

INTERSTATE SANITATION COMMISSION

A TRI-STATE ENVIRONMENTAL AGENCY

1982

ANNUAL REPORT

NEW YORK NEW JERSEY CONNECTICUT

1 9 8 2
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

10 COLUMBUS CIRCLE • NEW YORK, N.Y. 10019

AREA CODE 212-582-0380

COMMISSIONERS

NEW YORK

Natale Colosi, PH.D.

Chairman

George Dumbach

Robert F. Flacke

Fred C. Hart

Anthony J. Vaccarello

NEW JERSEY

Joseph J. Brennan

Robert E. Hughey

Shirley A. Mayer, M.D.

Samuel P. Owen

CONNECTICUT

Carl R. Ajello

Helen Carrozelli

John P. Clark

Douglas S. Lloyd, M.D.

Stanley J. Pac

Director-

Chief Engineer

Thomas R. Glenn

January 24, 1983

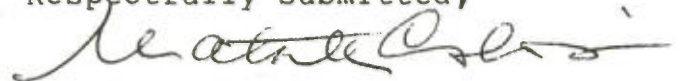
To His Excellency, Mario M. Cuomo
His Excellency, Thomas H. Kean
His Excellency, William A. O'Neill
and the Legislatures of the States of New York,
New Jersey, and Connecticut

Your Excellencies:

The Interstate Sanitation Commission respectfully
submits its report for the year 1982.

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

Respectfully submitted,



For the State of New York

Chairman



For the State of Connecticut

Vice Chairman



For the State of New Jersey

Vice Chairman

INTERSTATE SANITATION COMMISSION

COMMISSIONERS

NEW YORK

Natale Colosi, Ph.D.,
Chairman
George Dumbach
Robert F. Flacke
Fred C. Hart
Anthony T. Vaccarello

NEW JERSEY

Samuel P. Owen,
Vice Chairman
Joseph J. Brennan
Robert E. Hughey
Shirley A. Mayer, M.D.

CONNECTICUT

John P. Clark,
Vice Chairman-Treasurer
Carl R. Ajello
Helen Carrozelli
Douglas S. Lloyd, M.D.
Stanley J. Pac

*

Mitchell Wendell, Ph.D.
General Counsel

Thomas R. Glenn
Executive Secretary

Alan I. Mytelka, Ph.D.
Assistant Secretary

INTERSTATE SANITATION COMMISSION

STAFF

Thomas R. Glenn
Director & Chief Engineer

Alan I. Mytelka, Ph.D.
Assistant Director & Assistant Chief Engineer

Mitchell Wendell, Ph.D.
General Counsel

Engineering

Howard Golub
M. Mehdi Rahimi-Alangi
Peter L. Sattler
Walter Pyrch
Henry W. Anusiak
Frank V. Filippo

Laboratory

Joseph S. Czachor
John I. Chen, Ph.D.
Michael S. Kenney
Stephen C. Croce
William Preston

Field Investigation

William M. McCormack
William J. Edwards
Michael L. Hornsby
Issac Grinberg

Administrative

Carmen L. Leon
Margret E. Levy
Valentini Tsekeridou
Dee J. Kissinger

C O N T E N T S

	<u>PAGE</u>
I. SUMMARY OF ACTIVITIES	1
II. WATER POLLUTION	3
GENERAL	3
WATER POLLUTION CONTROL PROJECTS	5
CONNECTICUT	5
NEW JERSEY	10
NEW YORK	19
WATER QUALITY AND EFFLUENT MONITORING	34
EFFLUENT MONITORING	34
REMOTE AUTOMATIC WATER QUALITY MONITORING	34
WATER QUALITY SURVEYS	35
SPECIAL COLIFORM SURVEYS	49
LABORATORY	52
NEW YORK HARBOR WATER QUALITY STEERING COMMITTEE	54
III. AIR POLLUTION	55
GENERAL	55
REGIONAL AIR POLLUTION WARNING SYSTEM	56
AIR POLLUTION COMPLAINTS	56
NEW FIELD OFFICE	56
COAL CONVERSION	60
PROCEDURES RELATING TO SULFUR DIOXIDE EMISSIONS	60
IV. LEGAL ACTIVITIES	63
COAL CONVERSIONS	63
APPENDIX A - WASTEWATER TREATMENT PLANTS DISCHARGING INTO THE INTERSTATE SANITATION DISTRICT WATERS	
APPENDIX B - GLOSSARY	

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

		<u>PAGE</u>
MAP	Wastewater Treatment Plants in the Interstate Sanitation District	4
PHOTO	Linden Roselle Sewerage Authority - Dewatering Facility, Union County, New Jersey	15
PHOTO	New York City - Red Hook Sewage Treatment Plant, Kings County, New York	30
MAP & TABLE	Remote Water Quality Monitors in the Interstate Sanitation District	36 & 37
GRAPHS	Monthly Data from Remote Automatic Water Quality Monitors	38-42
TABLE	Percent of Time Interstate Sanitation Commission Dissolved Oxygen Requirements Were Met at I.S.C. Remote Automatic Water Quality Monitoring Stations for the Period of October 1, 1981 through September 30, 1982	43
TABLE	Percent of Time Interstate Sanitation Commission Dissolved Oxygen Requirements Were Met at I.S.C. Remote Automatic Water Quality Monitoring Stations for June, July, August, September and October in Water Years 1977 and 1982	44
MAP	Water Quality Survey Area in the Interstate Sanitation District	45
TABLES	Interstate Sanitation Commission Water Quality Sampling Stations	46-48
TABLE	Selected Organic Compounds Detected in Interstate Sanitation District Waters During 1982	50
TABLE	Interstate Sanitation Commission Coliform Survey Sampling Stations	51
MAP & TABLE	Locations of Air Monitoring Telemetry Stations in the New Jersey-New York-Connecticut Air Quality Control Region	57 & 58
TABLE	Distribution of Air Pollution Complaints by Community on Staten Island from January to November 1982	59

I. SUMMARY OF ACTIVITIES

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 on technical assistance, planning, laboratory analysis, monitoring, and coordination of interstate problems to promote the construction of water pollution control projects within the Interstate Sanitation District.

WATER POLLUTION

This year, as in the past, the Commission's program for water pollution abatement continued to provide assistance for effective coordination and decision-making on a regional basis. Emphasis was placed on wasteload allocations, minimizing the effects of combined sewers, pretreatment of industrial wastes, ocean dumping and enforcement.

Within the District, planning and construction are well underway to provide a higher degree of quality for discharged wastewater. It is estimated that more than \$2.4 billion has been allocated for this purpose by the governmental units involved.

The Commission is taking an active role on the New York Water Quality Steering Committee. The Committee was formed to determine whether any excess assimilative capacity exists in the District based on presently applicable dissolved oxygen standards. The purpose is to provide a better basis for the states, the Commission, and the U.S. EPA to evaluate applications for permit modifications under Section 301(h) of the Clean Water Act.

The Commission continued to monitor waste discharges from public and private treatment plants to check compliance with N/SPDES permits and to sample the waters of the District. The sampling of the area waters was modified to take additional coliform samples to assist New Jersey in assessing their disinfection policy. These samples were analyzed by the Commission's laboratory.

This annual report contains values for temperature, conduc-

tivity, dissolved oxygen, and pH for remote automatic water quality monitors. A comparison of 1982 and 1977 dissolved oxygen data, during the critical summer months, showed a significant improvement in the water quality over the past five years.

AIR POLLUTION

Consistent with past years, the Commission coordinated the Air Pollution Warning System in the New Jersey-New York-Connecticut Air Quality Control Region.

In regard to sulfur dioxide emissions, the Commission worked closely with its member states and chaired an Ad Hoc Committee of the Atlantic Alliance on short-term health hazards and emission reduction strategies.

During the first 11 months of 1982, the Commission received over 900 citizen complaints concerning odors with the majority coming from Staten Island residents. In order to respond in a more effective manner, the Commission established a field office on Staten Island that is manned during peak complaint periods, i.e. evenings and weekends.

The Commission is a participant in the proceedings before the NYS DEC regarding Consolidated Edison's application for converting from burning low sulfur oil to burning 1% sulfur coal.

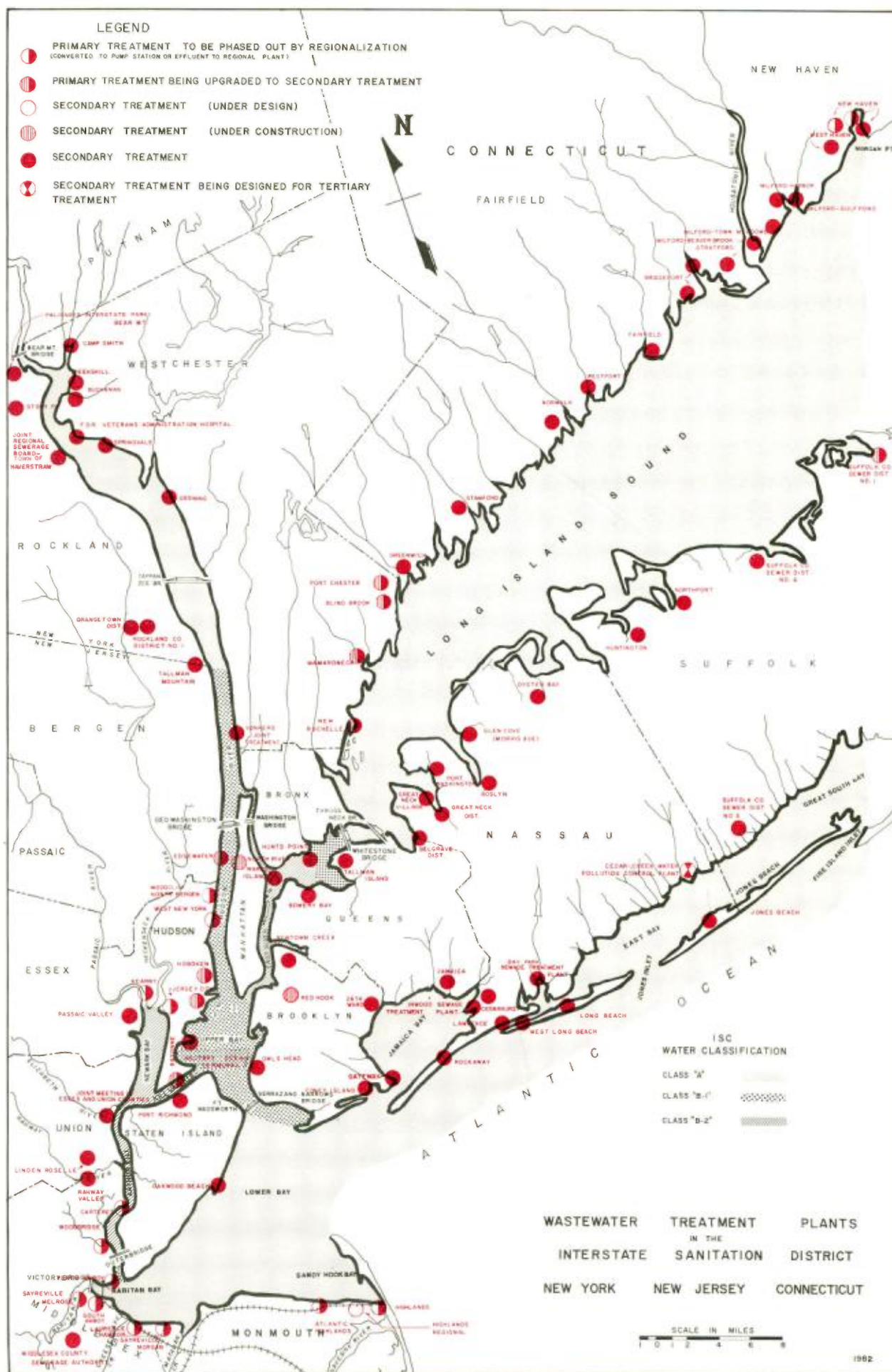
II. WATER POLLUTION

GENERAL

During 1982, 191 water pollution control projects in the Interstate Sanitation District were completed, were underway, or were in the planning stage. A total of more than \$2.4 billion was allocated for this work in the following manner: over \$587 million for 62 completed projects, in excess of \$770 million for 83 projects underway, and at least \$1.05 billion for 46 future projects. These expenditures are being used to construct new facilities and to upgrade existing facilities and should improve the quality of the effluents being discharged into District waters. These figures do not include the monies being spent by industries for pollution control.

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, or consulting engineering firms. The information in this section is that which was available through October 1982.

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



CONNECTICUT WATER POLLUTION CONTROL PLANTS

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

Projects in Progress

A \$365,000 SSES has begun for the purpose of studying tide gate infiltration and inflow.

Work is continuing on the lateral installation to the Trumbull interceptor. This \$20 million project is 50% complete.

The Northwest interceptor is 90% complete. The expected cost of this project is \$4 million. An additional \$700,000 has been allocated for a general rehabilitation project which is 60% complete.

The ongoing 201 Step I study is 15% complete.

Fairfield, Connecticut (Fairfield County)

Completed Projects

A new sludge handling facility has been put into service. This \$900,000 project included the construction of a two story building to house a new belt filter press, a new process control station, and a sludge centrifuge. An addition to the laboratory was also built.

Rebuilding of one of the primary settling tanks has been completed at a cost of \$40,000.

The 201 Step I infiltration/inflow study has been completed. The report has been sent to the Connecticut DEP and the U.S. EPA. The cost of this project was \$194,000.

Project in Progress

Work has begun on the rebuilding of a second primary settling tank. The expected cost of this project is \$40,000.

Future Projects

Requests for bids have been made for two projects. The first is a modification to the chlorination system which includes new chlorinators and metering. The second project is the construction of two new pump stations. One is to be

built in the beach area and the other in the northern part of Fairfield.

Greenwich, Connecticut (Fairfield County)

Completed Projects

During 1982, \$335,000 was spent to upgrade and update this facility. Among the improvements were the complete rebuilding of primary tanks, final tanks, and the sand drying beds. Additionally, the following installations were made: stainless steel diffusers in the aeration tanks, a new grit classifier, a new sludge conveyer, and new polymer pumps.

Project in Progress

A partial grant of \$371,000 has been received to carry out the I/I Phase IIB study.

Future Project

The planned North Mianus sewer project, which is expected to cost \$6.5 million, will begin as soon as funding becomes available.

Milford - Beaver Brook, Connecticut (New Haven County)

Future Project

A \$500,000 construction project is expected to begin during 1983 on the upgrading of plant facilities. Included in this project are chlorination system revisions, a new belt filter press, and a new emergency generator building.

Milford - Gulf Pond, Connecticut (New Haven County)

Refer to description of projects at Milford - Housatonic Wastewater Treatment Facility.

Milford - Harborside, Connecticut (New Haven County)

Refer to description of projects at Milford - Housatonic Wastewater Treatment Facility.

Milford - Housatonic Wastewater Treatment Facility, Connecticut (New Haven County)

Future Projects

An application has been filed for a Step III 201 grant for the construction of this new treatment plant along the

Housatonic River. This facility, which has been designed under a 201 Step II grant, will replace the Town Meadows, Gulf Pond and Harborside Plants. Construction is expected to commence during 1983.

An estimation of \$14.7 million has been made for construction of a new collection system. These funds will provide for the installation of 19,000 feet of interceptor lines, 38,000 feet of force main, the rehabilitation of four existing pump stations, and the building of five new pump stations.

Milford - Town Meadows, Connecticut (New Haven County)

Refer to description of projects at Milford - Housatonic Wastewater Treatment Facility.

New Haven - Boulevard, Connecticut (New Haven County)

Refer to New Haven - East Shore write-up.

