 1, 1988. The flows are to be diverted to the PVSC plant for treatment.

For additional information, refer to the PVSC write-up.

The Commission and the U.S. EPA are presently involved in litigation against Jersey City to ensure compliance with ISC and federal requirements. For further information, refer to the Legal Activities section of this report.

Jersey City - West, New Jersey (Hudson County)

See the Jersey City - East and PVSC write-ups for information.

Joint Meeting of Essex and Union Counties, New Jersey (Union County)

Project in Progress

Design preparations for I/I elimination are 10% complete. Approximately $3.5 million is estimated for design preparations, contract documents and subsequent construction for I/I elimination. Construction will begin during 1988.

Kearny, New Jersey (Hudson County)

Completed Project

A final cost of $44,000 was spent to determine ultimate disposal and treatment processes.

Future Project

It is planned that this facility divert all flows to the PVSC treatment plant. Federal and State Consent Orders have set compliance schedules to cease discharge. Cost estimates for all construction are $4 million. An approximate construction start-up date is set for June 1988; the anticipated operational start-up date is January 1, 1990.

Middlesex County Utilities Authority, New Jersey (Middlesex County)

Future Projects

The MCUA treatment plant will receive additional wastewater flows from three communities which comprise the South Bay Project. The work is scheduled to begin in August 1988 at an approximate cost of $21 million. Flows amounting to 6 MGD will be eliminated from the existing primary plants at Carteret, Old Bridge Municipal Utilities Authority, Sayreville (Melrose and Morgan), and South Amboy. This Project has been designed for a total capacity of 48.7 MGD. Sewer alignments have been adjusted to avoid encroachment on County parks.

MCUA has requested authorization from the U.S. Army Corps of Engineers to construct a 132-inch diameter sanitary sewer pipeline crossing the Raritan River. The pipeline will eliminate bypassing of untreated sewage from the Sayreville pumping station during storm events. No cost estimates for this phase of construction were available.

A total of 9 MGD of sewage from Perth Amboy and Wood-

bridge is also scheduled for treatment at the MCUA plant. July 1988 is the estimated operational start-up date. Refer to the individual community write-ups for additional information and cost estimates.

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

Future Projects

This facility is operating under federal and State Consent Orders to attain secondary effluent limitations by June 1, 1988. A re-estimate of $9 million has been proposed for a secondary treatment plant with a capacity of 2.91 MGD. New units to be installed include a chlorine contact tank and building, a grit chamber, inclined plate settlers, primary settling tanks, and trickling filters. Upgrading of the administration building, as well as Phase III of the 201 Facilities Plan are also slated under these expenditures.

Collection system work involving a main pump station and gravity sewers is awaiting grant approval.

The Commission and the U.S. EPA are presently involved in litigation against North Bergen to ensure compliance with ISC and federal requirements. For further information, refer to the Legal Activities section of this report.

Old Bridge Municipal Utilities Authority, New Jersey (Middlesex County)

Future Project

This primary facility is under a federal Consent Order to discontinue discharging and divert all flows to MCUA. This facility will be converted to a pump station and all flows will be conveyed by force main to MCUA. Plant abandonment is anticipated for June 30, 1988.

For more information, refer to the MCUA write-up.

Passaic Valley Sewerage Commissioners, New Jersey (Essex County)

Projects in Progress

Headworks rehabilitation is 50% complete and should be finished by early 1988 at a cost of $3 million.

The PVSC service district is expanding to accept flows from several communities. Costs for pump station construction and force main installation are being incurred by each

community. By December 1987, Fairlawn, Little Falls, North Haledon, Totowa, and West Paterson will be on-line. North Arlington and Lynhurst, as well as Bayonne, are expected to come on-line in 1989. Jersey City is expected to divert flows in 1988.

Refer to the individual community write-up for additional information.

Perth Amboy, New Jersey (Middlesex County)

Completed Project

One hundred and sixty thousand dollars was spent to install a new diffuser system, as well as remove accumulated sediment from the flocculation channel.

Future Projects

An estimate of over $11.3 million was made to convert this plant to a pump station. An operational date of August 1, 1989 was set; flows will then be sent to the MCUA facility for treatment.

An estimated $8 million will be needed to separate a storm sewer in the Budapest area, as well as to upgrade two pump stations.

The facility is operating under a State Consent Order to cease discharge.

Rahway Valley Sewerage Authority, New Jersey (Middlesex County)

Projects in Progress

Ninety-nine percent of the upgrading at this facility is complete. Work includes an aeration system retrofit to a fixed floor grid fine bubble diffuser system, a digester gas conditioning system, two new raw sewage pump engines, a new boiler, and a new larger capacity positive displacement blower. A final cost estimate for the systems is $1.7 million.

Sandblasting and re-coating of the interior structures of all four secondary clarifiers is under way. A cost of $36,000 will be incurred.

Replacement of the digester gas detection system is under way and is expected to cost $8,000.

Digester cover re-coating and insulation is nearly complete. A chlorine container handling and transport system is being replaced. No cost estimates for either project are available.

Future Project

Construction plans for new administrative offices, as an addition to the existing supervisory office building, are being explored.

Sayreville - Melrose and Morgan Plants, New Jersey (Middlesex County)

Future Projects

Sayreville has received U.S. EPA grants amounting to 55% of the total cost for two separate projects.

A $10.3 million project is for the construction of a gravity interceptor and force main from the Morgan area of Sayreville to convey wastewater to MCUA. Additionally, a pump station will be constructed at the site of the South Amboy primary treatment plant and those flows will be treated at MCUA as well.

For the second project, costing $1.9 million, two pump stations will be constructed at the existing Melrose and Morgan sites, including the associated force mains. Construction for both projects is to start during the spring of 1988 and completion is anticipated one year later.

These primary facilities are under State Consent Orders to complete necessary construction and cease discharge.

Refer to the MCUA write-up for additional information.

South Amboy, New Jersey (Middlesex County)

Project in Progress

This 1.0 MGD facility is operating under a State Consent Order to complete construction and cease discharge. The primary plant will be phased out and will be replaced by a pump station with the flows being diverted to the MCUA plant for treatment. The pump station conversion is well under way with a tentative completion date of the summer of 1988.

Refer to the MCUA write-up for more information.

West New York, New Jersey (Hudson County)

Future Projects

Almost $23 million will be needed to upgrade this facility to secondary treatment utilizing trickling filters. Major units to be installed include chlorination facilities, ozone sludge conditioning, rotating screens, secondary clarifiers, and trickling filters. Construction is to begin by June 1, 1988 with attainment of operational levels by September 1, 1990.

The Commission and the U.S. EPA are presently involved in litigation against West New York to ensure compliance with ISC and federal requirements. For further information, refer to the Legal Activities section of this report.

Woodbridge, New Jersey (Middlesex County)

Future Project

A re-estimated $45 million has been proposed for Woodbridge's conversion to a pump and relay station for its own flow, as well as those from Carteret and Perth Amboy. The work will include pump stations, force mains, and interceptor sewers to convey all flows to the MCUA facility for treatment. Construction is scheduled to start up on January 15, 1988. An operational start-up date has been set for September 1, 1989. This plant is operating under federal and State Consent Orders to cease discharge.

Refer to the MCUA write-up for more information.

NEW YORK WATER POLLUTION CONTROL PLANTS

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

Completed Project

Phase I construction to expand this facility to 70 MGD is 99% complete. The estimated $22.7 million cost included five aerobic fluidized bed reactors and two final clarifiers.

Projects in Progress

Phase II construction is 90% complete. This phase pertains to the plant's headworks and includes the installation of new bar screens, grit tanks, two main sewage pumps, odor control equipment and scavenger waste disposal facilities. The expected cost is $14.7 million.

Phase IIIA construction, estimated to cost $58 million, is 40% complete. This portion of the plant expansion work includes additions and modifications to the secondary treatment facilities.

Future Projects

Five final phases of construction improvements are planned. At a cost of $25 million, Phase IIIB will address main equipment building modifications. Phase IIIC will involve power generation facilities at a cost of $31 million. Effluent pump and fire protection pump station improvements are Phase IVA and will cost $8 million. Phases IVB and IVC address sludge thickening and primary treatment improvements, respectively. The total cost for this work is expected to be $44 million.

The facility is operating under a State Consent Order to attain secondary treatment effluent permit levels by July 1, 1988.

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

Project in Progress

Conversion of Belgrave's disinfection process from liquid chlorine to hypochlorite is 10% complete. The estimated $240,000 job will include new tanks, supporting equipment

and a new building to house the additions.

Future Project

An approximate construction start-up date of January 1988 has been made for a $1.6 million rehabilitation project. Work will include replacing the trickling filter stones with plastic media, new laboratory facilities, a new garage and shop, a new generator, and two new comminutors.

Bowery Bay, New York (Queens County)

Project in Progress

A City-wide CSO abatement program is now in the second phase. The first phase identified the extent to which CSO results in noncompliance of water quality standards. The second phase involves dividing the City into four areas and developing facility planning for each area. Previous and present planning at various tributaries will be incorporated in these plans. The program is being conducted in accordance with SPDES permit requirements. Bidding by individual contractors for specific tasks is under way.

Future Projects

Approximately $11.5 million will be needed to upgrade and rehabilitate this plant.

An SSES is planned for this drainage basin.

Camp Smith, New York (Westchester County)

Completed Project

Replacement of recirculation and sump pumps was completed at a cost of $5200.

Project in Progress

Engineering studies to address the rehabilitation of all plant controls, meters and sensors are still under way. An estimated $160,000 will be spent for study and design, as well as installation of the new equipment.

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

Completed Project

A primary digester, converted from a secondary digest-

er, was put on-line during December 1986; costs incurred amounted to nearly $3 million.

Projects in Progress

A $45 million contract for upgrading this secondary activated sludge plant to a flow capacity of 56 MGD is currently 87% complete. Construction includes the installation of odor control units, modification of the aeration system, and rehabilitation of the air filtration system.

Another phase of the construction includes a new power generating facility. This work is under way and has an estimated cost of $32 million.

Future Projects

A total of $80 million is planned for three phases of capacity expansion construction. Digesters, dissolved air flotation thickeners with an odor control facility, influent screens, primary tanks, final tanks, a grit chamber, a return sludge pumping station, rehabilitation of existing digesters, influent screening and grit handling equipment, air blowers, and retrofitting the existing air diffusers with fine bubble diffusers are items included for the expansion of this plant from 56 MGD to 76 MGD.

This plant is operating under a State Consent Order to complete capacity expansion and plant rehabilitation by July 1, 1988.

Coney Island, New York (Kings County)

Projects in Progress

A water quality facility plan for Paerdegat Basin in Jamaica Bay is in progress.

Several construction phases at this treatment facility have begun and others are well under way; in toto, 70.6% of the work is done. Primary settling tanks, plant maintenance, grit removal facilities, a sludge force main, an engine generator, digester facilities and thickeners are included in this $230 million project.

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

Future Project

An estimated $240 million will be needed to complete

phased construction at Coney Island. Agenda items include aeration and final settling tanks, new main pumps and process blowers. An operational start-up date has been set for 1994.

Glen Cove, New York (Nassau County)

Completed Project

A belt filter press was installed at a total cost of $67,000.

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

Projects in Progress

This facility is operating under a State Consent Order to attain secondary treatment levels by July 1, 1988. A re-estimate of $2 million was made to install a new chlorine building, a contact chamber, and a dome-covered trickling filter with a scrubber and sand filter. Work began during the fall of 1987.

Rehabilitation of the force main began during the fall of 1987. A cost estimate of $539,00 has been made.

For more information, see the Great Neck Water Pollution Control District write-up.

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

Projects in Progress

This facility is operating under a State Consent Order to comply wih secondary treatment standards by July 1, 1988. Construction has just begun to expand this secondary trickling filter plant to 3.8 MGD. An estimated $16.6 million will be spent to cover the costs for new headworks, primary and final settling tanks, a new trickling filter, gas storage, a sand filter, a chlorine contact tank, an effluent pump station, and a combined outfall for the Great Neck WPCD and the Village of Great Neck.

Collection system upgrading including pump stations, force mains, gravity sewers and interceptors began in September 1987. Five percent of the $3.3 million job is complete.

Huntington Sewer District, New York (Suffolk County)

Projects in Progress

This plant's construction upgrade and capacity expansion is 75% complete. The nearly $13 million project consists of bar racks, belt filter presses, grit chambers, biodiscs, chemical storage facilities, a chlorine contact tank, clarifiers, a digester, equalization tanks, flash mix and flocculation tanks, a gravity thickener, primary and secondary settling tanks, screw pumps, a trickling filter, and a scavenger waste pretreatment process.

This facility is operating under a State Consent Order to attain secondary treatment. The Order specifies substantial construction completion by August 31, 1987 and attainment of operational levels by November 30, 1987.

Hunts Point, New York (Bronx County)

Completed Project

The I/I study is complete and a report has been issued.

Projects in Progress

A water quality study is under way.

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

Future Project

Rehabilitation of various treatment units is estimated to cost $23 million. A start-up date for construction was not available.

Inwood Water Pollution Control Plant - Disposal District No. 1, New York (Nassau County)

Projects in Progress

This facility is currently operating under a State Consent Order to meet secondary effluent limitations by July 1, 1988. Proposed phased construction improvements include new trickling filter flow distribution arms, a new hypochlorination system, new screening or a comminuting device, and rehabilitation of existing tankage. Bids were being received in October 1987 and cost estimates are $400,000.

Jamaica, New York (Queens County)

Project in Progress

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

Future Project

An I/I study is scheduled to begin soon.

Lawrence, New York (Nassau County)

Completed Project

A $16,000 engineering study to address capital improvements is nearly complete. A draft report has been issued.

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

Project in Progress

This plant is operating under federal and State Consent Orders to attain secondary treatment levels. It is planned to expand and upgrade this 6.4 MGD secondary trickling filter plant to 7.5 MGD at a cost of $8.25 million. Work began during October 1987.

Mamaroneck, New York (Westchester County)

Completed Project

Nearly $3 million was incurred to install two pump stations and force mains.

Project in Progress

A two phase construction program went out to bid in December. Phase One will address I/I elimination. Phase Two involves major collection system rehabilitation. This work is eligible for 55% federal government funding; cost estimates were not available.

Future Projects

An operational start-up date of June 1, 1993 is anticipated for a 20 MGD secondary activated sludge plant. This project will cost $155 million and construction is anticipated to begin in early 1989.

An additional $26 million is anticipated for the land/water phases to install a new outfall.

Presently, this facility is operating under a State Consent Order to attain secondary treatment levels. Specific dates for the municipal compliance plan are being revised.

See the New Rochelle write-up for additional information.

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

Projects in Progress

A cost estimate of $1,299,000 has been made to build two additional equalization tanks for the existing treatment facility. Work began during October 1987.

