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INTERSTATE SANITATION COMMISSION

1969

NEW YORK NEW JERSEY CONNECTICUT

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R e p o r t

of the

INTERSTATE SANITATION COMMISSION

on the
Water Pollution Control Activities
and the
Interstate Air Pollution Program

INTERSTATE SANITATION COMMISSION

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INTERSTATE SANITATION COMMISSION

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

AREA CODE 212-582-0380

January 22, 1970

To His Excellency, William T. Cahill
His Excellency, John N. Dempsey
His Excellency, Nelson A. Rockefeller
and the Legislatures of the States of New York, Connecticut and New Jersey

Sirs:

The Interstate Sanitation Commission respectfully submits its report for the year 1969.

The members of the Commission trust that we will receive the continued active interest and support of the Governors and the members of the Legislatures to assure the progress of the important programs in water and air pollution abatement for the improvement of our environment.

Respectfully submitted,

For the State of New York — Chairman

For the State of Connecticut — Vice Chairman

For the State of New Jersey — Vice Chairman

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Counsel

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*Part Time on Air Pollution Program
**Full Time on Air Pollution Program

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I. SUMMARY OF ACTIVITIES

The Interstate Sanitation Commission was formed in 1936 by the States of New York and New Jersey. Connecticut joined the Commission in 1941. The Tri-State Compact provides for the abatement of existing water pollution and control of future pollution. In 1962, the field of air pollution was included in the scope of the Commission's activities.

The Commission works in several ways to advance the cause of pollution abatement within the Interstate Sanitation District. These include inspection of municipal and industrial waste treatment plants, cooperation with other governmental agencies, coordination of activities among these agencies and sponsoring of conferences and studies of mutual benefit.

This report, which is prepared each year, provides a record of the water and air pollution activities of the Interstate Sanitation Commission and of work and planning on water pollution control projects within the Interstate Sanitation District. The Annual Report is submitted to the Governors and Legislatures of New York, New Jersey and Connecticut.

WATER POLLUTION

It is anticipated that more than 1.3 billion dollars will be spent in the area of waste water treatment on future projects which should be completed within the next five to ten years. Much of this money is designated for the upgrading and expansion of existing sewage treatment plants. There are also several major new facilities planned such as the North River and Red Hook plants in New York City. Areas which do not dispose of their wastes at a treatment plant are being lessened each year. Several counties within the District are developing plans to handle their waste flows on a regional basis which should provide for more effective treatment and pollution control.

A project now under construction at Spring Creek on Jamaica Bay will provide data on the feasibility of treating storm flows from a combined sewer system.

During the year 1969 the Interstate Sanitation Commission greatly expanded its facilities. The laboratory was moved to a new location with much more work area available and the Engineering Department at the office was enlarged to include the former laboratory space. The water pollution mobile laboratory was delivered and is being utilized in the training of treatment plant personnel and in the sampling of industrial plants.

A report entitled "Study of Estuarine Pollutant and Water Quality Distribution in the New York City-New Jersey Metropolitan Area" was published for distribution in 1969 and is available from the Commission on request. This study was prepared for the Interstate Sanitation Commission by consulting engineers.

AIR POLLUTION

The State of Connecticut announced its desire to join the States of New Jersey and New York in the Interstate Sanitation Commission's air pollution program in the metropolitan tri-state area. The necessary legislation was passed by the State of Connecticut authorizing that State's participation to begin on July 1, 1969.

During the past year the coordination of the regional air pollution warning system in New Jersey, New York and Connecticut was advanced by beginning the installation of a teletype communications system among the participating agencies. The center of this network is at the 10 Columbus Circle office of the Interstate Sanitation Commission in New York City.

During the past year two air monitoring mobile vans were updated. Both vans are equipped with a sulfur dioxide analyzer and a smoke shade recorder. One van contains, in addition, a carbon monoxide analyzer. These vans will enable the Interstate Sanitation Commission to locate sources of air pollution more easily through on-the-spot analyses and will be available to cooperating agencies for checking the many continuous monitoring stations when readings appear to be abnormal.

II. WATER POLLUTION

New York

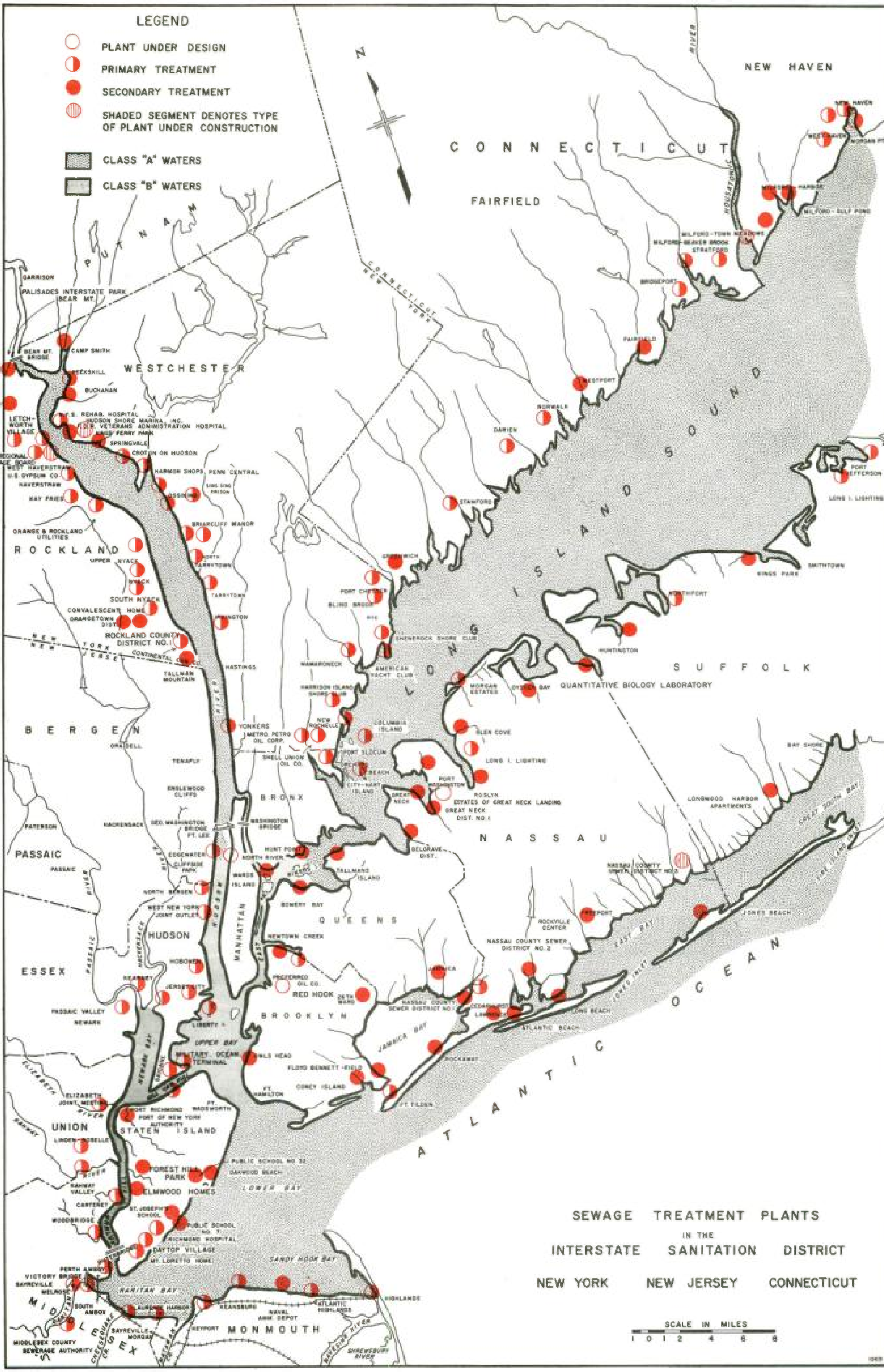
New Jersey & Connecticut

GENERAL

A total of 84 water pollution control projects were completed, under construction or in the planning stage in the year 1969. Money designated for this work is estimated at more than $1,495,046,570. This figure when broken down gives $5,231,860 for 13 completed projects, $161,056,210 for 20 projects under construction, $1,328,758,500 for 50 future projects. Most of the money which is being spent provides for minimum removals from waste water in excess of 80 percent of the biochemical oxygen demand, the above statistics do not include large sums of money being expended by industries for in-plant changes and treatment units.

The information presented in reference to each of the pollution control projects in the following sections is that obtained by the Interstate Sanitation Commission from responsible officials in the respective state or local governmental agencies, sewerage authorities or consulting engineering firms.

A map of the Interstate Sanitation District on the following page indicates the type of treatment provided by, and the approximate location of, each plant within the District. Appendix A lists additional information on each plant.