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

Future Projects

Plans for the modification of the East Shore plant along with the elimination of the Boulevard and East Street plants have been sent to the Connecticut DEP and the U.S. EPA for preliminary draft review. These plans propose construction of a pump station at the Boulevard plant and the conversion of the East Street plant to a pump station. Both stations will have aerated grit chambers and bar screens. The flows from these two stations will be diverted to the East Shore plant for treatment.

The East Street project is expected to cost \$3.0 million and the Boulevard project \$5.2 million. Modifications to the East Shore plant are expected to cost \$3.5 million.

Construction for the East Shore project includes the addition of two thickened sludge storage tanks, new grit removal facilities ahead of the primary settling tanks, a sludge pumping building, a sludge chemical conditioning facility, and fiberglass covers for the gravity thickeners.

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

Refer to New Haven - East Shore write-up.

Norwalk, Connecticut (Fairfield County)

Completed Project

A Step I 201 Facilities Design is nearly complete and a report is expected in early 1983. The final cost of this study was estimated at \$348,000.

Projects in Progress

A 75 MGD supplemental treatment facility to treat excess stormwater is 99% complete. This \$6 million project includes installation of two bar screens, two degritters, six microscreens, two sludge presses, and a sludge reactor retrofit.

A combined sewer separation project is 20% complete. Construction is continuing in east Norwalk, south Norwalk, and at Union Avenue and Main Street. The final cost is estimated to be \$5 million.

Stamford, Connecticut (Fairfield County)

Projects in Progress

Modifications to the chlorine handling facility have begun and are about 15% complete. Included in this \$130,000 project are new chlorine tank scales and an electric crane.

Three pump stations located at Alvord Lane, Barry Place and Carter Drive are being renovated. This project is better than 25% complete with a final cost estimate of \$1 million.

Stamford has been awarded a \$165,000 U.S. EPA research grant for the study of secondary clarifiers.

Future Project

Construction estimated to cost \$1 million is scheduled to begin in late 1983 on a new pump station facility which will be located on Greenwich Avenue.

Stratford, Connecticut (Fairfield County)

Project in Progress

Construction is 95% complete on the installation of a new sludge dewatering facility. An estimate of \$1.4 million has been given for this project.

Future Projects

Upgrading of the dewatering process will include the installation of a new belt filter press. The cost estimate for this project is \$400,000.

A proposal to upgrade the Broad Bridge pumping station has been made. This \$80,000 project includes the installation of a third pump, a diesel generator, and the upgrading of the two existing pumps.

West Haven, Connecticut (New Haven County)

Project in Progress

An SSES is in progress.

Negotiations are underway with the Town of Orange regarding diversion of flows to the West Haven Treatment Plant.

Future Projects

Two sewer construction projects are being proposed. First, the Front Avenue interceptor which has an expected cost of \$700,000. Second, the Oyster River trunk sewer, Section II, is estimated to cost \$1.5 million.

A cost estimate of \$50,000 has been made to add a septic waste disposal system to this plant.

Westport, Connecticut (Fairfield County)

Project in Progress

An engineering study is in progress for the purpose of replacing and/or upgrading five pump stations and sewer lines along the west side of the Saugatuk River. This \$1.5 million project should eliminate most of the combined sewers in that area.

NEW JERSEY WATER POLLUTION CONTROL PLANTS

Atlantic Highlands, New Jersey (Monmouth County)

Refer to Atlantic Highlands/Highlands Regional Sewerage Authority.

Atlantic Highlands/Highlands Regional Sewerage Authority, New Jersey (Monmouth County)

Projects in Progress

A sludge management study is currently underway with an early 1983 completion target date. A Step II 201 Facilities Design study has begun.

Future Project

It is planned that a \$10 million, 1.75 MGD secondary (rotating biological contactors) treatment plant will be built with construction commencing in late 1983. Both the Atlantic Highlands' and Highlands' flows will be treated by this facility when completed.

Bayonne, New Jersey (Hudson County)

Completed Projects

The Step II 201 Facilities Design study has been completed and its report has been issued.

Design work for tide gate and regulator rehabilitations has also been completed. This facility is located in Area II of the Hudson County Utilities Authority.

Projects in Progress

A sludge disposal study is underway.

Twenty thousand dollars has been appropriated for the installation of a new 1600 amp electric service. The additional electricity is needed to power the main sewage pumps which are presently run by internal combustion engines. The installation is 95% complete.

Future Projects

A design flow of 11 MGD is planned for a new secondary activated sludge plant. The projected \$35 million facility will have rehabilitation work done on the existing primary

settling tanks and pump station. New units to be installed are raw sewage pumps, bar screens, grit collectors, activated sludge tanks, secondary settling tanks, floatation thickeners, sludge dewatering and disinfection equipment, a chlorine contact tank and an extended outfall line.

A new projection of \$500,000 has been estimated for the rehabilitation of tide gates and regulators. Construction start-up dates have not been determined for either project.

Bayshore Regional Sewerage Authority, New Jersey
(Monmouth County)

Projects in Progress

A Step III 201 feasibility study to improve plant facilities and correct design errors is still in progress. A federal grant providing 75% of the estimated \$500,000 project has been awarded. A completion date of summer 1983 is expected.

A sludge management study is concurrently underway. The purpose is to supply a drier sludge which will burn more efficiently in the plant's incinerator.

Future Project

The Town of Keansburg (1 of 8 communities serviced by Bayshore) is expected to receive 86% federal funding for sewer improvements. This \$8 million project will eliminate CSO's in Keansburg.

Carteret, New Jersey (Middlesex County)

Refer to Middlesex County Utilities Authority.

Edgewater, New Jersey (Bergen County)

Project in Progress

A Step II 201 Facilities Design study is now in progress.

Future Projects

Cost estimates of \$1,375,000 have been made for construction and rehabilitation of pump stations, regulators, and sewer lines.

A reestimate of \$8.5 million has been made for upgrading construction. The new secondary facility will employ

rotating biological contactors. Among the new equipment to be installed are influent pumping stations, grit collectors, high rate clarifiers, secondary settling tanks, and chlorine contact tanks.

Highlands, New Jersey (Monmouth County)

Refer to Atlantic Highlands/Highlands Regional Sewerage Authority.

Hoboken, New Jersey (Hudson County)

Project in Progress

Under the auspices of the Hudson County Utilities Authority, this facility is being upgraded to secondary treatment. Recently, a grit chamber and new chlorinators were completed. In addition, two of three pump stations have been overhauled. The digester tank is to be converted to a holding tank and bids for sludge handling are to be processed shortly. When completed, wastewater from the surrounding communities, including West New York and Woodcliff, will be treated here.

Hudson County Utilities Authority, New Jersey (Hudson County)

Projects in Progress

The Step II 201 Facilities Design is still underway. The study has already specified plans for the rehabilitation of regulators, tide gates, and new sludge dewatering equipment for all three drainage areas.

A sludge disposal study is continuing on schedule. Disposal alternatives that are being considered are incineration and co-disposal.

Future Projects

The three drainage basins regulated by the Authority are: Area I - Jersey City (East and West), western North Bergen, Kearny Point, the western slope of Union City, and Secaucus; Area II - Bayonne; Area III - Hoboken including Weehawken, eastern Union City, and West New York.

Five hundred and ten million dollars for construction will be implemented to upgrade and rehabilitate this extensive network of drainage basins. Fifteen percent of the funds (\$68.4 million) is the estimated cost for new pump stations, interceptor lines, collector sewer rehabilitation, and tide gate and regulator rehabilitation.

Jersey City - East, New Jersey (Hudson County)

Completed Projects

A Step II 201 Facilities Design for the purpose of upgrading the existing primary plant has been completed and a report has been issued. A combined sewer overflow study has also been completed.

Future Project

It is planned to upgrade this facility to secondary activated sludge treatment. This 57.5 MGD plant will be enhanced with a new aeration tank, secondary clarifiers, a chlorine contact tank, and sludge handling equipment. Operational construction will be under the auspices of the Hudson County Utilities Authority. When complete, wastewater from the surrounding communities, including Secaucus, western North Bergen, western Union City, and Kearny Point, will be treated here.

Jersey City - West, New Jersey (Hudson County)

Future Project

As part of the Hudson County Utilities Authority's Drainage Area I, this facility will eventually divert all flows to the Jersey City - East plant for treatment.

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

Projects in Progress

An I/I study is proceeding on schedule.

Construction is currently underway to install the necessary equipment to utilize digester gas for electric power generation.

Future Project

Ten million dollars has been estimated for upgrading construction. The facility will implement a solids handling system which will utilize a sludge dewatering and incineration process.

Kearny, New Jersey (Hudson County)

Future Project

The Kearny Facilities Design study has been approved by the Hudson County Utilities Authority and the Passaic Valley Sewerage Commissioners. This plant will be converted to a pump station and flows diverted via a force main to the Passaic Valley facility. Construction costs are estimated at \$8 million. The start-up date is spring 1983.

Linden Roselle Sewerage Authority, New Jersey (Union County)

Completed Project

Sludge dewatering facilities are 100% complete. Four belt filter presses were turned over to the Authority during June 1982. Costs for this project amounted to \$6 million.

Middlesex County Utilities Authority, New Jersey
(Middlesex County)

Project in Progress

The SSES/CSO study is continuing on schedule.

Future Project

As mandated by the State of New Jersey DEP and the U.S. EPA, Carteret, Perth Amboy and Woodbridge are expected to divert their flows to this plant. The estimated cost of this project is \$84,484,100. In addition, wastewater from Old Bridge Township, Sayreville (Melrose & Morgan), and South Amboy will be treated at this facility.

Military Ocean Terminal, New Jersey (Hudson County)

Completed Projects

Construction is 99% complete for a ships' waste disposal system and flow equalization basin. Final equipment installations include hoses to accommodate ships at five berths. Final costs of \$626,000 will be well under past years' estimates of \$950,000.

A completed feasibility study has determined that it is not cost-effective to divert flows by force main to Bayonne.

Future Project

An I/I study is being proposed for this 100% separated



Completed Sludge Dewatering Facilities
at the Linden Roselle Sewerage Authority
Photo Courtesy of L.R.S.A.

sewer system.

Old Bridge Township (Laurence Harbor), New Jersey
(Middlesex County)

Completed Project

A Step II 201 Design study has been completed.

Future Project

It is proposed that this primary facility will be phased out and converted to a pump station and force main system. The diverted flows would be treated by the Middlesex County Utilities Authority. Estimates for this construction have been reevaluated at \$5.7 million.

Passaic Valley Sewerage Commissioners, New Jersey (Essex County)

Future Projects

New primary sedimentation basins are to be built and should be on-line by mid-1985. In addition to treatment rehabilitation construction, grounds maintenance will be completed. The aesthetic refinements include a bridge, access roads and landscaping. A cost estimate for these future projects is \$75 million.

Perth Amboy, New Jersey (Middlesex County)

Refer to Middlesex County Utilities Authority.

Rahway Valley Sewerage Authority, New Jersey (Middlesex County)

Projects in Progress

Construction is about 95% complete on a sludge dewatering system. New equipment includes six belt filter presses, a collection system, meter rehabilitation, and supervisory offices. Costs for this project have been reestimated at \$7.5 million.

Construction is underway for additional grit handling facilities. \$484,000 has been appropriated for this project.

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

Completed Projects

An engineering report has been issued which determined the most cost-effective alternatives for sewage collection and treatment.

Future Project

Refer to Middlesex County Utilities Authority write-up.

South Amboy, New Jersey (Middlesex County)

Completed Project

Fifty thousand dollars has been spent on an independent study to determine whether this facility should be converted to a pump station or upgraded to secondary treatment. A report has been issued recommending the former alternative by which diverted flows will be treated by the Middlesex County Utilities Authority.

West New York, New Jersey (Hudson County)

Completed Projects

A sludge disposal study has been completed. A new chlorination facility is nearly complete (99%) at a cost of \$800,000.

Future Project

This facility will eventually be phased out. Under the auspices of the Hudson County Utilities Authority, all wastewater will be treated at the Hoboken facility.

Woodbridge, New Jersey (Middlesex County)

Completed Project

The Step II 201 Facilities Design phase has been completed and accepted by the State.

Projects in Progress

An I/I study is underway with a scheduled completion date of December 1982.

Future Project

An application is pending before the NJ DEP for Step III construction. This primary plant is planned to be converted to a pump station and a new interceptor sewer built to divert flows to the Middlesex County Utilities Authority. A reestimate of \$56 million has been made which includes the South Amboy phase of this project.

Woodcliff - North Bergen, New Jersey (Hudson County)

Refer to Hoboken write-up.

NEW YORK WATER POLLUTION CONTROL PLANTS

Arthur Kill Correctional Facility, New York (Richmond County)

Projects in Progress

An engineering study is presently in progress to determine what additional treatment units will be needed to handle a larger flow capacity. The completion of this study is dependent on a pending I/I report.

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

Projects in Progress

Construction of an 80-foot digester, two 90-foot sludge storage tanks with supporting equipment, and rehabilitation of existing tanks is 95% complete. The cost of this project is estimated at \$12 million.

Among the engineering studies underway are a sludge management plan, an ocean outfall feasibility and route selection report, and an environmental assessment statement.

Future Projects

A \$60 million plant expansion from 60 to 70 MGD is proposed. The original cost estimate of \$90 million was reduced due to the exclusion of the ocean outfall from this phase of construction. The plant expansion project will include new bar screens, grit tanks, primary and final settling tanks, and a fluidized bed unit.

Bids for the Island Park sewer system rehabilitation have been awarded. Five million dollars is the cost estimate for this project.

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

Completed Project

The 201 Facilities Plan study to determine the future needs of the plant has been completed. The report has yet to be issued.

Blind Brook, New York (Westchester County)

Completed Project

Construction of the sludge force main that will serve this facility has been completed.

Projects in Progress

Construction to upgrade this primary plant to secondary activated sludge treatment is 95% complete. The cost for this job is estimated to be \$12.3 million.

Construction started in September 1982 on the effluent line to serve Blind Brook and Port Chester.

Bowery Bay, New York (Queens County)

Future Projects

A plan of study has been submitted for approval prior to submission of a Step I 201 Facilities Plan application to correct some plant operational deficiencies.

It is proposed that this secondary activated sludge facility will undergo rehabilitation. The cost of this project is estimated at \$11.5 million.

Briarcliff Manor - River Road and Scarborough Dock,
New York (Westchester County)

Completed Project

All flows from these locations are being diverted to the Ossining Wastewater Treatment Plant which is maintained by the Westchester County Department of Public Works.

Buchanan, New York (Westchester County)

Completed Project

An estimated \$2100 has been spent to upgrade the safety equipment in the chlorine room. Installment of an automatic exhaust fan has been made, which provides a complete air change in the room in one minute.

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

Completed Project

A \$14.8 million sludge dewatering system using belt filter presses has been completed.

A computer and instrumentation evaluation study, as part of the 201 Facilities Plan study, has also been completed.

Project in Progress

The 201 Facilities Plan study to evaluate future requirements of the plant is continuing on schedule.

Coney Island, New York (Kings County)

Completed Project

The infiltration/inflow study and the Step I 201 Facilities report are substantially complete.

Projects in Progress

Based upon the results of the I/I study and the Step I 201 Facilities report, an upgraded plant is being designed to provide 90% removals of BOD's and suspended solids.

An application for Step II design has been approved. Consulting engineers have been selected, a contract has been signed, and the design work is in progress. Portions of the design have been completed with plans and specifications, as well as a Step III construction grant application which has already been submitted for approval. The proposed secondary step aeration facility will be enhanced with new primary settling tanks, aeration and final settling tanks, thickeners, main pumps, and process blowers.