A hazardous waste study, which was initiated by a NYS DEC complaint, is nearly complete; cleanup logisitcs are slated for 1988.

New Rochelle, New York (Westchester County)

Project in Progress

On December 12, 1986, NYS DEC imposed a sewer hookup moratorium on the New Rochelle Sewer District. This plant meets or exceeds the permitted flow capacity. With anticipated development in the area, the State is concerned that the plant capacity will be exceeded as well as not being able to meet effluent requirements. To this end, County and municipal officials are working closely with the State in order to address this issue.

Future Project

Presently, this facility is operating under a State Consent Order to accomplish collection system rehabilitation. The New Rochelle Sewer District, which is comprised of Larchmont, a small section of Mamaroneck, New Rochelle and Pelham Manor, will go to bid shortly for this work. A cost of $1 million is anticipated.

Newtown Creek, New York (Kings County)

Projects in Progress

A water quality facility plan for Newtown Creek is in

progress.

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

Future Project

An estimated $100 million will be needed to modify the present process by incorporating step aeration with reduced contact time.

Northport, New York (Suffolk County)

Project in Progress

An engineering study is 25% complete and is assessing the replacement of a grit collection system and a new pump station.

North River, New York (New York County)

Completed Projects

The construction of all advanced preliminary treatment facilities is 97.7% complete. Construction costs, including a 30-acre platform and interceptor sewers, amounted to $727.3 million. This plant has been providing primary treatment and disinfection since April 1986.

An SSES is also complete.

Projects in Progress

The rooftop park is designed, including the north and south access bridges. Funding approval is in place and construction has begun; anticipated costs are $35 million.

Construction of the secondary treatment facilities is 48.3% complete. Final cost estimates are expected to be $207.2 million. This facility is operating under federal and State Consent Orders. The project is on schedule and is expected to be in compliance by July 1, 1989.

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

Oakwood Beach, New York (Richmond County)

Completed Projects

An I/I study for this drainage basin is complete.

A short section of the West Branch Interceptor Sewer System has been completed.

Project in Progress

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

Future Project

Final design of the West Branch Interceptor System serving Tottenville is complete. The $129 million project will include a gravity sewer and two pump stations and is scheduled for completion by 1993.

Orange and Rockland Utilities, New York (Rockland County)

Completed Projects

Construction upgrading is 100% complete at this 0.012 MGD secondary treatment plant. Final costs amounted to nearly $300,000.

Design work for the reconversion of two major units to coal is 95% complete.

Future Project

Cost estimates of $200 million are anticipated for the coal reconversion project. No start-up date for construction was available.

Ossining, New York (Westchester County)

Completed Project

A $2 million rehabilitation project is 98% complete. Work entails odor control equipment for the thickeners, a scum concentration tank sludge grinder, sludge dewatering and processing piping.

Owls Head, New York (Kings County)

Projects in Progress

Several construction phases are well under way and several others have been started. At a total cost of $250 million, work is continuing on the sludge processing complex, pump and power houses, engine generators and auxiliaries.

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

Future Projects

New York City has applied for a U.S. Army Corps of Engineers dredging permit to install an outfall and deepen the sludge barge berthing area.

Additional planned agenda items for this plant include installation of new primary tanks, chlorination tanks, final settling tanks, an outfall, and demolition of the old aeration tanks. Operation at secondary treatment levels is anticipated for 1995; $200 million is expected to be accrued by then.

Oyster Bay Sewer District, New York (Nassau County)

Completed Project

Plant rehabilitation work is complete at an estimated $160,000. New equipment installed includes gas production and use meters, chlorinators, chlorine detectors, nine valves and a sludge heater exchanger.

Project in Progress

A Step I 201 Facilities Plan is 90% complete.

Future Project

This plant is operating under a State Consent Order to eliminate I/I and attain secondary treatment limitations. Bids for construction are presently being prepared. No awards or anticipated construction dates are available.

Peekskill, New York (Westchester County)

Completed Project

Installation of new air blowers and conversion of a third process blower are 100% complete. Final costs amounted to $250,000.

Port Chester, New York (Westchester County)

Project in Progress

The $42.5 million construction of a 5.5 MGD secondary treatment facility is 50% complete. The project includes rotating biological contactors, settling tanks, gravity

thickeners, centrifuge dewatering, fluidized bed sludge burning, chlorination, and an outfall into the Long Island Sound. This plant is under federal and State Consent Orders to begin secondary treatment by January 1, 1990.

Port Richmond, New York (Richmond County)

Project in Progress

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

Port Washington Water Pollution Control District, New York (Nassau County)

Projects in Progress

Construction is 10% complete to expand this 3 MGD secondary trickling filter plant's capacity to 4 MGD. A total re-estimated cost of nearly $17 million will provide for a new primary clarifier, a trickling filter, a secondary clarifier, a sand filter, a chlorine contact tank, a sludge dewatering system, and an outfall.

In regards to the sewer outfall, Port Washington requested U.S. Army Corps of Engineers' authorization for installation and dredging. The purpose of this work is to provide proper dilution for treated wastewater and to comply with the findings of the Areawide 201 Water Resource Study.

Construction involving sewer replacement, rehabilitation and modernization of two pump stations is under way. A final cost was announced at nearly $10.5 million.

This facility is operating under a State Consent Order to upgrade its equipment and meet minimum treatment requirements, as specified. The municipal compliance plan sets July 1, 1988 for meeting discharge permit limits and May 15, 1990 for completion of construction.

Red Hook, New York (Kings County)

Projects in Progress

During May 1987, this 60 MGD activated sludge step aeration plant went on-line providing primary treatment with disinfection. Ongoing construction includes work on the main building; HVAC, electrical, and sludge handling facilities; and final settling tanks. All these components, representing an outlay of $145.8 million, are 85% complete.

Collection system work is presently 43% complete. Current construction includes force main installation in the existing Gowanus Canal flushing tunnel and pump station; a new service wing and garage; upgrading of mechanical, electrical, HVAC, and plumbing systems; and renovation of tide gates. Final costs for these phases represent over $23 million of a total $31.62 million for collection system construction.

The Red Hook facility is under federal and State Consent Orders to attain operational secondary treatment levels by June 1, 1989. To date, this project is on or ahead of schedule in accordance with the municipal compliance plan.

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

Richmond Memorial Hospital, New York (Richmond County)

Project in Progress

An engineering study is under way which is addressing a suspended solids processing problem.

Rockaway, New York (Queens County)

Projects in Progress

An I/I study is in progress.

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

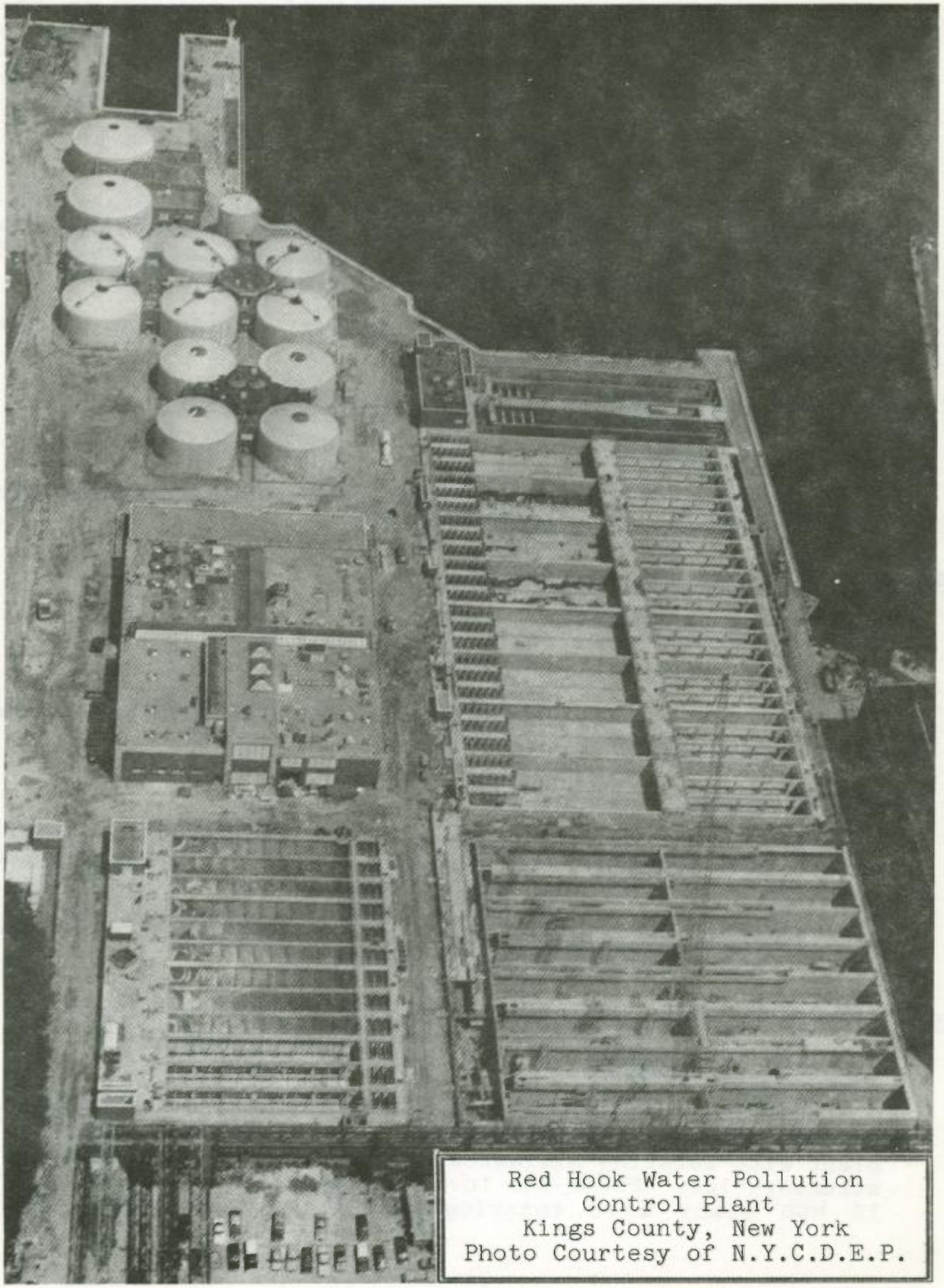
Future Project

New York City has requested U.S. Army Corps of Engineers' authorization for a dredge permit to install three storm sewer outfalls in Beach Channel, Jamaica Bay at Rockaway Beach. The purpose of the proposed project is to provide separate storm and sanitary sewer systems and eliminate CSOs. Cost estimates were not available.

Rockland County Sewer District #1, New York (Rockland County)

Projects in Progress

Upgrading and expansion of this facility is progressing in a dual phase mode. Phase One is addressing a new 16 MGD plant with rotating biological contactors and supporting instrumentation. Phase Two involves retrofitting the existing 10 MGD plant with rotating biological contactors. Both



Red Hook Water Pollution
Control Plant
Kings County, New York
Photo Courtesy of N.Y.C.D.E.P.

phases are 70% complete and will cost approximately $152 million.

Collection system construction is 70% complete. Three of ten pump stations are nearly complete; seven of the ten are expected to be on-line during 1988. A microcomputer alarm and monitoring system is being installed in order to telemeter information to the main plant. Expenses incurred are included in the aforementioned main facility cost.

This facility is operating under a State Consent Order; modifications and specific Order dates are pending.

Roslyn, New York (Nassau County)

Completed Project

The Nassau County Department of Public Works has completed the Roslyn pump station which now diverts all flows, via newly installed force mains, to the Cedar Creek facility on the south shore of Long Island. Operations began September 16, 1987; final costs amounted to over $3.67 million.

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

Completed Project

Pump station construction is complete at a final estimated cost of $1.5 million.

Project in Progress

The upgrading of this plant to secondary treatment with a flow capacity of 2.5 MGD is 40% complete. The project includes construction of an aerated grit tank, rotating biological contactors, modifications to settling tanks, and upgrading the disinfection and sludge thickening processes. This re-estimated $5 million project anticipates a mid-1988 operational status.

Suffolk County Sewer District #1, S.U.N.Y., New York (Suffolk County)

Projects in Progress

Construction of a 2.5 MGD secondary oxidation ditch treatment facility is 50% complete and is anticipated to be operational by June 1988. Over $13 million is expected to be spent to install a main control building with all supporting equipment, a maintenance section, and odor control

capabilities.

A new effluent force main is being installed and connected to the Port Jefferson Harbor outfall. This work is 95% complete and will cost $2.3 million.

This facility is under a State Consent Order to attain secondary treatment by July 1, 1988.

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

Projects in Progress

Sludge dewatering and conditioning processes are 90% complete. Three belt presses have been installed. Refurbishing of two multi-hearth incinerators with new brickwork is still under way. An expenditure of $3.8 million covers construction modifications, as well as previously completed sludge and odor control studies, and odor control equipment which was installed.

This facility is operating under a State Consent Order to implement improvements and meet secondary effluent limitations by July 1, 1988.

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

Projects in Progress

Several engineering studies are still under way with a total estimated cost of $700,000. Among the issues being addressed are the facility's structure, sludge processes and handling, and equipment improvements. This work is 10% complete.

Tallman Island, New York (Queens County)

Project in Progress

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

26th Ward, New York (Kings County)

Project in Progress

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

Future Project

Facility planning studies for water quality improvement of Jamaica Bay will be started soon.

Wards Island, New York (New York County)

Projects in Progress

An SSES is under way.

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

Yonkers, New York (Westchester County)

Projects in Progress

Fifty-five percent of a $4.2 million upgrade is complete. Work includes new roofs for the sludge storage tanks, an enclosure for the sodium hypochlorite tanks, a grit storage tank, and all equipment for the sludge thickening polymer system.

On November 18, 1987, NYS DEC imposed a sewer hookup moratorium on the Yonkers draingage basin. This plant meets or exceeds the permitted flow capacity. With anticipated development in the area, the State is concerned that additional wastewater flows will cause contravention of effluent water quality regulations. To this end, County and municipal officials are working closely with the State in order to address this issue.

EFFLUENT AND AMBIENT WATER QUALITY MONITORING

The Commission's field and laboratory staff maintained monitoring programs for effluents and the ambient waters throughout this past year. Field personnel continued inspections and samplings at municipal, industrial, and private wastewater treatment facilities. Both routine and intensive water quality surveys were conducted throughout the District. Laboratory personnel performed analyses for a wide range of parameters to determine whether ISC Water Quality Regulations and/or N/SPDES permit limitations were being met.

During October, the Commission acquired its own research vessel for conducting ambient water quality surveys. Now operational, the gas chromatograph/mass spectrophotometer (GC/MS), purchased at the end of 1986, has enhanced the laboratory's capability to measure toxic and priority pollutants in water, air, and sediment samples.

