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WATER QUALITY MANAGEMENT PLAN
LONG ISLAND SOUND-ATLANTIC OCEAN

(17)

Department of Environmental Conservation

Division of Land Resources and Forest Management

December 1976

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FOREWORD

This is New York State's official plan for pollution abatement in the Atlantic Ocean (17-01) Long Island Sound (17-02) Planning Area prepared by the Department of Environmental Conservation pursuant to Section 303(e) of the Federal Water Pollution Control Act Amendments of 1972. The plan identifies pollution problems, treatment needs, priorities, schedules for pollution abatement and governs State and Federal grants-in-aid for any future treatment works and all permits issued under the National Pollution Discharge Elimination System. This is one of a series of basin water quality plans being prepared statewide to coordinate and direct the State's water quality decisions and to assure wise use and management of several billion dollars in public funds for pollution abatement during the next five years. This plan represents the first of a two-phase planning process that will ultimately deal with land use-water quality interrelationships and meet requirements for planning under both Sections 303(e) and 208 of PL 92-500.

The plan was developed as an integral part of the Coastal Zone Management (CZM) and designated area 208 study programs to assure a coordinated water quality planning approach.

State and local policies and plans on detailed aspects of water quality, water resources and land use management have been factored into this plan. To the extent of available resources, in this first phase of planning, inputs and contributions have been received from many levels of government, private concerns and from the general public at local public hearings on water quality standards and water quality related planning and construction programs. Basin plans are presented at local hearings before final approvals. Local input to the planning process will be further developed in Phase II through CZM and 208.

Portions of the plan may be revised at any time based on public comments and concerns, changes in priority and needs for pollution abatement identified through studies being conducted under Section 208. This will include a continuous updating as permits are issued and as changes result in effluent limit evaluations and compliance schedules. The plan will also be revised, at least annually, updated and periodically aired at a public meeting or hearing. Also, accomplishments will be assessed and compared with State and National pollution control goals. Operating efficiencies of facilities will be examined.

Long Island Sound - Atlantic Ocean
Planning Area 17
303(e) Basin Plan

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SUMMARY

1. Water Quality Problems

Water quality problems are widespread in the Atlantic Ocean-Long Island Sound Basin.

- Over 100,000 acres of shellfishing waters are currently closed due to bacterial contamination. This includes scattered areas in Suffolk County, nearly all bays and Long Island Sound waters of Nassau and Westchester Counties, and New York City waters off Rockaway and in a portion of Raritan Bay.
- About 50 bathing beaches are normally closed or posted each summer because of bacterial pollution. Most closures are temporary, but chronic pollution exists at several New York City beaches and at a few beaches in Nassau, Suffolk and Westchester Counties.
- Weed growth and algal blooms are of nuisance proportion in portions of Western Long Island Sound and adjoining bays, Huntington Harbor, the lower Peconic River, Moriches Bay, South Oyster Bay, Hempstead Bay and Jamaica Bay.
- Oil slicks, turbidity, drift and sludge accumulations from combined sewer overflows or raw discharges create serious water quality problems in the poorly flushed backwater areas in the Upper New York Bay. Sludges decomposing cause foul odors in many areas.

- Portions of the Byram River, Arthur Kill, Harlem and Lower East Rivers approach anoxic conditions at critical periods during the summer. Water temperatures on the Arthur Kill reach 85°F thus increasing biological activity and decreasing the solubility of oxygen in water. Shellfish culture and a satisfactory fishery cannot be maintained in these waters.
- Many ground water supplies on Long Island are contaminated with nitrates, detergents, chlorides and toxic materials. This problem is of serious consequence since the Islanders depend solely on a limited ground water resource for their domestic water supply.

2. Sources of Pollution

Water problems cited above are due to a wide variety and multiplicity of sources.

More than 500 waste discharges have been identified in the Basin. Fifteen percent of these discharges are large municipal discharges, five percent are major industrial discharges and the remaining smaller point sources many of which discharge to the ground water supplies of Suffolk County. Table A provides information on each major source. Figures A, B and C show each discharge location.

Other significant sources include combined sewer discharges in New York City and Westchester County, thousands of individual household systems, mostly in Suffolk County, duck farm waste, landfill leachate, vessel waste discharges, thermal discharges, ocean dumping of spoil and sludges and dredging activities.

3. 208 Planning

Areawide waste treatment management (208) planning is actively under way in the Long Island-Atlantic Ocean Basin. About 14.4 million dollars have been granted by EPA for 208 planning; 5.2 million dollars for Nassau and Suffolk Counties; 8.1 million dollars for New York City and 1.1 million dollars for Westchester County. These plans are scheduled for completion in early 1978.

4. Sewerage Facility Needs

The cost of corrective facilities in the planning area based on DEC's 1974 "Needs Survey" is 14.2 billion dollars. About 3.3 billion dollars are needed for sewage treatment and transmission facilities; 3.1 billion for new collectors; 2.1 billion for sewer system rehabilitation; and 5.7 billion for correction of combined sewers and stormwater control. Table B summarizes these needs by municipality. These estimates are currently being revised.

Thirty-four projects or phases of projects with an estimated project cost of 2.3 billion dollars are pending construction grants. See Table C. These projects comprise 47 percent of the statewide estimated costs of projects pending construction grants. Twenty additional projects with project costs of $134,160,000 are pending grants for planning and design. See Table D.

Short range plans in New York City are for interception and treatment of dry weather flows and separate sanitary sewers on Staten Island. This will cost 2.5 billion dollars.

Over 300 combined sewer overflows and storm runoff will remain untreated. New York City, through the 208 program, is developing a water quality model to evaluate the impact of these discharges on water quality and water quality improvements that could be accomplished through alternative control schemes.

Currently 5 million cubic yards per year of sewage sludges from metropolitan New York City and New Jersey sewage treatment plants are barged and dumped in a designated site in the New York Bight Apex. This volume is expected to double with increased wastewater treatment during the next 20 years. The Interstate Sanitation Commission has taken the lead in investigations of alternative methods of disposal with the goal of eliminating ocean disposal.

Needs for advanced waste treatment to prevent ground water contamination and nuisance weed growths and algae blooms in the Long Island embayments are being evaluated through ongoing 201 wastewater facility planning. Twenty-one advanced waste treatment plants are already on line. Most of these are small plants located in Suffolk County and provide nitrogen removal, effluent polishing and ground water recharge. Fifteen additional plants, including Glen Cove, Sag Harbor and Bay Park are in the planning and design stage.

The 208 studies currently underway are identifying costs and evaluating the effectiveness of non-point source control and/or advanced point source treatment alternatives in each water quality limiting segment. The results of these studies are expected to provide a basis for policies and plans to manage the quality and quantity of ground water resources and protect the environmental integrity of bays and surface waters throughout the Atlantic Ocean-Long Island Sound planning area.

5. Water Quality Limiting Segments

Based on limited water quality modeling and sampling, the following areas are presently classified as "water quality limited segments":

1. Arthur Kill-Kill Van Kull
2. Upper New York Bay
3. East River-Harlem River
4. Western Long Island Sound
5. Byram River-Port Chester Harbor
6. Manhasset Bay
7. Hempstead Harbor
8. Huntington Harbor
9. Port Jefferson
10. Peconic River
11. Sag Harbor
12. Moriches Bay
13. Great South Bay
14. Middle Bay
15. Hempstead Bay
16. Long Island Groundwaters

Water quality surveys and modeling of alternative waste load allocations are being carried out by designated 208 agencies. These studies will confirm these classifications or provide justification for reclassification of segments.