Croton-on-Hudson, New York (Westchester County)

Completed Project

This treatment facility has been converted to a pump station and all flows have been diverted to the Ossining Wastewater Treatment Plant.

F.D.R. Veterans Administration Medical Center, New York
(Westchester County)

Completed Project

The replacement of the digester tank floating cover and associated piping and valves has been completed. The cost of this project was \$160,000.

Glen Cove, New York (Nassau County)

Completed Projects

The secondary trickling filter plant and incinerator (in operation from 1965 to 1977) were completely demolished at a cost of \$15 million. Construction of the new incinerator for the upgraded secondary activated sludge facility was completed at a cost of \$12 million.

An engineering study to evaluate the impact of local industries on this treatment plant and to reevaluate the sewer use ordinance has been completed and a report issued.

A new line has been installed for the Morris Avenue interceptor and additional sewers have been slip-lined at a cost of \$1.2 million.

Great Neck District, New York (Nassau County)

Completed Project

Conversion from gaseous chlorination to the use of sodium hypochlorite for disinfection was completed at a cost of \$121,600.

Project in Progress

Replacement of 800 feet of 18" diameter clay sewer pipe with a new 30" diameter reinforced concrete pipe is 70% complete. The cost of this project is estimated to be \$180,000.

Harbor Club Apartments, New York (Suffolk County)

Future Project

The flows from this apartment complex will be diverted to the new Suffolk County plant at Bergen Point once the sewer line is available.

Huntington Sewer District, New York (Suffolk County)

Project in Progress

The 201 funded I/I and Facilities Plan study are continuing. Under consideration are design improvements for scavenger waste handling and upgrading of the sewage treatment plant. Modifications include the addition of rotating biological disc filters, a chlorine contact tank, installation of new secondary settling tanks, and an extended outfall line.

Hunts Point, New York (Bronx County)

Projects in Progress

Several programs have been in effect to improve the technical level of plant personnel, the work environment and operating logistics.

A plan of study has been submitted for approval, prior to submission of a Step I 201 Facilities Plan application, to correct some plant deficiencies and improve reliability.

Future Project

Rehabilitative construction is planned for various operating units in conjunction with the replacement of the final settling tanks. The cost estimate for this work is \$23 million.

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

Project in Progress

A 201 Facilities Plan study is underway.

Jamaica, New York (Queens County)

Completed Project

The upgrading to step aeration of this facility is essentially complete (99+%). Final completion of this project is dependent upon construction change orders and/or various punch list items.

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

Project in Progress

A pretreatment analysis study is in progress.

Jones Beach, New York (Nassau County)

Project in Progress

Rehabilitation has begun on the "greenhouse" enclosed sludge drying beds, primary and secondary settling tanks, and trickling filter. Among the equipment to be replaced are the trickling filter distribution arm, the floating cover on the west digester, the recirculation pumps, and an emergency generator. Changing chlorine gas disinfection equipment to a less hazardous sodium hypochlorite system is also planned. This project is approximately 10% complete and will cost an estimated \$578,000.

K-Mart Shopping Center, New York (Richmond County)

Future Project

An engineering report was issued in 1981 for the upgrading of this secondary extended aeration facility, however, no start-up date has been given. The study makes provisions for an oil and grease interceptor, a flow equalization chamber and final settling tank improvements.

Long Beach, New York (Nassau County)

Project in Progress

A 201-funded sludge management study is continuing.

Mamaroneck, New York (Westchester County)

Project in Progress

An SSSES is underway.

New Rochelle, New York (Westchester County)

Completed Project

Upgrading construction from primary to secondary activated sludge treatment is complete. New units that were added to the system are oxygenation tanks, final settling tanks and sludge processing (incineration) facilities. Fi-

nal expenditures for this project amounted to \$22 million.

Newtown Creek, New York (Kings County)

Completed Project

The Step I 201 Facilities Plan is approximately 95% complete at a cost of \$3.2 million. This Plan will recommend methods for upgrading the existing plant.

Projects in Progress

Modifications to the Manhattan pump station are currently underway to conserve energy and eliminate excessive heat.

An I/I study is underway and has a cost estimate of \$1.745 million.

An application to amend this plant's Step I grant has been submitted to include funding for a water quality study.

North River, New York (New York County)

Completed Projects

The foundation for the North River Treatment Plant, a 32-acre platform built out into the Hudson River, is complete. The eleven miles of interceptor sewers to the plant are also complete. The Step I 201 Facilities Plan work for the superstructure of this new 170 MGD plant and the rooftop park has been completed. The construction of the sludge storage tank, eight digester tanks and the access and utilities contract for this facility are 99% complete. The cost for the above completed projects was \$386.6 million.

Projects in Progress

The Step II design work for the plant superstructure and the rooftop park is estimated to cost \$23 million. The prepurchase of plant equipment is underway at a cost of \$72 million. The remainder of the plant superstructure and rooftop park are under design and grant applications have been submitted for the main building, preliminary tanks, and the sludge facilities. A total cost of approximately \$300 million has been assigned to this work.

Northport, New York (Suffolk County)

Project in Progress

An engineering study is underway to determine how best to implement findings of the completed 201 - I/I Facilities Plan.

Future Project

A new pump station is to be built with the advent of a new 66-unit housing development.

Oakwood Beach, New York (Richmond County)

Completed Projects

The upgrading and expansion of this plant from 15 MGD to 40 MGD, including the outfall line and the 9-mile sludge force main connecting the plant with the Port Richmond plant, is 99% complete. The Richmond Hill Road to Eltingville interceptor and the structures for the pumping stations at Eltingville and Richmond Hill Road are also 99% complete. The cost for the above completed projects was \$118.2 million.

The designs of the electrical and mechanical installations of the Eltingville and Richmond Hill Road pumping stations are complete. Construction is expected to start in fiscal year 1983.

The Step II design for the West Branch interceptor system is complete. Construction is expected to start in the spring of 1983.

The Fresh Kills interceptors are under construction and are substantially complete at a cost of \$18 million.

Projects in Progress

The consultant design contract for the Mayflower pumping station is in progress and construction is anticipated to start in early 1984.

The final facility plan for the West Branch interceptor system is presently being prepared. The final design of the West Branch interceptor system to Tottenville, which will complete the Oakwood Beach WPCP, is awaiting completion of the final facility plan to determine routing and method of construction. A Step III grant application for construction of a section of the West Branch interceptor has been submit-

ted for approval at an estimated cost of \$3.5 million.

A Step III grant application for construction of the remainder of the Eltingville and Richmond Hill pumping stations has been submitted for approval at an estimated cost of \$13 million. This work includes the construction of the force mains, the installation of pumps and mechanical equipment and the electrical, HVAC, and plumbing work to complete the structures.

Orange & Rockland Utilities, New York (Rockland County)

Project in Progress

The construction of a new 0.12 MGD extended aeration domestic sewage treatment plant is underway. The approximate cost of the equipment for this project is \$50,000.

Future Project

In conjunction with the installation of the treatment plant, two new lift stations will be installed and the existing lift station modified.

Ossining Correctional Facility, New York (Westchester County)

Completed Project

As of August 1982, all flows were diverted to the Ossining Wastewater Treatment Plant which is under the auspices of the Westchester County Department of Public Works.

Ossining - Liberty and Water Streets, New York
(Westchester County)

Completed Project

All sewage in the Village of Ossining is now treated by the Ossining Wastewater Treatment Plant. Flows from Liberty Street reach the main facility by gravity. Five percent of the Water Street capacity is pumped to Ossining and the remainder flows by gravity.

Ossining, New York (Westchester County)

Completed Project

Construction of two interceptor sewers and three pump stations are complete. The final costs are estimated at \$6.9 million. Presently, this facility is treating the flows from Briarcliff Manor, Croton-on-Hudson, and three

phased out Ossining plants (Correctional Facility, Water Street, and Liberty Street).

Project in Progress

Construction of this new secondary plant is 99% complete. New units installed here include screening, pumping, primary clarification, conventional activated sludge bio-oxygenation and secondary clarifiers.

Owls Head, New York (Kings County)

Projects in Progress

Based upon the results of the infiltration/inflow study and the Step I 201 Facilities Report, an upgraded plant is being designed to provide 90% removals of BOD's and suspended solids. Consulting engineers have been selected, a contract has been signed, and design work is underway. Portions of the design have been completed with plans and specifications, as well as a Step III construction grant application which already has been submitted for approval. The new plant will replace the entire existing facility and employ secondary step aeration treatment. Final costs are expected to be \$330 million.

Oyster Bay, New York (Nassau County)

Project in Progress

The sewer system evaluation study is continuing under a 201-funded grant.

Port Chester, New York (Westchester County)

Completed Projects

A value engineering study is complete. The report evaluates the original plant proposed upgrading. A feasibility study is also complete and a report has been issued. A final SSES report has been completed.

Future Projects

It is proposed that this primary facility be upgraded to secondary treatment utilizing biological contactors. New units to be installed include primary tanks, bio-discs, secondary clarifiers, chlorination, and a common outfall with the Blind Brook Treatment Plant.

The SSES findings recommend sewer rehabilitation work;

cost estimates are \$762,500.

Port Richmond, New York (Richmond County)

Completed Project

The upgrading and expansion of the Port Richmond Plant is essentially complete (99+%). The project will be closed when construction change orders and/or punch list items have been attended to.

Project in Progress

Design work is in progress for the rehabilitation of sludge docking facilities (Phase II) and construction work is anticipated to start in 1983.

Port Washington, New York (Nassau County)

Project in Progress

The future needs of this plant will be determined by the continuing Port Washington Peninsula, Nassau County 201 Study.

Red Hook, New York (Kings County)

Completed Projects

Upon completion of construction change orders and/or punch list items, four interceptors, one pump station, and a foundation contract will be completed.

A Step I 201 Facilities Plan for the superstructure was completed at a cost of approximately \$1.7 million.

Projects in Progress

Step II, final design of the superstructure, will be completed early in 1983. A Step I 201 Facilities Plan for the Gowanus pumping station and a water quality study for the Gowanus Canal are in progress.

The foundation and cofferdam for the main building are under construction at a cost of \$7.9 million. A contract for the construction of the preliminary tanks and the chlorine contact tanks has been awarded at a cost of \$6.1 million.

Seventy-eight percent of the new interceptor sewer system is complete. This system will intercept and transmit



Red Hook Sewage
Treatment Plant under Construction
Kings County, New York
Photo Courtesy of N.Y.C. D.W.R.

the local dry weather flow to the treatment plant.

Future Projects

A grant for \$27 million has been approved by the U.S. EPA for the prepurchase of materials and equipment for the superstructure.

A grant for \$76 million has been approved by the U.S. EPA for the construction of the structural and associated embedded plumbing and electrical contracts for the superstructure.

Richmond Memorial Hospital, New York (Richmond County)

Project in Progress

A 0.025 MGD secondary extended aeration treatment plant is being designed to serve this facility. Construction should begin as soon as a site is secured and funding obtained. The estimated cost of this project is \$175,000.

Rockaway, New York (Queens County)

Completed Project

The upgrading of this facility is essentially complete. Construction change orders and/or punch list items still remain.

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

Project in Progress

The design stage has begun on a \$34 million sewer system expansion program.

Future Project

A \$62 million expansion project is planned which will upgrade plant facilities and increase the plant design capacity to 25 MGD. Included in this project will be additional primary and secondary settling tanks, rotating biological contactors, an aerated grit chamber and a composting facility.

Roslyn, New York (Nassau County)

Project in Progress

The Village of Roslyn is included in the 201 Facilities

Plan study being conducted by Nassau County for the Port Washington Peninsula. This 5 MGD secondary plant will probably be phased out and the flow diverted to the Nassau County Cedar Creek Water Pollution Control Plant.

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

Projects in Progress

The 201 Facilities Plan study is continuing and is near completion.

An emergency work request was submitted and has been approved by the U.S. EPA to upgrade the #1 pump station and force main.

Future Project

Contingent upon the results of the 201 study results, as well as federal and state aid, it is planned that this primary treatment facility be upgraded and expanded to secondary treatment.

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

Future Project

A \$125,000 program to upgrade the sludge thickener is planned.

Tallman Island, New York (Queens County)

Completed Project

The upgrading and expansion of the plant is essentially complete. Construction change orders and/or punch list items need to be attended to.

26th Ward, New York (Kings County)

Completed Project

A study of excessive wastewater flows has been completed and the report has been issued. The final cost for this project was \$0.6 million.

Upgrading of this facility is essentially complete. Construction change orders and/or punch list items need to be finished.

Wards Island, New York (New York County)

Completed Project

The expansion and upgrading of this plant is complete except for construction change orders and/or punch list items.

West Long Beach, New York (Nassau County)

Future Project

Plans call for a \$1.5 million rehabilitation project. Items on the agenda are replacement of existing anaerobic digestion system equipment, an emergency generator, and repairs to pumping stations.

Yonkers Joint Treatment Plant, New York (Westchester County)

Completed Project

The 201 Step I - I/I study has been completed and a report has been issued.

Project in Progress

A combined sewer overflow study is presently underway.

Future Project

It is being proposed to upgrade this system with a sludge dewatering facility which will employ filter presses.

WATER QUALITY AND EFFLUENT MONITORING

The Commission's effluent monitoring program involves routine sampling and analysis of municipal wastewater treatment plants and industries. Additional sampling of municipal plants and industries is performed to check compliance with their N/SPDES permits. The quality of the District waters is checked by using remote automatic water monitors and by conducting boat and helicopter sampling surveys.

Effluent Monitoring

All municipal wastewater treatment plants and some industrial facilities discharging into District waters are sampled routinely by the Commission. The samples are analyzed and the results are used to determine compliance with the Commission's regulations.

In cooperation with, and at the request of, the member states and the U.S. EPA, specific sewage treatment plants and industries within the District are sampled. The results, which are forwarded to the proper agencies, indicate whether the plants are in compliance with their N/SPDES permits. Sewage treatment plants are sampled for six hours and industries for 24 hours, or a full day's production when less than 24 hours.

Remote Automatic Water Quality Monitoring

The Commission's remote automatic water quality monitors continuously measure District waters for temperature, conductivity, dissolved oxygen and pH. The data are transmitted hourly and recorded by a central receiver at the Commission's office. Daily summaries and the hourly readings are sent to the appropriate state and federal agencies and also are entered into STORET, a national data base maintained by the U.S. EPA. As a result of meetings with the states and the U.S. EPA, several changes have been made regarding the locations of the remote monitors. Shown on the following pages are a map and listing of the monitor locations.

Graphs for the past five years showing the monthly maximum, minimum and average values for each parameter, at each station, are also included. The monthly maximum and minimum represent the single highest value and the single lowest value for the month, respectively. The monthly average is the average of the daily average values for the month. Dotted lines indicate a month for which less than ten days of data were available.

Following the graphs is a table showing the percent of time that the dissolved oxygen met Commission requirements at each remote automatic water quality monitoring station for the period

October 1, 1981 through September 30, 1982 (water year 1982). A table is also included comparing these values with those obtained in water year 1977 (October 1976 through September 1977).