The laboratory and field staff, in conjunction with the NYS DEC, continued to proctor written and administer practical examinations to candidates for Sewage Treatment Plant Operators' Certification, Grades II and III. The Commission laboratory retained both its New Jersey and New York State laboratory certifications. Although they do not have a laboratory certification program, an inspection by the U.S. Food and Drug Administration found the Commission's laboratory to be in conformance with their recommended procedures. The laboratory continued its participation in the U.S. EPA Water Pollution Laboratory Evaluation Program and Water Supply Microbiology Performance Evaluation Study.

Effluent Monitoring

Effluent discharges into the District's waterways were monitored throughout the year by the Commission's investigations of municipal, industrial and private wastewater treatment plants. These investigations included field inspections of processes, equipment, and plant records, as well as the collection and analyses of samples. Inspections of private and municipal facilities generally cover a six hour sampling period, while investigations of industrial facilities cover a period of twenty-four hours or for a full day's production if less than twenty-four hours. All of these investigations are conducted to determine a facility's compliance with its N/SPDES permit. As per the ISC workplan, these investigations have been coordinated with those of the State environmental departments and the U.S. EPA.

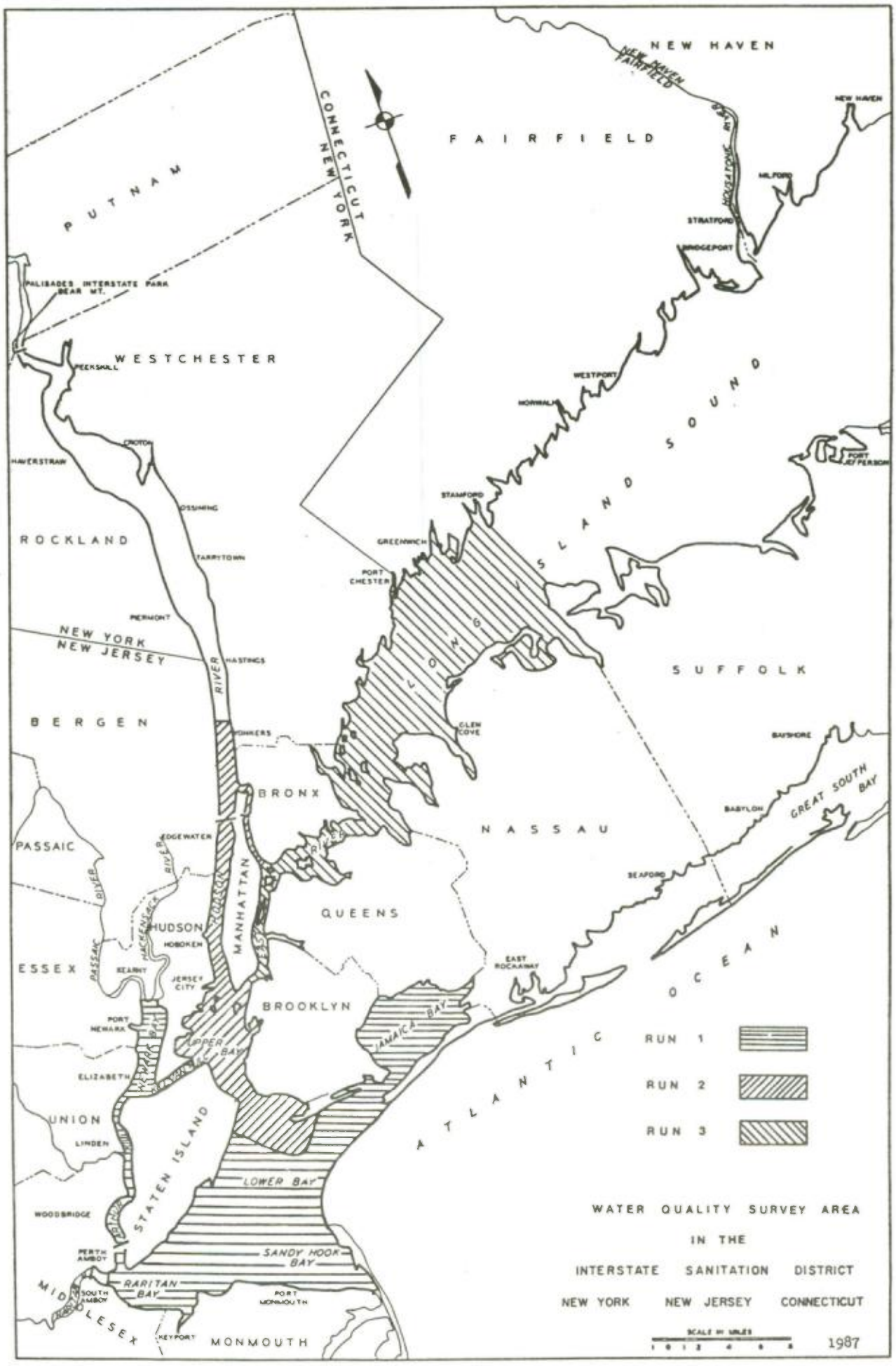
Ambient Water Quality Monitoring

This year, as a result of meetings in the spring with the State environmental departments and the U.S. EPA, the Commission

switched from repetitive (four times per year) sampling of a fixed station network to intensive surveys. The fixed station network was sampled once in the spring; the remainder of the sampling was intensive surveys. A map of the water quality sampling areas for the fixed station network and lists of the sampling station descriptions are shown on the following pages. The surveys were conducted using vessels from the State environmental departments, whenever available, or chartered from the New Jersey Marine Sciences Consortium in Sandy Hook, N.J. and the Marine Science Research Center in Stony Brook, N.Y.

One project consisted of intensive surveys in the New York Harbor Complex conducted during the months of August and November 1986 and February and April 1987. Three 24-hour surveys were conducted in Fairfield County, Connecticut harbors during June and August. Cheesequake Creek, located in Middlesex County, N.J., was sampled in May and July. Preliminary surveys were conducted at ten points along the east and west shores of the Hudson River above the George Washington Bridge in July and August. The purpose was to determine coliform densities as a prelude to the opening of beaches.

Data generated on these studies are available at the ISC office in hard copy and through STORET, U.S. EPA's national data base for water quality data.


NEW HAVEN
NEW HAVEN FAIRFIELD
FAIRFIELD
CONNECTICUT NEW YORK
PUTNAM
PALISADES INTERSTATE PARK BEAR MT.
WESTCHESTER
PEEKSKILL
CROTON
HAVERSTRAW
OSSINING
ROCKLAND
TARRYTOWN
PIERMONT
NEW YORK NEW JERSEY
HASTINGS
RIVER
BERGEN
YONKERS
BRONX
PORT CHESTER
GREENWICH
STAMFORD
NORWALK
WESTPORT
BRIDGEPORT
STRATFORD
MILFORD
NEW HAVEN
LONG ISLAND SOUND
SUFFOLK
GLEN COVE
BAYSHORE
BABYLON
GREAT SOUTH BAY
NASSAU
QUEENS
BROOKLYN
MANHATTAN
PASSAIC
EDGEWATER
HUDSON
HOBOKEN
ESSEX
KEARNY
JERSEY CITY
PORT NEWARK
ELIZABETH
UNION
LINDEN
STATEN ISLAND
UPPER BAY
LOWER BAY
JAMAICA BAY
EAST ROCKAWAY
BEACH
ATLANTIC OCEAN
WOODBRIDGE
PERTH AMBOY
SOUTH AMBOY
SANDY HOOK BAY
RARITAN BAY
PORT MONMOUTH
KEYPORT
MIDDLESEX
MONMOUTH
RUN 1
RUN 2
RUN 3
WATER QUALITY SURVEY AREA
IN THE
INTERSTATE SANITATION DISTRICT
NEW YORK NEW JERSEY CONNECTICUT
SCALE IN MILES
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1987

INTERSTATE SANITATION COMMISSION
WATER QUALITY SAMPLING STATIONS - RUN 1

STATION	LATITUDE NORTH D M S	LONGITUDE WEST D M S	D E S C R I P T I O N
AK-03	40-38-18	74-11-45	At the center of & on the northside of the B&O R.R. Bridge
AK-07	40-35-35	74-12-22	Middle of mouth of Rahway River & in line with shoreline along Tremley Reach
AK-13	40-33-02	74-15-00	Mid-channel between Flashing Red Buoy #12 & Flashing Green, Black Buoy #1
AK-18	40-30-24	74-15-34	Mid-channel of Ward Point Bend (west) and opposite Perth Amboy Ferry Slip
AO-01	40-31-47	73-56-37	Flashing Red R "2" Gong (4 sec.)
JB-03	40-37-37	73-53-00	In channel 400 feet south of the end of Canarsie Pier
JB-05	40-35-45	73-48-40	At center pier of bridge over Beach Channel - Hammels
JB-07	40-38-52	73-49-20	At mouth of Bergen Basin, southeast of the sludge storage tank
LB-01	40-30-44	74-06-03	500 feet from Old Orchard Light in line with the beacon at Old Orchard Shore
NB-03	40-39-20	74-08-45	Northside of C.R.N.J. Bridge over the Newark Bay South Reach Channel (mid-channel)
NB-12	40-41-57	74-07-10	Newark Bay North Reach at mid channel northside of LVRR Bridge
RB-10	40-29-04	74-15-38	Qk Fl G "3" Buoy
RB-14	40-28-01	74-11-18	Buoy C "3" off Conaskonk Point at channel entrance to Keyport Harbor
RB-15	40-27-23	74-08-56	Private Fl G Buoy "1" on Belvedere Beach Point Comfort
RB-16	40-30-16	74-09-46	North side of Fl 4 sec 8M "20" Buoy located on northern boundary of Raritan Bay West Reach; off Huguenot Beach on Staten Island
RI-02	40-34-24	73-53-08	Under center of bridge from Barran Island to Rockaway
RI-03	40-33-21	73-56-51	Gong "9" Fl G 4 sec Buoy in Rockaway Inlet; northwest of Lookout Tower on Rockaway Point

INTERSTATE SANITATION COMMISSION
WATER QUALITY SAMPLING STATIONS - RUN 2

STATION	LATITUDE NORTH D M S	LONGITUDE WEST D M S	DESCRIPTION
HA-02	40-50-44	73-55-45	Hamilton Bridge (middle bridge of 3)
HR-01	40-42-20	74-01-36	Mid-channel of Hudson River N-S: Line of black buoys E-W: Fire Boat Pier (NY) and railroad pier (NJ)
HR-02	40-45-17	74-00-58	Mid-channel of Hudson River E-W: Heliport (NY) and Seatrain pier (NJ)
HR-03	40-47-41	73-59-09	Mid-channel of Hudson River E-W: Soldiers & Sailors Monument (NY) and circular apartment buildings (NJ)
HR-04	40-51-04	73-57-04	Mid-channel of Hudson River under George Washington Bridge
HR-05	40-52-40	73-55-02	Mid-channel of Spuyten Duyvil Creek under Henry Hudson Bridge
HR-07	40-56-51	73-54-27	Mid-channel of Hudson River E-W: Opposite Phelps Dodge (Yonkers)
LB-02	40-33-45	74-04-20	B.W. Bell off Midland Beach
LB-03	40-34-03	73-59-00	200 feet south of Steeplechase Pier at Coney Island - N "2S"
LB-04	40-35-00	74-00-51	1/4 mile northeast of Norton Point, near the White Nun Buoy
NJ-08	40-31-28	74-02-07	Buoy R "10S" Gong Fl R at northwest end of Swash Channel
UH-03	40-39-14	74-03-35	Passaic Valley Outfalls E-W: Robbins Reef Light and forward water tower on Naval Dock N-S: Statue of Liberty and Black Bell Buoy #1-G
UH-11	40-39-05	74-05-10	Located in the Kill Van Kull, in mid-channel & directly opposite Fl G & Black Buoy #3
UH-13	40-36-26	74-02-45	Middle of channel in Narrows under Verrazano Bridge
UH-21	40-40-23	74-02-28	Main ship channel 10 yards to the west of Fl R Bell Buoy #30
UH-22	40-38-25	74-02-50	In mid-channel of Bay Ridge Channel E-W: Flashing Red Beacon on 69th St. Ferry Dock (Brooklyn) N-S: Fl G Bell Buoy #3 and Fl R Gong Buoy #22
UH-29	40-42-17	73-59-54	Mid-channel of East River in line with Pier #11 (Manhattan) and Pier #1 (Brooklyn)

INTERSTATE SANITATION COMMISSION
WATER QUALITY SAMPLING STATIONS - RUN 3

STATION	LATITUDE NORTH D M S	LONGITUDE WEST D M S	D E S C R I P T I O N
ER-02	40-42-48	73-58-20	Under Williamsburg Bridge - mid-channel
ER-03	40-44-05	73-58-05	Mid-channel of East River E-W: Pier #73 (School Slip) Manhattan with open pier, foot of Greene Street, Brooklyn N-S: Poorhouse Flats Range
ER-09	40-47-26	73-54-53	Mid-channel of East River E-W: Fl R Bell Beacon on Wards Island with tall stack on Con Edison's Astoria Plant
ER-11	40-47-50	73-52-02	Mid-channel of East River E-W: Fl R Beacon (College Point) with stack on Rikers Island N-S: Line from center of Sanitation Pier (Hunts Point) with Fl R #4 Buoy (Station approximately 250 yards SE of #4 Buoy)
LI-15	40-47-58	73-47-38	Middle of Throgs Neck Bridge
LI-17	40-49-43	73-46-46	500 yards off Stepping Stone, north of Fl G "12" M Horn
LI-19	40-51-33	73-45-03	Off Bell "27" at Gang Way Rock
LI-24	40-53-57	73-44-27	At New Rochelle outfall approximately 500 yards south of R "2"
LI-25	40-55-25	73-42-01	Mamaroneck Fl 4 sec. Bell R "42"
LI-26	40-58-47	73-38-59	Port Chester off N "2"
LI-27	41-00-08	73-36-04	Captain's Harbor - Newfoundland Reef Fl R "4"
LI-28	40-59-42	73-33-58	Greenwich Point R N "34"
LI-29	41-00-54	73-32-14	Stamford between E int G 8M Horn & Fl R
LI-31	40-55-29	73-30-11	Oyster Bay Gong "1"
LI-32	40-54-39	73-38-07	Matinecock Pt. "21" Fl G 4 sec. Bell
LI-33	40-51-42	73-40-07	Hempstead Harbor midway between R 6 Bell and Fl 4 sec. "1"
LI-34	40-50-00	73-44-02	Manhasset Bay Fl G 4 sec. "1"
LI-35	40-59-33	73-28-53	At the disposal site designated as WLIS III N-S: Long Neck Point in Connecticut and Lloyd Point in New York

SPECIAL INTENSIVE SURVEYS

1986/1987 Intensive Water Quality Surveys Within the New York/ New Jersey Metropolitan Area

The following is excerpted from a report issued by the Commission in September 1987.