6. Permits For Water Quality Control

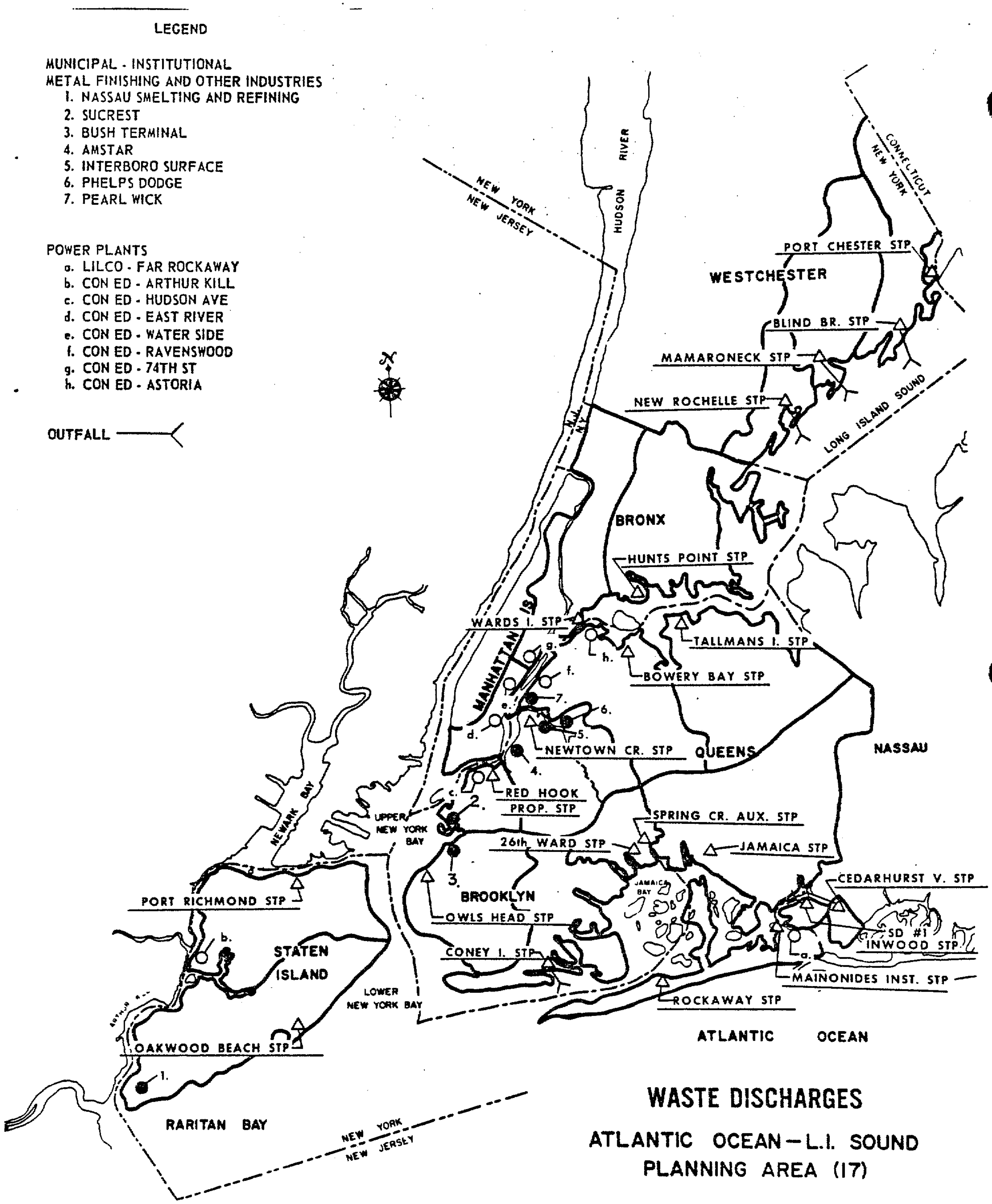
Permits to control the discharge of point sources of pollution have been issued under the State/National Discharge Elimination System for nearly 90% of the discharges. Table E summarizes the biochemical oxygen demand limitation for each major discharge. Further information on treatment requirements, abatement conditions and schedules can be found in the discharge permits. These are on file and available for inspection at the U.S. Environmental Protection Agency or NYS Department of Environmental Conservation Offices.

NPDES/SPDES permits are also required at oil storage and transfer sites. These permits require the collection of runoff and removal of oil and grease that runoff might contain. Bulk users and handlers of oil must also have plans for spill prevention and control. The U.S. Coast Guard has responsibility for vessel transfers of oil. Any spills must be reported to the Coast Guard day or night. The discharger has primary responsibility for emergency containment and cleanup.

The Corps of Engineers is responsible for updating proper disposal of dredged spoil under Section 404 of PL 92-500. Because of the potential adverse environmental impact of ocean disposal of dredged spoil, the Corps has recently reduced the number of acceptable disposal sites to five in Long Island Sound and to the New York Bight. Studies of these sites are underway to better determine the ways and extent of dumping on the environment.

The discharge of wastes from vessels are not controlled by NPDES/SPDES permits but are controlled by State and Federal laws and regulations. The Environmental Protection Agency currently controls sewage discharges from vessels by requiring the use of macerator-chlorinators.

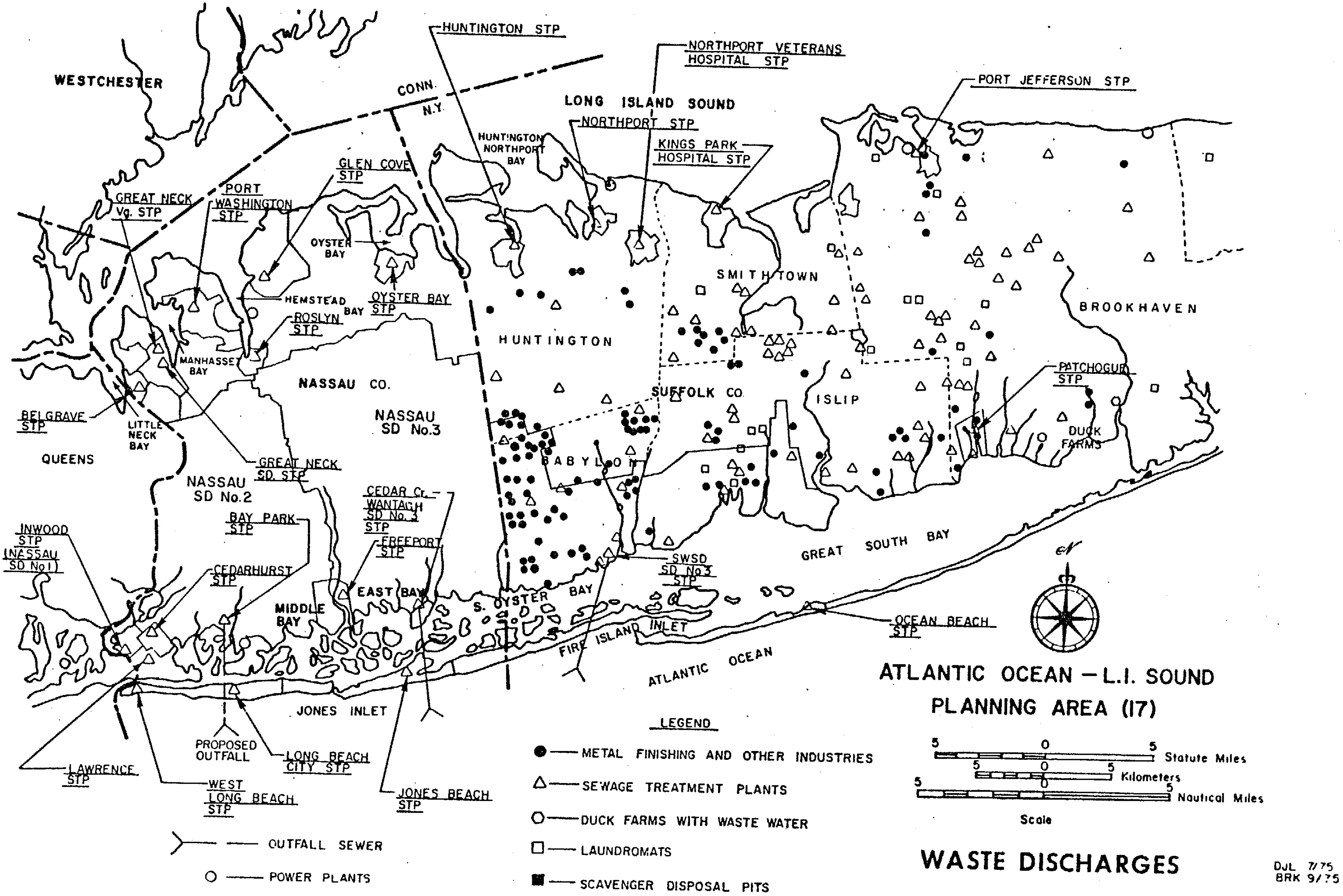
New York State prohibits the discharge of sewage that has not received a secondary level of treatment. To meet these requirements most small vessels have installed sewage holding tanks which are emptied periodically at some 61 pumpout and land based treatment facilities in the planning area. Seven of these are in Connecticut. This is considered to be an adequate number although additional facilities especially in the New York City Area, are needed for convenience and to discourage illegal discharges.