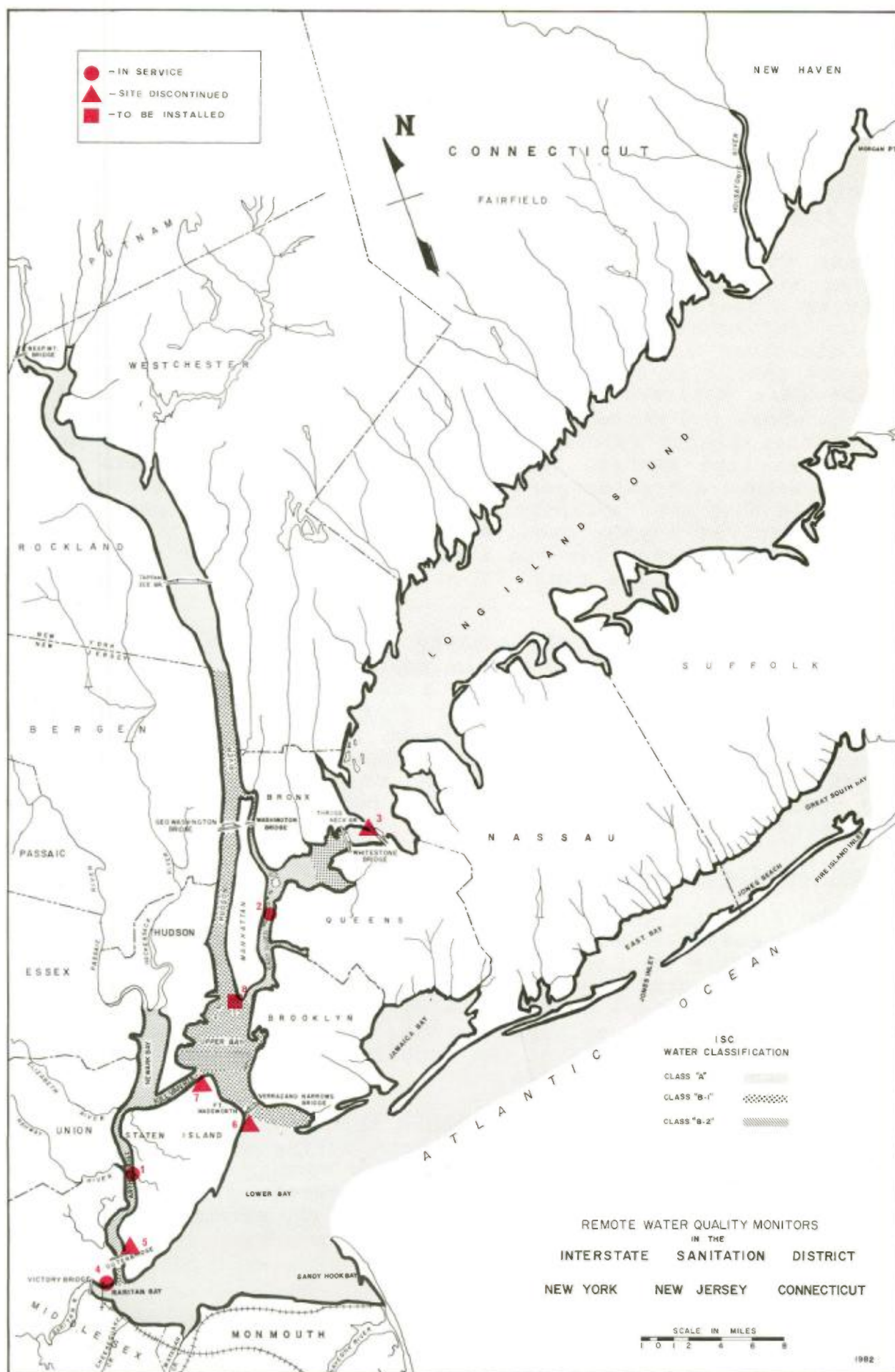
Based on the percent of dissolved oxygen values meeting Commission requirements, significant improvements have been made in the water quality in much of the District over the past five years. Although year-to-year changes are not very large, the values on the dissolved oxygen table show an improvement in the Arthur Kill for the critical summer months compared to 1981. A clearer picture of changes in the waterways can be obtained comparing values over a longer time period. This is presented in the dissolved oxygen chart comparing water years 1977 and 1982 for the months of June, July, August, September and October. In water year 1977 the months of October and June were transition months where the dissolved oxygen went from poor summer values to the better winter values. In water year 1982 these same months were more like winter, that is, higher dissolved oxygen values were obtained a greater percent of the time. It can be seen from the table that the East River (at Station 2) did not meet Commission dissolved oxygen requirements at all during the month of August 1977, whereas for the same month in 1982 the requirements were met 29.7% of the time. Similar improvements have been made at other locations.

The improvement in the quality of the District's waters over the past five years is due, in part, to wastewater treatment projects being completed and to less frequent bypassing of raw sewage into the waters. However promising the improvement may be, it is still not enough to reach the required goals. Dissolved oxygen values are still below requirements during the critical summer months. Wastewater treatment plant construction and upgrading needs to be continued and the CSO problem must be addressed for the waterways to meet requirements.

Water Quality Surveys

As a result of meetings with the states and the U.S. EPA, the water quality surveys by boat were discontinued as of the end of June. They were replaced by three helicopter runs using a U.S. EPA helicopter contracted for by the Commission. Some sampling station changes have been made and at several stations samples may be taken at multiple depths. A map of the water quality sampling areas and lists of the sampling station descriptions are shown on the following pages.

The use of helicopters, rather than boats, allows the sampling to be conducted at all stations during a specific portion of a tidal cycle. Each sampling run is conducted four times per year -- once each during the months of March, July, August, and September. Some revisions have been made in the parameters analyzed.



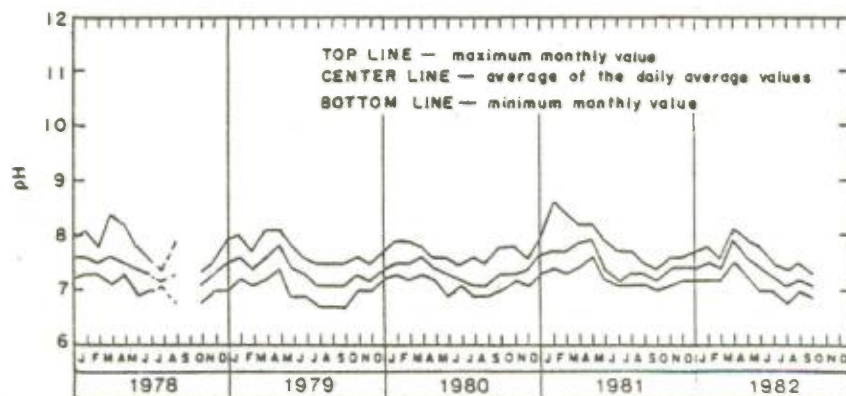
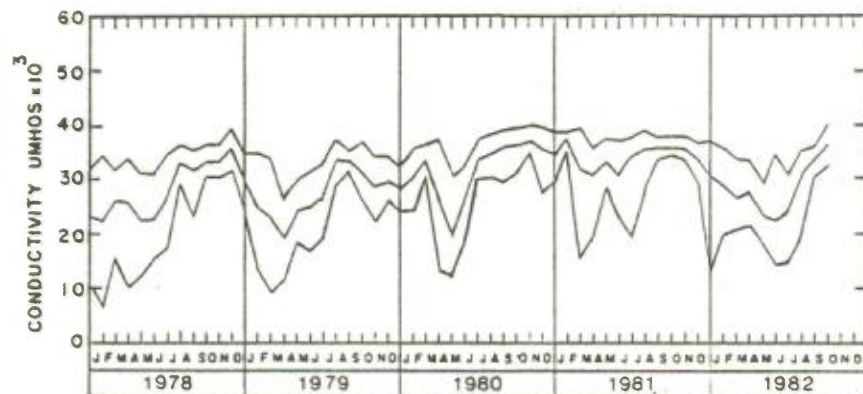
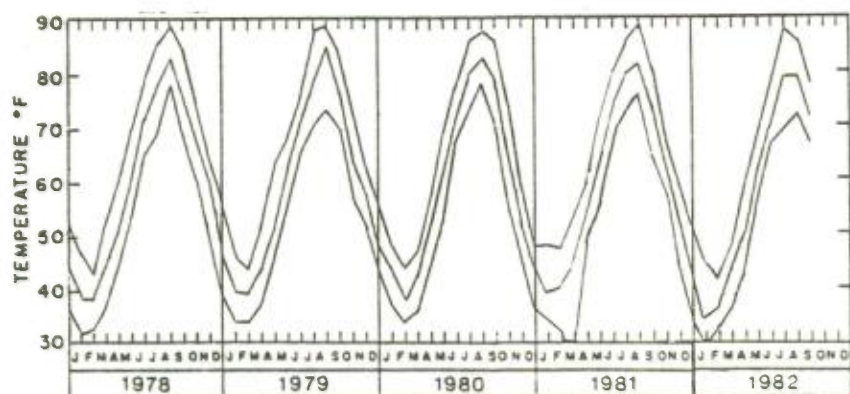
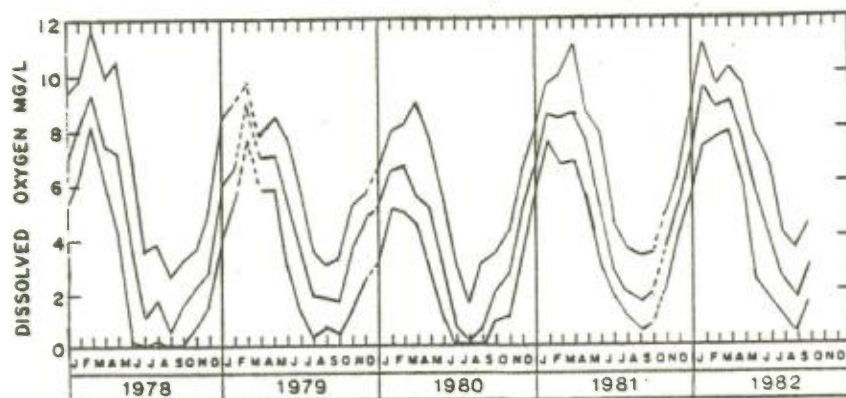
REMOTE AUTOMATIC WATER QUALITY MONITORING STATIONS
IN THE
INTERSTATE SANITATION DISTRICT

1. Arthur Kill - Consolidated Edison Arthur Kill
Generating Station, Staten Island, New York
2. East River - Consolidated Edison Ravenswood
Generating Station, Long Island City, New York
3. East River - Throgs Neck Bridge, Fort Schuyler,
Bronx, New York (1)
4. Raritan River - Victory Bridge, Perth Amboy,
New Jersey (2)
5. Arthur Kill - Outerbridge Crossing, Staten Island,
New York (1)
6. The Narrows - Fort Wadsworth, Staten Island,
New York (1)
7. Kill Van Kull - U.S. Gypsum Company, Staten Island,
New York (1)
8. Hudson River at the Battery (3)

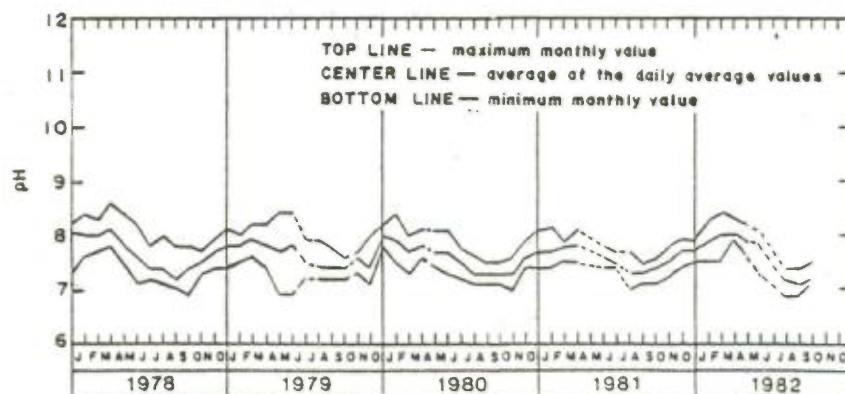
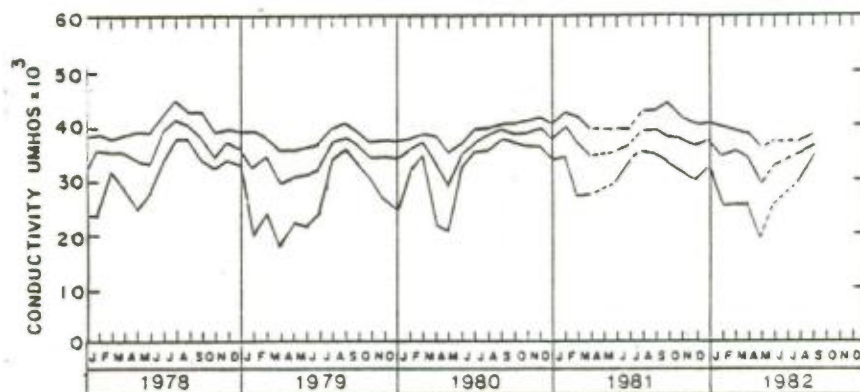
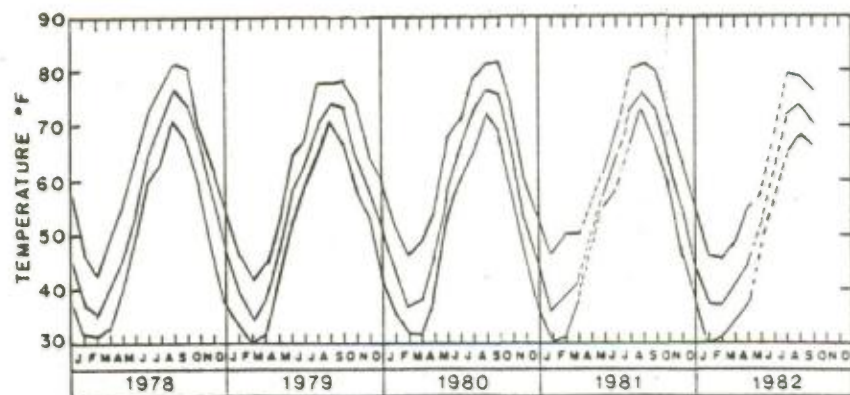
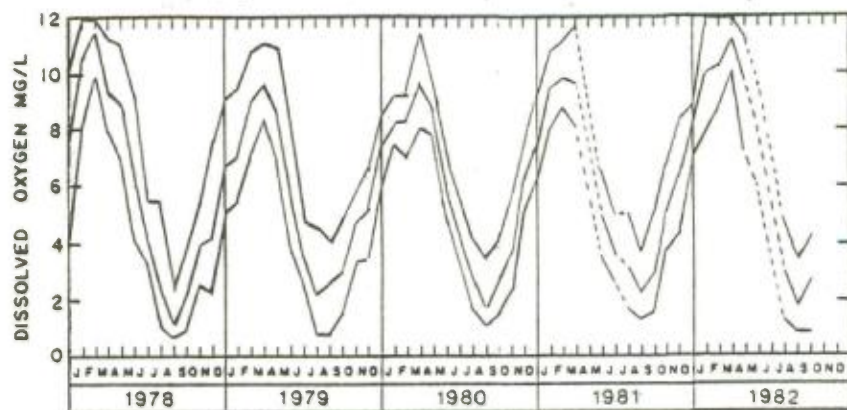
Notes:

- (1) Monitoring site discontinued
- (2) Returned to service on May 1, 1982.
- (3) To be installed