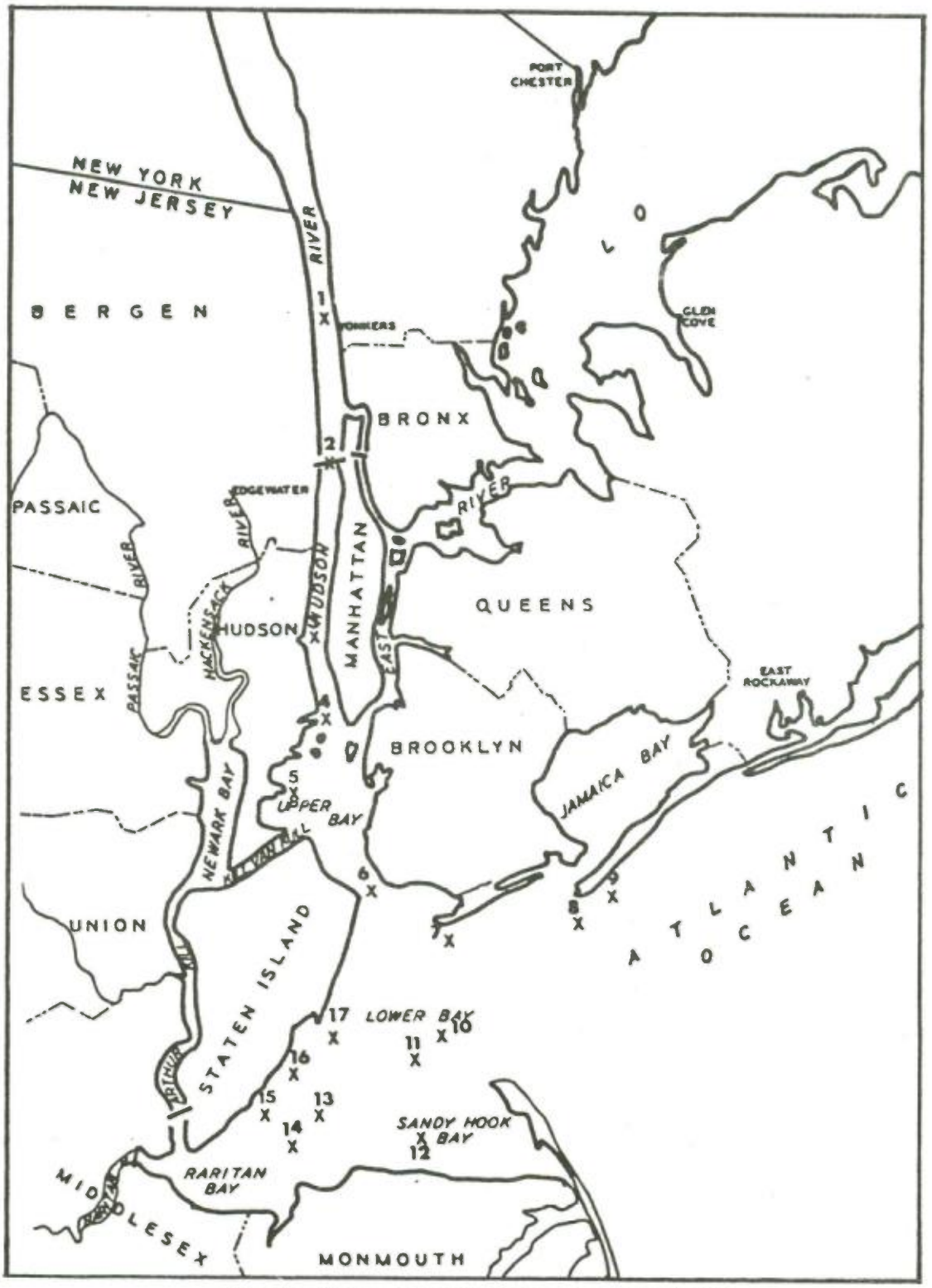
In 1985, as a result of Use Attainability Analyses (UAAs), several waterbodies within the Interstate Sanitation District were upgraded by the Interstate Sanitation Commission, New York State, and New Jersey. The Commission's year-round disinfection requirement also went into effect on July 1, 1986.

As a follow-up to the two aforementioned actions, the Commission, in cooperation with the environmental departments of the States of New York and New Jersey, conducted special ambient water quality sampling surveys to assess the results of those actions and to plan for the future. To reduce the cost of chartering commercial boats to conduct the sampling, whenever possible, the State environmental departments supplied their boats. Commission personnel did the sampling and the analyses were performed by the ISC laboratory.

Sampling surveys, each lasting from three to ten days, were conducted in August and November 1986 and in February and April 1987. Seventeen stations were chosen in the Hudson River, Upper New York Bay, Lower New York Bay, Raritan Bay, Sandy Hook Bay, and the Atlantic Ocean (see map and station descriptions on the following pages). Several of the Raritan/Sandy Hook Bay stations are located in shellfishing areas and the station off the Rockaways is located near the NYS DEC summer closure boundary for shellfishing.

On all four surveys, top (approximately 5 feet below the surface) and bottom (approximately 1 to 2 feet above the bottom) samples were taken for dissolved oxygen, temperature and conductivity. Top samples for fecal and total coliforms were taken on all four surveys and bottom samples for these parameters were taken at one station. Additionally, on the August 1986 and February 1987 surveys, top samples were taken for metals, nutrients, and chlorophylls.

The data are encouraging with respect to improved coliform values. Year-round disinfection is a major factor in this improvement. A comparison was made of the coliform concentrations in cold weather before and after the Commission's year-round disinfection requirement became effective. The chart on a following page shows significantly lower coliform values with year-round disinfection than with seasonal disinfection.



INTERSTATE SANITATION COMMISSION

1986/1987 INTENSIVE SAMPLING SURVEY STATION LOCATIONS

INTERSTATE SANITATION COMMISSION

1986 - 1987 INTENSIVE SAMPLING SURVEY STATION LOCATIONS

ISC SURVEY STATION NUMBER	LATITUDE NORTH D M S	LONGITUDE WEST D M S	D E S C R I P T I O N	MAP REFERENCE NUMBER
AO-01	40-31-47	73-56-37	Flashing Red R "2" Gong (4 sec.)	8
HR-01	40-42-20	74-01-36	Mid-channel of Hudson River N-S: Line of black buoys E-W: Fire Boat Pier (NY) and railroad pier (NJ)	4
HR-02	40-45-17	74-00-58	Mid-channel of Hudson River E-W: Heliport (NY) and Seatrain pier (NJ)	3
HR-04	40-51-04	73-57-04	Mid-channel of Hudson River under George Washington Bridge	2
HR-07	40-56-51	73-54-27	Mid-channel of Hudson River E-W: Opposite Phelps Dodge (Yonkers)	1
LB-01	40-30-44	74-06-03	500 feet from Old Orchard Light in line with the beacon at Old Orchard Shore	17
LB-03	40-34-03	73-59-00	200 feet south of Steeplechase Pier at Coney Island - N "2S"	7
LB-05	40-29-01	74-07-35	Buoy "1" Fl 4 sec; off Point Comfort	13
LB-07	40-29-40	74-02-53	Buoy Fl G 4 sec; Southern end of Chapel Hill South Channel	11
LB-08	40-31-28	74-02-07	Buoy R "10S" Gong Fl R 4 sec; Northwest end of Swash Channel	10
RB-16	40-30-16	74-09-46	North side of Fl 4 sec 8M "20" Buoy located on northern boundary of Raritan Bay West Reach; off Huguenot Beach on Staten Island	16
RB-19	40-28-26	74-11-02	Buoy "1" Fl G 2.5 sec; off Conaskonk Point	14
RB-20	40-27-27	74-04-20	Buoy "1" Fl G 4 sec Bell; off Port Monmouth	12
RB-21	40-29-25	74-11-40	Midway between Fl 4 sec Buoy and Fl 4 sec 8M "20" Buoy and 2300 yards south of Seguine Point on Staten Island	15
UH-03	40-39-14	74-03-35	Passaic Valley Outfalls E-W: Robbins Reef Light and forward water tower on Naval Dock N-S: Statue of Liberty and Black Bell Buoy 1-G	5
UH-13	40-36-26	74-02-45	Middle of channel in Narrows under Verrazano Bridge	6
W-06	40-32-36	73-51-54	South of main building with twin towers at Riis Park and approximately 1 1/2 miles from shore	9

Comparison of Geometric Means of Coliform Concentrations
in Cold Weather Before and After ISC Year-Round Disinfection Requirement*

Fecal Coliform (count/100ml)

Station	Seasonal Disinfection**	Year-Round Disinfection***
1	920	430
2	700	470
3	4400	390
4	3300	620
5	2200	250
6	4700	190
7	970	61
8	1100	15
10	2000	98
16	83	50
17	43	43

Total Coliform (count/100ml)

Station	Seasonal Disinfection**	Year-Round Disinfection***
1	1700	980
2	2700	1300
3	11000	1500
4	7600	1800
5	15000	900
6	18000	490
7	5400	150
8	11000	46
10	5500	360
16	180	75
17	290	69

* ISC's year-round disinfection requirement went into effect on July 1, 1986.
** March 1984, March 1985, and March 1986 when seasonal disinfection was practiced.
*** November 1986 and February 1987 when year-round disinfection was practiced.

In general, lower dissolved oxygen (DO) values were found in the bottom waters throughout the study area than at the surface. The DO values were lowest in August, when four stations (between the George Washington Bridge and the Narrows) fell below the 4.0 mg/l requirement. Improved DO values can be attributed to better treatment practices and treatment of sewage that was previously discharged raw.

It should be noted that the Red Hook and North River sewage treatment plants in New York City, which came on-line providing primary treatment and disinfection in the spring of 1987 and 1986, respectively, are expected to provide secondary treatment in 1989. The Hudson County, New Jersey communities providing primary treatment are expected to go to secondary treatment in the near future. These upgradings will further improve the DO levels.

Heavy metals concentrations are summarized on the table on the following page. Shown are the maximum, minimum, and mean values for 10 metals at 17 stations. For each metal, the concentration appeared to be in the same order of magnitude throughout the study area. In general, the metals concentrations were low except for copper. The measured values for copper are much higher than the ambient water quality standard (2.0 µg/l) promulgated by the NYS DEC in 1986. It must be noted that the NYS DEC standard is for "acid-soluble" copper, whereas the measurements taken are for "total" copper. In spite of this difference, it is likely that the NYS DEC standard for copper is being exceeded.

The data collected during these surveys are limited in nature and require further verification. The Commission has scheduled follow-up sampling surveys for areas of Raritan Bay and the Atlantic Ocean off the Rockaways. Sufficient data will be collected so the States of New York and New Jersey can make a determination on extending the season for those shellfish areas which are only seasonally opened and/or opening areas which are presently closed.

Combined sewer overflow discharges, which are caused by wet weather conditions, are a primary driving force contributing to the degradation of the ambient waters in the area. Regional combined sewer overflow data is necessary to enhance the understanding of pollution due to storm water runoff. Proper data must be collected to make a first estimation of pollution magnitude. Additional field sampling will be required to verify and refine estimates.

Hudson River Coliform Survey

In 1986, the ISC and the environmental departments of New York and New Jersey upgraded the portion of the Hudson River

SUMMARY OF HEAVY METALS CONCENTRATIONS IN STUDY AREA*

PARAMETER		STATION																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Silver	Max.	10	6	5	5	4	5	5	5	6	5	6	4	4	5	7	4	4
	Min.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Mean(N)**	3.2 (4)	2.5(6)	2.1(6)	2(6)	1.8(6)	2.5(4)	2(5)	2(6)	2.5(5)	2.4(5)	2(5)	2(5)	2.2(5)	2.6(5)	1.8(5)	2.4(5)	2.2(5)
Arsenic	Max.	2	3	7	8	5	4	4	3	3	3	4	4	4	5	4	5	3
	Min.	1	1	1	1	2	1	1	1	1	2	2	1	2	2	2	2	1
	Mean (N)	1.3 (4)	2(6)	2.5(6)	2.8(6)	2.5(6)	2.5(4)	2.4(5)	2.1(6)	2.3(6)	2.2(5)	2.6(5)	3.2(5)	3.0(5)	3.5(4)	2.8(5)	2.8(5)	2.2(5)
Cadmium	Max.	0.5	1.7	0.9	0.6	0.8	1.2	0.9	1.4	1.5	0.5	1.0	0.7	0.6	1.0	1.7	0.6	1
	Min.	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	Mean (N)	0.5 (4)	0.7(6)	0.6(6)	0.5(6)	0.6(6)	0.7(4)	0.6(5)	0.7(6)	0.7(6)	0.5(5)	0.6(5)	0.5(5)	0.5(50	0.6(5)	0.7(5)	0.5(5)	0.6(5)
Chromium	Max.	3.8	7.7	5.8	3.8	2.5	3.8	1.5	2.3	2.3	5.8	1.8	2.3	2.3	3.8	3.8	3	3
	Min.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1	1
	Mean (N)	2.4 (4)	2.9(6)	2.6(6)	2.0(6)	1.6(6)	2.5(5)	1.1(5)	1.2(6)	1.2(6)	2.7(4)	1.3(5)	1.2(5)	1.3(5)	1.6(5)	1.9(5)	1.4(5)	1.4(5)
Copper	Max.	62	44	55	69	77	44	63	125	51	72	113	50	89	74	61	32	41
	Min.	7	4	2	7	4	4	4	2	4	3	4	5	5	5	2	2	4
	Mean (N)	30(4)	24(6)	27(6)	31(6)	38(6)	20(4)	24(5)	29(6)	17(6)	25(5)	36(5)	24(5)	31(5)	26(5)	22(5)	17(5)	15(5)
Iron	Max.	365	625	629	315	306	162	211	98	104	110	116	119	121	148	189	513	186
	Min.	197	265	181	68	108	46	63	35	37	44	45	32	32	50	44	96	53
	Mean (N)	299(4)	425(6)	348(6)	187(6)	182(6)	121(4)	101(5)	72(6)	58(6)	67(5)	73(5)	74(5)	87(4)	90(5)	114(5)	199(5)	103(5)
Mercury	Max.	0.3	0.4	0.3	0.2	0.2	0.2	0.8	0.9	0.9	0.3	0.7	0.5	0.3	0.6	0.5	0.1	0.3
	Min.	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Mean (N)	0.15(4)	0.18(6	0.18(6	0.1(6)	0.1(6)	0.1(4)	0.3(5)	0.3(5)	0.4(6)	0.1(5)	0.2(5)	0.2(5)	0.2(5)	0.2(5)	0.2(5)	0.1(5)	0.1(5)
Nickel	Max.	5	14	11	7	13	9	9	9	7	6	10	8	9	16	13	10	11
	Min.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	Mean (N)	5 (4)	7.8(6)	6.3(6)	5.5(6)	6.8(6)	6.2(4)	6.2(5)	6.1(6)	5.5(6)	5.4(5)	6.6(5)	6.6(5)	6.7(4)	9.4(5)	8(5)	6(5)	7(5)
Lead	Max.	38	38	58	40	63	33	30	18	16	25	13	18	25	16	18	27	16
	Min.	5	5	8	5	6	10	8	5	5	7	5	17	5	5	5	6	8
	Mean (N)	16(4)	17(6)	23(6)	17(6)	25(6)	18(4)	15(5)	10(6)	10(6)	12(5)	8(5)	11(5)	13(4)	10(5)	11(5)	17(5)	11(5)
Zinc	Max.	28	48	36	71	85	168	35	87	64	57	81	56	89	92	57	63	35
	Min.	14	8	10	11	15	11	17	1	3	2	5	12	13	32	9	8	11
	Mean (N)	22(4)	24(6)	23(6)	28(6)	37(6)	60(4)	24(5)	33(6)	31(6)	32(5)	41(5)	33(5)	45(5)	50(5)	29(5)	38(5)	24(5)

* Concentrations of "total" metals in µg/l

** (N) = the total number of data values measured

(from the confluence with the Harlem River north to the New York /New Jersey border) to swimmable/fishable -- ISC Classification "A."