WASTE DISCHARGES

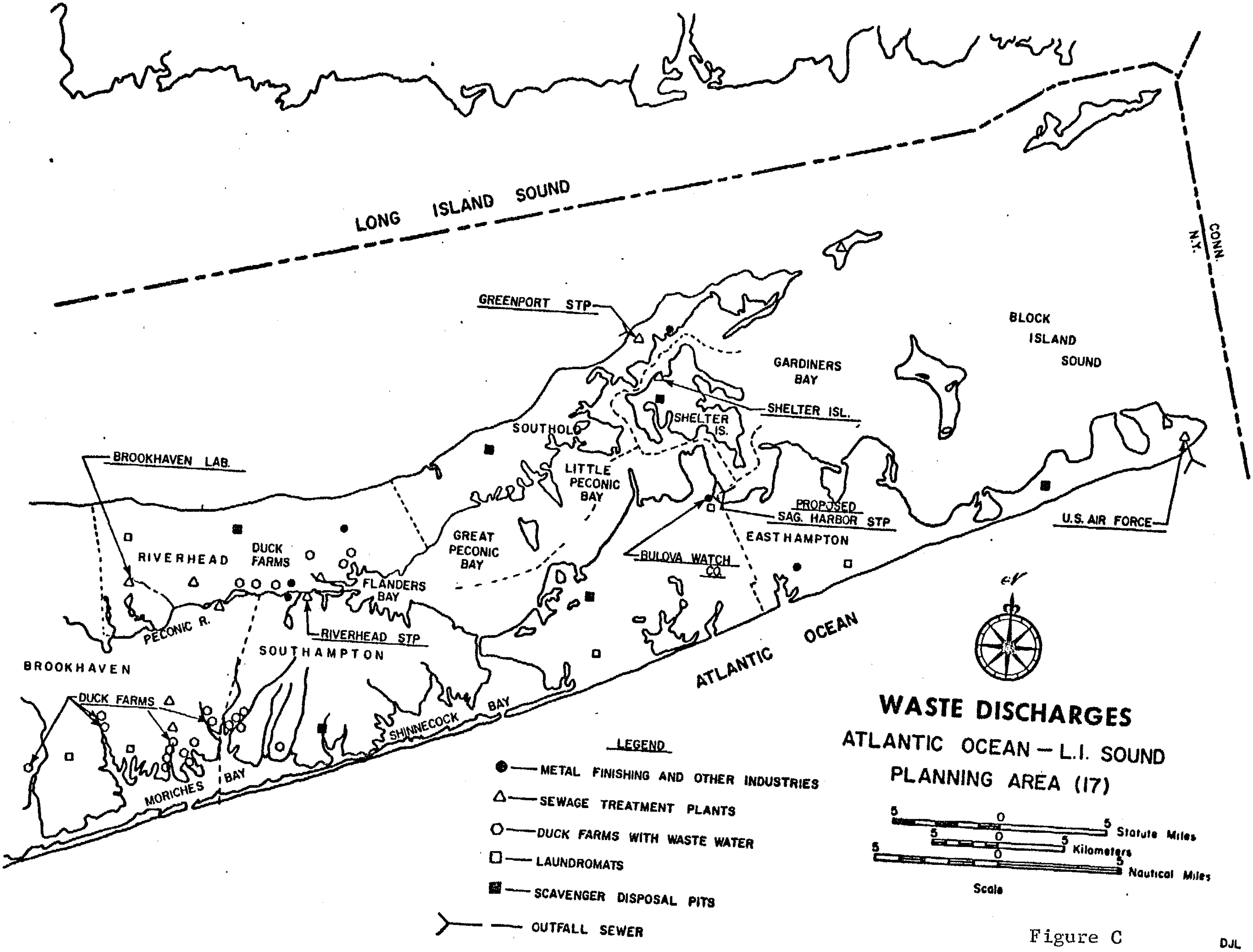
ATLANTIC OCEAN — L.I. SOUND
PLANNING AREA (17)

Figure A



WESTCHESTER
CONN.
N.Y.
LONG ISLAND SOUND
HUNTINGTON STP
NORTHPORT VETERANS HOSPITAL STP
PORT JEFFERSON STP
NORTHPORT STP
KINGS PARK HOSPITAL STP
HUNTINGTON NORTHPORT BAY
GLEN COVE STP
PORT WASHINGTON STP
GREAT NECK Vg. STP
OYSTER BAY
HEMSTEAD BAY
OYSTER BAY STP
ROSLYN STP
MANHASSET BAY
LITTLE NECK BAY
BELGRAVE STP
QUEENS
NASSAU CO.
NASSAU SD No.3
NASSAU SD No.2
GREAT NECK SD. STP
HUNTINGTON
SMITHTOWN
BROOKHAVEN
SUFFOLK CO.
ISLIP
BABYLON
PATCHOGUE STP
DUCK FARMS
CEDAR Cr. WANTAGH SD No. 3 STP
FREEPORT STP
BAY PARK STP
INWOOD STP (NASSAU SD No.1)
CEDARHURST STP
MIDDLE BAY
EAST BAY
S. OYSTER BAY
SWSD SD No.3 STP
GREAT SOUTH BAY
FIRE ISLAND INLET
OCEAN BEACH STP
ATLANTIC OCEAN
JONES INLET
PROPOSED OUTFALL
LAWRENCE STP
WEST LONG BEACH STP
LONG BEACH CITY STP
JONES BEACH STP
N
ATLANTIC OCEAN — L.I. SOUND
PLANNING AREA (17)
LEGEND
● METAL FINISHING AND OTHER INDUSTRIES
△ SEWAGE TREATMENT PLANTS
○ DUCK FARMS WITH WASTE WATER
□ LAUNDROMATS
■ SCAVENGER DISPOSAL PITS
OUTFALL SEWER
○ POWER PLANTS
5 0 5 Statute Miles
5 0 5 Kilometers
5 0 5 Nautical Miles
Scale
WASTE DISCHARGES
DJL 7/75
BRK 9/75

Figure B



WASTE DISCHARGES
ATLANTIC OCEAN — L.I. SOUND
PLANNING AREA (17)

Figure C

DJL 7/75
BRK 9/75

Table A

Waste Sources and Abatement Status
Long Island-Atlantic Ocean (17)

Waste Source	Project Number	Receiving Stream & Classification	Treatment Facilities	Year Built	Design Plant Eff. -%-	Design Raw Loading -#/day-	Design Flow MGD	Status & Abatement Requirement
*** MAJOR MUNICIPAL AND INDUSTRIAL DISCHARGES *** (Note: Major Thermal Discharges at end of table)								
I. New York Bays - Arthur Kill - Kill Van Kull								
Nassau Smelting and Refining	---	Mill Creek, I	-Chemical addition and precipitation to remove metals and adjust pH -Cooling Tower	1973	-------	Metals	0.331 (Actual)	-Sanitary waste to Oakwood Beach STP upon completion of interceptor -Meet BPT with existing treatment process
NYC-Port Richmond, WPCP	346 593	Kill Van Kull, II	Primary	1953, 1964 Under Construction	BOD ~ 24 (Actual) BOD ~ 85 (Proposed)	BOD_u = 150,000 NOD = 90,000 (New Design)	10 (Design) 17.1 (Actual) 60 (New Design)	-Under construction to upgrade to 60 MGD step aeration STP -Expand collection system -Convert to separate sewers
Sucrest Corporation	---	Erie Basin, I	None	----	-------	BOD_u = 2,500	9.65 (Actual Primary Cooling)	-Process waste to Red Hook STP in future or provide BPT -Continue barometric condenser cooling water discharge
Bush Terminal Associates	---	Gowanus Bay, I	None	----	-----	BOD_u = 7,000	0.995 (Actual San., Proc. & Cooling)	-Inventory of tenants needed to establish combined BPT limits -Provide treatment or join Owls Head System
NYC-Owls Head, WPCP	402 357	Upper New York Bay, I	Modified Aeration	1952	BOD ~ 55 (Actual) BOD ~ 85 (Proposed)	BOD_u = 225,000 NOD = 135,000 (New Design)	160 (Design) 99 (Actual) 135 (Proposed Design)	-Achieving only 55% removals -Facilities planning underway. -Probably provide 135 MGD Activated Sludge STP using pure oxygen -Abate combined sewer overflows
NYC-Oakwood Beach, WPCP	392	Lower New York Bay, SB	Modified Aeration	1956, Under Construction	BOD ~ 58 (Actual) BOD ~ 85 (Proposed)	BOD_u = 68,000 NOD = 40,000 (New Design)	16 (Design) 19.1 (Actual) 40 (New Design)	-Achieving only 58% removals -Under construction to upgrade to 40 MGD step aeration STP -Expand collection system -Project priorities 12 & 13

Table A (cont'd)

Waste Sources and Abatement Status
Long Island-Atlantic Ocean (17)