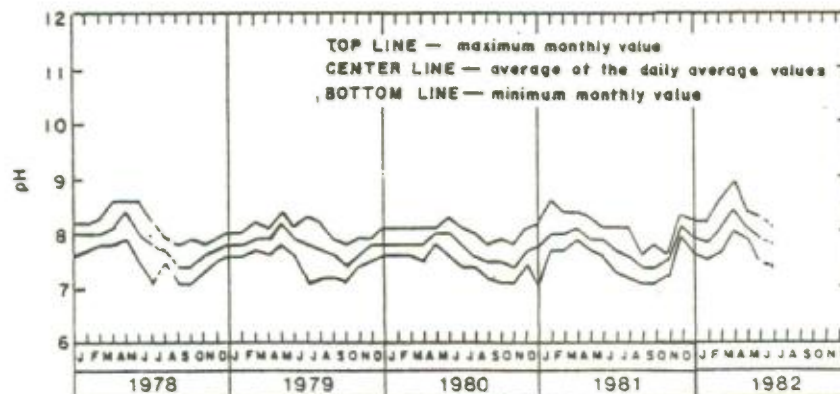
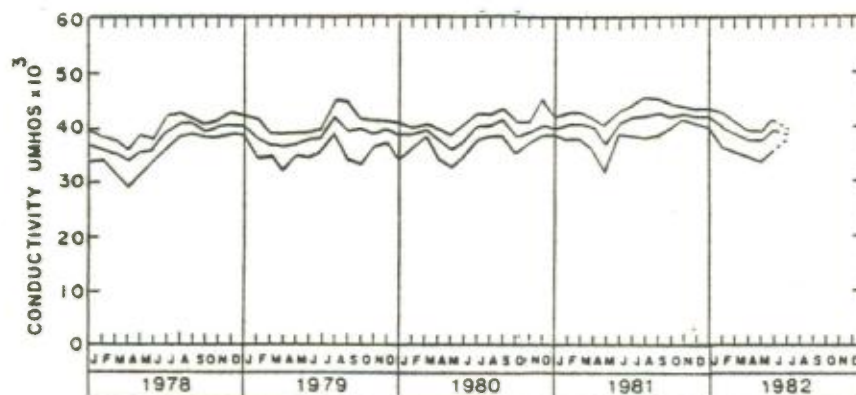
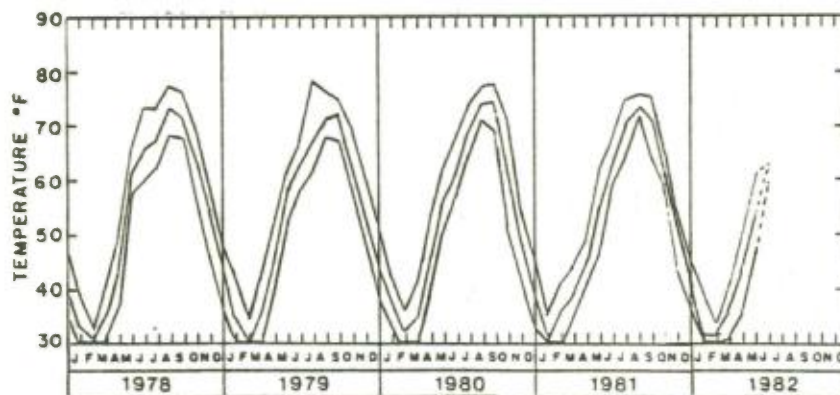
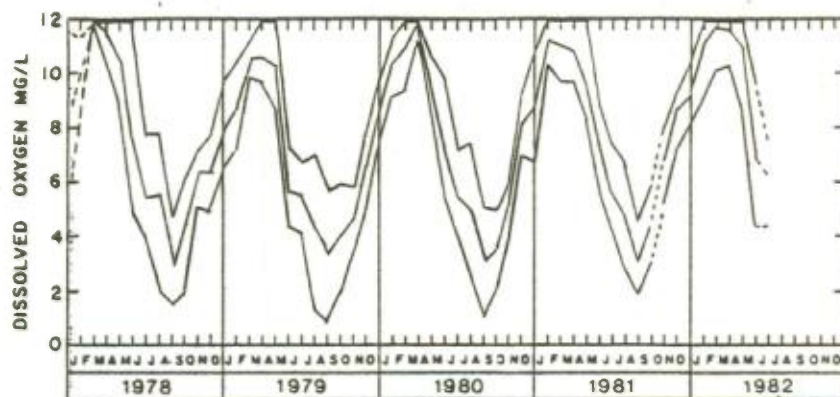
ARTHUR KILL — CON ED. (station no. 1)



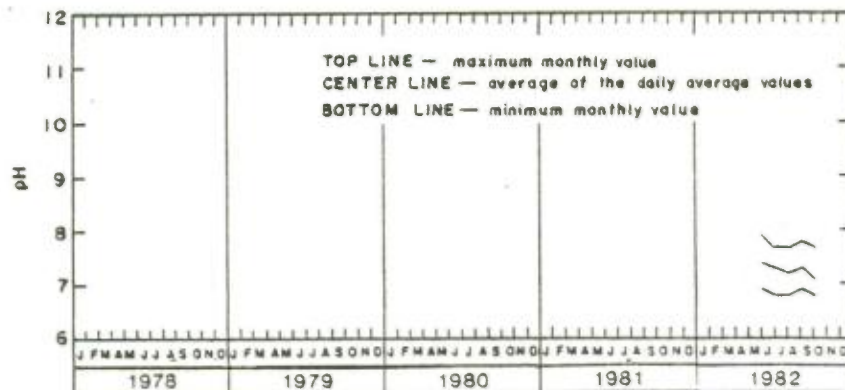
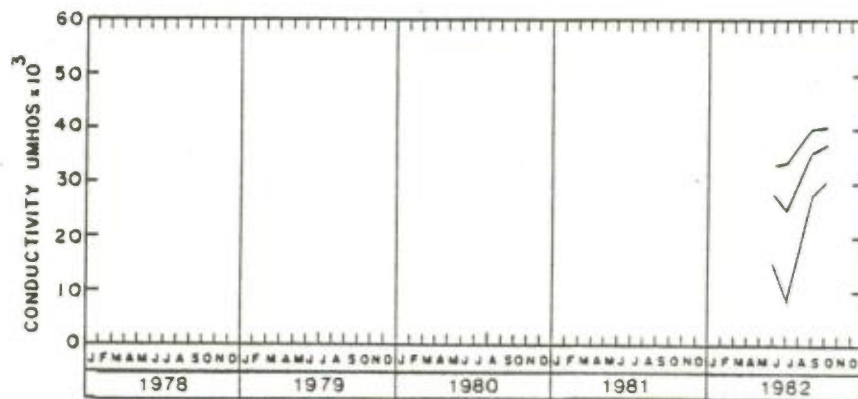
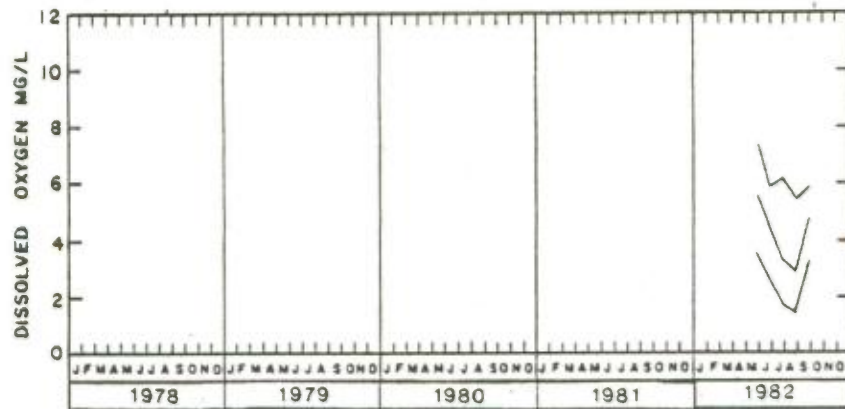
EAST RIVER — CON ED. (station no. 2)



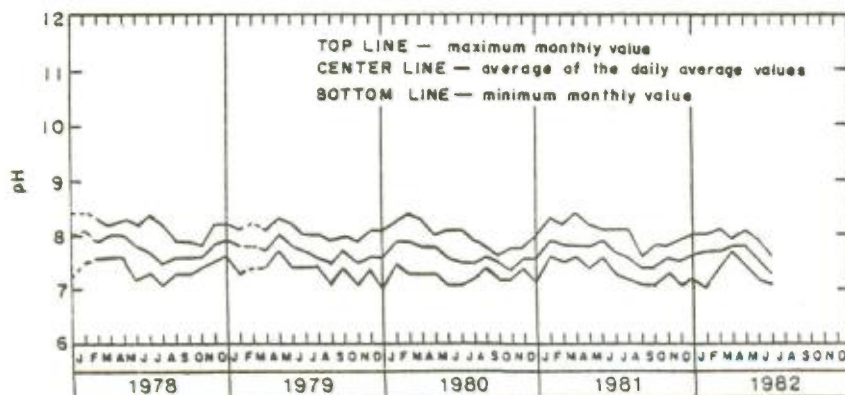
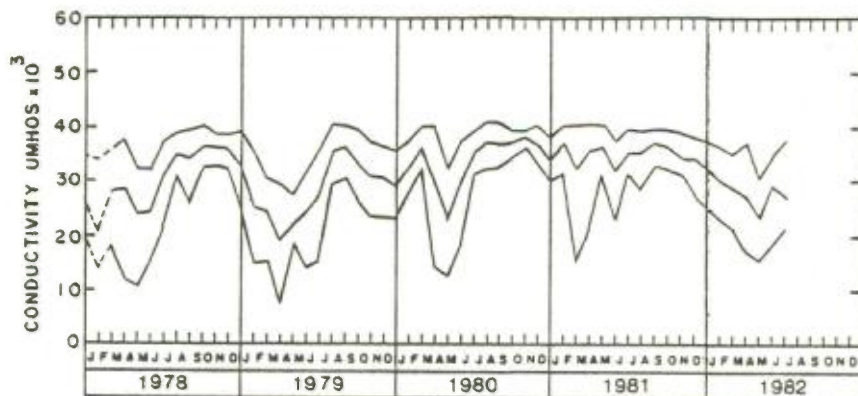
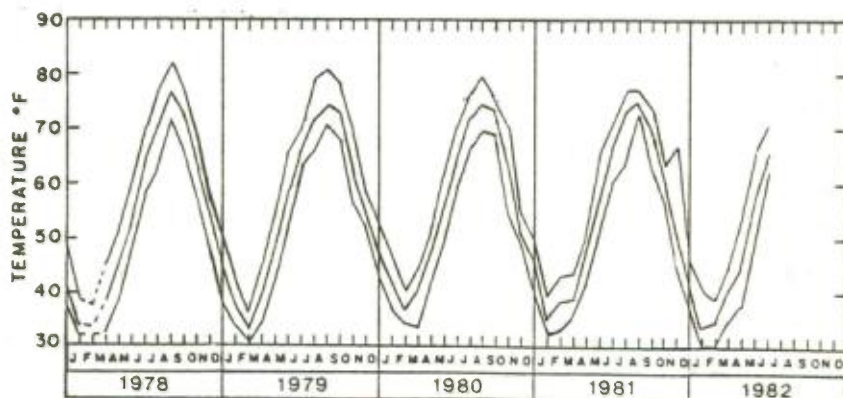
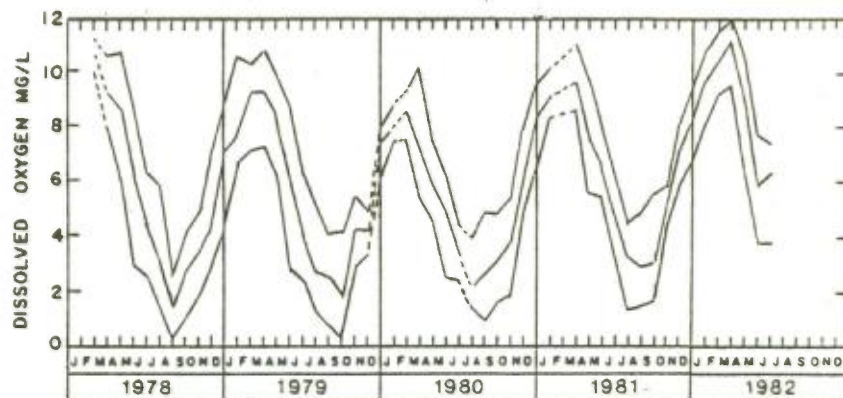
EAST RIVER — THROGS NECK (station no. 3)



RARITAN RIVER—VICTORY BRIDGE (station no. 4)



KILL VAN KULL — U.S. GYPSUM (station no. 7)



PERCENT OF TIME INTERSTATE SANITATION COMMISSION DISSOLVED OXYGEN REQUIREMENTS
WERE MET AT I.S.C. REMOTE AUTOMATIC WATER QUALITY MONITORING STATIONS
FOR THE PERIOD OF OCTOBER 1, 1981 THROUGH SEPTEMBER 30, 1982

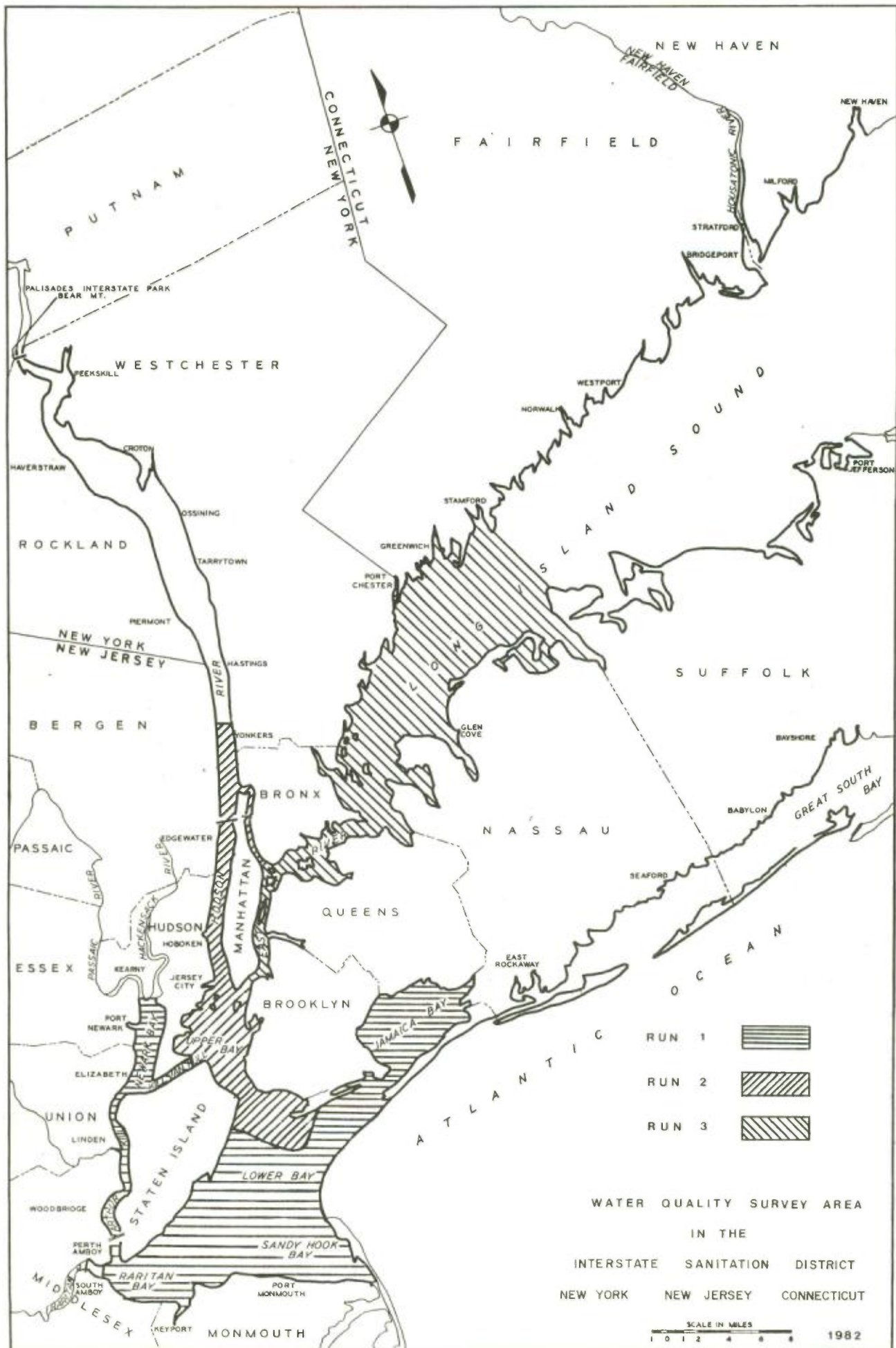
MONTH	STATION 1 AK/CE	STATION 2 ER/CE	STATION 3 ER/TN *	STATION 4 RR/VB **	STATION 7 KVK/USG *
October 1981	100.0	100.0	100.0	-	100.0
November 1981	100.0	100.0	100.0	-	100.0
December 1981	100.0	100.0	100.0	-	100.0
January 1982	100.0	100.0	100.0	-	100.0
February 1982	100.0	100.0	100.0	-	100.0
March 1982	100.0	100.0	100.0	-	100.0
April 1982	100.0	100.0	100.0	-	100.0
May 1982	100.0	100.0	100.0	96.4	100.0
June 1982	98.3	100.0	100.0	80.1	100.0
July 1982	71.4	87.7	-	25.9	-
August 1982	32.8	29.7	-	12.8	-
September 1982	97.8	90.3	-	90.1	-