A limited coliform survey was conducted in the upgraded portion of the Hudson River and north to Croton-on-Hudson. Ten different sites in New Jersey and New York along the west and east shores of the Hudson River were sampled seven times during the months of July and August. The samples were taken at the shoreline from marinas, waterfront parks and beaches. Several of the beach sites have been closed for swimming for many years due to high coliform bacteria densities and aesthetic blight.

Preliminary results are encouraging. Eight of the ten sites met bathing requirements during the limited sampling period. One of the areas not meeting the standard was in Class "B-1" waters below the upgraded portion of the Hudson River. The Commission will conduct an intensive survey in the area during the summer of 1988. If the 1988 sampling confirms the preliminary results obtained in 1987, the Commission will advise those officials responsible for opening swimming areas that the coliform values are meeting the swimming requirements. Hopefully, some areas can be opened for swimming by 1989.

Cheesequake Creek Surveys

The following is an excerpt from a report issued by the Commission in October 1987.

Cheesequake Creek is located in Middlesex County, New Jersey. It is approximately 3.4-miles long, 350-feet wide, and 4-feet deep at its southern end (at Cheesequake State Park) and 10-feet deep at its northern end (Raritan Bay). Reports of possible toxic contamination initiated ISC field inspections. The Commission conducted two sampling surveys in Cheesequake Creek -- one on May 4, 1987 and one on July 8, 1987. The samples were tested for a total of 1195 organic compounds and 10 heavy metals.

The concentrations of the 10 metals analyzed for were generally low and met the U.S. EPA Water Quality Standards (1986), except for copper. The copper concentration exceeded the 2.9 µg/l marine acute criteria set by U.S. EPA for saltwater aquatic species protection. However, concentrations of copper of the magnitude measured on this survey seem to be prevalent throughout the waters of the Interstate Sanitation District.

Of the 1195 organic compounds tested for, only three were present. Nitrobenzene and hexachlorobenzene were detected at the mouth of Cheesequake Creek during the first survey. However, their concentrations were low. Dioctyl phthalate, a plasticizer commonly used during polymer processing, was found in Cheesequake

Creek in concentrations generally in the same range detected within other ISC District waters.

Connecticut Harbor Surveys

The Commission and the Connecticut Department of Environmental Protection jointly conducted three 24-hour intensive surveys in Connecticut Harbors. Black Rock Harbor was sampled on June 16 and 17, 1987, and Bridgeport Harbor was sampled twice -- June 29 and 30, and August 5 and 6, 1987. The data collected are needed by the Connecticut DEP for wasteload allocation determinations and water quality modeling.

RESEARCH VESSEL

In the past years, to collect samples from the District's waterways, the Commission has chartered local vessels or, whenever possible, received assistance from the States environmental departments' vessels and the U.S. EPA helicopter. In order to conduct its ambient water quality monitoring in an efficient, expeditious and cost-effective manner, the Commission has acquired its own research vessel.

The vessel is a workboat that will allow sampling year-round. It has an overall length of 25 feet, a cabin to provide a work area and protection for the crew during winter and inclement weather conditions, and an inboard diesel engine. The vessel was built as per U.S. Coast Guard approval and certification; delivery was made during November. A photograph and specifications are shown on the following page.

In memory of Dr. Natale Colosi, an ISC Commissioner since 1945 and its Chairman from 1963 to 1985, the new research vessel was christened the R/V Natale Colosi.

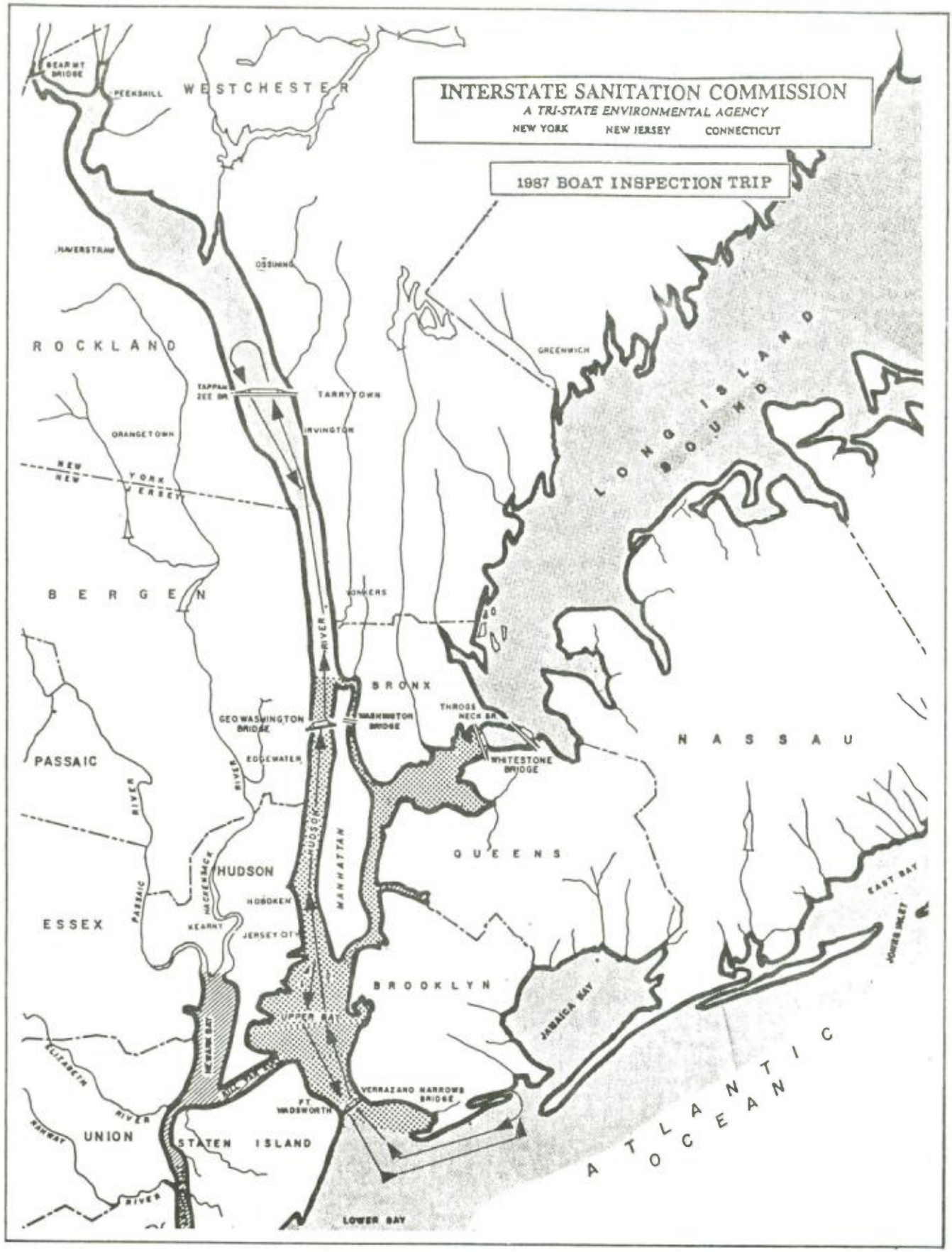
R/V NATALE COLOSI

Hull:	Fiberglass
Dimensions:	
Length:	25'3"
Beam:	9'3"
Draft:	2'3"
Displacement:	5460 pounds
Speed:	25 knots
Engine:	6 cylinder diesel
Navigation:	Loran C 160 channel VHF radio Radar
Winch:	12 volt mounted on aluminum davit

BOAT INSPECTION TRIP

In July, the Commission conducted its annual boat inspection trip. This year's trip covered the Lower and Upper New York Bay complex and the Hudson River to the Tappan Zee Bridge. The map on the following page shows the route which was followed. This area of the Interstate Sanitation District ranks as the world's second busiest seaport, provides resources for recreational boating, commercial and recreational fishing and shellfishing, and sand and gravel mining.

The attendees were able to view the Metropolitan Area's beautiful sea and landscapes, recreational resources, maritime and urban industries, historical landmarks, waterfront development projects, as well as some obscure yet intriguing points of interest. Included among the attendees were ISC Commissioners, elected officials, officials from all levels of government, citizen groups and the press. The opportunity to discuss and observe firsthand some of the environmental problems and progress in the District was shared by all.


INTERSTATE SANITATION COMMISSION
A TRI-STATE ENVIRONMENTAL AGENCY
NEW YORK NEW JERSEY CONNECTICUT
1987 BOAT INSPECTION TRIP
BEARMT BRIDGE
PEEKSKILL
WESTCHESTER
HAVERSTRAW
OSSINING
ROCKLAND
TARRYTOWN
IRVINGTON
ORANGETOWN
GREENWICH
LONG ISLAND SOUND
NEW YORK
NEW JERSEY
BERGEN
YONKERS
HUDSON RIVER
BRONX
GEO WASHINGTON BRIDGE
WASHINGTON BRIDGE
THROGS NECK BR
WHITESTONE BRIDGE
NASSAU
PASSAIC
PASSAIC RIVER
EDGEWATER
HACKENSACK RIVER
HUDSON
MANHATTAN
QUEENS
EAST BAY
HOBOKEN
ESSEX
PASSAIC
KEARNY
JERSEY CITY
BROOKLYN
UPPER BAY
JAMAICA BAY
NEWARK BAY
ELIZABETH RIVER
VERRAZANO NARROWS BRIDGE
FT WADSWORTH
UNION
STATEN ISLAND
ATLANTIC OCEAN
LOWER BAY

LONG ISLAND SOUND ESTUARINE STUDY

Starting with fiscal year 1985, Congress has funded a U.S. EPA-sponsored project to carry out a multiyear water quality program including research, sampling, monitoring, and assessment for the Long Island Sound. This project is part of the National Estuary Program. As per the Clean Water Act amendments of 1987, the governors of New York and Connecticut have requested official designation of Long Island Sound into the National Estuary Program. This designation will assure funding for the project until 1991. Overall project coordination is being carried out by the U.S. EPA Regions I and II. The study is being conducted by the Commission, the States of Connecticut and New York, the National Oceanic and Atmospheric Administration (NOAA), and the academic community.

The goals of the study are:

1. to protect and improve the water quality of Long Island Sound and its coves and estuaries in order to ensure that a healthy and diverse marine community is maintained,

2. to ensure that health risks associated with human consumption of shellfish and finfish are minimized,

3. to ensure that opportunity for water contact recreation activities are maximized, and

4. to ensure that social and economic benefits associated with the use of Long Island Sound are realized to the fullest extent possible by the citizens of Connecticut and New York.

The study area for the project includes the East River from Hell Gate to Throgs Neck and Long Island Sound from Throgs Neck on the west to a line between Watch Island, Rhode Island and Orient Point/Plum Island, New York on the east.

The Commission is involved in various facets of the project, including membership on the Management Committee, the Technical Advisory Committee and several working groups.

The Commission has assembled and summarized data on toxic contaminants in the water column. ISC is in the process of assimilating the results of its work, along with that of the other study participants, into an overall environmental assessment of Long Island Sound.

NEW YORK BIGHT INITIATIVE

The Commission participated in a two year process, the New York Bight Initiative, which brought together more than twenty organizations with divergent interests under the auspices of the New York Academy of Sciences. A single text consensus document, "Managing PCBs in the Hudson-Raritan Estuary and the New York Bight," resulted from the direct dialogue among environmental users, government agencies, scientists and representatives of diverse interest groups. The document addresses sources, fates, and effects of PCBs in the Hudson-Raritan Estuary and New York Bight, and offers constructive recommendations for management and research. PCBs were chosen as the focal issue because they are a contaminant of concern to the many different users of the Bight.

III. AIR POLLUTION

GENERAL

The Commission has conducted an interstate air pollution program since 1962. The emphasis has been on investigations, applied research, and advocating regional viewpoints on environmental issues. During 1987, the Commission continued its investigation of air pollution complaints, particularly on Staten Island. For the 12-month period ending September 30, 1987, a total of 954 air pollution complaints were received; a sharp decrease -- nearly 75% -- from the previous 12-month period.

This year, the Commission initiated plans for an air toxics sampling and analysis program to help identify and quantify gaseous, toxic pollutants in the region. The program will emphasize sampling during odor episodes and air stagnation events. The Commission also serves as a member of the advisory group to a bi-state air toxics assessment project for Staten Island and nearby New Jersey which is coordinated by the U.S. EPA.

During the past year, the Commission has been involved in a wide range of air pollution activities related to resource recovery. ISC has reviewed environmental impact statements to ascertain if interstate considerations have been addressed. Staff members have conducted meetings and held numerous discussions with representatives of the three States to review resource recovery plans and progress.

The Commission gained party status in the Brooklyn Navy Yard administrative hearing conducted by the NYS DEC, as part of its permitting process. ISC is scheduled to present expert testimony at the hearing in the near future. Also, the Commission was represented at the Issues Conference and presented a prepared statement of our views at the Legislative Public Hearing.

The Commission continued to serve on a task force formed by the Commissioner of the NYS DEC to look into the various aspects of a hazardous waste incinerator that could possibly be located in Perth Amboy, New Jersey -- directly opposite Staten Island.

The Commission continued to provide daily air quality and stagnation advisory reports for use by the three member States and New York City. ISC hosted a meeting of environmental and health representatives from New Jersey, New York, Connecticut and the U.S. EPA to discuss a new procedure developed by New Jersey for advising the public of unhealthful ozone occurrences and to review the High Air Pollution Alert and Warning System in light of the new procedure.