Waste Source	Project Number	Receiving Stream & Classification	Treatment Facilities	Year Built	Design Plant Eff. -%-	Design Raw Loading -#/day-	Design Flow MGD	Status & Abatement Requirement
II. East River-Harlem River								
NYC-Red Hook, WPCP (Proposed)	394	East River, SD	-None; Raw and Combined Sewer Discharges -Step Aeration under Construction	Under Construction	BOD ~ 85 (proposed)	BODu = 175,000 NOD = 105,000	70 (Design)	-70 MGD step aeration under construction -5% complete -Abate wet weather combined sewer overflows -To include flows from Newtown Creek -Project Priorities #37,38,39 & 40
Amstar Corp.	---	East River, SD	-Sanitary waste to municipal system -Barometric condenser discharges	----	---------	BOD_u = 2,100	9.27 (Actual)	-Sanitary waste is conveyed to municipal system -Meet BPT for other wastes
NYC-Newtown Creek WPCP	86 713	East River, SD	310 MGD Activated Sludge Includes 20 MGD UNOX Demonstration Project	1967, 1975	BOD ~ 60	BOD_u = 850,000 NOD = 500,000 (Actual)	310 (Design) 340 (Actual)	-Manhattan pumping station tied in 5/76 -The plant is limited in size by land availability & presently overloaded -Engineering studies are proposed to evaluate pure oxygen, inflow infiltration problems, diversion to other collection systems & subdivisions of district as means of reducing flows or increasing plant capabilities -Diverted flow is being incorporated into Red Hook design
Interboro Surface	---	Newtown Creek, II	-Dust Scrubber Sedimentation Pit Overflow	----	---------	TSS = 1500	.020 (Actual)	-Meet BPT, especially suspended solids reduction
Phelps-Dodge Ref. Corp.	713	Newtown Creek, II	-Sanitary : Raw -Process: Neutralization and Precipitation -Cooling Water: Cooling Towers	----	---------	Metals and Cooling Water	.565 (Actual)	-Sanitary wastes will be conveyed to municipal system -Meet BPT for metals, pH, temperature, etc.
Pearl Wick, Corp.	---	East River, SD	None	----	---------	Metals and Cooling Water	.041 (Actual)	-Sanitary wastes will be conveyed to municipal system -Meet BPT for metals, temperature, etc.
NYC-Wards Island, WPCP	214 363 395	East River, SD		1937, 1948, Under Construction	BOD ~ 60 (Actual) BOD ~ 85 (Proposed)	BODu = 440,000 NOD = 260,000 (New Design)	210 (Design) 150 (Treated) 115 (Bypassed) 250 (New Design)	250 MGD step aeration under construction -Abate combined sewer overflows

Table A (cont'd)

Waste Sources and Abatement Status
Long Island-Atlantic Ocean (17)

Waste Source	Project Number	Receiving Stream & Classification	Treatment Facilities	Year Built	Design Plant Eff. -%-	Design Raw Loading -#/day-	Design Flow MGD	Status & Abatement Requirement
NYC-Bowery Bay, WPCP	398 406	Rikers I. Channel, SD	Activated Sludge	1939, 1958, Under Construction	BOD ~ 63 (Actual) BOD ~ 85 (Proposed)	BOD_u = 380,000 NOD = 220,000 (New Design)	120 (Design) 113 (Actual) 150 (New Design)	-150 MGD step aeration under construction -Abate combined sewer overflows
Hunts Point, WPCP	143 397 399	East River, I	Step Aeration	1952, 1964, Under Construction	BOD ~ 85 (Proposed)	BOD_u = 335,000 NOD = 200,000 (New Design)	150 (Design) 151 (Actual) 200 (New Design)	-Being upgraded and expanded to 200 MGD step aeration STP -Harts Island; City Island and Orchard Beach STPs have been abandoned with flow now to Hunts Point STP -Abate combined sewer overflows
Tallmans Island, WPCP	166 404	East River, I	Activated Sludge	1939, 1965, Under Construction	BOD ~ 80 (Actual) BOD ~ 85 (Proposed)	BOD_u = 133,000 NOD = 80,000 (New Design)	60 (Design) 61 (Actual) 80 (New Design)	-Only primary removal while under construction -80 MGD modified aeration by June 1976 -80MGD step aeration by January 1977 -Abate combined sewer overflows
III. Western Long Island Sound								
Port Chester	069 695	Byram River, SC	Primary	1964	BOD ~ 18 (Actual) BOD ~ 85 (Proposed)	BOD_u = 16,000 NOD = 9,300 (Existing)	6.0 (Design) 6.2 (Actual)	-Upgrade to 6 MGD activated sludge STP -Effluent to discharge to proposed Blind Brook outfall -Provide sludge disposal service to Blind Brook -Project priorities #173 and #174
Blind Brook	105 696	Long Island Sound, SB	-Primary -Outfall to Sound	1963	BOD ~ 19 (Actual) BOD ~ 85 (Proposed)	BOD_u = 8,300 NOD = 5,000 (Existing)	5.0 (Design) 2.9 (Actual)	-Upgrade to 5 MGD activated sludge STP -Install new outfall to serve Blind Brook & Port Chester -Pump sludge to Port Chester -Project priorities #145 & #146
Mamaroneck	908	Long Island Sound, SB	-Primary -2.5 Mile Outfall to Sound	1965	BOD ~ 28 (Actual) BOD ~ 85 (Proposed)	BOD_u = 31,000 NOD = 19,000 (Existing)	18 (Design) 18.5 (Actual)	-Existing plant designed to handle 60 MGD storm flows -Upgrade to 18 MGD secondary STP
New Rochelle	5	Long Island Sound, SB	-Primary -1.7 Mile Outfall to Sound	1935, 1964	BOD ~ 13 (Actual) BOD ~ 85 (Proposed)	BOD_u = 24,000 NOD = 14,000 (Existing Design)	15 (Design) 14.5 (Actual)	-Upgrade to 15 MGD pure oxygen secondary STP -Abate overflows -Correct excessive

Table A (cont'd)

Waste Sources and Abatement Status
Long Island-Atlantic Ocean (17)

Waste Source	Project Number	Receiving Waters & Classification	Treatment Facilities	Year Built	Design Plant Eff. -%-	Design Raw Loading -#/day-	Design Flow MGD	Status & Abatement Requirement
III. Western Long Island Sound								
Belgrave S.D.	609	Little Neck Bay, SB	High Rate Trickling Filter	1935, 1965	BOD $\sim$ 80	BOD_u = 5000 NOD = 3000	2.0	Meet BPT requirements
Great Neck Vg.	341	Manhasset Bay, SB	High Rate Trickling Filter	1933, 1968	BOD $\sim$ 85	BOD_u = 3750 NOD = 2250	1.5 (Design) 1.0 (Actual)	Meet BPT requirements
Great Neck S.D.	629	Manhasset Bay, SB	High Rate Trickling Filter	1962, 1967	BOD $\sim$ 85	BOD_u = 6740 NOD = 4040	2.7 (Design) 2.9 (Actual)	Overloaded; expand facilities in future and extend service to adjacent area
Port Washington	351, 666	Manhasset Bay, SB	High Rate Trickling Filter	1951, 1968	BOD $\sim$ 75	BOD_u = 7500 NOD = 4500	3.0	-Unranked pending project; 201 planning needed -Plant overloaded -Extend services to Vg. of Roslyn and adjacent area -Expand capacity to 6.5 MGD -Install outfall to Sound
Roslyn Vg.	342	Hempstead Harbor, SB	High Rate Trickling Filter	1942, 1968	BOD $\sim$ 80	BOD_u = 1250 NOD = 750	0.5	- Meet BPT requirements - Abandon plant and join with Port Washington in regional system in future
Glen Cove (C)	236, 665	Glen Cove Creek-I Hempstead Harbor, SB	High Rate Trickling Filter	1919, 1964	BOD $\sim$ 80	BOD_u = 10,000 NOD = 6,000	4.0 (Design) 5.23 (Actual)	-Expand to 8 MGD activated sludge STP with discharge to the tidal mouth of Glen Cove Creek -Extend service to Sea Cliff, Roslyn Harbor, Brookville-Old Westbury Area in future -Project priorities 52 & 53
Oyster Bay	---	Oyster Bay Harbor, SA	High Rate Trickling Filter	1963	BOD $\sim$ 85	BOD_u = 3000 NOD = 1800	1.2	-Plant periodically flooded at high tide -System receives excessive infi[illegible]ion/ inflow

Table A (cont'd)

Waste Sources and Abatement Status
Long Island-Atlantic Ocean (17)

Waste Source	Project Number	Receiving Waters & Classification	Treatment Facilities	Year Built	Design Plant Eff. -%-	Design Raw Loading -#/day-	Design Flow MGD	Status & Abatement Requirement
IV. Central & Eastern Long Island Sound								
Huntington SD, STP	343	Huntington Harbor, SA	High Rate Trickling Filter	1927, 1956, 1970	BOD ~ 85 NOD ~ 0	BOD_u = 5000 NOD = 3000	2.0	- Sewer system receives considerable infiltration
Northport STP	237	Northport Harbor, SA	Extended Aeration	1973	BOD ~ 85 NOD ~ 50	BOD_u = 825 NOD = 495	0.5	- Serves Centerport S.D. - Abated - Plant expansion and sewer services to surrounding area being studied
Northport Veterans Hospital	---	Subsurface Discharge	Trickling Filter Sand Filtration	----	BOD ~ 85	BOD_u = 775 NOD = 465	0.31	-----------
Stony Brook Subdivision	---	Subsurface Discharge	Rated Aeration	1965 1975	BOD ~ 85	BOD_u = 900 NOD = 540	0.36	- Upgrade
Kings Park SD #6	---	Long Island Sound, SA	Activated Sludge	1935, 1963	BOD ~ 85 NOD ~ 50	BOD_u = 2500 NOD = 1500	2.0	-Planning area has been defined -Capacity available for expansion
Port Jefferson STP SD #1	709	Port Jefferson Harbor, SC	Primary, Chlorination	1957, 1962 1973	BOD ~ 35	BOD_u = 3680 NOD = 2210	2.27 (Design)	- Existing system has considerable infiltration - 201 and 208 studies are underway. Completion of 201 study scheduled for 6/77 - Serves SUNY at Stony Brook and Lace Mill
Greenport Vg.	621	Long Island Sound, SA	Primary, Imhoff Tank	1940	BOD ~ 33 NOD ~ 0	BOD_u = 1251 NOD = 750	0.5 Actual (0.3)	- Plant being upgraded to 0.5 MGD STP consisting of 2 aerated lagoons for extended biological oxidation - Under construction - Project priority #69
V. Peconic River - Peconic Bay Area								
Brookhaven National Laboratory	---	Trib. to Peconic River	Primary Clarifier, Sand filters	Unknown	N.A.	N.A.	1.3	Low level radioactive wastes and sanitary waste are within acceptable limits