Notes: * Removed from service at the end of June 1982
** Restored to service at the beginning of May 1982

PERCENT OF TIME INTERSTATE SANITATION COMMISSION DISSOLVED OXYGEN
 REQUIREMENTS WERE MET AT I.S.C. REMOTE AUTOMATIC WATER QUALITY
 MONITORING STATIONS FOR JUNE, JULY, AUGUST, SEPTEMBER AND OCTOBER
 IN WATER YEARS 1977 AND 1982 (1) (2)

MONTH -----	YEAR ----	STATION 1 AK/CE -----	STATION 2 ER/CE -----	STATION 4 RR/VB -----
October	1981	100.0	100.0	-
	1976	58.0	83.2	66.7
June	1982	98.3	100.0	80.1
	1977	10.1	90.0	43.7
July	1982	71.4	87.7	25.9
	1977	11.7	30.7	24.2
August	1982	32.8	29.7	12.8
	1977	0.9	0.0	0.3
September	1982	97.8	90.3	90.1
	1977	3.6	31.9	8.5

- Notes: (1) Only stations operational in both years are shown.
 (2) Water year 1977 is October 1976 through September 1977; water year 1982 is October 1981 through September 1982.



INTERSTATE SANITATION COMMISSION
WATER QUALITY SAMPLING STATIONS - HELICOPTER RUN 1

STATION	LATITUDE NORTH			LONGITUDE WEST			DESCRIPTION
	D	M	S	D	M	S	
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 F1 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 F1 G Buoy "1" on Belvedere Beach Point Comfort
RB-16	40	30	16	74	09	46	North side of F1 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" F1 G 4 sec Buoy in Rockaway Inlet; northwest of Lookout Tower on Rockaway Point

INTERSTATE SANITATION COMMISSION
WATER QUALITY SAMPLING STATIONS - HELICOPTER RUN 2

STATION	LATITUDE NORTH			LONGITUDE WEST			DESCRIPTION
	D	M	S	D	M	S	
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 - HELICOPTER RUN 3

STATION	LATITUDE NORTH			LONGITUDE WEST			DESCRIPTION
	D	M	S	D	M	S	
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	53	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

The Commission's water quality survey data for calendar years 1974 through 1981 were sent to the U.S. EPA for input to STORET. The 1982 data will go into STORET in early 1983 and all future water quality data collected will routinely be input to STORET.

Twenty-one water column samples from District waters were analyzed for nineteen organic pollutants. The results of these analyses are shown on the accompanying table.

Water column samples for chlorophylls were taken during July, August, and September at all stations and values for chlorophyll a, b, and c were determined. The highest concentrations of chlorophyll a during 1982 were in Long Island Sound, Lower New York Bay, and Jamaica Bay.

Special Coliform Surveys

At the request of the New Jersey DEP, a coliform sampling program relating to New Jersey's disinfection policy was inaugurated in March. The sampling is a cooperative effort among the Commission, the states, and the U.S. EPA. The Commission analyzes each sample for both fecal and total coliforms. This program will continue into 1983. The stations sampled during 1982 are shown on the list that follows.

SELECTED ORGANIC COMPOUNDS DETECTED IN
INTERSTATE SANITATION DISTRICT WATERS
DURING 1982 *

STATION	COMPOUND	DETECTED CONCENTRATION (µg/l)
LB-02	alpha - BHC	1.30
UH-11	p,p' - DDE	2.40
RB-17	alpha - BHC	19.2
RB-17	Di-n-octyl phthalate	55.2
LB-01	alpha - BHC	16.3
RB-08	Di-n-octyl phthalate	1.09
RB-15	Di-n-octyl phthalate	2.51
RI-01	Di-n-octyl phthalate	14.8
RI-02	Di-n-octyl phthalate	5.52
LI-15	Di-n-octyl phthalate	90.7
LI-34	Di-n-octyl phthalate	47.0

* U.S. EPA Priority Pollutants analyzed for: alpha - BHC, beta - BHC, Lindane, Heptachlor, Heptachlor Epoxide, Aldrin, Endrin, Chlordane, Endosulfans, p,p' - DDE, o,p' - DDE, p,p' - DDD, o,p' - DDD, p,p' - DDT, o,p' - DDT, PCB's, Methoxychlor, Mirex, and Di-n-octyl phthalate.

INTERSTATE SANITATION COMMISSION
COLIFORM SURVEY SAMPLING STATIONS

STATION	LATITUDE NORTH			LONGITUDE WEST			DESCRIPTION
	D	M	S	D	M	S	
SS-01	40	51	04	73	57	04	Mid-channel of Hudson River under George Washington Bridge
SS-02	40	45	17	74	00	58	Mid-channel of Hudson River E-W: Heliport (NY) and Seatrain pier (NJ)
SS-03	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)
SS-04	40	42	17	73	59	54	Mid-channel of East River in line with Pier #11 (Manhattan) and Pier #1 (Brooklyn)
SS-05	40	39	35	74	02	46	In main ship channel 10 yards west of Flashing Red Bell Buoy #26
SS-06	40	36	26	74	02	45	Middle of channel in Narrows under Verrazano Bridge
SS-07	40	34	03	73	59	00	200 feet south of Steeplechase Pier at Coney Island - N "2S"
SS-08	40	31	47	73	56	37	Flashing Red R "2" Gong (4 sec.)
SS-09	40	33	45	74	04	20	B.W. Bell off Midland Beach
SS-10	40	31	28	74	02	07	Buoy R "10S" Gong Fl R 4 sec; Northwest end of Swash Channel
SS-11	40	29	40	74	02	53	Buoy Fl G 4 sec; Southern end of Chapel Hill South Channel
SS-12	40	29	03	74	04	42	Buoy R "6" Fl R 2.5 sec Bell; Eastern end of Raritan Bay East Reach Channel
SS-13	40	27	27	74	04	20	Buoy "1" Fl G 4 sec Bell; off Port Monmouth
SS-14	40	29	01	74	07	35	Buoy "1" Fl 4 sec; off Point Comfort
SS-15	40	28	26	74	11	02	Buoy "1" Fl G 2.5 sec; off Conaskonk Point
SS-16	40	28	36	74	13	33	Fl G 4 sec, Boundary Light
SS-17	40	29	23	74	15	00	Buoy "55" Fl G; off Ward Point, Staten Island
SS-18	40	35	35	74	12	22	Middle of mouth of Rahway River & in line with shoreline along Tremley Reach
SS-19	40	39	20	74	08	45	Northside of C.R.N.J. Bridge over the Newark Bay South Reach Channel (mid-channel)
SS-20	40	39	05	74	05	10	Located in the Kill Van Kull, in mid-channel & directly opposite Fl G & Black Buoy #3
SS-21	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
SS-22	40	31	18	74	07	56	West side of Fl 4 sec 27 ft 6M Buoy approximately 1000 yards off Crookes Point at Great Kills on Staten Island
SS-23	40	29	25	74	11	40	Midway between Fl 4 sec Buoy (SS-16) and Fl 4 sec 8M "20" Buoy (SS-21) and 2300 yards south of Seguine Point on Staten Island

LABORATORY

During 1982, the Commission's laboratory analyzed samples collected throughout the District. The sources of these samples included municipal sewage treatment plants, industrial facilities and District water surveys. On a routine basis, the Commission performs inspections and collects samples at wastewater treatment plants. Municipal and industrial samplings were also conducted at the request of the member states and the U.S. EPA to check for compliance with the N/SPDES permit requirements. The results of the inspections and samplings are furnished to the states and the U.S. EPA.

The laboratory gives the Commission the capability to engage in special testing programs and to undertake investigations involving sampling and analyses.

The water quality conditions of the waterways throughout the Interstate Sanitation District have been regularly monitored by sampling conducted from boats. As of July 1982, water sampling was carried out from a U.S. EPA helicopter. Due to the high speeds, a larger survey area may be encompassed, sampling can be done during one specific tidal phase, and the difficulties of on-board analyses can be eliminated. These numerous water column samples are then transported to the laboratory for analysis.

During 1982, analyses of coliform bacteria for permit compliance were conducted by the multiple tube fermentation procedure. Special coliform sampling, as related to NJ DEP disinfection policy, has been conducted since March and also uses the multiple tube fermentation procedure. The Commission laboratory also analyzed samples for a special study conducted by the State of New Jersey.

The Commission's air quality program, which is described elsewhere in this report, continued its heavy emphasis on the investigation of individual complaints concerning instances of interstate air pollution. In general, these investigations primarily involve on-the-scene tracking of contaminant sources through the physical presence and observations made by Commission personnel. However, when air samples need to be analyzed, the laboratory performs that duty.

Although the laboratory was operating under financial limitations, equipment was maintained according to manufacturers' instructions. Improvement was made in the laboratory's atomic absorption capabilities by obtaining a new strip chart recorder. Again, the prime deficiency continues to be the absence of a gas chromatograph-mass spectrophotometer. Having the personnel capable of operating this equipment and desiring to greatly enhance the laboratory's ability to monitor the presence of toxic sub-

stances, the Commission resubmitted a request for funds to cover this capital investment.

On a continuing basis, the laboratory conducted certification examinations for applicants for New York State sewage treatment plant operators. Examinations were administered on four different occasions involving 27 applicants.

The Commission laboratory received its permanent certification for wastewater analysis from the State of New Jersey.

NEW YORK HARBOR WATER QUALITY STEERING COMMITTEE

Several meetings were attended by the U.S. EPA, the Commission, NYS DEC, and NJ DEP to discuss a work plan for evaluating applications for 301(h) variances, as provided for in the Clean Water Act. Before any of these applications can be evaluated, it must be determined whether any excess assimilative capacity exists based on dissolved oxygen standards.

To oversee this project, a committee (the New York Harbor Water Quality Steering Committee) was formed comprised of a member from each agency. The Commission was designated as the agency to contract with a consultant to make model runs using the New York City 208 Steady State Model and to make recommendations based on the results.

The Commission submitted a 106 Grant Request to the U.S. EPA, which was approved, for the project. The U.S. EPA has issued a press release and held public meetings on the project for interested parties. The Commission, working with the states and the U.S. EPA, has gathered the data needed by the consultant for the model runs, which are presently in progress. A report by the Commission to the U.S. EPA will be issued in early 1983.

III. AIR POLLUTION

GENERAL

The Commission's air quality program involves studies of selected pollutants and investigation of interstate problems. Emphasis is on interstate matters; however, the investigation of specific complaints often leads to the identification of intrastate problems which are referred to the proper authorities. These types of work are labor intensive. Their proper performance requires that staff members be physically present at the locations where the complaints are made, at the sources of the pollution, and at other points in the area, as appropriate.

Due to the serious nature of the odor problem, the Commission, despite budgetary complaints, found it imperative to assign a Sanitarian to Staten Island on a full-time basis to respond to residents' complaints. The Commission continued to work with state and local air pollution enforcement personnel concerning the large number of odor complaints received by the Commission's 24 hour-a-day answering service.

During this past year, the Commission has continued to provide air quality and stagnation advisory reports for use by its three member states. The data is received at the Commission from New Jersey, New York, and the National Weather Service and disseminated to all three states (New York - New Jersey - Connecticut).

The Commission continued its involvement with the Ad Hoc Committee of the Atlantic Alliance. This Committee is involved with formulating procedures relating to sulfur dioxide emissions.

The Commission is participating in the proceedings before the NYS DEC regarding the application of Consolidated Edison to convert three of its units from the burning of low sulfur oil to the burning of 1% sulfur coal.

REGIONAL AIR POLLUTION WARNING SYSTEM

The Interstate Sanitation Commission is the coordinator of the New Jersey-New York-Connecticut Air Quality Control Region High Air Pollution Alert and Warning System. The Commission, based on stagnation advisory reports and/or contaminant concentrations, may call for activation of the system. Upon notification of the participating federal, state, and local agencies by the Commission that the system has been activated, data on pollutants are transmitted to and from the Commission using procedures agreed upon by all the participants. In 1982, conditions in the Region did not warrant activation of this system.

There are 43 telemetry stations operated by various state and local agencies in the New Jersey-New York-Connecticut Air Quality Control Region. A map of the station locations and an updated list of the stations are shown on the following pages.