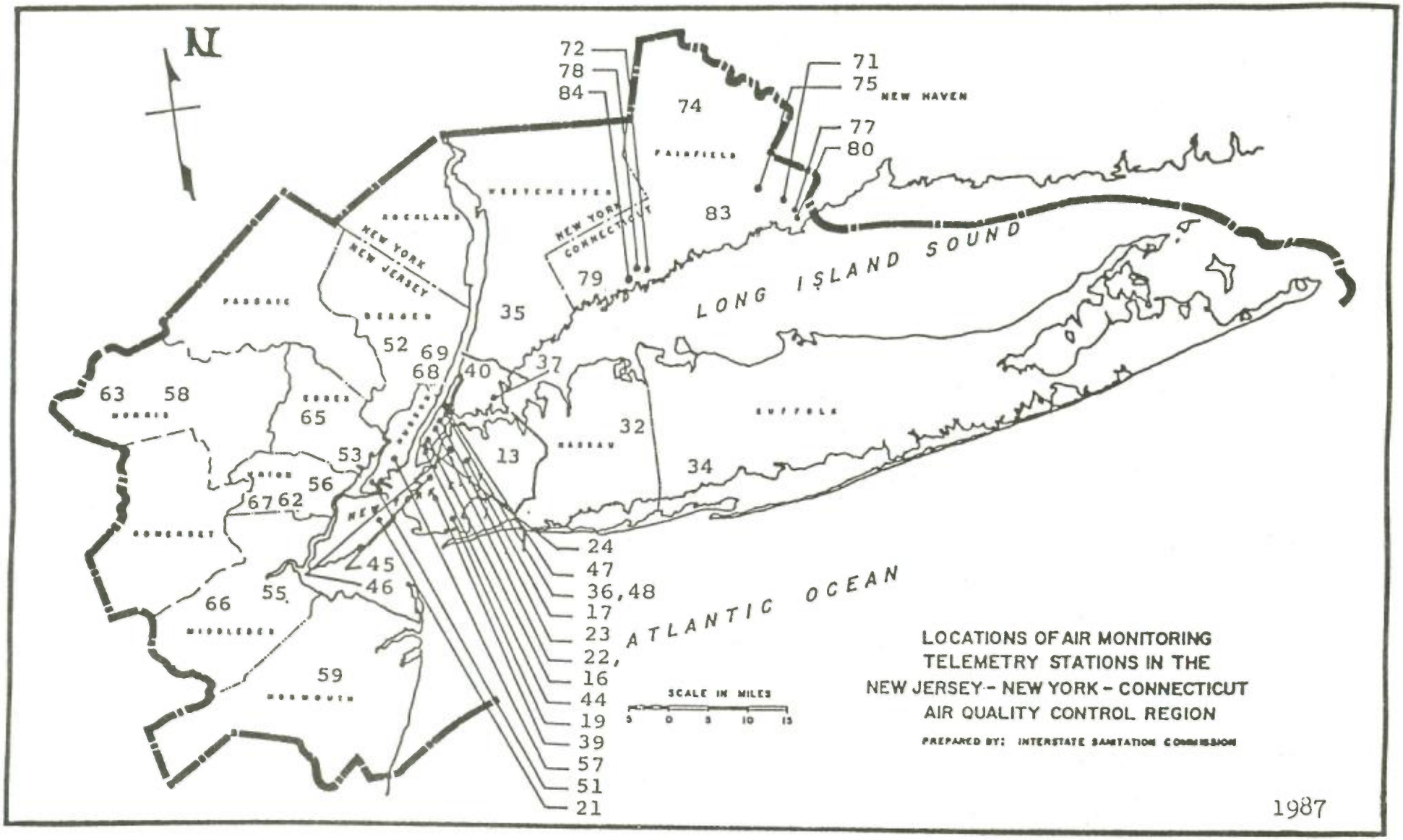
REGIONAL AIR POLLUTION WARNING SYSTEM

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. The Commission may activate this System based on stagnation advisory reports and/or existing pollutant levels. The Commission notifies the participating federal, state, and local agencies that the System has been activated. Then data on pollutants is transmitted to and from the Commission using procedures agreed upon by all the participants. In 1987, conditions did not warrant activation of the System.

As agreed to by ISC and the member states of the Air Quality Control Region (AQCR), daily stagnation forecasts for the New Jersey-New York-Connecticut AQCR are prepared by the NYS DEC in Albany and transmitted to the Commission. These forecasts, as well as air quality data from the States, are then transmitted to all participating agencies.

There are 45 air monitoring telemetry stations operated by the three member States in the AQCR. Two stations which were in operation last year -- Soho and Yonkers -- were closed in 1987. A map and an updated list of the station locations are shown on the following pages.

A meeting of environmental and health representatives from New Jersey, New York, Connecticut, U.S. EPA and ISC was held at the Commission office in September 1987, to discuss a new procedure developed by New Jersey for advising the public of unhealthful ozone occurrences and to review the High Air Pollution Alert and Warning System in light of the new procedure. The study of ozone health effects to generate health criteria and the review of meteorological data for improved predictions were also topics of discussion. The group targeted completion of an ozone alert system and related criteria for May 1988, so that the system can be implemented next summer -- the time of year when ozone levels in the region are at their peak.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MIDDLESEX
ATLANTIC OCEAN
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MONMOUTH
SCALE IN MILES
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LOCATIONS OF AIR MONITORING
TELEMETRY STATIONS IN THE
NEW JERSEY - NEW YORK - CONNECTICUT
AIR QUALITY CONTROL REGION
PREPARED BY: INTERSTATE SANITATION COMMISSION
1987

AIR MONITORING TELEMETRY STATIONS
IN THE
NEW JERSEY-NEW YORK-CONNECTICUT
AIR QUALITY CONTROL REGION

ISC NO.	SITE OR CITY	COUNTY	STATE
13	Queens College	Queens	New York
16	Mabel Dean Bacon H.S.	New York	New York
17	Greenpoint	Kings	New York
19	Sheepshead Bay H.S.	Kings	New York
21	Susan Wagner H.S.	Richmond	New York
22	CCNY	New York	New York
23	45th Street	New York	New York
24	Canal Steet	New York	New York
32	Eisenhower Park	Nassau	New York
34	Babylon	Suffolk	New York
35	White Plains	Westchester	New York
36	I.S. 45	New York	New York
37	I.S. 155	Bronx	New York
39	P.S. 321	Kings	New York
40	P.S. 2	Bronx	New York
44	World Trade Center	New York	New York
45	Brooklyn Transit	Kings	New York
46	P.S. 112	Queens	New York
47	Alexander's Dept. Store	New York	New York
48	P.S. 59	New York	New York
51	Bayonne	Hudson	New Jersey
52	Hackensack	Bergen	New Jersey
53	Newark	Essex	New Jersey
55	Perth Amboy	Middlesex	New Jersey
56	Elizabeth	Union	New Jersey
57	Jersey City	Hudson	New Jersey
58	Morristown	Morris	New Jersey
59	Freehold	Monmouth	New Jersey
62	Elizabeth	Union	New Jersey
63	Chester	Morris	New Jersey
65	East Orange	Essex	New Jersey
66	New Brunswick	Middlesex	New Jersey
67	Plainfield	Union	New Jersey
68	Cliffside Park	Bergen	New Jersey
69	Fort Lee	Bergen	New Jersey
71	Bridgeport	Fairfield	Connecticut
72	Stamford	Fairfield	Connecticut
74	Danbury	Fairfield	Connecticut
75	Stratford	Fairfield	Connecticut
77	Bridgeport	Fairfield	Connecticut
78	Stamford	Fairfield	Connecticut
79	Greenwich	Fairfield	Connecticut
80	Bridgeport	Fairfield	Connecticut
83	Norwalk	Fairfield	Connecticut
84	Stamford	Fairfield	Connecticut

AIR POLLUTION COMPLAINTS

The Commission continued to receive, respond to, and investigate air pollution complaints. Staten Island is the source of more citizen complaints attributable to interstate transport of airborne pollutants than any other single area under the jurisdiction of the Commission.

The Commission maintains a field office and a 24-hour answering service on Staten Island to respond to and investigate complaints. The field office is staffed for two shifts three days a week and one shift four days a week, including weekends and nighttime hours. Whenever the field office is unstaffed, complaints are handled at the Commission's office during regular office hours and, whenever necessary, Commission personnel are reached at home by ISC's answering service during non-office hours.

For the 12-month period ending September 30, 1987, the Commission received a total of 954 complaints. This represents a sharp decrease -- almost 75% -- from the 3,475 complaints received during the comparable 12-month period in 1986. Air complaints were categorized by the Commission and are presented in the following tables by: (1) community from which complaints were made, (2) type of odor, (3) time of day, and (4) day of the week.

Fifty-three Staten Island communities registered at least one complaint with the Commission during the October 1986 to September 1987 period. The four other boroughs of New York City were the source of 18 complaints. New Springville led the Staten Island communities in complaints for the second consecutive 12-month period with 96, or 10.1% of the total. Annadale and Arden Heights followed as major sources of odor complaints with 79 and 76, respectively.

Citizens' descriptions of odors were classified into the ten categories shown on the table. Garbage was the most frequently reported single odor category and represented more than one third of all complaints, or 34.6%. The garbage odor was heavily reported during the months of June and July 1987, when almost 45% of the 12-month total for this category was registered. "Chemical and other" odors represented roughly another one third of all complaints reported to the Commission with 35.8% of the total number of complaints. This category also represents odors that could not be more specifically described by the complainants.

Complaints were grouped into three intervals according to time of the day they were received. As in previous years, the table shows that the majority of complaints (54.8%) are registered with the Commission during the 8-hour period between 4:00 p.m.

DISTRIBUTION OF AIR POLLUTION COMPLAINTS BY COMMUNITY ON STATEN ISLAND FROM OCTOBER 1986 TO SEPTEMBER 1987

COMMUNITY	COMPLAINTS	
	NUMBER	% OF TOTAL
New Springville	96	10.1
Annadale	79	8.2
Arden Heights	76	8.0
West New Brighton	61	6.4
Great Kills	52	5.4
Huguenot	44	4.6
Tottenville	39	4.1
Westerleigh	36	3.8
Eltingville	35	3.7
Travis	35	3.7
Richmondtown	30	3.1
Mariner's Harbor	26	2.7
Willowbrook	24	2.5
Bull's Head	23	2.4
Rossville	23	2.4
Castleton Corners	22	2.3
Elm Park	22	2.3
Port Richmond	18	1.9
New Dorp	18	1.9
Graniteville	17	1.8
All Others *	178	18.7
TOTALS	954	100.0

* Represents 37 communities from which 50 or fewer complaints were reported per community. In addition, this total includes eighteen complaints from other boroughs and New Jersey.

DISTRIBUTION OF AIR POLLUTION COMPLAINTS BY TYPE OF ODOR

FROM STATEN ISLAND COMMUNITIES

FROM OCTOBER 1986 TO SEPTEMBER 1987

TYPE OF ODOR	COMPLAINTS	
	NUMBER	% OF TOTAL
Garbage	330	34.6
Gassy	101	10.6
Cat Urine	71	7.5
Sulfur/Eggy	66	6.9
Sewage	16	1.7
Burning Rubber/Plastic	15	1.6
Dead Fish/Fishy	9	0.9
Onion/Garlic	3	0.3
Soap/Detergent	1	0.1
Chemical & Others	342	35.8
TOTALS	954	100.0

DISTRIBUTION OF AIR POLLUTION COMPLAINTS BY TIME OF DAY

FROM STATEN ISLAND COMMUNITIES

FROM OCTOBER 1986 TO SEPTEMBER 1987

	NUMBER OF COMPLAINTS				
	Time of Complaints*				
MONTH	Midnight to 8:00 AM	8:00 AM to 4:00 PM	4:00 PM to Midnight	TOTAL	% OF TOTAL
October 1986	9	30	41	80	8.4
November 1986	12	24	24	60	6.3
December 1986	14	12	25	51	5.4
January 1987	4	16	25	45	4.7
February 1987	1	16	53	70	7.3
March 1987	7	17	38	62	6.5
April 1987	6	10	35	51	5.3
May 1987	6	4	35	45	4.7
June 1987	15	33	74	122	12.8
July 1987	8	12	59	79	8.3
August 1987	19	53	40	112	11.7
September 1987	35	68	74	177	18.6
TOTALS	136	295	523	954	
% OF TOTAL	14.3	30.9	54.8		100.0

* Includes Weekends and Holidays

DISTRIBUTION OF AIR POLLUTION COMPLAINTS BY DAY OF WEEK

FROM STATEN ISLAND COMMUNITIES

FROM OCTOBER 1986 TO SEPTEMBER 1987

	NUMBER OF COMPLAINTS						
	Day of Complaints*						
MONTH	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
October 1986	11	5	20	21	7	9	7
November 1986	7	9	5	5	9	10	15
December 1986	6	7	4	9	12	6	7
January 1987	5	1	16	8	6	5	4
February 1987	9	21	16	5	11	4	4
March 1987	5	14	5	12	10	12	4
April 1987	6	6	8	10	15	4	2
May 1987	0	8	2	10	10	12	3
June 1987	29	17	27	18	9	11	11
July 1987	3	12	15	24	23	2	0
August 1987	9	40	16	11	12	18	6
September 1987	22	26	22	41	14	34	18
TOTALS	112	166	156	174	138	127	81
% OF TOTAL	11.7	17.4	16.4	18.2	14.5	13.3	8.5

* Includes Holidays

and midnight. The Commission maintains a field inspector on duty seven days a week during this time period to best respond to and investigate air complaints. This table also shows that in the last four months (June through September 1987) of the 12-month reporting period, 490 complaints, or 51.4% of the total, were recorded.

The complaints were also tabulated by the day of the week on which they were reported. The number of complaints per day of the week ranged from a high of 174, or 18.2% of the total, on Thursdays to a low of 81, or 8.5% of the total, on Sundays. No strong pattern emerges with respect to the day of the week when odors are reported in comparing the present complaint distribution with those of previous years.

AIR TOXICS STUDY

The Commission has embarked upon an air toxics sampling and analysis program to help identify and quantify airborne, gaseous toxic pollutants in the region. The program will emphasize sampling during odor episodes and air stagnation events, in addition to background monitoring activities. ISC will be cooperating with the U.S. EPA and the State agencies to determine the extent and severity of the atmospheric urban "soup" problem and the means to alleviate it. The Commission is a member of the advisory group to a bi-state air toxics assessment project for Staten Island and nearby New Jersey.

ISC plans to use an EPA-type canister to collect air samples and a gas chromatograph-mass spectrophotometer (GC/MS) to identify and measure the concentration of the volatile organic compounds present in the samples. The recently acquired GC/MS system contains data acquisition and processing work stations that significantly enhance data workup and rapidly yield results in a highly usable format. Stringent quality assurance and quality control will be exercised during the program to insure reliable measurements.