LEGEND
PLANT UNDER DESIGN
PRIMARY TREATMENT
SECONDARY TREATMENT
SHADED SEGMENT DENOTES TYPE OF PLANT UNDER CONSTRUCTION
CLASS "A" WATERS
CLASS "B" WATERS
N
CONNECTICUT
NEW HAVEN
FAIRFIELD
PUTNAM
WESTCHESTER
ROCKLAND
BERGEN
PASSAIC
ESSEX
HUDSON
UNION
MIDDLESEX
MONMOUTH
BRONX
MANHATTAN
QUEENS
BROOKLYN
STATEN ISLAND
NASSAU
SUFFOLK
LONG ISLAND SOUND
ATLANTIC OCEAN
HUDSON RIVER
UPPER BAY
LOWER BAY
RARITAN BAY
SANDY HOOK BAY
JAMAICA BAY
NEWARK BAY
EAST BAY
GREAT SOUTH BAY
JONES INLET
NEW HAVEN
WEST HAVEN
MORGAN PT.
MILFORD HARBOR
MILFORD - GULF POND
MILFORD - TOWN MEADOWS
MILFORD - BEAVER BROOK
STRATFORD
BRIDGEPORT
FAIRFIELD
WESTPORT
NORWALK
DARIEN
STAMFORD
GREENWICH
PORT CHESTER
BLIND BROOK
RYE
MAMARONECK
NEW ROCHELLE
YONKERS
HASTINGS
TARRYTOWN
NORTH TARRYTOWN
BRIARCLIFF MANOR
OSSINING
SING SING PRISON
HARMON SHOPS, PENN CENTRAL
CROTON ON HUDSON
SPRINGVALE
KINGS' FERRY PARK
VETERANS ADMINISTRATION HOSPITAL
HUDSON SHORE MARINA, INC.
BUCHANAN
PEEKSKILL
CAMP SMITH
BEAR MT. BRIDGE
BEAR MT.
PALISADES INTERSTATE PARK
GARRISON
STONY PT.
LETCHWORTH VILLAGE
JOINT REGIONAL SEWERAGE BOARD
WEST HAVERSTRAW
U.S. GYPSUM CO.
HAVERSTRAW
BAY FRIES
ORANGE & ROCKLAND UTILITIES
UPPER NYACK
NYACK
SOUTH NYACK
CONVALESCENT HOME
ORANGETOWN DIST.
ROCKLAND COUNTY DISTRICT NO. I
CONTINENTAL CAN
TALLMAN MOUNTAIN
TENAFLY
ENGLEWOOD CLIFFS
HACKENSACK
GEO. WASHINGTON BRIDGE
FT. LEE
EDGEWATER
CLIFFSIDE PARK
NORTH BERGEN
WEST NEW YORK JOINT OUTLET
HOBOKEN
KEARNY
JERSEY CITY
PASSAIC VALLEY NEWARK
LIBERTY
MILITARY OCEAN TERMINAL
ELIZABETH JOINT MEETING
PORT RICHMOND
PORT OF NEW YORK AUTHORITY
FT. WADSWORTH
LINDEN-ROSELLE
RAHWAY VALLEY
CARTERET
WOODBRIDGE
FOREST HILL PARK
ELMWOOD HOMES
ST. JOSEPH'S SCHOOL
PUBLIC SCHOOL NO. 32
OAKWOOD BEACH
PUBLIC SCHOOL NO. 7
RICHMOND HOSPITAL
DAYTOP VILLAGE
MT. LORETTO HOME
PERTH AMBOY
VICTORY BRIDGE
SAYREVILLE
MELROSE
SOUTH AMBOY
SAYREVILLE MORGAN
MIDDLESEX COUNTY SEWERAGE AUTHORITY
KEYPORT
KEANSBURG
NAVAL AMM. DEPOT
ATLANTIC HIGHLANDS
HIGHLANDS
SHREWSBURY RIVER
METRO PETRO OIL CORP.
SHELL UNION OIL CO.
HUNT POINT
NORTH RIVER
WARDS ISLAND
TALLMAN ISLAND
BOWERY BAY
NEWTOWN CREEK
PREFERRED OIL CO.
RED HOOK
26TH WARD
OWLS HEAD
FLOYD BENNETT FIELD
CONEY ISLAND
FT. HAMILTON
FT. TILDEN
ROCKAWAY
JAMAICA
NASSAU COUNTY SEWER DISTRICT NO. 3
NASSAU COUNTY SEWER DISTRICT NO. 2
ROCKVILLE CENTER
FREEPORT
LAWRENCE
LONG BEACH
ATLANTIC BEACH
JONES BEACH
NASSAU COUNTY SEWER DISTRICT NO. 3
LONGWOOD HARBOR APARTMENTS
BAY SHORE
BELGRAVE DIST.
GREAT NECK
GREAT NECK DIST. NO. I
ESTATES OF GREAT NECK LANDING
PORT WASHINGTON
ROSLYN
LONG I. LIGHTING
GLEN COVE
MORGAN ESTATES
OYSTER BAY
QUANTITATIVE BIOLOGY LABORATORY
HUNTINGTON
NORTHPORT
KINGS PARK
SMITHTOWN
PORT JEFFERSON
AMERICAN YACHT CLUB
SHENOROCK SHORE CLUB
HARRISON ISLAND SHORE CLUB
COLUMBIA ISLAND
FORT SLOCUM
CITY-HART ISLAND
SEWAGE TREATMENT PLANTS
IN THE
INTERSTATE SANITATION DISTRICT
NEW YORK NEW JERSEY CONNECTICUT
SCALE IN MILES
1 0 1 2 4 6 8
1969

COMPLETED PROJECTS

Belgrave, N.Y.

A tank truck for hauling sludge to the Nassau County District No. 2 Plant for disposal was purchased at a cost of $17,000.

Croton-on-Hudson, N.Y.

The Village of Croton has installed a new Wallace & Tiernan chlorine feeder at its 500,000 gallons per day plant. This gives them a capacity of 350 pounds of chlorine per day at a cost of $1,360.

F.D.R. Veterans Administration Hospital, N.Y.

This plant went to secondary treatment in September, 1969. New facilities added include a trickling filter, two secondary final settling tanks, two recirculating pumps and a chlorine contact tank. Cost of the improvements was about $148,000 for this 750,000 gallons per day plant.

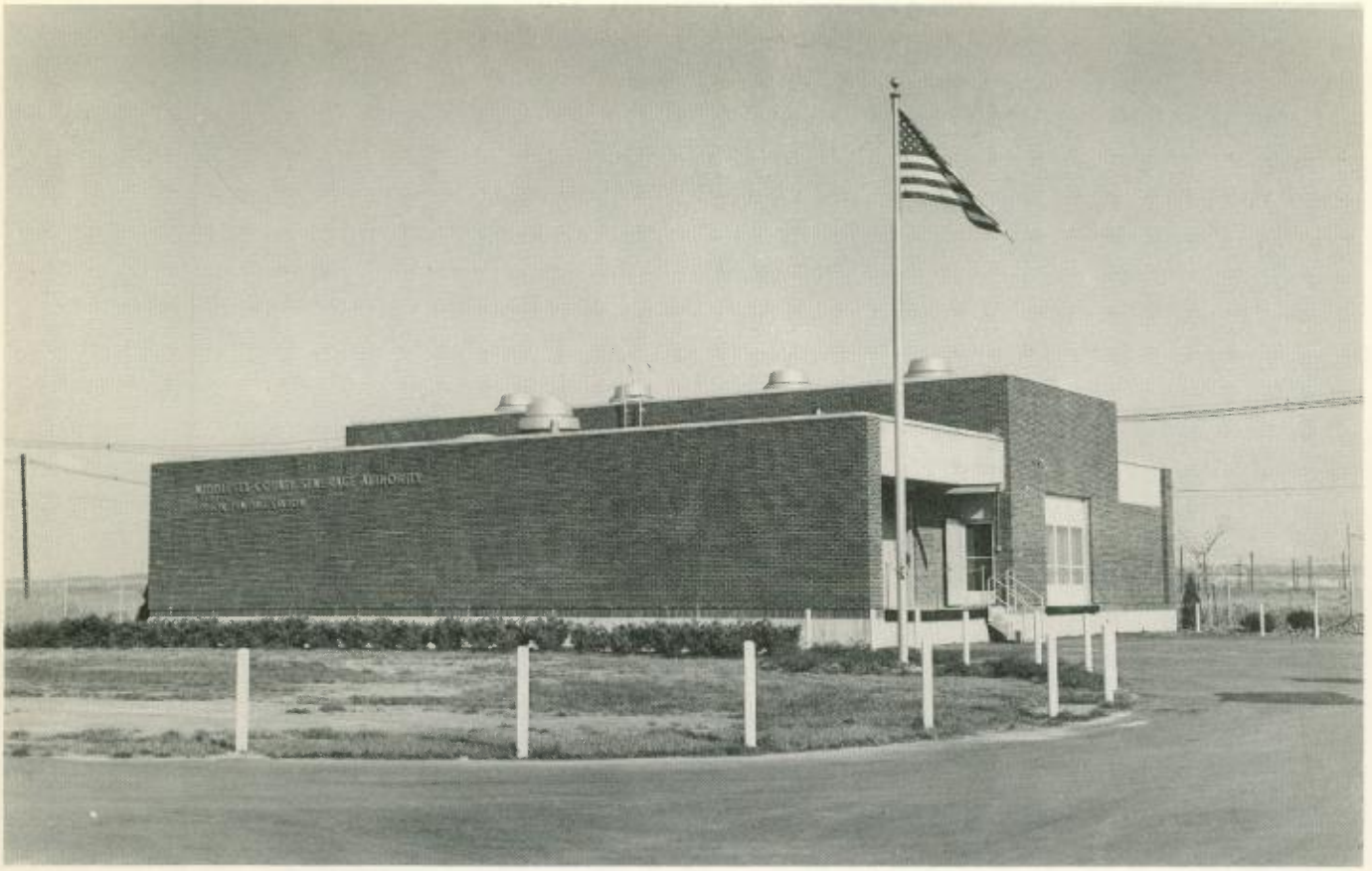
Great Neck Village, N.Y.

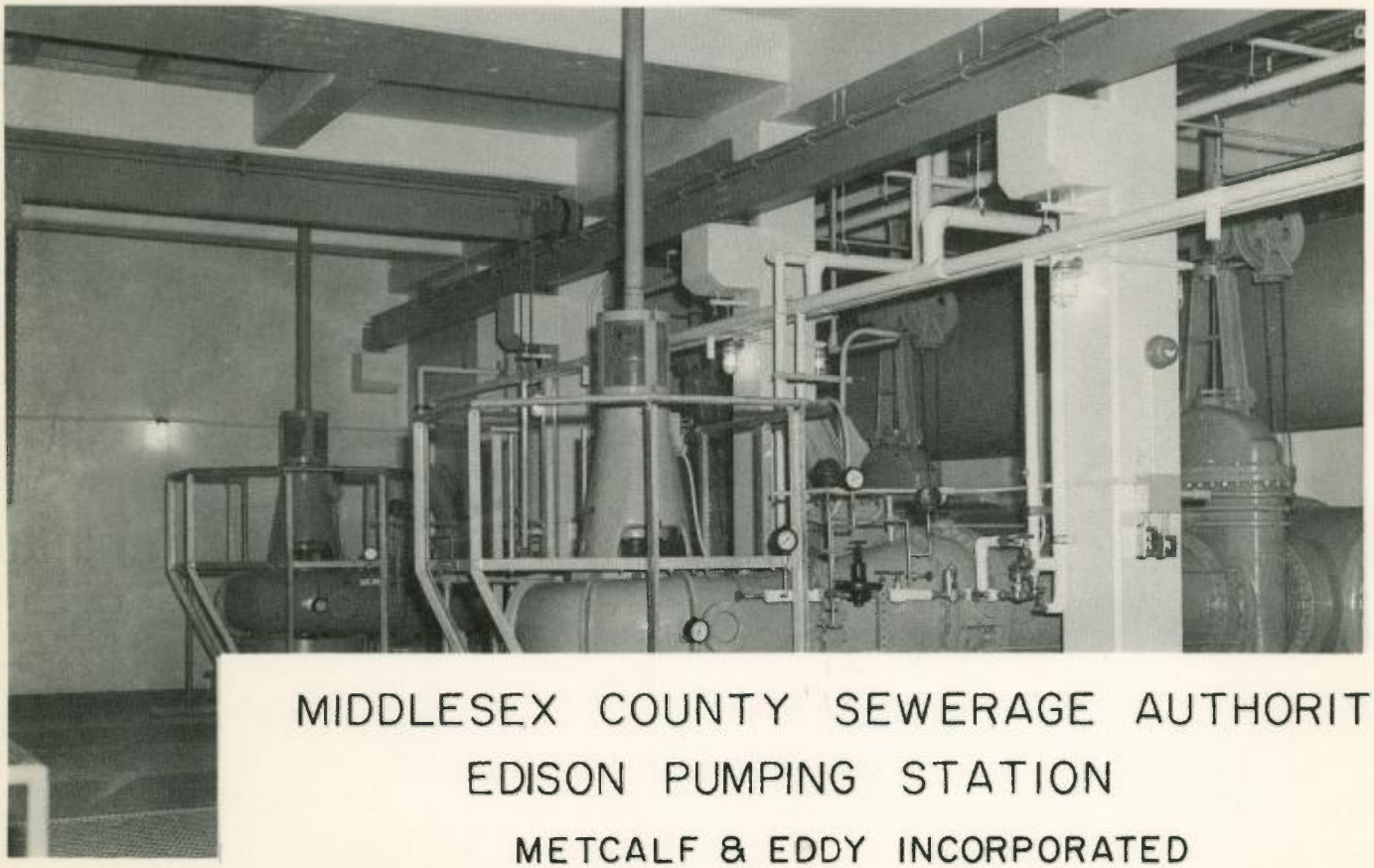
Expansion to 1.5 million gallons per day and modernization of the Great Neck Village Secondary Treatment Plant was completed in 1969 at an approximate cost of $328,000.