Table A (cont'd)

Waste Sources and Abatement Status
Long Island-Atlantic Ocean (17)

Waste Source	Project Number	Receiving Stream & Classification	Treatment Facilities	Year Built	Design Plant Eff. -%-	Design Raw Loading -#/day-	Design Flow MGD	Status & Abatement Requirement
Duck Farms (5 Farms)	---	Peconic River	Aerated Lagoons	1965-1970	BOD ~ 85	N.A.	N.A.	Duck Farms to improve operation and convert to dry farming by 1983
Riverhead, New York	536	Peconic River - Peconic Bay, SC	High Rate Trickling Filter	1937, 1971	BOD ~ 85	BOD_u = 3000 NOD = 1800	1.2 Actual = 0.6	-Abated -201 underway
Shelter Island Heights Association	---	Dering Bay, SA	Septic Tank, Outfall Sewer	1925	BOD ~ 35	BOD_u = 100 NOD = 60	0.04	Provide secondary treatment
Bulova Watch Company*	---	Sag Harbor Bay, SA	None	----	----------	Metals, Toxic Substances	0.1	- Segregate cooling, sanitary and process waste. Submit engineering report. - Sanitary waste to Sag Harbor STP
Sag Harbor Vg. (Proposed)	433	Sag Harbor Bay, SA	None, 2 Sewer Outfalls and Individual Sub-surface systems	Proposed	-----------	BOD_u = 250 (Proposed) NOD = 150 (Proposed)	0.1 (Proposed)	- New, extended aeration plant under construction to provide 90% over-all removal - Outfall to be located outside breakwater - Future expansion to 0.5 MGD planned - Project priorities #46 & 47
VI. Montauk Point - Atlantic Ocean								
U.S. Air Force (Montauk)	---	Atlantic Ocean, SA	High Rate Trickling Filter	1973	BOD ~ 85	BOD_u = 118 NOD = 70	0.049	-Abated
VII. Moriches Bay - Atlantic Ocean								
Duck Farms (17 Farms)	---	Tributaries to Moriches Bay	Aerated Lagoons	1965-1970	BOD ~ 85	N.A.	N.A.	-Duck farms to improve operation and convert to dry farming by 1983
VIII. Great South Bay - Atlantic Ocean								
Duck Farms (2 Farms)	---	Tributaries to Great South Bay	Aerated Lagoons	1965-1970	BOD ~ 85	N.A.	N.A.	-Duck farms to improve operation and convert to dry farming by 1983
Patchogue, Vg.	741	Patchogue Cr., D	Primary Settling	1927, 1951	BOD ~ 35	BOD_u = 1250 NOD = 750	0.5	-Upgrade level of treatment, expand service -Participate in regional 208 Study, Suffolk Co. South Central Study Area -Planning area has been defined

Table A (cont'd)

Waste Sources and Abatement Status
Long Island-Atlantic Ocean (17)

Waste Source	Project Number	Receiving Stream & Classification	Treatment Facilities	Year Built	Design Plant Eff. -%-	Design Raw Loading -#/day-	Design Flow MGD	Status & Abatement Requirement
Ocean Beach STP	---	Great South Bay, SA	Primary Chlorination	1917, 1950	BOD 35	BOD_u = 1251 NOD = 750	0.05	-Seasonal flows limited Limited room for expansion -Provide secondary treatment -Under construction -Project priority #55
Yaphank Regional S.D. (Proposed)	994	-----------	Proposed	Proposed	---------	----------	Undefined	-208 study is underway -completion date for the study is 1/77 -Regional system, STP sites & design capacities are undefined -Planning area has been, defined
South Central Study Area Disposal District #2	---	-----------	Proposed	Proposed	---------	----------	Undefined	-Reginnal projects to be defined in 201 & 208 studies -Planning area has been defined
IX. South Oyster Bay - Atlantic Ocean								
Suffolk Co. Southwest S.D. #3	624	Atlantic Ocean, SA	Activated Sludge	Under Construction	BOD 85	BOD_u = 75,000 NOD = 45,000	30	-Regional STP & interceptors under construction. Completion scheduled for January 1978 -Finalize plans for ocean outfall -Complete environmental restoration along route of outfall -Includes substantial amount of industrial waste -Project priorities #140, 141, 142, 143 & 144
West Central S.D. (Proposed)	995	---------	Proposed	Proposed	--------	----------	Undefined	-208 study is underway -Regional system, STP sites & design capacities are undefined -Planning area has been defined

Table A (cont'd)

Waste Sources and Abatement Status
Long Island-Atlantic Ocean (17)

Waste Source	Project Number	Receiving Stream & Classification	Treatment Facilities	Year Built	Design Plant Eff. -%-	Design Raw Loading -#/day-	Design Flow MGD	Status & Abatement Requirement
XI. Jamaica Bay (cont'd)								
NYC-Rockaway, WPCP	68 403	Jamaica Bay, SB	Modified Aeration	1952, 1961, Under Construction	BOD ~ 20 (Actual) BOD ~ 85 (Proposed)	BODu = 75,000 NOD = 45,000	30 (Design) 19.3 (Actual) 45 (New Design)	-Being expanded and upgraded to 45 MGD step aeration STP -Abate combined sewer overflows
Maimonides	---	Jamaica Bay, SB	-Activated Sludge -Also raw discharges	----	BOD ~ 85	BOD_u = 15 NOD = 9 (Design)	.0060 (Design) .0017 (Actual)	-Buildings not currently connected to treatment facility shall be connected
NYC-Jamaica, WPCP	109, 321, 400	Jamaica Bay, SB	Step Aeration	1943, 1964, Under Construction	BOD ~ 70 (Actual) BOD ~ 93 (Proposed)	BOD_u = 170,000 NOD = 100,000	100 (Design) 93 (Actual)	-Being upgraded step aeration -Abate combined sewer overflows
Spring Creek Auxiliary STP	347	Old Mill Creek, I	-Temporary storage of combined sewage -Primary settling and chlorination of excess combined sewage -Retained sewage treated at 26th Ward WPCP in dry weather	1972	---------	---------	1,300,000 of storage	-Continue operation and monitoring of operation -Use results of observations as basis for designs of other combined sewer overflow corrective measures
26th Ward, WPCP	405	Hendrix Creek, I	Step Aeration	1944 1951 Under Construction	BOD = ~85 (Proposed)	BOD_u = 140,000 NOD = 85,000 (New Design)	60 (Design) 66 (Actual) 85 (New Design)	-Being expanded and upgraded to 85 MGD step aeration STP -Continue treatment of stored combined sewage from Spring Creek Auxiliary STP -Abate remaining combined sewer overflows
NYC-Coney Island, WPCP	396 345 044	Rockaway Inlet, SB	Modified Aeration	1936 1963	BOD ~ 55 (Actual) BOD ~ 85 (Proposed)	BOD_u = 183,000 NOD = 110,000	110 (Design) 100 (Actual)	-Upgrade to step aeration STP

Table A (cont'd)

Waste Sources and Abatement Status
Long Island-Atlantic Ocean (17)