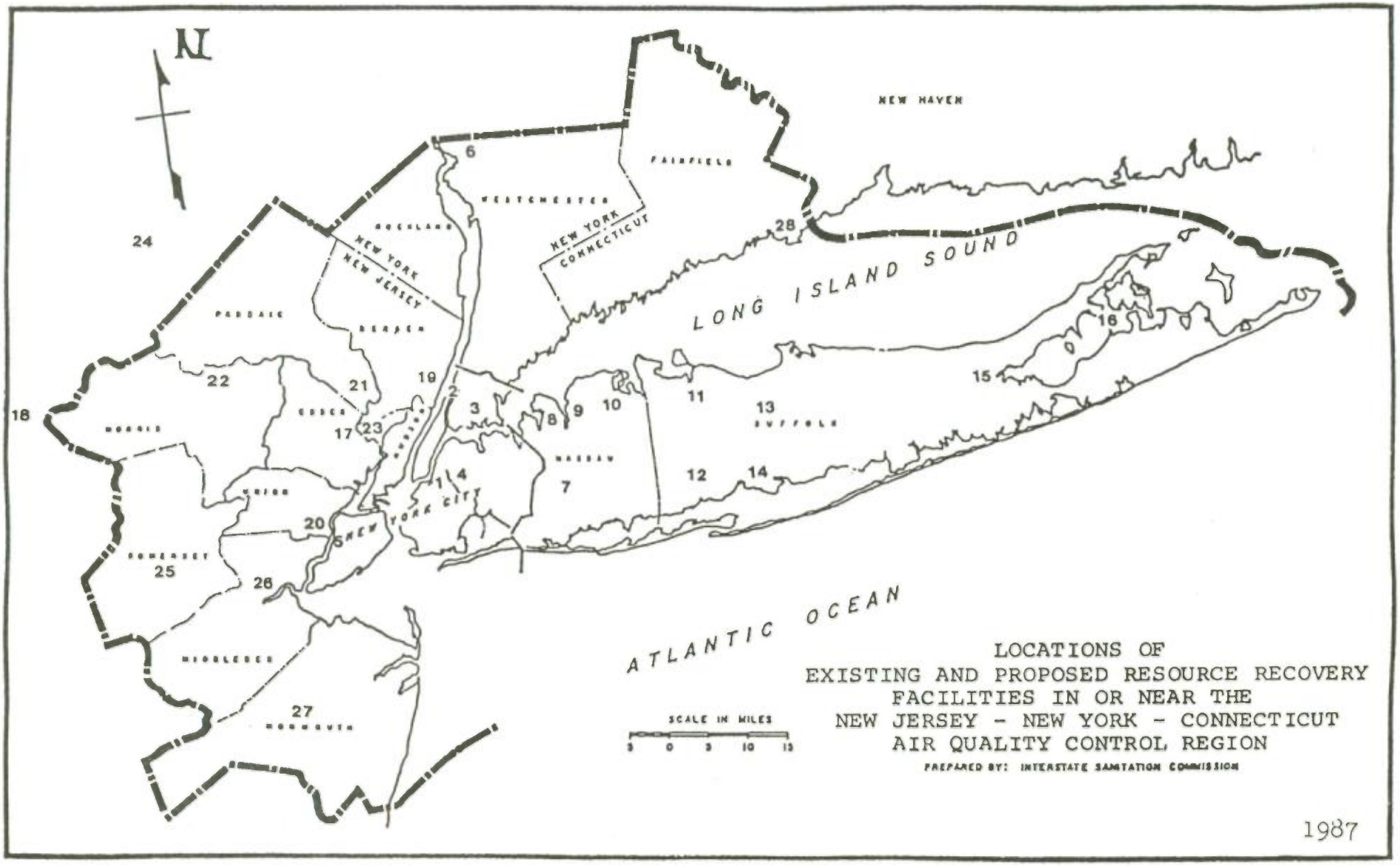
RESOURCE RECOVERY FACILITIES

Nowhere in the United States is there such a large concentration of resource recovery facilities planned for construction and operation during the next ten years as in this part of the country. More than twenty-five resource recovery facilities have been announced or proposed in or near the New Jersey-New York-Connecticut AQCR. A map and list indicating the locations of these resource recovery facilities are presented on the following pages. The estimated, total design capacity of these facilities is about 37,000 tons/day. This represents approximately 20% of the total projected municipal solid waste combustion capacity planned for the United States until the year 2000.

The Commission is involved in a wide range of air pollution activities related to resource recovery. ISC is continuing to participate in the various phases of the environmental and legislative processes in its three member States. The Commission is in favor of the use of resource recovery to dispose of municipal solid waste, but the projects must afford the greatest possible protection to the inhabitants and the environment of the region.

The ISC has been particularly concerned with the environmental aspects of resource recovery. The Commission has participated in the siting and permit proceedings of many projects in the region in several different ways. The Commission has reviewed the environmental impact statements of projects in New York and New Jersey to ascertain if interstate considerations have been addressed. ISC has conducted meetings and held numerous discussions with representatives of New Jersey, New York and Connecticut to review plans and progress for individual facilities. ISC has also notified several RRF authorities in the region of the considerations that the Commission believes must be taken into account in proceeding with a project and of ISC's interest in being kept informed on its progress. Finally, the Commission has participated in public hearings to site and permit RRFs, particularly for the Brooklyn Navy Yard project in New York City. Refer to the Legal Activities section of this report for further information on the Brooklyn Navy Yard hearing.

Of the many air pollution issues that ISC has considered, the Commission believes that three require more emphasis: cumulative impact of multiple RRFs, use of pollutant source emission standards in air permits, and characterization testing of an RRF soon after normal operation is achieved. Clearly, not enough attention has been given to the potential impact of the dense concentration of the large number of high capacity plants planned for the Metropolitan Area. A study is in order which takes into account the impacts of other RRFs planned in the region on the air quality in the vicinity of an individual resource recovery facility.



LOCATIONS OF
EXISTING AND PROPOSED RESOURCE RECOVERY
FACILITIES IN OR NEAR THE
NEW JERSEY - NEW YORK - CONNECTICUT
AIR QUALITY CONTROL REGION

PREPARED BY: INTERSTATE SANITATION COMMISSION

1987

LOCATIONS OF EXISTING OR PROPOSED RESOURCE RECOVERY FACILITIES IN OR NEAR THE NEW JERSEY-NEW YORK-CONNECTICUT AIR QUALITY CONTROL REGION

FACILITY NO.	FACILITY NAME	STATE	COUNTY	CAPACITY (Tons Per Day)
1	Brooklyn Navy Yard (3)	New York	Kings	3000
2	Wards Island (3)	New York	New York	2000
3	Barretto Point (3)	New York	Bronx	2000
4	Maspeth (3)	New York	Queens	2000
5	Arthur Kill (3)	New York	Richmond	3000
6	Peekskill (1)	New York	Westchester	2250
7	Hempstead (2)	New York	Nassau	2250
8	Port Washington (3)	New York	Nassau	1000
9	Glen Cove (1,4)	New York	Nassau	200
10	Oyster Bay (3)	New York	Nassau	900
11	Huntington (3)	New York	Suffolk	750
12	Babylon (2)	New York	Suffolk	750
13	Smithtown (3)	New York	Suffolk	---
14	Islip (2)	New York	Suffolk	400
15	Riverhead (3)	New York	Suffolk	---
16	Southold - E. Hampton (3,5)	New York	Suffolk	---
17	Newark (3)	New Jersey	Essex	2250
18	Oxford Township (2)	New Jersey	Warren	400
19	Ridgefield (3)	New Jersey	Bergen	3000
20	Rahway (3)	New Jersey	Union	1400
21	Passaic (3)	New Jersey	Passaic	1000
22	Rockaway Township (3)	New Jersey	Morris	1000
23	Kearny (3)	New Jersey	Hudson	1000
24	Lafayette Township (3)	New Jersey	Sussex	300-400
25	To Be Determined (3)	New Jersey	Somerset	600-800
26	Sayreville (3)	New Jersey	Middlesex	1800
27	Tinton Falls (3)	New Jersey	Monmouth	---
28	Bridgeport (2)	Connecticut	Fairfield	2250

(1) Existing
(2) Under Construction
(3) Proposed
(4) Co-burning with sewage sludge
(5) Composting is contemplated

The Commission favors pollutant source emission standards for RRFs which are based on best available technology. Source emission standards are preferred over ambient air standards because they focus more directly on the pollution generated by a source. Ambient air standards, while mindful of public health, are difficult to enforce.

ISC believes that a characterization program should be undertaken in the first few months after normal operation of an RRF is attained. Early testing enables determination as soon as practicable of actual emission values of contaminants for comparison with permitted standards. Characterization tests are especially appropriate for the numerous, large RRFs to be located in the highly populated urban environment of the Metropolitan Area. In addition to providing some early answers about emitted pollution levels, the dissemination of the test data may go a long way towards allaying the fears of some groups concerning certain pollutants and vindicating the choice of resource recovery technology.

Based on the reviews and evaluations of the Commission during the past year, several trends related to items specified in air permits have emerged. They include: (1) more pollutants require standards, (2) both source emission and ambient air standards be specified in the same permit, (3) lower values are indicated for pollutant standards, and 4) use of dry scrubbing is specified for acid gas control. These recent trends point to stricter and significantly more definitive RRF regulations that bode well for all of us.

IV. LEGAL ACTIVITIES

Commencing in 1986, the Commission has increased its enforcement efforts both in federal court and administrative hearings to ensure compliance with ISC Water Quality Regulations. It has also addressed the interstate aspect of appropriate major projects in the tri-state area resulting in air emissions.

Additionally, the Commission has adopted administrative enforcement procedures which include provisions that regulate the initiation and conduct of enforcement proceedings for violations of ISC Regulations. These procedures were adopted at the Commission's June 1987 meeting. Since that time, the ISC has developed the investigative and administrative aspects of its enforcement program. The Commission is investigating areas where raw sewage is entering the waterways. ISC is also concerned about the present capacity and condition of POTWs where waterfront development projects are planned.

LITIGATION AGAINST HUDSON COUNTY MUNICIPALITIES

This consolidated action in the United States District Court in New Jersey against Bayonne, North Bergen, Jersey City, Hoboken, the Hudson County Utilities Authority, Union City, West New York, Guttenberg and Weehawken was originally filed by the U.S. EPA in order to require these Hudson County municipalities to upgrade their sewage treatment plants to meet secondary treatment requirements by July 1, 1988. The ISC intervened in June 1986 to ensure that the effluents from the upgraded plants would meet ISC water quality requirements.

In June 1987, the ISC filed motions against all the above-mentioned entities (except for Guttenberg which had defaulted) for Partial Summary Judgment on the issue of liability for violations of ISC Water Quality Regulations, as demonstrated by discharge monitoring reports (submitted by the permittees) and independent ISC investigations. U.S. EPA filed a similar motion against the permit holding municipalities.

During August and September of 1987, the ISC and U.S. EPA participated in a number of settlement meetings with the individual municipalities. Various status conferences were held in District Court. The following matters were being negotiated: (1) compliance schedules for upgrading to secondary treatment, (2) sewer bans, (3) interim improvements and effluent limitations, and (4) stipulated penalties for noncompliance.

Oral argument on the motions for preliminary judgment was held before Judge Ackerman on October 13, 1987, with the following results:

(1) The ISC was granted its Order for Partial Summary Judgment against defendants Bayonne, North Bergen, and West New York. Bayonne and North Bergen did not oppose the ISC motion. At the hearing, West New York argued against both the ISC and U.S. EPA motions. Subsequently, the judge ruled in favor of ISC and U.S. EPA in an Opinion issued on November 23, 1987.

(2) The ISC entered into stipulations of settlement with Union City, Weehawken and the Hudson County Utilities Authority -- the nonpermit holding defendants.

(3) The motions against defendants Jersey City and Hoboken were returnable at a later date since both defendants are about to reach settlement with plaintiffs.

Since the hearing, the judge has ordered that the plaintiffs and Jersey City submit a signed consent agreement to the Court by January 25, 1988. Hoboken is about to sign a letter of intent regarding settlement.

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

In November 1986, the ISC intervened in the lawsuit originally filed by the Township of Woodbridge, New Jersey to enjoin further deposition of refuse from the Fresh Kills Landfill into District waters. Daily, 14,000 tons of solid waste are delivered by barge to the Landfill. This action was initiated over eight years ago by the Township of Woodbridge in an effort to stop debris (some of which was hospital waste) from reaching its shores. A number of Orders entered by the Court required a variety of mitigatory efforts (for example, containment booms). The debris problem continued.

On June 3, 1983, Judge Stern issued an Order requiring the construction and operation of a wholly enclosed barge unloading facility to be completed by December 31, 1985. This facility was proposed by the City as a solution to the problem; they did not build the facility. The ISC entered the suit believing compliance with the Court Order would alleviate the pollution problem.

Discovery proceedings were conducted by the parties and ended in July. Depositions were taken by all parties. On August 10, 1987, the defendant, City of New York, filed a motion requesting the Court to modify its Order of June 1983 and to eliminate the requirement for a wholly enclosed barge unloading facility.

On October 26, 1987, the ISC filed a cross-motion for contempt and to compel construction of the barge unloading facility. The ISC motion was supported by affidavits of Commission person-

nel that demonstrated that debris entered the waterway during the unloading operations. This debris also drifted toward the New Jersey shore. The State of New Jersey opposed New York City's motion, but did not file a motion for contempt.

On December 7, 1987, the ISC and the other plaintiffs reached a settlement in their Contempt Citation against the City of New York to remedy the littering of the waterways and beaches of Woodbridge, New Jersey and Staten Island.

The contempt action -- initiated by the Commission in conjunction with the Township of Woodbridge -- was granted in U.S. District Court by federal Judge Maryanne Trump Barry on October 26th. At that hearing, Judge Barry called for immediate actions and sanctions against the City if remedial agreements could not be reached.

The agreement, which also will protect approximately 50 miles of the New Jersey coastline, provides for immediate actions and long-term solutions. The New Jersey Attorney General's office, the Township of Woodbridge, the NJ DEP, Groups Against Garbage, and Save Our Shores are also parties to the agreement, which is expected to lessen or eliminate debris from the marine operations at the Landfill and at the transfer stations.

Under the general terms of the agreement, an independent monitor and an independent engineering consultant, paid for by the City of New York, will inspect and review operations and the installation of a super boom and other equipment at the Fresh Kills Landfill and at cleanup sites, with ready powers to correct ineffective procedures. The ISC and New York Environmental Police will have unlimited, 24-hour-a-day access to the Fresh Kills Landfill for monitoring purposes.

The City is subject to stipulated fines for missing any of the milestone dates set forth in the agreement. If the debris problem continues unabated because the City is not implementing the agreement, or if the efforts of the City are not sufficient to eliminate the garbage and litter in the waterways, the parties will ask the judge to stop or phase out the barging of garbage to the Fresh Kills Landfill.