Two primary settling tanks were replaced by two 50 feet by 15 feet enclosed units and the furnace for the digester was replaced. A grit chamber and external heat exchanger were also installed.

Middlesex County Sewerage Authority, N.J.

Construction of the Edison Pump Station in the Raritan Centre Site has been completed. This was built as a replacement for the Hayden Pumping Station, which has a 6 million gallons per day capacity. The new station has a 67 million gallons per day capacity and ultimately, with additional pumps, this will be increased to 115 million gallons per day. A new force main across the river from





MIDDLESEX COUNTY SEWERAGE AUTHORITY
EDISON PUMPING STATION

METCALF & EDDY INCORPORATED

CONSULTING ENGINEERS

this station to the central treatment plant and the new gravity sewer to the new station have been installed for the ultimate capacity.

New Haven, East Shore Plant, Conn.

Expansion and modernization of this plant has been completed at a cost of $709,000. The design flow is now 12.5 million gallons per day.

Some of the new units include a circular settling tank, a barminutor chamber, a sludge thickener tank and an additional main sewage pump.

New York State Rehabilitation Hospital, West Haverstraw, N.Y.

A new chlorinator was installed in June for the effluent of the hospital's treatment plant. Cost of the new unit is approximately $1500 and provides for a maximum feed of 50 pounds of chlorine per day.

Orangetown Sewer District No. 2, N.Y.

This 8.5 million gallons per day secondary treatment plant was put into full service this year. The high rate trickling filters and a new sludge incinerator began operation during 1969.

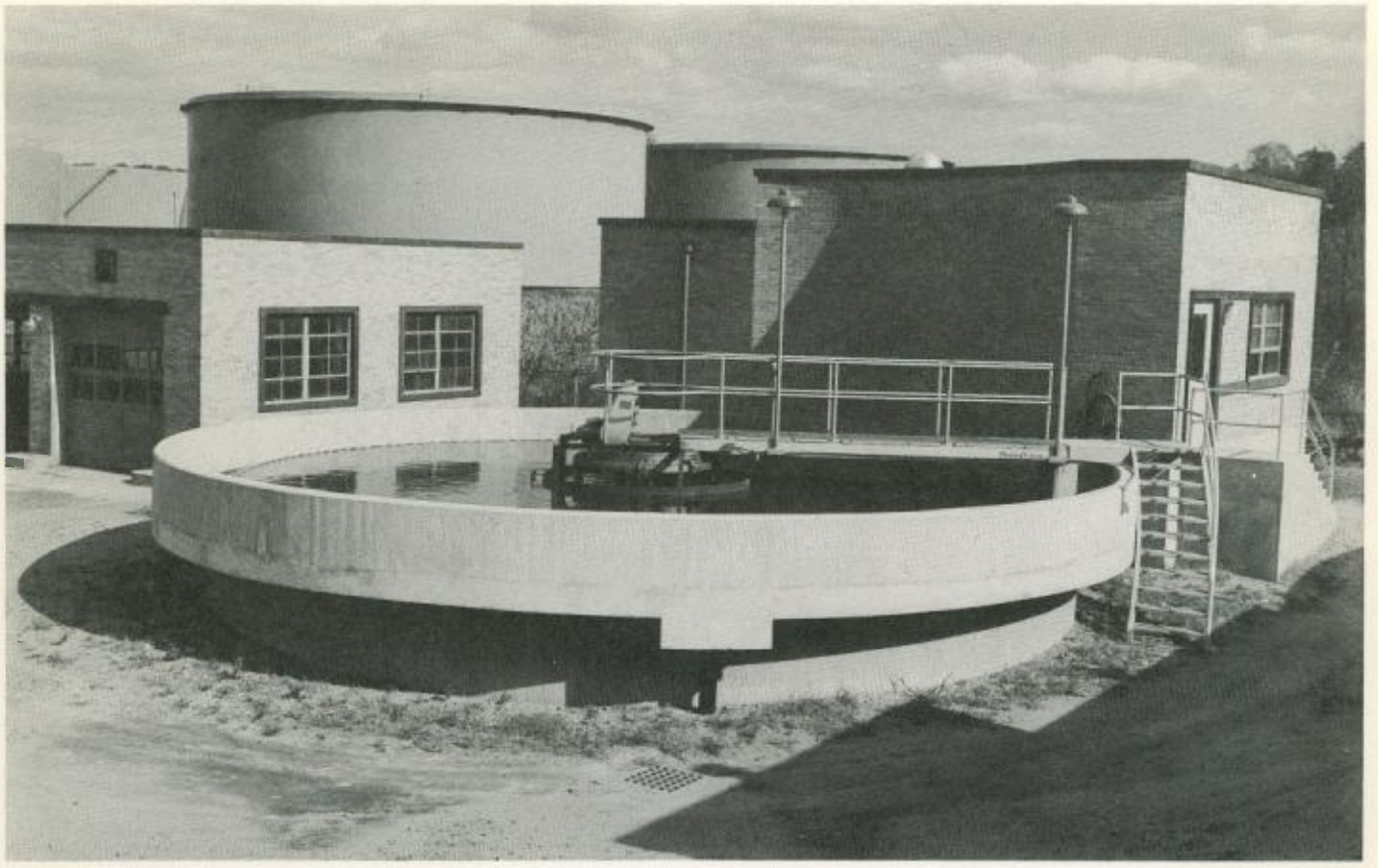
Raw sewage from Rockland State Hospital was diverted to Orangetown during the summer of 1969.

Port Chester, N.Y.

Sludge from the Port Chester primary plant will be trucked to another plant in Westchester County for treatment and ultimate disposal. For this purpose a new tank truck was purchased in September at a cost of about $20,000.

Port Jefferson, N.Y.

Expansion of the Port Jefferson Sewer District was completed at a cost of $680,000. The work consisted of a pumping station and four and one-half miles of sewers.



NEW HAVEN — EAST SHORE SEWAGE TREATMENT PLANT

BOWE WALSH & ASSOCIATES

CONSULTING ENGINEERS

Port Washington, N.Y.

Construction of a new sludge incinerator has been completed at a cost of $627,500. The secondary digester was converted to a building and a new sludge thickener added. The primary digester was reconditioned and is being used as a sludge storage tank.

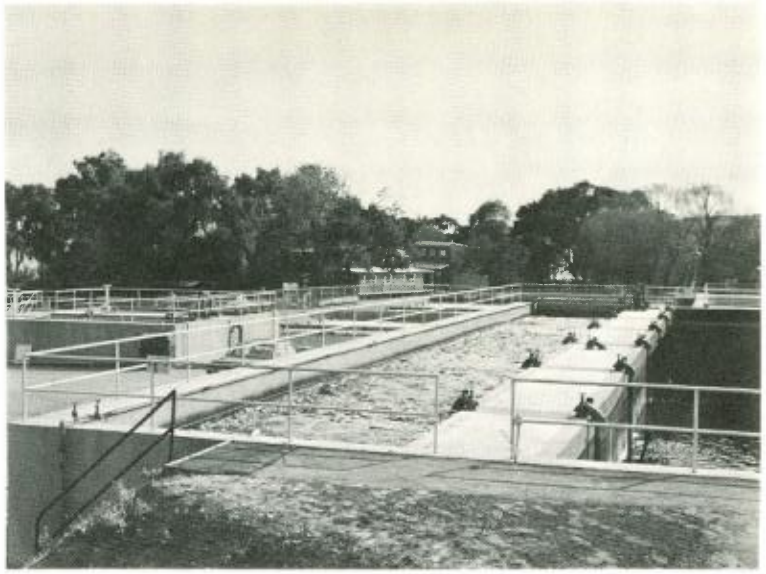
Stony Point, N.Y.

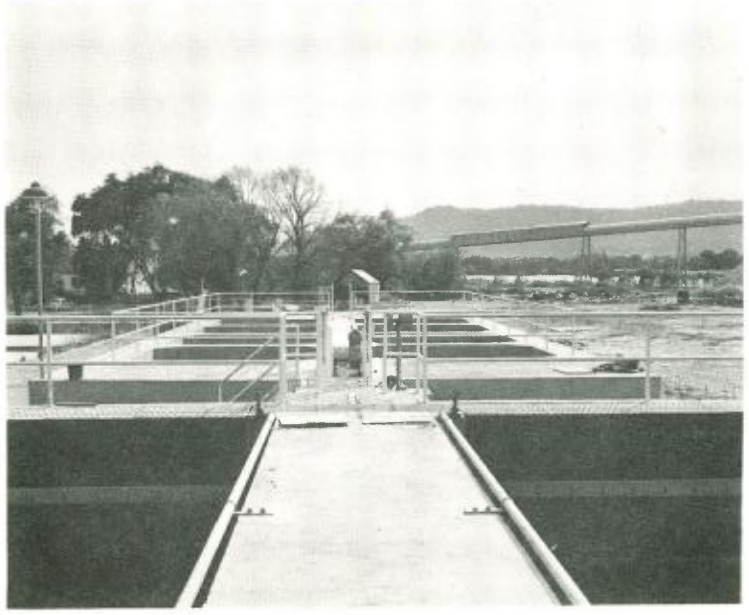
The new Stony Point extended aeration plant went into operation on September 1, 1969 at a cost of $1,000,000. Its capacity is one million gallons per day.

Contract No. 4 for intercepting sewage from the southern part of town also was completed at a cost of $1,700,000.

West Haven, Conn.

The new treatment plant on Beach Street began operation in May of 1969. The design capacity is 23 million gallons per day.





STONY POINT
SEWAGE TREATMENT PLANT

BOWE WALSH & ASSOCIATES
CONSULTING ENGINEERS

PROJECTS UNDER CONSTRUCTION

Carteret, N. J.

Construction work is in progress to convert the combined sewer system in the Chrome Section of the Borough to a separate system. The cost of this work will be $368,731.

Continental Can Company, Piermont, N. Y.

Secondary treatment facilities are being constructed to handle this plant's 2.5 million gallons per day of white water wastes.

The existing 64-foot diameter Dorr Clarifier will remain in operation and chemical coagulation will be provided. New facilities include two 6.25 million gallon aeration basins and four sludge lagoons.

Construction work began in July 1969 and is expected to be completed in May of 1970 at cost of about $1,000,000.

Great Neck Sewer District, N. Y.

This sewer district is being expanded by the construction of a new pumping station, interceptor and force main in the "Miracle Mile" area of Manhasset. This work is about 65% completed.

Total cost will be about $486,000.

Humble Oil and Refining Company, Linden, N. J.

Secondary treatment facilities are presently under construction at the Bayway Refinery and should be fully operational in July of 1970. The units are designed for 15 million gallons per day and will cost about $6,000,000. Included in the work are a grit chamber, modernized separator, aeration tank and final settling tank.

An equalization and neutralization basin is under construction for the chemical area on the East Side of the plant property. Completion is expected by March 1970 for this 0.5 million gallons per day facility.

Huntington, N. Y.

Construction is under way to make improvements on this secondary treatment plant. The work includes the installation of a standby generator, revision of the present grit-collecting chamber and a new vacuum filter. The cost of the work is estimated at $160,000.