Waste Sources	Project Number	Receiving Stream & Classification	Treatment Facilities	Year Built	Design Plant Eff. -%-	Design Raw Loading -#/day-	Design Flow MGD	Status & Abatement Requirement
X. East Bay-Middle Bay-Hempstead Bay-Atlantic Ocean								
Nassau Co. SD #3 - Cedar Creek	361, 628, 982	Atlantic Ocean, SA	Activated Sludge	1974	BOD ~ 85	BOD_u = 112,700 NOD = 67,500	45	-Project 982 to include 5.0 MGD pilot advanced wastewater treatment-recharge facility -Plant to be expanded to 90 MGD in 1981 to include Freeport and other areas -Project priorities #178, 179 & 180
Jones Beach State Park STP	---	Sloop Channel, SA	Trickling Filter	----	BOD ~ 85	BOD_u = 6,250 NOD = 3,750	25 (Design) 0.225 (Actual Summer Flow)	-Meet BPT requirements
Freeport V. STP	---	Stadium Park Canal, SC (Trib. of Freeport Cr. And Hempstead Bay), I	High Rate Trickling Filter	1927, 1961	BOD ~ 85	BOD_u = 10,000 NOD = 6,000	4.0 (Design) 3.7 (Actual)	-Connect to Nassau SD #3 -Receives some industrial plating waste -Some infiltration inflow problems
Nassau Co. S.D. #2 Bay Park STP	891	Reynolds Channel, SB	Activated Sludge	1951, 1961	BOD ~ 90	BOD_u = 150,000 NOD = 90,000	60 (Design) 65 (Actual)	-Plant to be expanded to 90 MGD -Install 3.0 mile long ocean outfall to depth of 56 ft. -Receive waste from Cedarhurst and Lawrence in future
Long Beach (C)	305	Reynolds Channel, SB	High Rate Trickling Filter	1952, 1968	BOD ~ 85	BOD_u = 16,000 NOD = 9,600	6.4 (Design) 6.9 (Actual)	-Discontinue discharge to Reynolds Channel -Tie into proposed Bay Park ocean outfall
West Long Beach STP	---	Reynolds Channel, SB	High Rate Trickling Filter	1927, 1960	BOD ~ 85	BOD_u = 7,500 NOD = 4,500	1.5 (Design) 0.65 (Actual)	-Meet BPT requirements
Lawrence STP	---	Banister Creek, I (Trib. to Reynolds Channel)	High Rate Trickling Filter	1933, 1966	BOD ~ 85	BOD_u = 3,750 NOD = 2,250	1.5 (Design) 0.76 (Actual)	-Pump to Bay Park
XI. Jamaica Bay								
Cedarhurst STP	---	Motts Cr., I	High Rate Trickling Filter	1934, 1968	BOD ~ 85	BOD_u = 2,500 NOD = 1,500	1.0	-Pump to Bay Park
Inwood STP (Nassau Co. S.D.#1)	---	Jamaica Bay, SB	High Rate Trickling Filter	1963	BOD ~ 85	BOD_u = 6,250 NOD = 3,760	2.5 (Design) 1.5 (Actual)	-Meet BPT requirements

Table A (cont'd)

Waste Sources and Abatement Status
Long Island-Atlantic Ocean (17)

Waste Source	Project Number	Receiving Stream & Classification	Treatment Facilities	Year Built	Design Plant Eff. -%-	Design Raw Loading -#/day-	Design Flow MGD	Status & Abatement Requirement
			*** MAJOR THERMAL DISCHARGES ***			CAPACITY -MW-		
Con-Ed - Arthur Kill	---	Arthur Kill	None	----	---------	911	654 (Actual)	
Con-Ed - Hudson Avenue	---	East River	None	----	---------	700	967 (Actual)	
Con-Ed - East River	---	East River	None	----	---------	513	541 (Actual)	
Con-Ed - Waterside	---	East River	None	----	---------	596	555 (Actual)	-Standards for thermal discharges were approved March, 1975
Con-Ed - Ravenswood	---	East River	None	----	---------	1828	1390 (Actual)	
Con-Ed - 74th Street	---	East River	None	----	---------	209	317 (Actual)	
Con-Ed - Astoria	---	East River	None	----	---------	1550	1363 (Actual)	-Requirements for tri-axial temperature measurements and other permit requirements are being contested by dischargers; adjudicatory hearings are to be held
Con-Ed - Astoria, Unit 6 (Proposed)	---	East River	None	----	---------	800	785 (Proposed)	
LILCO - Glenwood Landing	---	Hempstead Harbor	None	----	---------	381	395 (Actual)	
LILCO - Northport	---	Long Island Sound	None	----	---------	1125	682 (Actual)	
LILCO - Port Jefferson	---	Port Jefferson Harbor	None	----	---------	438	375 (Actual)	
LILCO - Shoreham, Nuclear (proposed)	---	Long Island Sound	None	----	---------	820	863 (Actual)	
LILCO - Far Rockaway	---	Mott Basin	None	----	---------	100	82 (Actual)	
LILCO - E. F. Barrett	---	Barnums Island Channel	None	----	---------	380	294 (Actual)	

TABLE B

SUMMARY OF 1974 SURVEY OF NEEDS
FOR
MUNICIPAL WASTEWATER TREATMENT FACILITIES
($1,000 June 1973)

CATEGORY	NYC	WESTCHESTER	NASSAU	SUFFOLK	TOTAL
I	0	68,853	56,747	89,817	215,417
II	1,143,553	2,057	347,096	531,160	2,023,866
IIIA	232,900	35,130	6,630	721	275,381
IIIB	1,795,998	3,168	24,582	0	1,823,748
IVA	1,330,321	7,084	649,026	1,107,413	3,093,844
IVB	216,578	2,950	115,341	750,253	1,085,122
V	2,834,442	0	0	0	2,834,442
Sub total	7,553,792	119,242	1,199,422	2,479,364	11,351,820
VI	99,129	174,017	739,667	1,869,491	2,882,304
Total	7,652,921	293,259	1,939,089	4,348,855	14,234,124

CATEGORY I - *Secondary Treatment (AWT not required)
CATEGORY II - *Secondary Treatment and/or AWT
CATEGORY IIIA - Infiltration/Inflow Correction including treatment
CATEGORY IIIB - Replacement or Major Rehabilitation of sewers
CATEGORY IVA - *New Collectors, etc.
CATEGORY IVB - *New Interceptors, etc.
CATEGORY V - Correction of combined sewer overflows
CATEGORY VI - Treatment and/or control of storm waters

*Categories currently eligible for federal funds under Public Law 92-500.