BROOKLYN NAVY YARD RESOURCE RECOVERY FACILITY ADMINISTRATIVE HEARING

In July 1986, the Commission petitioned for party status in the NYS DEC hearing held on the various permits required for the 3,000 ton per day municipal solid waste incinerator which will be located on the Brooklyn Navy Yard (BNY) site. The Commission has considerable interest in the construction and operation of a resource recovery facility which has the potential to directly af-

fect the environmental quality in the region. The Commission was especially interested in the cumulative impact of this facility in combination with the large number (26) of other resource recovery facilities planned for the Metropolitan Area.

The Commission submitted a statement of interest and was granted party status in June 1987. ISC's statement of interest addressed the following issues:

(1) that the disposal of the ash from the BNY facility occurs in a secure landfill to safeguard the waters of the District from contaminated runoff and leachate;

(2) that the cumulative impacts of this facility and those of other facilities planned in the interstate area be considered in determining appropriate air emission values;

(3) that specific source emission criteria be developed rather than the use of ambient air standards;

(4) that a more intensive stack testing program be instituted in the early stages of facility operation;

(5) that any wastewater introduced into the municipal sewer system be pretreated; and

(6) that New York City develop and institute a comprehensive recycling/source separation program.

The Commission has been actively participating in the hearing since it began in July 1987, by cross-examining the witnesses presented on behalf of the Applicant (Signal Environmental Systems), the City of New York and the NYS DEC. The ISC submitted its prefiled testimony in the matter in October and will be making its expert witness panel available for cross-examination in January 1988.

WASTEWATER TREATMENT PLANTS
DISCHARGING INTO
INTERSTATE SANITATION DISTRICT WATERS
1 9 8 7

Plant	ISC Receiving Water Classification	Date of Const.	Flow MGD Average	Flow MGD Design	Type of Treatment	Estimated Population Served
CONNECTICUT						
Fairfield County						
Bridgeport - East Side	B-1	1973+	8.4	24.0	Secondary (AS)	100,000
- West Side	B-1	1973+	28.0	60.0	Secondary (AS)	175,000
Fairfield	A	1982+	7.7	9.0	Secondary (AS)	50,000
Greenwich	A	1982+	7.9	8.5	Secondary (AS)	48,000
Norwalk	B-1	1980+	11.5	15.0	Secondary (AS)	79,000
Stamford	B-1	1976+	16.7	20.0	Secondary (AS)	95,000
Stratford	A	1982+	8.5	11.5	Secondary (AS)	51,000
Westport	A	1975+	1.5	2.8	Secondary (AS)	12,000
New Haven County						
Milford - Beaver Brook	A	1987+	2.8	3.2	Secondary (AS)	11,500
- Housatonic	A	1987	5.0	8.0	Secondary (AS)	30,000
- Town Meadows	A	1953	1.6	1.2	Secondary (AS)	6,000
New Haven - Boulevard	B-1	1969+	9.9	13.0	Primary	81,000
- East Shore	B-1	1984+	29.1	40.0	Secondary (AS)	128,000
West Haven	B-1	1985+	7.7	12.5	Secondary (AS)	60,000
NEW JERSEY						
Bergen County						
Edgewater	B-1	1958+	2.9	3.0	Primary	21,000
Essex County						
Passaic Valley Sewerage Commissioners	B-1	1985+	223.0	330.0	Secondary (AS)	1,400,000
Hudson County						
Bayonne	B-2	1953	7.2	21.0	Primary	60,000
Hoboken	B-1	1955	12.4	20.7	Primary	45,000
Jersey City - East Side	B-1	1967+	27.5	46.6	Primary	159,000
- West Side	B-2	1967+	14.6	36.0	Primary	115,000
Kearny	B-2	1955	1.8	4.0	Primary	24,000
North Bergen M. U. A. - Woodcliff	B-1	1962	2.2	3.3	Primary	36,000
West New York	B-1	1982+	7.9	10.0	Primary	57,000
Middlesex County						
Carteret	B-2	1950	3.0	3.0	Primary	21,000
Middlesex County Utilities Authority	A	1978+	89.7	120.0	Secondary (AS)	600,000
Old Bridge Township	A	1962	0.9	1.4	Primary	14,000
Perth Amboy	A	1985+	4.3	10.0	Primary	39,000
Rahway Valley Sewerage Authority	B-2	1973+	27.1	35.0	Secondary (AS)	190,000
Sayreville - Melrose	A	1947	0.09	0.15	Primary	1,100
- Morgan	A	1947	0.24	0.3	Primary	3,000
South Amboy	A	1930	1.0	1.0	Primary	9,000
Woodbridge - Sewaren	B-2	1952	4.9	10.0	Primary	50,000
Monmouth County						
Cliffwood Beach	A	1964	0.35	0.75	Secondary (AS)	-
River Gardens	A	1978+	0.17	0.10	Secondary (AS)	-
Union County						
Joint Meeting of Essex & Union Counties	B-2	1978+	67.2	75.0	Secondary (AS)	500,000
Linden Roselle Sewerage Authority	B-2	1982+	10.6	17.0	Secondary (AS)	62,000

WASTEWATER TREATMENT PLANTS
DISCHARGING INTO
INTERSTATE SANITATION DISTRICT WATERS
1 9 8 7

Plant	ISC Receiving Water Classification	Date of Const.	Flow MGD Average	Flow MGD Design	Type of Treatment	Estimated Population Served
NEW YORK						
Nassau County						
Bay Park	A	1960+	57.2	60.0	Secondary (AS)	503,000
Belgrave Sewer District	A	1973+	1.6	2.0	Secondary (TF)	12,000
Cedar Creek	A	1984+	50.9	45.0	Secondary (AS)	435,000
Cedarhurst	A	1968+	0.9	1.0	Secondary (TF)	7,500
Cold Spring Harbor Laboratory*	A	1975	0.04	0.075	Physical/Chemical	250 - 400
Glen Cove	A	1981+	4.2	8.0	Secondary (AS)	28,000
Great Neck Sewer District	A	1976+	2.5	2.7	Secondary (TF)	15,000
Great Neck Village	A	1968+	1.1	1.5	Secondary (TF)	9,000
Inwood	A	1961+	1.2	2.5	Secondary (TF)	9,000
Jones Beach	A	1952	0.11	2.5	Secondary (TF)	Seasonal
Lawrence	A	1966+	1.2	1.5	Secondary (TF)	7,000
Long Beach	A	1965+	6.5	6.4	Secondary (BO)	40,000
Oyster Bay Sewer District	A	1963+	1.8	1.5	Secondary (TF)	8,500
Port Washington Sewer District	A	1969+	3.2	3.0	Secondary (TF)	30,000
West Long Beach Sewer District	A	1986+	0.7	1.5	Secondary (TF)	4,000
New York City						
Bronx County						
Hunts Point	B-1	1978+	132.0	200.0	Secondary (AS)	895,000
Kings County (Brooklyn)						
Coney Island	A	1958+	105.0	100.0	Secondary (AS)	690,000
Newtown Creek	B-1	1967	308.0	310.0	Secondary (AS)	1,100,000
Owls Head	B-1	1952	116.0	160.0	Secondary (AS)	785,000
Red Hook	B-1	1987	41.6	60.0	Secondary (AS)***	262,000
26th Ward	A	1975+	65.0	85.0	Secondary (AS)	301,000
New York County (Manhattan)						
North River	B-1	1986	181.0	170.0	Secondary (AS)***	1,162,000
Wards Island	B-1	1978+	332.0	250.0	Secondary (AS)	1,300,000
Queens County						
Bowery Bay	B-1	1978+	152.0	150.0	Secondary (AS)	712,000
Jamaica	A	1977+	98.0	100.0	Secondary (AS)	585,000
Rockaway	A	1978+	29.0	45.0	Secondary (AS)	72,000
Tallman Island	B-1	1979+	65.5	80.0	Secondary (AS)	465,000
Richmond County (Staten Island)						
Arthur Kill Correctional Facility*	B-2	1969	0.012	0.1	Secondary (AS)	1,000
Elmwood Park Condominiums*	B-2	1974	0.77	2.5	Secondary (RD)	1,800
IS-7*	A	1964	0.1	0.13	Extended Aeration w/ Sand Filtration	1,000
Mount Loretto Home - Plant #1*	A	1962	-	-	Septic Tank	250
- Plant #2*	A	1962	-	-	Septic Tank	250
Oakwood Beach	A	1979+	29.8	40.0	Secondary (AS)	286,000
Port Richmond	B-2	1979+	41.1	60.0	Secondary (AS)	210,000
PS-3*	A	1969	-	0.004	Extended Aeration	500
Richmond Memorial Hospital*	A	1985+	0.03	0.04	Secondary (AS)	400
Saint Joseph's School*	A	1963	-	0.02	Septic Tank with Sand Filtration	1,100
Village Green*	B-2	1970	0.45	1.0	Extended Aeration	5,000
Rockland County						
Joint Regional Sewerage Board-Town of Haverstraw	A	1980+	6.2	8.0	Secondary (AS)	50,000
Orange & Rockland Utilities*	A	1984+	0.003	0.012	Secondary (AS)	Industrial
Orangetown Sewer District	A	1968+	8.3	8.5	Secondary (TF)	52,000

WASTEWATER TREATMENT PLANTS
DISCHARGING INTO
INTERSTATE SANITATION DISTRICT WATERS
1 9 8 7

Plant	ISC Receiving Water Classification	Date of Const.	Flow MGD Average	Flow MGD Design	Type of Treatment	Estimated Population Served
NEW YORK (Continued)						
Rockland County (Continued)						
Palisades Interstate Park						
Bear Mountain Plant	A	1967+	0.08	0.25	Secondary (TF)	Seasonal
Tallman Mountain Plant	A	1968	-	0.01	Secondary (AS)	Seasonal
Rockland County Sewer District #1	A	1981+	16.5	10.0	Secondary (AS)	160,000
Stony Point	A	1985+	0.9	1.0	Secondary (AS)	10,000
Suffolk County						
Huntington Sewer District	A	1956+	1.4	2.0	Secondary (TF)	15,000
Northport	A	1973+	0.3	0.3	Secondary (AS)	3,000
Suffolk County Sewer District #1	A	1974+	0.9	2.5	Primary	33,000
Suffolk County Sewer District #3	A	1975	17.3	30.0	Secondary (AS)	300,000
Suffolk County Sewer District #6	A	1974+	0.7	2.0	Secondary (AS)	3,000
SUNY at Stony Brook	A	1974	1.4	2.0	Primary	10,000
Westchester County						
Blind Brook (Rye)	A	1985+	2.2	5.0	Secondary (AS)	25,500
Buchanan	A	1962	0.2	0.55	Secondary (AS)	2,500
Kings Ferry Sewer Association*	A	1971	0.04	0.05	Secondary (AS)	500
Mamaroneck	A	1965+	15.3	18.0	Primary	79,000
Metro North (Harmon Shop)*	A	1984+	0.13	0.40	Physical/Chemical	Industrial
New Rochelle	A	1982+	15.5	15.5	Secondary (AS)	80,000
Ossining	A	1981	5.2	7.5	Secondary (AS)	49,000
Peekskill	A	1980+	4.9	10.0	Secondary (AS)	35,000
Port Chester	B-1	1985+	5.4	6.0	Primary	26,000
Springvale Apartments Company*	A	1957	0.09	0.1	Secondary (TF)	1,000
Yonkers Joint Treatment	A	1979+	110.9	92.0	Secondary (AS)	500,000
FEDERAL & MILITARY						
Camp Smith - (Westchester Co.)	A	1985+	0.17	0.24	Secondary (TF)	2,000
FDR Veterans Administration Medical Center (Westchester Co.)	A	1982+	0.2	0.4	Secondary (TF)	3,000
Gateway National Recreation Area (Floyd Bennett Field, Kings Co.)	A	1981+	0.11	0.4	Secondary (TF)	2,000
Military Ocean Terminal (Hudson Co.)	B-1	1982+	0.14	0.18	Secondary (AS)	3,000

NOTES:
+ Year of major additions or reconstruction
* Private or institutional sewage treatment plant
** Under construction
*** Presently providing primary treatment and disinfection; secondary treatment in 1989
(AS) Activated Sludge
(BA) Bloc Aeration
(BO) Biochemical Oxidation
(EA) Extended Aeration
(RD) Rotating Disc
(TF) Trickling Filter

INTERSTATE SANITATION COMMISSION
FINANCIAL STATEMENT FY 1987

The Commission's accounting records are maintained on a cash basis and are audited annually by each of the participating States on a triennial basis. The following is a statement of cash receipts and disbursements for fiscal year July 1, 1986 to June 30, 1987:

CASH BOOK BALANCE AS OF JUNE 30, 1986 ----------		$ 70,546.01
RECEIPTS		
Connecticut - FY '87	$ 64,000.00	
New York - FY '87	390,100.00	
New Jersey - FY '87	390,000.00	
EPA - FY '86	175,479.00	
EPA - FY '87	218,200.00	
Long Island Sound Study - FY '85	26,611.00	
Long Island Sound Study - FY '86	31,065.00	
Interest	16,328.58	
Miscellaneous Receipts (includes $22,667.17 of Social Security refund monies which were passed through to the IRS)	26,862.62	
TOTAL RECEIPTS		1,338,646.20
	Sub-Total	$1,409,192.21
DISBURSEMENTS		
TOTAL DISBURSEMENTS		1,222,944.01*
CASH BOOK BALANCE ON June 30, 1987		$ 186,248.20

* Includes the $22,667.17 amount which was paid to the Internal Revenue Service as pass through monies.

G L O S S A R Y

AQCR	air quality control region
BNY	Brooklyn Navy Yard
CCNY	City College of New York
CSO	combined sewer overflow
DEC	Department of Environmental Conservation
DEP	Department of Environmental Protection
DO	dissolved oxygen
EPA	Environmental Protection Agency
GC/MS	gas chromatograph/mass spectrophotometer
H.S.	high school
HCUA	Hudson County Utilities Authority
HVAC	heating, ventilating, and air conditioning
I/I	infiltration/inflow
I.S.	intermediate school
ISC	Interstate Sanitation Commission
lbs	pounds
MCUA	Middlesex County Utilities Authority
MGD	million gallons per day
mg/l	milligrams per liter
ml	milliliter
NOAA	National Oceanic and Atmospheric Administration
N/SPDES	National/State Pollutant Discharge Elimination System
PCB	polychlorinated biphenyl
P.S.	public school
POTWs	Publicly Owned Treatment Works
PVSC	Passaic Valley Sewerage Commissioners
RRF	resource recovery facility
R/V	research vessel
SPDES	State Pollution Discharge Elimination System
SSES	sewer system evaluation study
SUNY	State University of New York
UAA	use attainability analysis
WPCD	water pollution control district
WPCP	water pollution control plant
µg/l	micrograms per liter