Joint Regional Sewerage Board, W. Haverstraw, N. Y.

Construction began in August 1969 on a new 3.2 million gallons per day modified activated sludge treatment plant to be completed in December of 1970 at an approximate cost of $3,000,000. The district served will include the Village of West Haverstraw, the Town of Haverstraw, Letchworth Village and the New York State Rehabilitation Hospital. Negotiations are also under way with Garnerville Holding Company.

The Town of Haverstraw is constructing a sewer system at an estimated cost of $1,500,000. This system will be tributary to the new plant under construction.

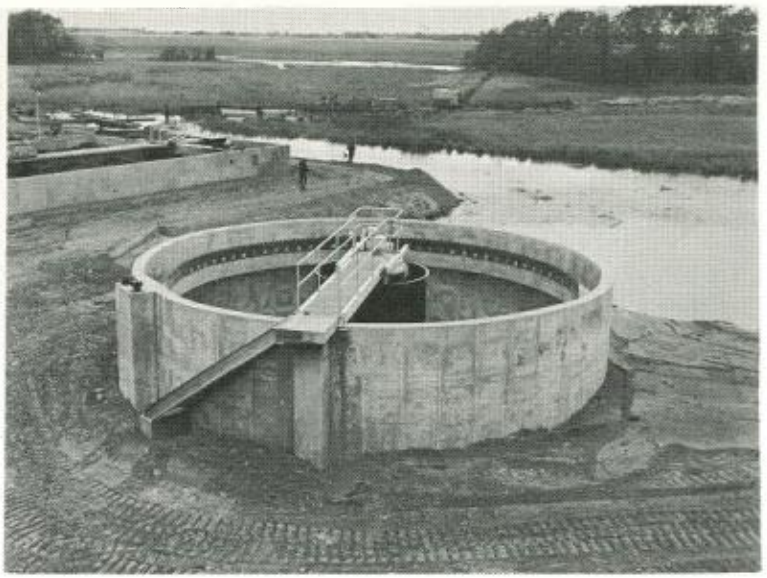
Kings Ferry Park, Cortlandt, N. Y.

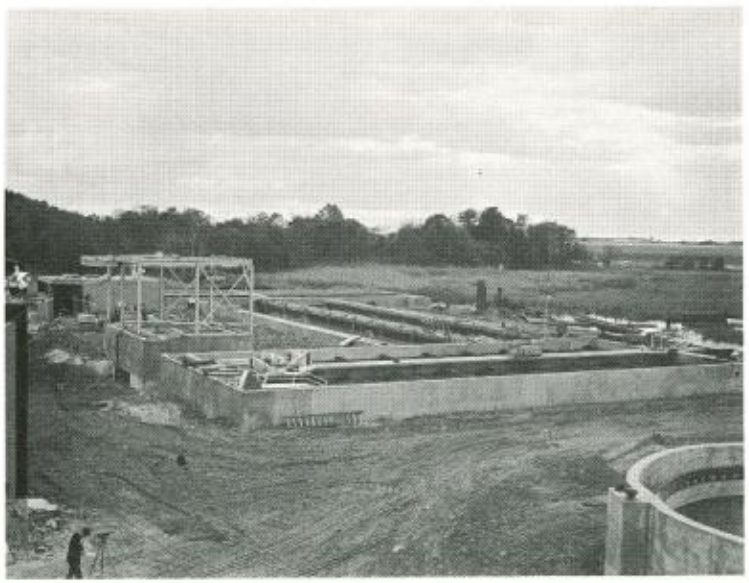
A 50,000 gallon per day contact stabilization treatment plant is presently under construction with conpletion expected early in 1970. The plant, which will discharge to Green's Cove on the Hudson River, provides for an 85 percent biochemical oxygen demand and suspended solids reduction.

Milford, Beaver Brook, Conn.

This new 3.2 million gallons per day activated sludge treatment plant has been 90 percent completed. Units include a wet well which is drained by four sewage pumps, aerated grit chambers, a primary settling tank, aeration tank, final settling tank and chlorine contact tank. Sludge is pumped to a primary and secondary digester equipped with an emergency overflow to a sludge lagoon.

Cost of the construction is estimated at $3,500,000.





MILFORD–BEAVER BROOK
SEWAGE TREATMENT PLANT
METCALF & EDDY INCORPORATED
CONSULTING ENGINEERS

Nassau County District No. 3, N. Y.

Construction work on a new plant has been about 20 percent completed. Work is also in progress on sewers, pumping stations and force mains tributary to this plant.

NEW YORK CITY, N. Y.

Bowery Bay, N. Y.

A pumping station, force main and interceptor to convey 1.1 million gallons of sewage per day from Rikers Island to the Bowery Bay Plant is now under construction. The work should be completed by April 1970 at a cost of $800,000.

Coney Island, N. Y.

Work began on two projects for improving this plant's existing facilities. These are improvements to the digestion tank facilities which is 50 percent complete and work on the sludge storage building which is 99 percent complete.

Hunts Point, N. Y.

A contract has been let to test the feasibility of leakproof expansion joints in one of the sedimentation tanks. The remainder of the tanks will also be provided with these joints if this work proves successful.

Newtown Creek, N. Y.

Construction of the Manhattan pumping station which is being built to transmit a flow of 170 million gallons per day has been 40 percent completed. Cost of this work will be around $12,000,000.

The Johnson Avenue interceptor in Brooklyn was completed in 1969 and is now in service.

North River, N. Y.

There are two interceptors presently under construction and a third which has been let out for bids. These interceptors are expected to be completed in the third quarter of 1972 at a cost of $76,000,000.

Owls Head, N. Y.

Work is being done on the Owls Head chlorination facilities. This consists of new storage tanks and piping, which are almost completed, at a cost of $107,000.

Port Richmond, N. Y.

Construction of the West Branch Interceptor is 90 percent complete. The project cost is $3,900,000.

Spring Creek, N. Y.

The New York City Sewer system is of the combined type and as a result, a large amount of raw sewage is discharged into the receiving waters during rain storms. This sewage is especially detrimental in the vicinity of potential bathing beaches where it becomes a public health hazard.

An Auxiliary Program plan is being completed to impound, disinfect, settle and degrit these combined flows in the vicinity of proposed bathing beaches. Construction of the first prototype plant has been 40 percent completed and is located at Spring Creek on Jamaica Bay. This $12,000,000 plant will have a reservoir with an impoundment capacity of 12,400,000 gallons and should be completed by the third quarter of 1970.

Interceptors tributary to the Spring Creek Plant are being constructed in three phases. The first is completed, the second under construction and the third to start construction in 1970.

After each storm, that water which has been collected in the impoundment reservoir will be pumped to the 26th Ward Plant for full treatment.

In conjunction with this work, an extensive study was begun in the second quarter of 1968 at an approximate cost of $1,000,000 to make an evaluation of water quality before and after the Spring Creek Plant starts its operation.

Wards Island, N. Y.

Rehabilitation of the plant's final settling tank is under way at a cost of $1,100,000. The work, which is 50 per cent completed, includes new flights and collecting mechanisms.

Oyster Bay, N. Y.

Two centrifugal pumps with a lift of 45 feet and a 180 gallons per minute capacity each are being installed at Highwood Road. The cost will be around $60,000.

Port Washington, N. Y.

Two new pumping stations and main sewers are being built to service the newly developed Flower Hill Section of Port Washington. Modernization of the existing main pumping station is also being undertaken. The cost of this work is $1,274,479.

Rahway Valley Sewerage Authority, N.J.

Construction work is under way to upgrade this primary plant to provide an 85 percent removal of bio-chemical oxygen demand and total suspended solids. The total cost of the work is estimated at about $10,800,000.

Improvements to the existing plant will be a new parallel grit chamber, new mechanical bar screen, expansion of the pump capacity from 65 to 75 million gallons per day and repairs on the primary settling tanks to improve their efficiency. The existing digesters are being converted to sludge storage tanks.

Secondary treatment will be provided by step

aeration. The new units have been designed to handle an average daily flow of 35 million gallons per day.

Rockland County Sewer District No. 1, N. Y.

This 10 million gallon per day activated sludge plant was completed in December, 1968 at a cost of about $4,760,000. A Zimpro sludge oxidation unit went into full service during the summer.

Work on the sewer system is under way and is expected to be completed at the end of 1970 at a total cost of approximately $34,000,000.

The new system will include 63 miles of sewers and nine pumping stations. Over 500 miles of lateral sewers, tributory to the County system, are being constructed by the Towns of Clarksville and Ramapo and the Village of Spring Valley.

Third stage construction work is under study. This will call for eventually doubling the capacity of the treatment plant and expanding the service to include the now unsewered portions of District #1.

West Haven, Conn.

Work is in progress to upgrade this 23 million gallons per day plant to provide activated sludge treatment. The existing plant began operation early in 1969.

FUTURE PROJECTS

Blind Brook, Rye, N. Y.

An engineering report pertaining to upgrading this plant to secondary treatment is due on Jan. 1, 1970. The work will cost about $6,000,000.

Sludge from the Blind Brook Plant will be digested at the secondary plant to be constructed at Port Chester.

Briarcliff Manor, N. Y.

The sewage presently being treated by septic tanks located at River Road and Scarborough Dock will be diverted by the installation of pump stations to the Westchester County Plant to be built in Ossining. An engineering report is now being prepared.

Bridgeport, East Side Plant, Conn.

A design for expanding and upgrading this facility has been completed by consulting engineers. The work is expected to cost about $8,000,000.

Activated sludge treatment is being provided for sanitary sewage and chemical treatment for storm water. The plant will be capable of handling an average flow of 12 million gallons per day. New treatment units include aeration tanks, final settling tanks, chlorine contact tanks, a storm water detention tank and gravity sludge thickeners.

Bridgeport, West Side Plant, Conn.

The design of additions and alterations to upgrade and expand this plant have also been completed. This facility will provide for activated sludge treatment to a waste load of 30 million gallons per day. Chemical treatment of storm water will also be provided for and a storm water detention tank is among the new units being added.

The cost of this work is estimated at $10,000,000.

Croton-on-Hudson, N. Y.

The 750,000 gallons per day Croton plant will be converted to a pump station upon construction of a new Westchester County Plant at Ossining.

Edgewater, N. J.

This primary plant is designed to treat a flow of 4.0 million gallons per day. Consultants are now preparing a feasibility study for treatment of industrial wastes at this plant.

Estates of Great Neck Landing, Babylon, N. Y.

Plans have been submitted to the New York State Health Department for approval to construct a treatment plant to service this development of 230 homes on the South Shore.

Freeport, N. Y.

The final design for expansion and imporvements to this plant has been completed.

The design capacity of the Freeport Plant will be increased from 4.0 to 6.0 million gallons per day and the Ray Street pumping station is being modernized. New facilities include an enlarged chlorine building to handle one-ton cylinders, settling tanks, a high rate trickling filter and a grit chamber. The cost of this job is estimated at $765,000.

Glen Cove, N.Y.

An engineering report is being prepared on the enlargement of the Morris Avenue Treatment Plant.

Additional land is being acquired for this expansion.

Glen Cove, Morgan Island, N. Y.

A report for conversion of the Morgan Island Treatment Plant to a pumping station was completed in 1968. Both

state and federal financing have been approved for the job. Work will begin when the Morris Avenue Plant has been expanded to handle the additional load.