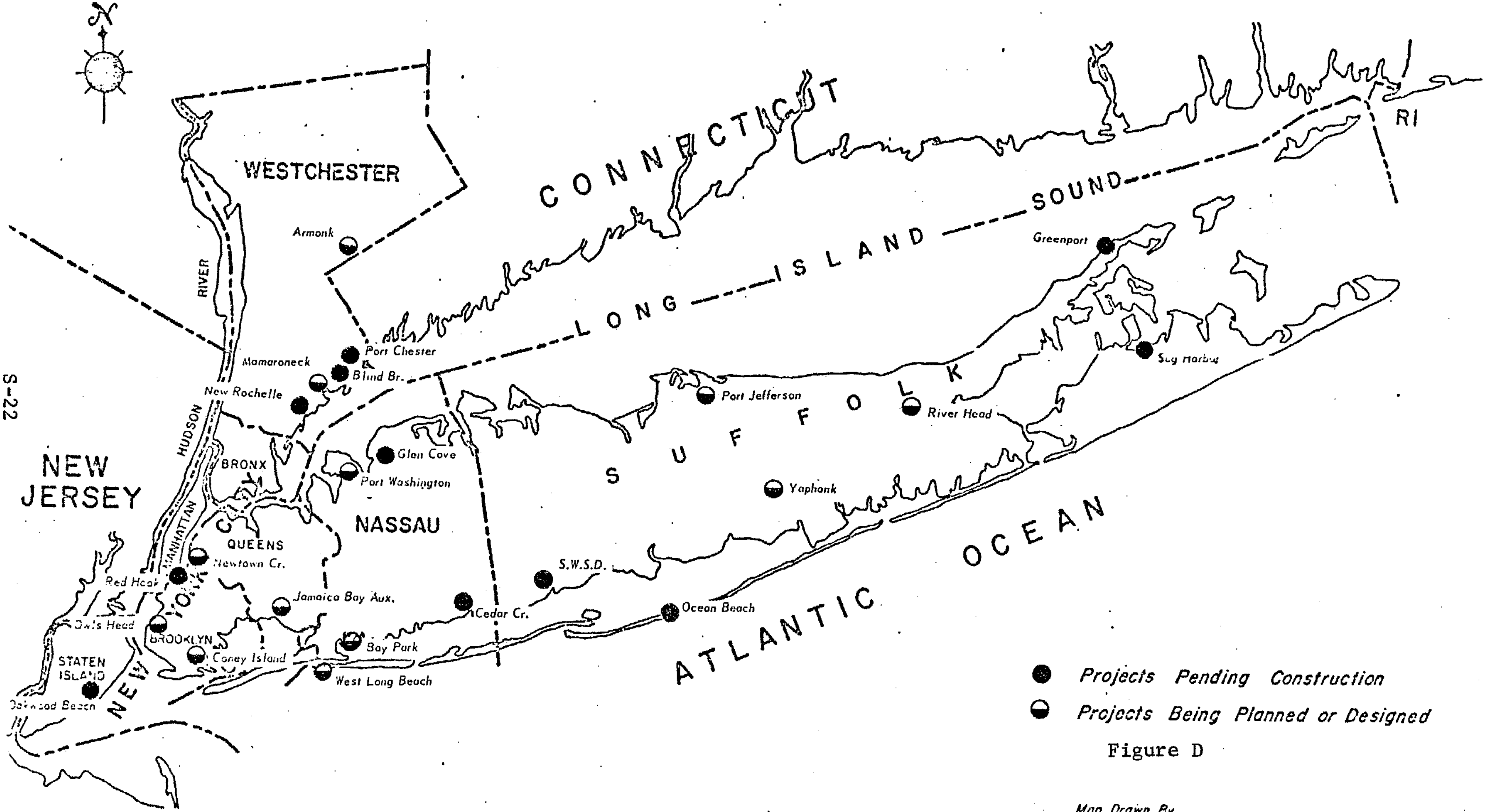


Figure D

Map Drawn By
David J. Lis 10/29/76

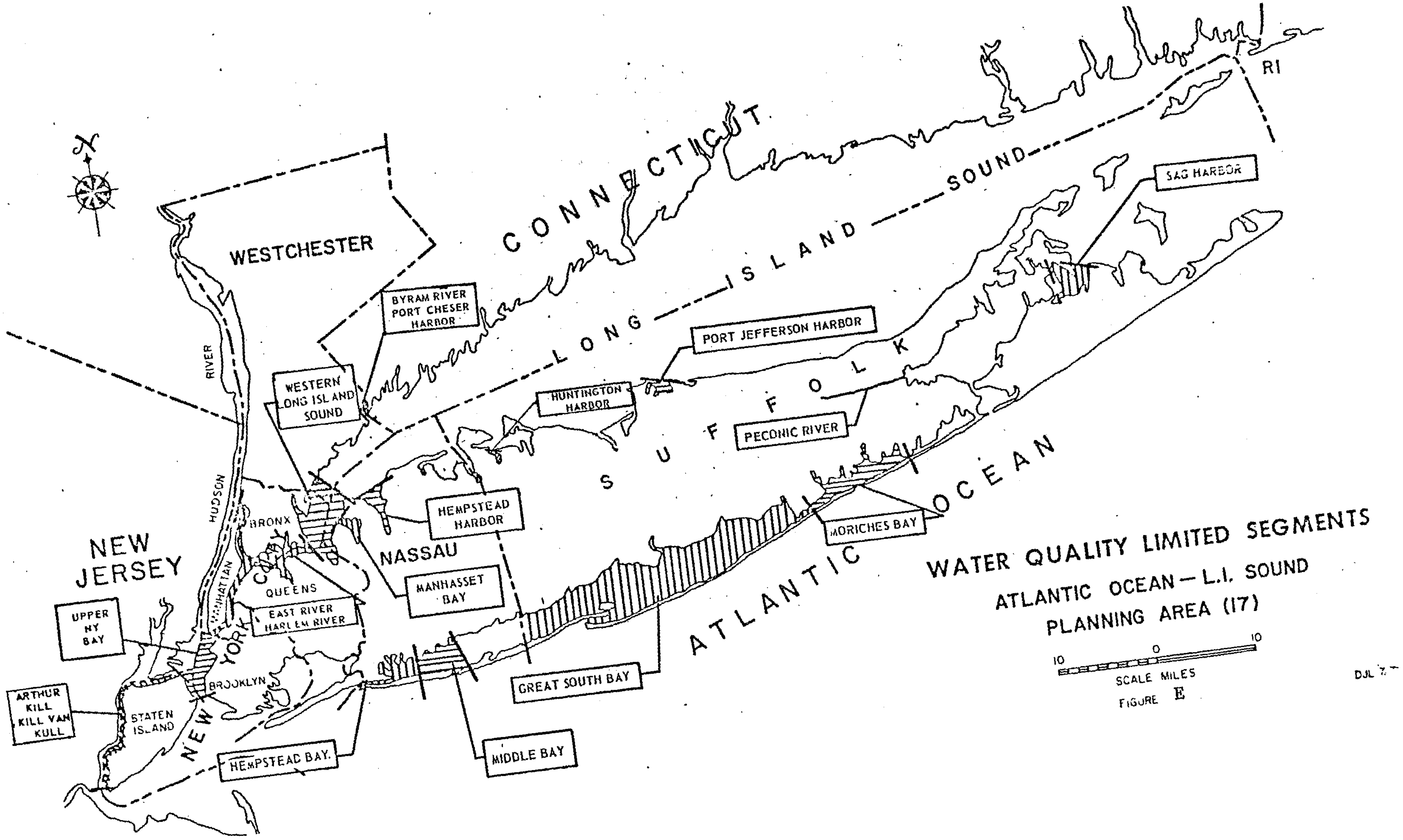
TABLE C
PROJECTS PENDING CONSTRUCTION GRANTS
(RANKED STATEWIDE)
(5/76)

PRIORITY Ranking	PRIORITY SCORE	APPLICANT LEGAL NAME COUNTY (BASIN)	NPDES NUMBER NY00-	GRANT IDENT. Number C-36-	Step Phase	APPLICATION TARGET DATE (Yr. & Mo.)	PROJECT DESCRIPTION (Facility Need Scope)	Estimated EPA Assistance ($1,000)	Est. Eligible Project Cost ($1,000)
10	81.25	New Rochelle SD Westchester (17)	20637	567	3	12/76	MOD - 3 Col.	498.75	665
12.	81.25	Oakwood Beach NYC (17)	26174	392	II	10/76	MOD-2,4,5 Int,PS,FM	14,700	19,600
13	81.25	Oakwood Beach	26174	392	III	3/77	MOD-2 Int	34,350	45,800
	81.25	Do.	26174	392	IV	7/77	MOD-2,4,5 INT,PS,FM		72,100
	81.25	Do.	26174	392	V	6/77	MOD-2,4,5 INT,PS,FM		18,500
14	81.25	Do.	26174	392	VI	[illegible]/77	MOD-3 Col.	6,600	8,800
37	71.83	Red Hook NYC (17)	27073	394	II	5/76	NEW-8 STP	49,539.25	66,119
38	71.83	Do.	27073	394	III	6/76	NEW-2 Int.	56,611.5	75,432
39	71.83	Do.	27073	394	IV	8/76	NEW-5 PS	8,212.5	10,950
40	71.83	Red Hook NYC (17)	27073	394	V	1/77	NEW-2 Int.	28,755.75	38,341
	71.83	Do.	27073	394	VI		NEW-8 STP		240,215
46	69.57	Sag Harbor (V) Suffolk (17)	28906	433	II	8/76	MOD-1 OS	81	108
47	69.57	Sag Harbor (V) Suffolk (17)	28908	433	III	11/76	MOD-6 Rehab.	162	216
52	68.75	Glen Cove (C) Nassau (17)	26620	665	IA	10/76	MOD-8 STP	4,050	5,400
53	68.75	Do.	26620	665	II	3/77	MOD-3 Col.	607.5	810
55	66/81	Ocean Beach (V) Suffolk (17)		783	3	12/76	MOD-3 Col.	101.25	135
69	69.25	Greenport (V) Suffolk (17).	20079	621	3	12/76	MOD-3 Col.	8.25	11
140	62.50	Suffolk Co. SD13 Suffolk (17)		1036	I	5/76	MOD-2 INT	12,259.5	16,346
141	62.50	Do.		1036	I	5/76	MOD-3 Col.	21,855	29,140
142	62.50	Do.		1036	II	10/76	MOD-2 INT.	2,897.25	3,863
143	62.50	Do.		1036	II	10/76	MOD-3 Col	24,921	33,228
	62.50	Do.		1036	III	5/77	MOD-2 INT		4,709
144	62.50	Do.		1036	III	5/77	MOD-3 Col	42,559.5	56,746
145	62.50	Blind Brook Westchester (17)	26719	695	I	3/76	INT - 1,8 STP,OS	10,836.75	14,449
146	62.50	Do.	26719	696	II	11/75	MOD-3 Col.	1,666.5	2,222
173	56.25	Port Chester (V) Westchester (17)	26786	695	I	3/76	INT -4,8 STP,FM	16,891.5	22,522
174	56.25	Do.	26786	695	II	12/76	MOD -3 Col.	45	60
178	56.25	Cedar Creek WPCP Nassau (17)	26859	982	I	4/76	NEW - 4,8,9 STP,FM,Recharge	24,807	33,076
178	56.25	Cedar Creek WPCP Nassau (17)	26859	982	II	6/76	MOD-3 Col.	32,640	43,520
179	56.25	Do.	16859	982	III	12/76	MOD-3 Col	24,275.25	32,367
180	55.25	Do.	26859	982	IV	4/77	MOD-3 Col.	26,593.5	35,458
	56.25	Do.	16859	982	V	12/77	MOD-3 Col		128,640
	56.25	Do.	26859	987	VI	12/78	MOD-3 Col.		126,183
	55.25	Do.	26859	982	VII	12/79	MOD-3 Col.		133,708