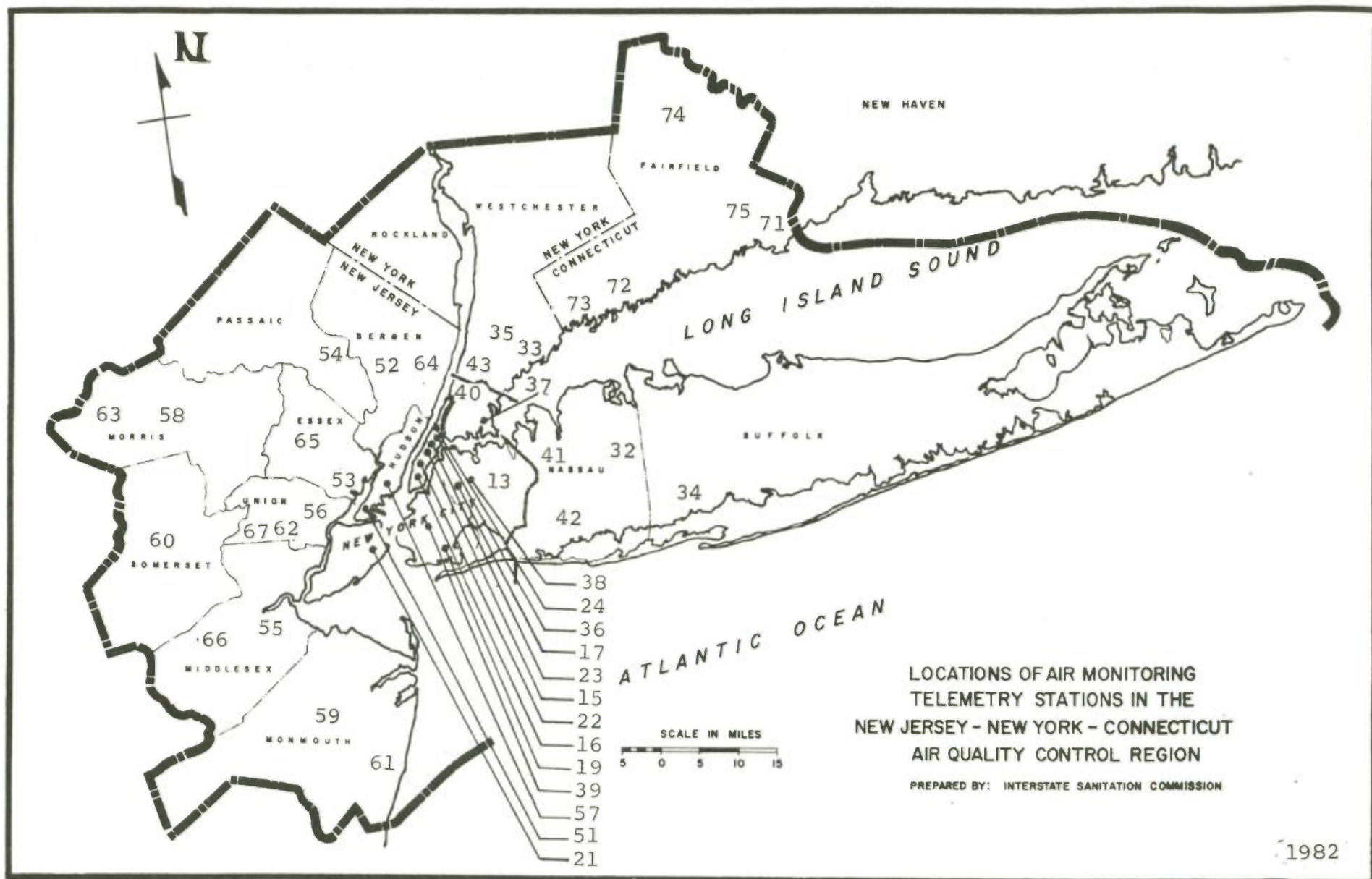
AIR POLLUTION COMPLAINTS

In 1982 the Commission continued to respond to air pollution complaints. For the first eleven months of this year, the Commission received over 900 such complaints. The table entitled "Distribution of Air Pollution Complaints By Community On Staten Island" gives a distribution by community of the complaints received from Staten Island during the past year. It should be noted in the table that the category "all others" represents all those communities from which 10 or fewer odor complaints were reported. Odor descriptions were similar to those reported in previous years. The most common odors reported were: plastic, gas, fish, cat urine, sulfur, garbage, chemical, and rotten egg.

New Field Office

The heavily industrialized area of the New York-New Jersey border in the vicinity of Staten Island is an especially important one for the air quality work of the Commission. More than any other single area under the jurisdiction of the Commission, it generates citizen complaints attributable to interstate transport of airborne pollutants. However, there are also many incidents which turn out to be from local sources. Accordingly, the work of investigating complaints, especially for odors, is both continual and substantial.

In the past, investigation of such complaints has been based at the Commission's office at Columbus Circle in Manhattan. In September 1982, it was determined that a special complaint answering field office would be opened on Staten Island in order to provide fuller and more rapid coverage. A member of the Commission staff was transferred from the Columbus Circle office to the



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

PREPARED BY: INTERSTATE SANITATION COMMISSION

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

<u>ISC NO.</u>	<u>SITE OR CITY</u>	<u>COUNTY</u>	<u>STATE</u>
13	Queens College	Queens	New York
15	Central Park	New York	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
33	Mamaroneck	Westchester	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
38	Woolsey Post Office	Queens	New York
39	P.S. 321	Brooklyn	New York
40	P.S. 2	Bronx	New York
41	Manhasset	Nassau	New York
42	Hewlett	Nassau	New York
43	Yonkers	Westchester	New York
51	Bayonne	Hudson	New Jersey
52	Hackensack	Bergen	New Jersey
53	Newark	Essex	New Jersey
54	Paterson	Passaic	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
60	Somerville	Somerset	New Jersey
61	Asbury Park	Monmouth	New Jersey
62	Elizabeth	Union	New Jersey
63	Chester	Morris	New Jersey
64	Dumont	Bergen	New Jersey
65	East Orange	Essex	New Jersey
66	New Brunswick	Middlesex	New Jersey
67	Plainfield	Union	New Jersey
71	Bridgeport	Fairfield	Connecticut
72	Stamford	Fairfield	Connecticut
73	Greenwich	Fairfield	Connecticut
74	Danbury	Fairfield	Connecticut
75	Stratford	Fairfield	Connecticut

DISTRIBUTION OF AIR POLLUTION COMPLAINTS BY COMMUNITY ON
STATEN ISLAND FROM JANUARY TO NOVEMBER 1982

COMMUNITY	ODOR COMPLAINTS	
	NUMBER	% OF TOTAL
Great Kills	137	14.8
Travis	88	9.5
Annadale	62	6.7
Huguenot	58	6.3
Bull's Head	53	5.7
Tottenville	49	5.3
New Springville	46	5.0
Eltingville	45	4.8
Arden Heights	44	4.7
West New Brighton	40	4.3
Mariner's Harbor	36	3.9
Westerleigh	32	3.4
Sunnyside	28	3.0
Rosebank	22	2.4
Willowbrook	17	1.8
Richmondtown	15	1.6
New Dorp	14	1.5
Oakwood	13	1.4
Graniteville	12	1.3
Bay Terrace	12	1.3
All Others *	106	11.4

* Ten or fewer complaints reported per community.

newly established Staten Island office. Some improvement in funding has since made it possible to add a new employee, also stationed at the Staten Island location. As a result, weekend and nighttime response is afforded directly from the field station. The new service is in addition to and coordinated with the 24-hour-a-day answering service and the work previously done from the Columbus Circle office.

COAL CONVERSION

During 1982, an extensive proceeding before the NYS DEC has been in progress on an application of Consolidated Edison to convert its Ravenswood No. 3 and Arthur Kill Nos. 2 and 3 units from the burning of low sulfur oil to the burning of 1% sulfur coal. The Legal Activities Section of this report discusses the participation of the Commission in the Con Ed proceeding.

The main known differences between combustion of low sulfur oil and 1% sulfur coal are in the emissions of particulate matter and sulfur compounds that result. The coal burning would be more detrimental to the ambient air environment than the oil unless fully controlled as to emissions.

From the point of view of the general public, this current application is of interest for its own sake and also because it raises a question as to what the effects on the environment may be from the combination of coal conversions that may occur in the years immediately ahead.

In sufficient quantities and concentrations, both particulate matter and sulfur dioxide are injurious to human health. A number of other sulfur compounds produced by the interaction of fine particles, sulfur dioxide, and other pollutants increase the dangers.

The problem has both local and regional aspects. Generally speaking, emissions from power generating stations and industrial sources are from stacks. Depending on stack heights, they have effects at varying distances (up to a considerable number of miles) from their points of discharge. A multitude of other sources also discharge similar pollutants at or near ground level. Meteorological parameters account for interstate and inter-regional transport of these pollutants.

PROCEDURES RELATING TO SULFUR DIOXIDE EMISSIONS

On August 9th, 1981, the NJ DEP observed a high 24-hour sulfur dioxide average concentration (0.139 ppm) at its Perth Amboy, N.J. monitoring station. In early 1981, this station had been

experiencing elevated levels of sulfur dioxide concentrations, but within the federal standards. A request by the NJ DEP brought about formation of an Ad Hoc Committee of the Atlantic Alliance to discuss the reasons and formulate strategies to forestall the exceeding of applicable ambient air standards. The Atlantic Alliance is an agreement between the States of New Jersey and New York for cooperation in preventing and/or resolving air quality controversies in the Region. The Commission was requested to assist the Atlantic Alliance in dealing with this problem.

The result of the cooperative work of the Commission and the New York and New Jersey officials, functioning through the Ad Hoc Committee, was development of "Procedures Relating to Sulfur Dioxide Emissions". The procedures provide that it is the responsibility of each state to develop and implement mutually agreed upon remedial and enforcement action, as may be necessary or appropriate, to keep the ambient concentrations of sulfur dioxide from exceeding applicable limitations.

The Commission, as the coordinating agency, will receive, examine, and transmit sulfur dioxide data. The data will be furnished by NJ DEP and NYS DEC. Other agencies such as the NYC Department of Air Resources, Central Jersey Regional Environmental Health Agency, and Hudson Regional Health Commission are participants in these procedures.

Under these procedures, it will be the responsibility of the states to undertake verification measures to ascertain the validity of any reported 24-hour sulfur dioxide average concentration of 0.10 ppm or higher. If any such reported average concentration is verified, the state in which the concentration has occurred will transmit this data to the Commission, as well as hourly readings already taken for the 24-hour period then in progress.

Under these procedures the states and the Commission will attempt to identify the sources of the reported concentration levels. The states, in cooperation with each other, will investigate to determine the source or sources of the reported ambient sulfur dioxide concentration and reasons therefore. The states will then implement their mutually agreed upon remedial and enforcement action to prevent the sulfur dioxide concentrations from exceeding the standards. Strategies may include fuel switching, load switching, reduction of operations of the source, plant shutdown, or any other measures appropriate under the circumstances.

To assist in the implementation of monitoring and control measures, the Commission has prepared a map and list of major sources of sulfur dioxide in the area covered by the procedures. (These are large working documents and do not appear in this re-

port). The area to which these procedures apply is the five boroughs of New York City and Bergen, Hudson, Essex, Union, and Middlesex Counties in New Jersey.

IV. LEGAL ACTIVITIES

The internal administration of the Commission includes consideration of legal matters relating to grants and appropriations, purchasing insurance, personnel, and financial management. Also involved are the conduct of the Commission's environmental programs including necessary interpretations of statutes, the compact, regulations, NPDES and SPDES permit requirements, and compliance with effluent discharge and receiving water or ambient air standards.

The conduct of relationships among the states, the federal government, and the private sector also have legal aspects. These matters are of an ongoing nature. The individual items which fit into these categories are not normally of a kind to be separately detailed in the annual report. During 1982, the application of Consolidated Edison for permits to burn coal presented issues of a character and size to require special recounting as a legal activity. In other instances, legal work contributed to items reported elsewhere in this account of the Commission's activities for the year.

COAL CONVERSIONS

In April, the Commission received formal notification that Consolidated Edison had filed applications with the NYS DEC for reconversion of its Ravenswood No. 3 and Arthur Kill Nos. 2 and 3 units from oil as a fuel to coal. The applications were accompanied by Draft Environmental Impact Statements and a variety of other supporting materials. The notice indicated that a conference would be held on May 4, followed by a formal hearing proceeding.

Examination of the applications and the accompanying documents showed issues to be present involving changes in emissions to the outdoor atmosphere of the Greater New York Metropolitan Region, new discharges of wastes to the waters of the area, and disposal of residual wastes either at sea or in landfills, some of which could be directly adjacent to waters of the Interstate Sanitation District or waters tributary to the District.

It is apparent that so far as water quality was concerned, the Commission had an interest in seeing that any new or altered effluent discharges to or affecting the waters of the District would meet its Water Quality Regulations and that any new or modified permits would include Commission requirements. Specifically, any waste discharges from the electric generating stations themselves or from the transportation, storage and handling of fuel would be involved. Also, disposal of residues from the op-

erations of the reconverted facilities would need to protect against leaching into or otherwise reaching the waters of the District under conditions that would violate Commission regulations or that would be inconsistent with use classifications.

The Commission does not itself have statutory authority to take direct enforcement action against violators of ambient air quality requirements. However, it does have authority to conduct air quality studies and investigations and to make recommendations to its member states. In addition, the Commission's complaint answering and referral functions could be affected by changes in air quality over some or all parts of the Region.

For these reasons, the Commission filed as a party to the Consolidated Edison proceeding. A large number of other public and private agencies also entered the proceeding, including the States of New Jersey and Connecticut and the City of New York.

The applicant offered written testimony in support of its proposal and was cross-examined starting on July 13. This aspect of the proceeding took a month. Thereafter, the other parties were afforded time to prepare testimony. The Commission submitted written testimony and was cross-examined.

The main features of the Consolidated Edison proposal to convert to coal, the supporting argument offered, and the Commission's position as presented in its testimony are summarized here. At this writing, the proceeding is not concluded.

The application was for permits to burn 1% sulfur coal at Ravenswood No. 3 and Arthur Kill Nos. 2 and 3. Particulate emissions would be controlled by electrostatic precipitators which would be designed to 99.75% removal efficiency. No other air pollution control equipment would be used, although some steps in the nature of "good housekeeping" would be employed to reduce fugitive dust from the coal piles and handling operations.

The reasons advanced for the desired change are two. It is predicted that there would be substantial cost savings through the use of less expensive fuel. It is also contended that dependence on foreign energy sources (imported oil) would be reduced.

Consolidated Edison asserts that the adverse effects on the environment would not be significant. Increases in ambient air concentrations of pollutants attributable to the coal conversions and ensuing coal burning would not be so great as to cause violations of the U.S. EPA standards for sulfur dioxide or particulate matter. Increases in other contaminant emissions also would be small.

Consolidated Edison also considered noise pollution and the

disposal of solid wastes. It gave little attention to effluent discharges from Ravenswood and Arthur Kill to be expected from the coal-fired operations. However, it has filed applications for new or modified SPDES permits with the NYS DEC in anticipation of changes that would result from the coal conversions.

By far the greater part of the time and attention in the proceeding has been concentrated on air quality conditions and effects. Although all aspects of the conversion proposal are important, emissions to the outdoor atmosphere and their effects on ambient air quality appear to be the most difficult and to have occasioned the greatest controversy. For this reason, the Commission's testimony has also concentrated most heavily on air pollution and on recommendations for keeping it under control. Nevertheless, water quality concerns within the area of the Commission's responsibilities are also considered.

The Commission's testimony takes the position that the proposed conversions can properly be allowed to proceed, so far as air quality is concerned, if emissions are adequately controlled. For particulate matter, the proposed electrostatic precipitators probably are an appropriate means of meeting the need. However, the Commission testimony also urges that fabric filters (baghouses) be considered very seriously because of their superior ability to remove particles of small size which have been found most detrimental to the respiratory systems of human beings. Increased contamination from sulfur dioxide is not protected against by the applicant's proposal.

While noting that knowledge concerning the health effects of air pollution (and of sulfur dioxide contamination in particular) is neither as extensive nor as well documented as one might wish, there is evidence that exposure of the population to sulfur dioxide causes or contributes to increased numbers and severity of cases of respiratory and cardiac illnesses. The U.S. EPA maximum toleration standards of 80 micrograms per cubic meter as an annual average, 365 micrograms per cubic meter as a 24-hour average, and 1300 micrograms per cubic meter as a 3-hour average are widely regarded as unhealthful to exceed. It should be recognized that higher concentrations of sulfur dioxide and other contaminants are worse from the health and environmental point of view than lower ones, even at levels below the U.S. EPA limits. For this reason, regulation should seek to keep contaminant levels as low as reasonably practicable and should not be activated only when the maximum acceptable limits are exceeded.