Costs were estimated as follows:

Conversion to a pumping station ($36,000), force mains and interceptor ($337,000) and the main lift station ($120,000).

Great Neck Sewer District, N.Y.

An engineering report is being prepared for the purpose of increasing this plant's design flow. An incinerator will also be added.

Haverstraw, N.Y.

Engineering plans are presently being prepared to upgrade this existing one million gallon per day primary treatment plant.

Preliminary plans call for the addition of the following new units: two high-rate trickling filters, two secondary settling basins, a chlorine contact tank and a pump station. The completed plant should give an 85 percent biochemical oxygen demand removal and 85 percent suspended solids reduction.

Total project cost is estimated at $1,200,000 with construction work to begin by September, 1970.

Highlands, N. J.

The feasibility of building a joint treatment plant for the Borough of Highlands and the Borough of Atlantic Highlands is presently being considered. A study of this project has been made by consultants.

Hudson County, N. J.

Consultants are preparing a regional comprehensive sewerage study which will consider treatment of all waste

waters discharged in Hudson County. The study was begun in September, 1969 and the recommendations should be presented in February, 1970.

It is expected that all waste waters from Hudson County will eventually be discharged to Upper New York Bay, the Kill Van Kull and the Hackensack River.

Irvington, N. Y.

This existing 1.0 million gallons per day is to have its flow diverted to the Yonkers County Plant when its expansion is completed.

Jersey City Sewerage Authority, N. J.

An engineering report is being prepared for providing secondary treatment at the East Side Plant. A pilot plant has been put into operation in conjunction with this work.

The feasibility of upgrading the West Side Plant to provide secondary treatment is also under study.

Kay-Fries Chemicals, Inc., West Haverstraw, N.Y.

Kay-Fries presently provides for neutralization of its effluent to Minesceongo Creek. Negotiations are now under way to divert this flow for treatment at Stony Point's extended aeration plant. This diversion would require that the Stony Point plant be expanded.

In-plant changes have reduced water consumption at Kay-Fries from 1.0 to 0.6 million gallons per day.

Keansburg, N. J.

A feasibility study is being done by the Town Engineer to upgrade this plant to provide secondary treatment.

Laurence Harbor, N.J.

Plans for upgrading to secondary treatment by contact stabilization modified activated sludge have been presented to the New Jersey State Department of Health and the

Federal Water Pollution Control Administration for review and approval. Construction work is expected to begin in June, 1970 and be completed in March, 1971.

The design is for an average flow of 1.4 million gallons per day and a peak flow of 3.5 million gallons per day. Units to be added are two aeration and stabilization tanks, two final settling tanks and a system for sludge recirculation. Cost of the new facilities and improvements to existing equipment will be about $900,000.

The plant's service area will be expanded and improved by construction of two pump stations, force mains and sewers for about $270,000.

Linden-Roselle Sewerage Authority, N. J.

The design of secondary treatment facilities has been approved by the New Jersey State Department of Health. The cost of this project is expected to be about $12,000,000.

New facilities include a plastic media roughing filter which will be followed by a step aeration activated sludge process. The first stage provides for a 17 million-gallon per day capacity. The plant's ultimate capacity will be 25.5 million gallons per day.

Existing sedimentation tanks are being converted to final clarifiers. The pump station's capacity will be increased to 51 million gallons per day to handle the maximum flow from the incoming trunk sewer.

Sludge-thickening tanks and additional sludge storage facilities will be provided and sludge will be barged to sea.

Four acres are to be added to the plant property to provide space for this expansion.

Long Beach, N. Y.

An engineering report is being prepared which deals with doubling this plant's design flow to approximately 13.0 million gallons per day.

Middlesex County Sewerage Authority, N. J.

A preliminary report for upgrading this 78 million gallon per day primary treatment plant has been accepted by the New Jersey State Department of Health. Plans call for increasing the plant's capacity to 105 million gallons per day and for providing secondary treatment of the completely mixed activated sludge type. A 90 percent biochemical oxygen demand reduction and an 85 percent suspended solids removal are anticipated.

The existing primary facilities are to be incorporated into the completed plan.

Facilities to be added are listed below:

1. Primary treatment facilities including aerated grit chambers, influent piping,meter chamber, and primary sedimentation tanks.

2. Secondary treatment facilities including aeration-sedimentation tanks of the completely mixed activated sludge type, air blower facilities, effluent piping, and chlorination facilities.

3. Sludge-processing and disposal facilities for barging raw sludge.

4. Anerobic digestion or vacuum filtration and incineration may have to be added, if required by the regulatory agencies. Anerobic digestion would be added before sludge barging. Vacuum filtration and incineration would replace barging with or without digestion, if barging is not permitted.

Construction costs of primary and secondary units are estimated at $64,381,000. The project cost of sludge-handling facilities is expected to be about $17,753,000. Work should start in January 1971 and the plant's size may be expanded to 120 million gallons per day if desired.

Plans have also been approved to expand the Sayreville Pumping Station, dualize several major trunk sewers tributary to the plant and dualize the treatment outfall

to handle the flow in the year 2010. The total project cost for the expanded sewer system is estimated at $53,780,000.

Nassau County District No. 4, N.Y.

This sewer district will serve the entire length of the North Shore of Nassau County. A report which was completed in 1968 and considers the sewerage facilities needed in this area is now being studied by the New York State Department of Health.

New Rochelle, N.Y.

An engineering report has been submitted to the State to upgrade this 15 million gallons per day plant to provide secondary treatment at an approximate cost of $15,000,000.

NEW YORK CITY

Bowery Bay, N.Y.

Consultants have prepared a report to expand and upgrade the Bowery Bay plant. Its capacity will increase to 150 million gallons per day, a 60 million gallons per day increase and it will be converted to step aeration with minimum removals of 90 percent of biochemical oxygen demand and suspended solids.

This report includes improvements to the existing plant and is presently awaiting state approval. Cost of the entire project is estimated at $49,300,000.

Coney Island, N.Y.

The Bureau of Water Pollution Control is awaiting the completion of a consultant's engineering report which deals with converting to a step aeration process plant. The total cost of the job is estimated to be about $37,200,000.

Hunts Point, N.Y.

An engineering report prepared by consultants has been submitted to New York State for review and approval.

This report deals with increasing the design flow to 200 million gallons per day, providing step aeration with minimum removals of 90 percent of biochemical oxygen demand and suspended solids improving existing facilities, and adding the Hart-City Island flow to Hunts Point. Overall project cost is estimated at $43,500,000 with $35,000,000 of this allocated to construction work in the expanding and upgrading phase.

It is anticipated that this plant will be operational in 1974.

Jamaica, N. Y.

A consultant's report has been submitted to New York State for upgrading the units in this plant to provide an overall biochemical oxygen demand removal of at least 90 percent by the step aeration process. The total cost of this work to begin in the third quarter of 1971 is about $18,700,000.

North River, N. Y.

This plant, which will be located between 137th Street and West 145th Street on the North River, is being designed to handle 220 million gallons per day of raw wastes. These wastes are not entering the Hudson and Harlem Rivers from upper Manhattan.

The North River plant will be a step aeration treatment plant, designed for a minimum of 90 percent biochemical oxygen demand and suspended solids removal. The treatment plant will be constructed in conjunction with a recreational facility known as Riverbank.

The North River Plant should be completed and operational by the fourth quarter of 1974 at a cost of approximately $300,000,000. A feasibility report on the plant foundation and treatment units has been submitted to New York State.

Plans for a sludge vessel with a 100,000 cubic foot capacity have been submitted to New York State for approval.

Oakwood Beach, N. Y.

Engineering reports for upgrading to step aeration and expanding from 15 million gallons per day to 40 million gallons per day with minimum removals of 90 percent biochemical oxygen demand and suspended solids have been submitted to New York State. Outfall design is being given careful consideration to insure that there will be no further degradation of Staten Island beaches.

Several contracts will be let for the construction of force mains, interceptors and pumping stations at a cost of $57,500,000.

Total cost of this entire project is estimated near $111,000,000.

Owls Head, N. Y.

A consultant's engineering report is being prepared to make this a full step aeration plant with removals of a minimum of 90 percent biochemical oxygen demand and suspended solids. Cost of the work, including additional interceptors, force mains and pump stations, is expected to be nearly $70,000,000.

Port Richmond, N. Y.

Consultants have prepared an engineering report which has been submitted to New York State for approval. This report deals with converting the Port Richmond plant from a 10 million gallon per day primary facility to a 60 million gallon per day step aeration plant with a 90 per cent minimum biochemical oxygen demand and suspended solids removal.

Included in the expansion are additional pumping stations, force mains and interceptors in the plant's tributory area. The completed facility is expected to be operational in 1975 for an outlay of $28,200,000.

Design of the East Branch Interceptor is nearing

completion.

Total project cost is estimated at $84,000,000.

Red Hook (East River Environmental Protection Center), N.Y.

Consultants are working on a feasibility report to construct a step aeration treatment plant with a 90 percent minimum biochemical oxygen demand and suspended solids removal in conjunction with an incinerator at the former side of the Brooklyn Navy Yard. Total cost of this work including plant and interceptors (excluding the incinerator) is expected to be about $200,000,000 and will be designed for a capacity of 120 million gallons per day.

Rockaway, N. Y.

A preliminary engineering report for expanding and upgrading this plant has been submitted to New York State. The improved plant will provide a minimum of 90 percent suspended solids and biochemical oxygen demand removal for a flow of 45 million gallons per day.

The phases of the work are improvements in the existing plant to be followed by the expansion and upgrading phase.

Total project cost is anticipated at about $31,600,000.

Tallmans Island, N. Y.

The Bureau of Water Pollution Control plans to make this an 80 million gallon per day step aeration plant with minimum removals of 90 percent biochemical oxygen demand and suspended solids at a cost of $32,500,000. A consultant has been designated for this work and an engineering report has been submitted to New York State for approval.

26th Ward, N. Y.

New York State has approved an engineering report

for enlarging the capacity of the 26th Ward Plant to 85 million gallons per day,the 2015 design flow, and for providing biological treatment by step aeration with a minimum of 90 percent suspended solids and biochemical oxygen demand removal. The project cost is estimated at approximately $21,600,000.

Construction on the plant pier and access road will start in 1970.

Wards Island, N. Y.

Approval has been granted by New York State for expanding Wards Island to 290 million gallons per day by the step aeration process with minimum removals of 90 percent biochemical oxygen demand and suspended solids. This work will include new separate sludge digestion facilities. Final design is now under way by consultants with total project cost estimated at $47,800,000.

Work on two phases will begin in 1970. These will be improvements to the Bronx-Manhattan grit chambers and construction of a dock at the north end of the property.

Northport, N. Y.

Plans to build a 150,000 gallon per day step aeration plant are now being revised to include the area of Centerport. The engineering report now being prepared will provide for a larger plant and for the addition of aerobic digestion because of the grease problem anticipated from diner wastes in Centerport.

Norwalk, Conn.

Engineering plans for upgrading this plant are being reviewed by the Connecticut Water Resources Commission. Construction work for going to activated sludge treatment and increasing the design flow to 30 million gallons per day should begin by March of 1970.

New units costing $3,000,000 include final settling tanks, an F/S unit, aeration tanks and a heat exchanger.

Nyack, South Nyack and Upper Nyack, N.Y.

Plans and specifications are in progress for the diversion of sanitary wastes from the Village of Nyack, South Nyack and Upper Nyack to the new Orangetown District No. 2 Secondary Treatment Plant. The existing primary plants at these locations will be abandoned.

Pump stations will be constructed to lift the raw sewage from the river level to the old Erie Railroad right-of-way and from this point it will flow by gravity to the Orangetown-Sparkill Pumping Station.

A new pump station is also planned to take the raw sewage from the Village of Grandview and the Jewish Convalescent Home to Orangetown via the Sparkill Pumping Station.

Orangetown Sewer District No. 2

Negotiations are under way to add the Boro of Rockleigh, N. J. to the Orangetown Sewer District.

Ossining, N. Y.

The two existing treatment plants in Ossining at Liberty Street and at Water Street will be converted to pump stations and divert their flows to the new Westchester County Plant now being planned. A county sanitary sewer district has recently been formed in the Ossining area.

Oyster Bay, N.Y.

Plans are being made to reroute a 10-inch lateral at Harbor Place and Shippoint Lane for a cost of about $16,500.

Peekskill, N. Y.

The existing plant located in Peekskill will be incorporated into the Westchester County System. A county sewer district is now being formed in this area with a report to be submitted on February 15, 1969.

Cost of upgrading the existing plant will be about $22,000,000.

Penn Central R. R., Croton, N. Y.

The existing oil separators at Harmon Shops will be kept in service and their effluent will be diverted to a new Westchester county plant to be constructed at Ossining. An engineering report is being prepared for this 700,000 gallon per day diversion.

Port Chester, N. Y.

A report on the upgrading of this plant to secondary treatment is scheduled for completion on January 1, 1970. The plant improvements will cost about $6,000,000.

Sludge from Blind Brook will be digested at this plant and the Port Chester effluent will be discharged to Long Island Sound via the Blind Brook outfall.

Stamford, Conn.

Plans for upgrading to step aeration and expanding this treatment plant are being reviewed by the Connecticut Water Resources Commission. Construction, which is expected to begin in Spring of 1970, will change the design flow from 10 to 20 million gallons per day and provide for a 95 percent biochemical oxygen demand reduction at an estimated cost of $5,000,000 to $6,000,000.

New equipment will include mechanical aerators and aeration tanks, primary and secondary clarifiers, new lab building and pump stations.

Tarrytown, N. Y.

The existing 1.5 million gallon per day primary plant is scheduled to be converted to a pump station and have its flow diverted to the Westchester County System at Yonkers.

West Haven, Conn.

A design has been completed to upgrade this 23 million gallons per day primary plant to provide activated sludge treatment. The design is presently being reviewed by the Connecticut Water Resources Commission.

West New York Joint Outlet, N.J.

An engineering report is being prepared to provide secondary treatment at this plant for a flow of 7.5 million gallons per day.

A biochemical oxygen demand reduction of 85 to 90 percent and a total suspended solids reduction of 90 percent is anticipated when the activated sludge treatment goes into operation.

Yonkers Joint Meeting, N.Y.

This existing 63 million gallons per day primary treatment plant is to be converted to activated sludge treatment. Plans for this have been submitted to the State for approval. Construction is expected to start in the spring of 1970. The job is expected to cost about $55,000,000.

INDUSTRIES IN THE INTERSTATE SANITATION DISTRICT

Industrial wastes comprise a significant portion of the total waste flow in the New York Metropolitan Area as is the case in most large urban areas. The Commission is presently conducting a survey of all industries located on Interstate Sanitation District Waters in order to continue to improve its industrial wastes abatement program.

Data required to assess the pollution potential of the various companies is obtained by two methods: (1) a meeting between a Commission representative and company representatives to discuss a plant's operation, water usages and waste discharge, and (2) sampling of the outfalls which discharge to District Waters. Industry has been quite cooperative and no problems have been encountered in obtaining plant information.

The information being sought is that shown on the General Outline following this section. This data is aimed at determining the potential pollution from each industrial plant by examining its processes, water usages and waste discharges.

In 1968, plants located in Rockland and Westchester Counties were surveyed. During 1969, the Commission concentrated its efforts on those industries located on District Waters in Bergen, Hudson and Essex Counties.

About 60 different companies were surveyed during 1969. Each company is being given a sampling priority based on information obtained during the survey.

The plants which the Commission feels have the greatest pollution potential are given a Priority 1 and will be given first consideration in our sampling program. With the completion of the new Commission Laboratory, the sampling program was begun in November with those Priority 1 industries located on Newark Bay.

INDUSTRIAL WASTE SURVEY

INTERSTATE SANITATION COMMISSION

G E N E R A L O U T L I N E

I. GENERAL SITE PLAN (To include the following):

A) Location of all process buildings
B) Water sources and quantities for plant (salt & fresh)
C) Inter-plant process water pipes
D) Discharge pipes and channels with respective average daily flows

II. PLANT STATISTICS:

A) List of finished products and quantities produced
B) List of raw materials and quantity of each

III. PLANT PROCESSES:

A) Flow Diagram of all processes
B) Breakdown of each process with following facts:
   1) Name and description
   2) Raw materials
   3) Quantity of cooling or process water (fresh & salt)
   4) Finished Product
   5) Locations of discharges and sizes of effluent channels or pipes
   6) Operation schedule (e.g. hrs./day, days/month)

IV. EXISTING WASTE TREATMENT FACILITIES:

A) Type (if any)
B) Flow Diagram with design capacities
C) Quantity treated
D) Locations of discharge pipe or channel

V. PRESENT STATUS OF ENFORCEMENT PROCEEDINGS:

A) List all water pollution abatement orders or letters and time schedules issued against your company and the status of each.

B) List all water pollution abatement activities resulting from a specific request or directive issued to your company by a control agency and the status of each.

LEGAL ACTIVITIES

The activities of Counsel during the past year fall into several categories, as follows: (1) Furnishing of regular consultation and advice, (2) Legislative Action, (3) Participation in Conference, and (4) Litigation.

Regular Consultation and Advice

The furnishing of routine legal consultation and advice in the day-by-day affairs of the Commission is virtually impossible to report in any substantive sense. During 1969 it has continued as in the past. It normally consists of a variety of matters related to the general administration of the Commission and its working relations with all manner of public agencies and private persons.

Legislative Action

There has been important legislative action affecting the Commission and its programs during 1969. These developments involved amendment of the Tri-State Compact and extension of the Commission's air pollution program to Connecticut.

Late in 1967 the Commission determined that its water quality standards-making procedures as embodied in Articles 6 and 7 of the Compact could benefit from supplementation. As originally drafted almost thirty-five years ago, these provisions empower the Commission to classify waters either "Class A" (recreational) or "Class B" (not intended for recreational use). Once these classifications are made, the applicable water quality standards attach automatically because they are written directly into Articles 6 and 7.

On the whole, the standards have worked well and have been susceptible of sufficient administrative application to make them usable, even in the face of changing conditions and views of acceptable water quality. However, they are not as flexible as standards made through the administrative procedures

usually employed by water pollution control agencies. Accordingly, it was decided to ask the member states to amend the Compact to add an administrative standards-making power that would be particularly suited to the Commission's role as an interstate agency.

Counsel had drafted the amendment in 1967 in consultation with officials of the three states but, owing to procedural problems, actual legislation was introduced only in New York during 1968. The legislation was well received but failed to be acted upon on the floor of the Assembly before adjournment. This year the result was different and a bill amending the compact was signed by the Governor. Legislation having the same effect also was enacted in Connecticut. While the format of the two bills is somewhat different, the language added to the compact in the two states is identical and so effective for the intended purpose. Legislation is still required in New Jersey for the amendment actually to become a working part of the Compact. The text of the amendment is set out at the conclusion of Counsel's report.

The other piece of legislation dealing with the Commission to be enacted during the current year was a Connecticut bill substantially identical with the New York and New Jersey statutes authorizing the Commission to engage in certain activities relating to air pollution.

Since January 1, 1962, the Commission has performed in a study, investigative and administrative role pursuant to its supplemental air pollution statutes. As Connecticut had not enacted such a law, its only role had been to consent to performance by the Commission on behalf of the other two states. The effect of the 1969 legislation was to make Connecticut a participant in the air quality program of the Commission. Accordingly, all three members states now receive the services of the Interstate Sanitation Commission in the fields of water and air quality.

Conferences

Under Section 10 of the Federal Water Pollution Control Act the Secretary of the Interior can convene "conferences" of state and interstate water pollution control agencies whenever he believes that discharges into the waters of one state are adversely affecting the health or welfare of persons in another state. The Hudson River from Albany to its mouth has been the subject of such a conference. During 1969 two sessions of this Hudson River Conference were held, one in June and the other in November. The Commission participated in both.

The June session was in the nature of a progress report and brought only a very limited number of new aggreements among the conferees. In fact, the only new item was a decision to undertake a storm water sewer survey in order to determine the physical locations and conditions of these installations. The work was intended to be done by the Interstate Sanitation Commission, with the New York State Department of Health performing necessary work in that portion of the Conference Area lying outside the Interstate Sanitation District. Financing was to be by a grant from the Federal Water Pollution Control Administration. Negotiations for the grant and supporting contract were virtually completed during the ensuing months and an award is expected at any time. However, by the present writing it had not yet been made.

The November session of the Conference was not anticipated at the time of the June proceedings. In fact, the conferees at that time agreed that the next meeting of the Conference would be in the fall or winter of 1970. Nevertheless, the Department of the Interior called the November session to consider conditions in the Passaic Valley area. The Commission filed a brief statement but, for procedural reasons, offered no substantive observations.

One result of the November session was an agreement among the Conferees that the Interstate Sanitation Commission in cooperation with New Jersey should undertake the same kind of storm water overflow project as mentioned above for the New York portion of the area.

Litigation

The Village of Port Chester was the subject of an abatement suit brought by the Commission in 1962. Previous reports of Counsel have detailed the lengthy course of this litigation. Recapitulation is not necessary here. Suffice it to say that the Village is now under a requirement to secure improved treatment of its wastes. In doing so, it must comply with a specific timetable. During 1969 the situation was kept under surveillance in order to make sure that the necessary steps were being taken for compliance. As of the current writing, Port Chester appears to be proceeding in accordance with the timetable.

The following is the text of the provision added to the Compact by the Connecticut and New York enactments:

"In addition to, or in substitution for, the classifications of waters set forth in Articles VI and VII of this Compact and the effluent standards made applicable thereto, the Commission may develop and, after public hearing place in force other classifications of waters and effluent standards within the District. Such classifications shall be on the basis of present or intended uses of the waters in question and shall be accompanied by requirements governing the quality of effluents, receiving waters, or both, as the public interest may make appropriate.

"Classifications, standards, and requirements adopted pursuant to this Article shall be developed and may be revised with due consideration for uniformity of requirements relating to the quality of effluents and receiving waters within the same classification in all parts of the District.

"Classifications made pursuant to this Article shall be governed by and shall implement any water and related land resource plans, water use plans or pollution control plans adopted by appropriate agencies of the signatory states, acting singly or in concert, or through joint intergovernmental agencies. Any exercise of authority by the Commission pursuant to this Article shall be subject to any procedural requirements, if applicable, that may be contained in federal law.

"Nothing contained in this Article shall be construed to abridge or limit any power otherwise existing of a signatory state to make and enforce classifications, standards, and requirements for effluents and receiving waters."