The Commission does not consider the increments to contamination of the ambient atmosphere that would result from the proposed conversions to be inconsequential. How many micrograms of pollutant will be added to the ambient air of the Metropolitan Region depends on many factors, most of which probably cannot be

predicted as to their incidence with accuracy. Nevertheless, the emissions from the three units proposed for conversion by Con Ed would be the largest sources of sulfur dioxide discharges in the New York City - North Jersey Area. Moreover, it is unrealistic to judge the application for coal burning at the Ravenswood and Arthur Kill facilities merely on the basis of estimates of concentrations calculated by adding the emissions from the converted units to background concentrations monitored in the recent past. It must be assumed that if it is advantageous to Consolidated Edison to convert to coal, it will be advantageous to others. The interest and responsibility of public agencies is to protect the population against polluted air from the entire combination of sources emitting to the atmosphere and not merely to judge on a piecemeal basis. An inadequacy in the basis for a decision presented by the Consolidated Edison material in support of its application is that it does not fully aggregate the influences of ambient air quality of the Region and offer to employ control measures which will adequately address the actual situation. Instead, its analysis attempts to make one or the other of two points:

1. That by themselves the emissions from the converted three units will not use up the margin between recently reported ambient air concentrations of sulfur dioxide and particulates and the U.S. EPA values included in its National Ambient Air Quality Standards (NAAQS); and/or

2. That the Consolidated Edison emission from the three converted units, plus some limited number of hypothesized sources, will not use up these margins.

Because of the uncertainties in predicting ambient air conditions some years into the future, and because of health risks associated with increases in pollutant levels, the Commission testimony has taken the position that permits for the applicant's coal conversions should be granted only with sufficient safeguarding conditions. Aside from the controls to minimize particulate emissions already mentioned, recommendations are made with respect to sulfur dioxide.

If the applicant is required to install flue gas desulfurization, permits for the conversions could be issued. Commercially available desulfurization technology can remove 90% or more of the sulfur generated by the coal burning and so should provide good protection against that contaminant. In fact, with flue gas desulfurization, coal with substantially more than 1% sulfur content could be used.

The Consolidated Edison case argues that while possible at Arthur Kill, desulfurization at Ravenswood is infeasible because space to install a satisfactory desulfurization process is lack-

ing. The Commission's view is that, if this assertion proves correct, desulfurization should be required at Arthur Kill. The Commissioner of Environmental Conservation would then need to consider whether allowing Ravenswood to burn coal without control of sulfur dioxide emissions is a reasonable risk. Coal washing and a requirement for even lower sulfur coal are other possible control measures, but the amelioration they would bring would not of itself be major.

If flue gas desulfurization is not employed, the correctness of the Consolidated Edison predictions that ambient air concentrations of sulfur dioxide in the Region will not rise (from whatever source or sources) becomes crucial. Permits which do not require flue gas desulfurization should not be issued, unless the states in the Region have first concluded an agreement allocating available ambient air pollution increments and binding themselves to assure that applicable standards will not be violated.

With respect to water quality, the Commission testimony pointed out that the requirements of the Water Quality Regulations which it has in effect need to be incorporated into the permits for any coal conversion and operations using coal as a fuel. To this end, the testimony made specific corrections of the draft documents previously filed with the Department of Environmental Conservation by Consolidated Edison.

WASTEWATER TREATMENT PLANTS
Discharging into the
INTERSTATE SANITATION DISTRICT WATERS
1 9 8 2

<u>Plant</u>	<u>ISC Receiving Water Classification</u>	<u>Date of Const.</u>	<u>F l o w MGD</u>	<u>Design</u>	<u>Type of Treatment</u>	<u>Estimated Population Served (1971-82)</u>
<u>CONNECTICUT</u>						
<u>Fairfield County</u>						
Bridgeport - East Side	B-1	1973+	15.5	24.0	Secondary (AS)	100,000
Bridgeport - West Side	B-1	1973+	30.4	60.0	Secondary (AS)	175,000
Fairfield	A	1982+	7.7	9.0	Secondary (AS)	50,000
Greenwich	A	1964+	11.0	8.5	Secondary (AS)	35,000
Norwalk	B-1	1980+	8.3	15.0	Secondary (AS)	58,000
Stamford	B-1	1976+	21.0	20.0	Secondary (AS)	100,000
Stratford	A	1982+	8.3	11.5	Secondary (AS)	47,000
Westport	A	1975+	1.8	2.8	Secondary (AS)	12,000
<u>New Haven County</u>						
Milford - Beaver Brook	A	1969	1.7	3.1	Secondary (AS)	10,000
- Gulf Pond	A	1976+	3.0	2.9	Secondary (AS)	16,000
- Harborside	A	1955+	0.5	0.5	Secondary (AS)	5,000
- Town Meadows	A	1953	1.6	1.2	Secondary (AS)	6,000
New Haven - Boulevard	B-1	1969+	13.5	13.0	Primary	81,000
- East Shore	B-1	1981+	12.2	40.0	Secondary (AS)	67,000
- East Street	B-1	1967+	13.7	20.0	Primary	61,000
West Haven	B-1	1972+	7.8	12.5	Secondary (AS)	53,000
<u>NEW JERSEY</u>						
<u>Bergen County</u>						
Edgewater	B-1	1958+	2.8	3.0	Primary	21,000
<u>Essex County</u>						
Passaic Valley Sewerage Commissioners	B-1	1981+	228.0	-	Secondary (AS)	2,900,000
<u>Hudson County</u>						
Bayonne	B-2	1953	12.3	21.0	Primary	70,000
Hoboken	B-1	1955	7.2	20.7	Primary	66,000
Jersey City - East Side	B-1	1967+	25.5	46.6	Primary	156,000
- West Side	B-2	1967+	24.1	36.0	Primary	115,000
Kearny	B-2	1955	2.0	4.0	Primary	30,000
West New York	B-1	1982+	5.0	10.0	Primary	39,000
Woodcliff - North Bergen	B-1	1962	1.7	3.3	Primary	19,000
<u>Middlesex County</u>						
Carteret	B-2	1950	3.2	3.0	Primary	21,000
Middlesex County Utilities Authority	A	1978+	82.1	120.0	Secondary (AS)	525,000
Old Bridge Township (Laurence Harbor)	A	1962	0.8	1.4	Primary	9,000
Perth Amboy	A	1978+	4.0	10.0	Primary	40,000
Rahway Valley Sewerage Authority	B-2	1973+	30.1	35.0	Secondary (AS)	215,000
Sayreville - Melrose	A	1947	0.1	0.15	Primary	2,000
- Morgan	A	1947	0.2	0.3	Primary	3,000
South Amboy	A	1930	0.9	0.9	Primary	9,000
Woodbridge	B-2	1952	4.0	10.0	Primary	33,000
<u>Monmouth County</u>						
Atlantic Highlands	A	1927	0.5	1.0	Primary	5,000
Highlands	A	1928	0.6	0.6	Primary	5,000
<u>Union County</u>						
Joint Meeting of Essex & Union Counties	B-2	1977+	60.0	75.0	Secondary (AS)	500,000
Linden Roselle Sewerage Authority	B-2	1980+	9.0	17.0	Secondary (AS)	61,000

38

WASTEWATER TREATMENT PLANTS
Discharging into the
INTERSTATE SANITATION DISTRICT WATERS
1 9 8 2

<u>Plant</u>	<u>ISC Receiving Water Classification</u>	<u>Date of Const.</u>	<u>Flow MGD Average</u>	<u>Design</u>	<u>Type of Treatment</u>	<u>Estimated Population Served (1971-82)</u>
<u>NEW YORK</u>						
<u>Nassau County</u>						
Bay Park	A	1960+	64.4	60.0	Secondary (AS)	558,000
Belgrave Sewer District	A	1973+	1.6	2.0	Secondary (TF)	12,000
Cedar Creek	A	1976+	33.6	45.0	Secondary (AS)	432,000
Cedarhurst	A	1968+	1.1	1.0	Secondary (TF)	8,000
Cold Spring Harbor Laboratory*	A	1975	0.05	0.075	Physical/Chemical	250 - 400
Glen Cove	A	1977+	3.7	3.0	Secondary (AS)	24,000
Great Neck Sewer District	A	1976+	2.6	2.7	Secondary (TF)	15,000
Great Neck Village	A	1968+	0.9	1.5	Secondary (TF)	9,000
Inwood	A	1961+	1.3	2.5	Secondary (TF)	7,000
Jones Beach	A	1952	0.1	2.5	Secondary (TF)	Seasonal
Lawrence	A	1967+	0.8	1.5	Secondary (TF)	6,000
Long Beach	A	1965+	6.0	6.4	Secondary (BO)	33,000
Oyster Bay Sewer District	A	1963+	1.7	1.5	Secondary (TF)	8,000
Port Washington Sewer District	A	1969+	2.9	3.0	Secondary (TF)	30,000
Roslyn	A	1965+	0.4	0.5	Secondary (TF)	5,000
West Long Beach Sewer District	A	1950+	0.8	1.5	Secondary (TF)	4,000
<u>New York City</u>						
<u>Bronx County</u>						
Hunts Point	B-2	1978+	111.4	200.0	Secondary (AS)	895,000
<u>Kings County (Brooklyn)</u>						
Coney Island	A	1958+	85.6	110.0	Secondary (AS)	690,000
Newtown Creek	B-2	1967	270.0	310.0	Secondary (AS)	1,100,000
Owls Head	B-1	1950	85.0	160.0	Secondary (AS)	785,000
25th Ward	A	1975+	64.0	85.0	Secondary (AS)	301,000
<u>New York County (Manhattan)</u>						
Wards Island	B-2	1978+	281.5	250.0	Secondary (AS)	1,300,000
<u>Queens County</u>						
Bowery Bay	B-2	1978+	129.0	150.0	Secondary (AS)	712,000
Jamaica	A	1977+	96.0	100.0	Secondary (AS)	585,000
Rockaway	A	1972+	21.0	45.0	Secondary (AS)	72,000
Tallman Island	B-1	1972+	61.0	80.0	Secondary (AS)	465,000
<u>Richmond County (Staten Island)</u>						
Arthur Kill Correctional Facility*	B-2	1969	0.1	1.0	Secondary (AS)	1,000
Elmwood Homes*	B-2	1978+	-	1.0	Extended Aeration	9,000
Elmwood Park Condominiums*	B-2	1976	-	1.5	Secondary (RD)	4,000
Heartland Village*	B-2	1968	0.6	1.0	Extended Aeration	7,000
IS-7*	A	1965	0.01	0.13	Extended Aeration w/ Sand Filtration	2,000
Mount Loretto Home - Plant #1*	A	1962	-	-	Septic Tank	500
- Plant #2*	A	1962	-	-	Septic Tank	200
Oakwood Beach	A	1979+	23.0	40.0	Secondary (AS)	286,000
Port Richmond	B-2	1979+	39.0	60.0	Secondary (AS)	210,000
Richmond Memorial Hospital*	A	1936	-	-	Septic Tank	400
Saint Joseph's School*	A	1963	-	0.02	Septic Tank with Sand Filtration	1,000
Village Green*	B-2	1970	0.4	1.0	Extended Aeration	5,000
<u>Rockland County</u>						
Joint Regional Sewerage Board-Town of Haverstraw	A	1980+	4.3	8.0	Secondary (AS)	40,000
Orange & Rockland Utilities*	A	1980+	0.003	0.0028	Secondary (AS)	Industrial
Orangetown Sewer District	A	1968+	7.0	8.5	Secondary (TF)	52,000

39

WASTEWATER TREATMENT PLANTS
Discharging into the
INTERSTATE SANITATION DISTRICT WATERS
1 9 8 2

<u>Plant</u>	<u>ISC Receiving Water Classification</u>	<u>Date of Const.</u>	<u>Flow MGD</u>	<u>Design</u>	<u>Type of Treatment</u>	<u>Estimated Population Served (1971-82)</u>
<u>NEW YORK (Continued)</u>						
<u>Rockland County (Continued)</u>						
Palisades Interstate Park						
Bear Mountain Plant	A	1967+	0.1	0.25	Secondary (TF)	Seasonal
Tallman Mountain Plant	A	1968	0.01	0.01	Secondary (AS)	Seasonal
Rockland County Sewer District #1	A	1981+	18.2	10.0	Secondary (AS)	160,000
Stony Point	A	1969	0.9	1.0	Secondary (AS)	10,000
<u>Suffolk County</u>						
Harbor Club Apartments*	A	1967	0.05	0.03	Extended Aeration	400
Huntington Sewer District	A	1956+	2.0	2.5	Secondary (TF)	20,000
Northport	A	1973+	0.3	0.3	Secondary (AS)	3,000
Suffolk County Sewer District #1	A	1974+	0.6	2.5	Primary	20,000
Suffolk County Sewer District #3	A	1975	4.8	30.0	Secondary (AS)	300,000
Suffolk County Sewer District #6	A	1974+	0.6	2.0	Secondary (AS)	6,000
SUNY at Stony Brook*	A	1974	1.3	2.5	Primary	10,000
<u>Westchester County</u>						
Blind Brook (Rye)	A	1963+	2.9	5.0	Primary	27,000
Buchanan	A	1962	0.2	0.55	Secondary (AS)	2,500
Conrail Harmon Shop (Croton)*	A	1980+	0.2	0.25	Physical/Chemical	Industrial
Kings Ferry Sewer Association*	A	1971	0.05	0.05	Secondary (AS)	500
Mamaroneck	A	1965+	12.5	17.0	Primary	77,000
New Rochelle	A	1964+	13.4	14.5	Primary	75,000
Ossining	A	1981	-	7.5	Secondary (AS)	33,000
Peekskill	A	1979+	3.9	10.0	Secondary (AS)	35,000
Port Chester	B-1	1964+	7.2	6.9	Primary	26,000
Springvale Apartments Company*	A	1957	0.1	0.1	Secondary (TF)	1,000
Yonkers Joint Treatment	B-1	1977+	78.0	92.0	Secondary (AS)	500,000
<u>FEDERAL & MILITARY</u>						
Camp Smith - (Westchester Co.)	A	1965	0.3	0.24	Secondary (TF)	2,000
FDR Veterans Administration	A	1982+	0.2	0.4	Secondary (TF)	3,000
Medical Center (Westchester Co.)						
Gateway National Recreation Area	A	1981+	0.1	0.4	Secondary (TF)	1,000
(Floyd Bennett Field, Kings Co.)						
Military Ocean Terminal (Hudson Co.)	B-1	1972+	0.09	0.18	Secondary (AS)	3,000

NOTES: + Year of major additions or reconstruction

* Private or institutional sewage treatment plant

(AS) Activated Sludge

(TF) Trickling Filter

(RD) Rotating Disc

(BO) Biochemical Oxidation

G L O S S A R Y

AQCR	air quality control region
BOD	biochemical oxygen demand
CCNY	City College of New York
CSO	combined sewer overflow
DEC	Department of Environmental Conservation
DEP	Department of Environmental Protection
DWR	Department of Water Resources
EIS	environmental impact statement
EPA	Environmental Protection Agency
F	degrees Fahrenheit
H.S.	high school
HVAC	heating, ventilation, and air conditioning system
I/I	infiltration/inflow
I.S.	intermediate school
ISC	Interstate Sanitation Commission
ISD	Interstate Sanitation District
MGD	million gallons per day
mg/l	milligrams per liter
ml	milliliters
NOAA	National Oceanic and Atmospheric Administration
NJ	New Jersey
NPDES	National Pollutant Discharge Elimination System
N/SPDES	National/State Pollutant Discharge Elimination System
NYC	New York City
NYS	New York State
PCBs	polychlorinated biphenols
ppb	parts per billion
ppm	parts per million
P.S.	public school
punch list	construction contractors' miscellaneous repairs and omissions encountered during a project which are necessary to complete before final acceptance of the work
slip-lining	insertion of a smaller diameter pipe within an existing sewer line to reduce infiltration and to minimize interruption
SPDES	State Pollutant Discharge Elimination System
SSES	sewer system evaluation study
STP	sewage treatment plant
WPCP	water pollution control plant
µg/l	micrograms per liter