AUTOMATIC DATA PROCESSING

In January 1969 the Commission installed a complete IBM QUIKTRAN 2 Time-Sharing Terminal. The terminal is an IBM 1050 System with the capability of keyboard, paper tape and card input/output. The terminal is linked to an IBM 7044 Data Processing System, located at an IBM Computing Center, via a Data-Phone.

The Commission installed a Type 35ASR Teletype in April 1969. Besides being linked to the IBM 7044 Data Processing System, the teletype is used as a communications link between the Commission and cooperating agencies during periods of high air pollution potential.

During the past year programs were prepared for the analysis of both water and air pollution data. Statistical analyses and graph-plotting, as well as the reduction of industrial survey and harbor survey data, are a few examples of work performed on the system during the past year. The computing system has proved an invaluable tool for the fast and efficient analysis of data.

NEW COMMISSION LABORATORY

The laboratory facilities of the Interstate Sanitation Commission have been relocated to West 48th Street in Manhattan. This larger laboratory, with additional personnel and instruments, has increased the Commission's water and wastewater analysis capability. This has enabled more extensive testing to be conducted for providing information to state and local agencies and in the enforcement of water quality standards in the Interstate Sanitation District.

Equipment which has been added to the new laboratory includes: a total carbon analyzer, auto analyzers for soluble chemical oxygen demand, ammonia, nitrates and nitrites, a temperature controlled room and a Warburg respirometer to be used for long term studies of polluted water and sludge. Other pieces of new equipment are a turbidimeter, dissolved oxygen meter, specific ion meter and an expanded range pH meter. Equipment has been added to enable fecal coliforms to be run by the membrane filter method.

The cars of the sanitarians have been provided with a temperature-controlled water bath for incubation of the fecal coliforms, and a refrigerator for sample storage while in the field.

INTERSTATE SANITATION COMMISSION MOBILE LABORATORY

The Interstate Sanitation Commission has acquired a mobile laboratory. This new "lab-on-wheels" will be used to accomplish two main functions: 1)Investigations and 2) Training.

Included in the scope of investigations are:(a) 24-hour or longer surveillances in connection with the enforcement of Interstate Sanitation Commission compact water quality standards, (b) special on-the-spot bacteriological, chemical and biological studies of receiving water and effluents of municipal and industrial wastewater treatment plants.

The training program will include instruction to professional and technical personnel of treatment plants in the necessary tests required for the satisfactory performance of their treatment plants.

The mobile laboratory is equipped with those basic and essential items that are needed to perform routine tests in sanitary chemistry, biology and microbiology. For non-routine use, depending upon the type and length of survey and associated analyses required, specialized equipment will be added temporarily from our laboratory and operated in the mobile laboratory.

TRAINING PROGRAM FOR TREATMENT PLANT OPERATORS

A technical assistance training program for sewage treatment plant operators is being instituted at plant sites in New Jersey, New York and Connecticut within the Interstate Sanitation District.

The Commission's new mobile laboratory, with all the necessary equipment for water sampling and analysis will travel to the plants where training and assistance are needed. This training program is a pioneering effort on the part of the Commission and it will be tailored to meet the needs of each treatment plant. The amount of time spent at each plant will vary with the training needed.

The object of this program is to upgrade the technical ability of operators by making available to them a team of Commission personnel which will include a graduate chemist and a sanitary engineer.

With the demand for higher water quality standards and the employment of secondary treatment assuming greater importance, the Commission feels there is a great need for proper tests and careful record-keeping at the treatment plants. In the past, primary treatment plants were able to run fairly efficiently with a minimum of operator control. However, the advances in the field and the more sophisticated controls necessary for efficient operation of biological treatment plants has created a need for upgraded training of treatment plant personnel.

Analytical determinations that will be taught as described in "Standard Methods" include: solids (suspended and volatile), volatile acid, dissolved oxygen, sludge volume index, pH, ammonia, nitrates, and total nitrogen.

A typical training session will be as follows:

After preliminary arrangements have been made, the mobile

laboratory will arrive early on the appointed morning with the graduate chemist and sanitary engineer. It will remain at the plant from one to three days, depending upon the degree of assistance needed. Each analytical test will be described in detail. The operator then will be shown how to perform the tests and then will perform the test himself. Emphasis will be placed upon proper laboratory procedures, such as the necessity for making solutions accurately as well as keeping glassware and other equipment clean. Following the laboratory phase of instruction, time will be devoted to the layout of proper notebooks and forms. A list of suggested equipment and chemicals needed and their estimated cost will be given at the end of the training session.

III. A I R P O L L U T I O N

New York

New Jersey & Connecticut

AIR POLLUTION

General

The State of Connecticut formally joined the Interstate Sanitation Commission's air pollution program in July 1969. The Commission in 1969 continued its air pollution abatement program as it has in past years. That is, without a definite indication of what its future role will be pending the final outcome of the proposed Mid-Atlantic States Air Pollution Control Commission. Under these circumstances, the Commission expanded the scope of its activities only to the extent mandated by the continuing problem of interstate air quality and the needs of the primary air pollution control agencies of the New York Metropolitan region. The primary agencies with air pollution enforcement powers are the New York State Health Department, the New Jersey State Health Department, the Connecticut State Department of Health and the New York City Environmental Protection Administration.

To aid these primary control agencies in the solution of air quality problems of an interstate nature, the Commission now maintains two mobile vans capable of measuring sulfur dioxide and smoke-shade at any site accessible to a small vehicle. In addition, one of these vans is capable of measuring carbon monoxide. These vans can be used to trace air contaminants as they cross state lines and may also be used to locate the initial source. They are available to cooperating agencies to check on their continuous monitoring units whenever readings seem to be abnormal. In addition to these mobile sampling units, the Commission continued to maintain several of its fixed-site air quality sampling stations. These stations are located at Willowbrook, Staten Island and Rahway, New Jersey. The Commission also maintains a station to measure wind speed and direction in Linden, New Jersey. An additional station, located in Travis, Staten Island, is being installed to transmit wind speed and direction data by telemetry to the Commission's headquarter's at 10 Columbus Circle in Manhattan.

In 1969 the activities of the Commission were directed toward aiding the primary regional control agencies in situations possibly involving areas under the jurisdiction of at least two or more of these agencies. These situations were concerned with odor problems at or near interstate boundaries, high concentrations of measured contaminants at or near interstate boundaries, citizen air pollution complaints concerning suspected interstate air pollution, and stagnant atmospheric conditions which covered the whole region.

To combat interstate odor pollution, the Commission relied upon the cooperation of the New York City Department of Air Resources, the New Jersey State Health Department, the New York State Department of Health and the many active citizens of the metropolitan area, who telephoned their odor observations to the Commission or the other control agencies. During 1969 the Commission's 24-hour a day telephone service received complaints from citizens of the area, concerning odors and other pollution problems. In addition to these, additional complaints have reached the Commission from other air pollution control agencies and local police and newspaper offices. In many instances, when the severity of the incident so warranted, the Interstate Sanitation Commission staff joined with personnel of other pollution control groups and conducted bi-state field reconnaissance to determine the pollution source. Because of the compact under which the Commission operates in the area of air pollution control, any action to curtail the offending emission must be taken by the proper control agency with jurisdiction in the area. The function of the Commission in these episodes has been one of coordination and technical assistance.

In 1969 the control agencies within the Commission's area of interest continued to expand their air quality monitoring systems. Within the New York City metropolitan region, remote automated air quality measuring systems are now maintained by New York City, New York State, the State of New Jersey, the State of Connecticut and the National Air Pollution Control Administration.

In its role of inter-agency coordinator the Commission

has served as a liaison when the interchange of data has become necessary, as well as data exchange point during periods of high air pollution potential. This role, during periods of high air pollution potential, is further discussed under the Regional Air Pollution Warning System.

REGIONAL AIR POLLUTION WARNING SYSTEM

This past year the Commission continued in its role as coordinator and central office for the Regional Air Pollution Warning System. However, with the increased number of air quality monitoring stations present in the region and the inclusion of the State of Connecticut as an active participant in the alert system, the Commission and participating agencies made major changes in the data interchange system.

To cope with the increased amount of data now available, the Commission has installed a heavy-duty teletype machine to communicate with all cooperating agencies.

A uniform data format has been agreed to which will allow the data, as transmitted, to be entered into a remote time-sharing computer system to be analyzed and tabulated. The output from this computer will be in such form that it can be retransmitted to all cooperating agencies directly by teletype. The use of this equipment will allow for a larger number of stations to report than would otherwise be possible.

As in the past the three contaminants measured for their concentrations are carbon monoxide, smoke-shade and sulfur dioxide. The dosages required to alter the air pollution alert status remain as they were in previous years.

During 1969 there were two periods when meteorological conditions were such that a "Forecast" status was initiated by the United States Weather Bureau. The first period of "Forecast" status was initiated at 12 noon, September 23rd, and was terminated at midnight, September 24th. The second

"Forecast" was initiated on October 10th and terminated at midnight October 11th. In neither"Forecast" period did the pollutant levels reach sufficient intensity to necessitate a call for an air pollution alert status.

FUTURE PLANS

The future activities of the Commission ultimately depend on the final designation of a regional air quality agency. In the interim, the Commission would be remiss if it did not plan for expanding and modernizing its air pollution monitoring facilities to reflect changes in air pollution abatement technology. These plans include the updating of equipment and expanding the air quality measurement program. In regard to the latter, continued emphasis will be given to mobile sampling, reflecting the unique role of the Commission in being able to cross state boundaries in the metropolitan region.

A P P E N D I X A

SEWAGE TREATMENT PLANTS

Discharging into the

INTERSTATE SANITATION DISTRICT

SEWAGE TREATMENT PLANTS
Discharging into the
INTERSTATE SANITATION DISTRICT WATERS
1969

Plant	Receiving Water Class	Date of Const.	Flow MGD Average	Flow MGD Design	Type of Treatment	Estimated Population Served
CONNECTICUT						
Fairfield County						
Bridgeport - East Side	A	1950+	10.3	14.0	Primary	47,000
- West Side	A	1951+	23.7	18.0	Primary	109,000
Darien	A	1956+	1.0	1.2	Primary	6,500
Fairfield	A	1967+	4.0	6.0	Secondary	30,000
Greenwich - Central	A	1964+	7.0	8.5	Secondary	42,000
Norwalk	A	1953+	7.9	30.0	Primary	55,000
Stamford	A	1943+	9.2	10.0	Primary	60,000
Stratford	A	1953+	5.9	5.0	Primary	40,000
Westport	A	1960	0.7	0.6	Secondary	5,000
New Haven County						
Milford - Gulf Pond	A	1960	2.1	2.4	Secondary	6,000
- Harbor	A	1937	0.6	0.5	Secondary	4,000
- Town Meadows	A	1954	1.5	1.2	Secondary	10,000
New Haven - Boulevard	A	1959+	12.3	13.0	Primary	63,100
- East Shore	A	1953	7.9	12.5	Primary	35,000
- East Street	A	1966+	15.9	22.5	Primary	67,100
West Haven	A	1950+		23.0	Primary	40,000
NEW JERSEY						
Bergen County						
Edgewater	B	1958+	2.1	4.0	Primary	5,000
Hudson County						
Bayonne	B	1954	8.3	20.0	Primary	73,000
Hoboken	B	1958	12.5	20.0	Primary	70,000
Jersey City - East Side	B	1967+	32.3	45.4	Primary	160,000
- West Side	B	1967+	17.4	36.0	Primary	110,000
Joint Outlet (West New York)	B	1953	6.2	7.5	Primary	50,000
Kearny	B	1955	2.3	4.0	Primary	30,000
North Bergen - Woodcliff	B	1962	1.5	4.4	Primary	14,741
Middlesex County						
Carteret	B	1953	2.6	3.0	Primary	21,000
Madison Township Sewerage Authority - Laurence Harbor	A	1963+	0.5	1.4	Primary	8,000
Middlesex County Sewerage Authority	A	1965+	64.2	78.0	Primary	500,000
Perth Amboy	A	1934	6.6	10.0	Primary	41,000
Rahway Valley Sewerage Authority	B	1937	26.4	35.0	Primary	68,000
Sayreville - Melrose	A	1949	0.03	0.1	Primary	1,000
- Morgan	A	1951	0.15	0.3	Primary	2,000
South Amboy	A	1940	0.8	1.0	Primary	9,000
Woodbridge	B	1954	2.9	10.0	Primary	25,000
Monmouth County						
Atlantic Highlands	A	1928	0.4	0.6	Primary	4,100
Highlands	A	1928	0.4	1.2	Primary	3,500
Keansburg	A	1964+	1.6	5.0	Primary	6,900
Keyport	A	1962+	0.7	2.9	Primary	6,400
Union County						
Elizabeth Joint Meeting	B	1958+	63.3	100.00	Primary	465,000
Linden-Roselle	B	1952	13.4	12.5	Primary	66,000
Essex County						
**Passaic Valley	B	1937+	250.0	-	Primary	2,899,000
NEW YORK						
Nassau County						
Belgrave Sewer District	A	1965+	1.4	2.0	Secondary	15,000
Cedarhurst	A	1934+	0.8	1.5	Secondary	7,000
Freeport	A	1960+	4.0	6.0	Secondary	40,000

SEWAGE TREATMENT PLANTS
Discharging into the
INTERSTATE SANITATION DISTRICT WATERS
1969

Plant	Receiving Water Class	Date of Const.	Flow MGD Average	Flow MGD Design	Type of Treatment	Estimated Population Served
NEW YORK (continued)						
Nassau County (continued)						
Glen Cove - Morgan Island Estates	A	1948	-	-	Septic Tank	-
- Morris Avenue	A	1965+	4.0	2.7	Secondary	25,000
Great Neck Sewer District	A	1962+	2.4	2.7	Secondary	14,000
Great Neck Village	A	1948+	1.0	1.5	Secondary	9,000
Jones Beach	A	1951	Seasonal	1.0	Secondary	Seasonal
Lawrence	A	1966+	0.8	1.5	Secondary	6,000
Long Beach	A	1953+	6.6	6.6	Secondary	29,000
*Long Island Lighting Company (Glenwood Landing)	A	1929	-	-	3-Septic Tanks	Industrial
Nassau County Sewer District #1	A	1961	1.3	2.5	Secondary	9,000
Nassau County Sewer District #2	A	1962+	59.6	60.0	Secondary	600,000
Oyster Bay Sewer District	A	1965+	1.1	1.2	Secondary	6,000
Port Washington Sewer District	A	1952+	2.4	3.0	Secondary	25,000
*Quantitative Biology Laboratory	A	1965	-	0.008	Secondary	40
Roslyn	A	1950+	0.4	0.45	Secondary	3,000
West Long Beach Sewer District (Atlantic Beach)	A	1960+	0.7	1.5	Secondary	Seasonal
NEW YORK CITY						
Bronx County						
Hart-City Island	A	1942	1.0	1.5	Primary	5,000
Hunts Point	B	1965+	140.09	150.0	Secondary	770,000
Orchard Beach	A	1945+	Seasonal	0.1	Primary	Seasonal
Kings County (Brooklyn)						
Coney Island	A	1965+	80.8	110.0	Secondary	535,000
Newtown Creek	B	1967	119.1	310.0	Intermediate	2,500,000
Owls Head	B	1952	101.8	160.0	Intermediate	750,000
26th Ward	A	1951+	63.0	60.0	Secondary	385,000
New York County (Manhattan)						
Dyckman Street	A	1917	5.0	7.5	Screening	39,000
Wards Island	B	1948+	237.2	220.0	Secondary	1,470,000
Queens County						
Bowery Bay	B	1958+	113.6	120.0	Secondary	1,000,000
Jamaica	A	1965+	82.8	100.0	Secondary	415,000
Rockaway	A	1961+	18.4	30.0	Secondary	90,000
Tallmans Island	A	1964+	56.1	60.0	Secondary	251,000
Richmond County (Staten Island)						
*Daytop Village	A	-	-	-	Septic Tank	-
*Elmwood Homes	A	-	-	-	Extended Aeration	-
*Forest Hill Park	A	-	-	-	Extended Aeration	-
*Mount Loretto Home - Plant #1	A	-	-	-	Septic Tank	-
- Plant #2	A	-	-	-	Septic Tank	-
Oakwood Beach	A	1956	313.5	15.0	Secondary	85,000
Port Richmond	B	1953	7.9	10.0	Primary	60,000
*Public School #7	A	1965	-	-	Extended Aeration	2,200
*Richmond Memorial Hospital	A	1936	-	-	Septic Tank	-
*Saint Joseph's School	A	1965	-	-	Extended Aeration	910
Rockland County						
*Continental Can Company	A	1954	2.64	3.0	Primary	Industrial
Haverstraw	A	1940	0.5	1.0	Primary	6,000
*Jewish Convalescent Home - Grandview	A	-	-	-	Septic Tank	-
*Kay-Fries Chemicals, Inc.	A	1966	-	0.01	Neutralization	Seasonal
*Letchworth Village (Thiells)	A	1935+	0.4	0.8	Imhoff Tank	4,500
*New York State Rehabilitation Hospital (West Haverstraw)	A	1933	0.05	0.2	Imhoff Tank	300
Nyack	A	1940	1.1	1.0	Primary	6,000

SEWAGE TREATMENT PLANTS
Discharging into the
INTERSTATE SANITATION DISTRICT WATERS

1969

Plant	Receiving Water Class	Date of Const.	Flow MGD Average	Flow MGD Design	Type of Treatment	Estimated Population Served
NEW YORK (continued)						
Rockland County (continued)						
Orange & Rockland Utilities	A				Septic Tank	Industrial
Orangetown Sewer District #2	A	1967+	5.1	8.5	Secondary	6,100
Rockland County Sewerage Authority	A	1968	4.2	10.0	Secondary	
Palisades Interstate Park (Bear Mountain Plant)	A	1951+	0.14	0.3	Secondary	Seasonal
**South Nyack	A	1941	0.3	0.6	Imhoff Tank	3,100
*Stony Point District #1	A	1969	-	1.0	Secondary	1,000
Upper Nyack	A	1953	0.07	0.1	Imhoff Tank	1,500
**West Haverstraw	A	1936	0.8	0.4	Imhoff Tank	5,500
Suffolk County						
Huntington Sewer District	A	1957+	1.4	2.0	Secondary	34,700
*Kings Park State Hospital (Smithtown)	A	1964+	1.0	2.0	Secondary	9,500
*Long Island Lighting Company (Port Jefferson)	A	-	-	-	Septic Tank	-
Northport	A	1949+	0.15	0.5	Imhoff Tank	6,000
Port Jefferson Sewer District	A	1963+	1.1	1.5	Primary	2,000
Westchester County						
*American Yacht Club (Rye)	A	-	Seasonal	-	2-Septic Tanks	Seasonal
Briarcliff Manor - River Road	A	1951 +	-	-	Septic Tank	200
- Scarborough Dock	A	1926 +	-	-	Septic Tank	1,500
Buchanan	A	1962	0.1	0.55	Secondary	-
Croton-on-Hudson	A	1951	0.7	0.75	Primary	7,000
Irvington	A	1950	0.8	1.0	Primary	5,500
Metropolitan Petroleum Corp.	A	1954	-	-	Septic Tank	-
*Penn C.R.R.Harmon Shop (Croton)	A	1941	0.12	0.7	Primary	Industrial
North Tarrytown	A	1940 +	1.3	1.7	Primary	8,800
Ossining - Liberty Street	A	1939	0.5	1.0	Imhoff Tank	3,000
- Water Street	A	1940	2.3	5.0	Primary	16,000
Peekskill	A	1953	1.2	4.0	Primary	19,000
Port Chester	A	1965 +	4.9	6.0	Primary	27,000
*Shell Union Oil Co. (Mount Vernon)	A	1949	-	-	Septic Tank	Industrial
*Shenerock Shore Club (Rye)	A	-	Seasonal	-	Septic Tank	Seasonal
*Sing Sing State Prison (Ossining)	A	1950 +	0.3	0.6	Primary	2,000
Springvale	A	1959	0.08	0.1	Secondary	1,000
Tarrytown	A	1940 +	1.0	1.5	Primary	11,100
Westchester County D.P.W.						
Blind Brook (Rye)	A	1963 +	2.1	5.0	Primary	23,000
Mamaroneck	A	1965 +	15.5	70.0	Primary	95,000
New Rochelle	A	1955 +	10.6	15.0	Primary	75,000
Yonkers Joint Meeting	A	1960 +	62.2	60.9	Primary	475,000
FEDERAL & MILITARY						
Camp Smith	A	-	-	-	Secondary	-
Earle Naval Ammunition	A	-	-	-	Secondary	-
FDR Veterans Administration Hospital	A	-	-	-	Secondary	-
Floyd Bennett Field	A	-	-	-	Secondary	-
Fort Tilden	A	-	-	-	Primary	-
Military Ocean Terminal	B	-	-	-	Imhoff Tank	-

\+ Year of major additions of reconstruction

* Private, institutional and industrial sewage treatment plants

** Estimated Flows

A P P E N D I X B

TABULATION OF

AUTOMATIC WATER QUALITY MONITORING STATIONS

IN THE

INTERSTATE SANITATION DISTRICT

TABULATION

OF

AUTOMATIC WATER QUALITY MONITORING STATIONS

IN THE

INTERSTATE SANITATION DISTRICT

INTERSTATE SANITATION COMMISSION

1. Arthur Kill, Consolidated Edison Generating Station, Staten Island, N. Y.

2. East River, Consolidated Edison Generating Station, Long Island City, N.Y.

3. Newark Bay, New Jersey *

FEDERAL

1. Narrows, U. S. Gov't. Quarantine Station, Staten Island, N. Y.
2. Victory Bridge, Mid-Channel, N. J.
3. Outerbridge Crossing, East Pier, Staten Island, N. Y.
4. Kill Van Kull, U. S. Gypsum Co., Staten Island, N. Y.
5. Throgs Neck (Bridge), Bronx, N.Y.*
6. Mobile, located in boat *
7. Mobile, located in Mobile Water Pollution Laboratory *

NEW YORK STATE *

1. Lower Hudson River, Verplanck
2. Upper New York Harbor, New York City
3. Lower Hudson River, Yonkers
4. Lower New York Harbor, Chelsea
5. Lower New York Harbor, New York City
6. East River, New York City
7. East River, New York City
8. Harlem River, New York City

* proposed