$1,319,019

TABLE D
PROJECTS PENDING GRANTS FOR PLANNING DESIGN AND CONSTRUCTION
(UNRANKED)
(5/76)

PRIORITY Ranking	PRIORITY SCORE	APPLICANT LEGAL NAME - COUNTY (BASIN)	NPDES NUMBER NY00-	GRANT IDENT. Number C-36-	Step Phase	APPLICATION TARGET DATE (Yr. & Mo.)	PROJECT DESCRIPTION (Facility Need Scope)	Estimated EPA Assistance ($1,000)	Est. Eligible Project Cost ($1,000)
	43.75	Riverhead (T) Suffolk (17)	20061	977	2	5/77	Int. - C STP	1,377	1,836
		Pt. Jefferson SD Suffolk County (17)	21750	709	2	6/77	New - 2.8 Int. STP	1,012.5	1,350
		Mamaroneck SD Westchester (13)	26701	908	2	6/77	MOD-2.3 Int. Col.	2,250	3,000
	56.25	Coney Island NYC (17)	26162	396	1	8/76	Int-8 STP-UP	1,038	1,384 114,394
	56.25	Owls Head NYC (17)	26166	402	1	9/76		1,311.75	1,749
	53.13	Newtown Creek NYC (17)		713	1	5/77		1,620	2,160
	50.00	Nassau Co. SD #2 Nassau (17)	26450	891	1	6/76		810	1,080
	31.25	West Long Beach Nassau (17)	23523	1043	1	10/76		3	4
		Suffolk Co. Yaphank SD Suffolk (17)		994	1	11/76		1,083.75	1,445 3,906
		New Castle (T) Armonk SD Westchester (13)		979	1	11/76		30	40
		Suffolk Co. Port Jefferson SD Suffolk (17)	21750	709	1	7/76		238.5	318
		West Long Beach SD Nassau (17)	23523		1	9/77	Sludge Disposal	12	[illegible]
		Bowery Bay NYC (17)	26158		1	9/77	Sludge Disposal	150	200
		Hunt's Point NYC (17)	26191		1	9/77	Sludge Disposal	150	200
		Jamaica NYC (17)	26115		1	9/77	Sludge Disposal	150	200
		Rockaway NYC (17)	26221		1	9/77	Sludge Disposal	36	48
		Tallman's Island NYC (17)	26239		1	9/77	Sludge Disposal	120	160
		Port Richmond NYC (17)	26107		1	9/77	Sludge Disposal	54	72
		Ward's Island NYC (17)	26131		1	9/77	Sludge Disposal	240	320
		26th Ward NYC (17)	26212		1	9/77	Sludge Disposal	210	280 $134,160



WATER QUALITY LIMITED SEGMENTS
ATLANTIC OCEAN — L.I. SOUND
PLANNING AREA (17)

FIGURE E

TABLE E

NPDES/SPDES PERMIT EFFLUENT RESTRICTIONS

WASTE SOURCE	5 DAY BOD lbs./day	 mg/l	 REMOV.	EFFECTIVE DATE OF PERMIT TO EXPIRATION DATE
I. <u>New York Bays - Arthur Kill - Kill Van Kull</u>				
Nassau Smelting & Refining	—	—	—	January 31, 1974 - January 31, 1979
NYC-Port Richmond	15,015	30	85%	May 31, 1975 - May 31, 1980
Sucrest Corp.	768	—	—	June 28, 1975 - June 28, 1979
	(28,285)	—	—	(Until July 1, 1977)
Bush Terminal Assoc.	236	—	—	Dec. 31, 1974-Dec. 31, 1979
	(4,695)	—	—	(Until July 1, 1977)
NYC-Owls Head	80,000	60	55%	May 31, 1975 - June 30, 1977
NYC-Oakwood Beach	10,000	30	85%	May 31, 1975 - May 31, 1980
II. <u>East River - Harlem River</u>				
NYC-Red Hook (Proposed)	—	—	—	May 31, 1975 - June 30, 1977
Amstar Corp.	756	—	—	March 31, 1974 - March 31, 1979
NYC-Newtown Cr.	206,800	80	60%	May 31, 1975 - June 30, 1977
	(111,200)	(43)	(80%)	(Prior to Manhattan PS tie in October of 1975)
Interboro Surface	—	—	—	DRAFT
Phelps-Dodge Ref.	3.3	—	—	July 31, 1974 - July 31, 1979

Table E (contd.)

NPDES/SPDES PERMIT
EFFLUENT RESTRICTIONS

WASTE SOURCE	5 DAY BOD			EFFECTIVE DATE OF PERM TO EXPIRATION DATE
	lbs./day	mg/1	REMOV.	
II. East River - Harlem River (contd.)				
Pearl Wick Corp.	———	———	———	September 30, 1974 - September 29, 1979
NYC-Wards Island	66,300	30	85%	May 31, 1975 - May 31, 1980
NYC-Bowery Bay	37,530	30	85%	May 31, 1975 - May 31, 1980
NYC-Hunts Point	50,000	30	85%	May 31, 1975 - May 31, 1980
NYC-Tallmans I.	20,000	30	85%	May 31, 1975 - May 31, 1980
III. Western Long Island Sound				
Port Chester	***	**	**	August 31, 1975 - June 30, 1977
Blind Brook	***	**	**	October 31, 1974 - June 30, 1977
Mamaroneck	***	**	**	December 31, 1974 - June 30, 1977
New Rochelle	***	**	**	December 31, 1974 - June 30, 1977
Belgrave	500	30	85%	June 28, 1974 - June 28, 1979
Great Neck (V)	375	30	85%	December 31, 1974 - December 31, 1979
	(500)	(40)	(80%)	(Until July 1, 1977)

Table E (contd.)

NPDES/SPDES PERMIT EFFLUENT RESTRICTIONS

WASTE SOURCE	5 DAY BOD			EFFECTIVE DATE OF PERMIT TO EXPIRATION DATE
	lbs./day	mg/1	REMOV.	
III. Western Long Island Sound (contd.)				
Great Neck SD	—	35	80%	January 31, 1975 - June 30, 1977
Port Washington	—	30	85%	November 30, 1974 - November 30, 1979
	—	(35)	(80%)	(Until July 1, 1977)
Roslyn (V)	130	30	85%	October 31, 1974 - October 30, 1979
	(130)	(30)	(80%)	(Until July 1, 1977)
Glen Cove	—	100	65%	December 31, 1974 - June 30, 1977
Oyster Bay	313	30	85%	March 29, 1974- March 29, 1979
	( )	(30)	(80%)	(Until July 1, 1977)
IV. Central and Eastern Long Island Sound				
Huntington S.D.	500	30	85%	February 28, 1975 - February 28, 1980
Northport	75	30	85%	February 28, 1974 - February 28, 1979
Kings Park State Hospital	250	30	85%	March 29, 1974 - March 29, 1979
Port Jefferson	***	**	**	March 31, 1975 - June 30, 1977
Greenport	***	**	**	June 30, 1974 - June 30, 1977

Table E (contd.)

NPDES/SPDES PERMIT EFFLUENT RESTRICTIONS

WASTE SOURCE	5 DAY BOD lbs./day	mg/1	REMOV.	EFFECTIVE DATE OF PERMIT TO EXPIRATION DATE
V. Peconic River-Peconic Bay Area				
Brookhaven Nat'l. Laboratory	575	30	85%	January 31, 1975 - January 31, 1980
H. F. Corwin & Sons	326	____	____	January 31, 1975 - January 31, 1980
	(1,400)	____	____	(Until July 1, 1977)
Riverhead	300	30	85%	March 29, 1974 - March 29, 1979
Shelter Island Heights Assoc.	8	30	85%	May 31, 1974 - May 31, 1979
Bulova Watch	____	____	____	February 28, 1975 - February 27, 1980
Sag Harbor (Proposed)	25	30	85%	DRAFT
VI. Montauk Point-Atlantic Ocean				
U.S. Air Force	7.5	30	85%	May 31, 1974 - May 31, 1979
VII. Moriches Bay-Atlantic Ocean				
L.I. Duck Farms Coop.	70	____	____	February 28, 1975 - February 28, 1980
	(200)	____	____	(Until July 1, 1977)
Moriches Duck Farm	113	____	____	February 28, 1975 - February 28, 1980
	(142)	____	____	(Until July 1, 1977)
Jurgielewicz Duck Farm	120	____	____	February 28, 1975 - February 28, 1980
	(230)	____	____	

Table E (contd.)

NPDES/SPDES PERMIT
EFFLUENT RESTRICTIONS

WASTE SOURCE	5 DAY BOD			EFFECTIVE DATE OF PERMI TO EXPIRATION DATE
	lbs./day	mg/1	REMOV.	
XI. Jamaica Bay				
Cedarhurst	250	30	85%	July 31, 1974 - July 31, 1979
Inwood	625	30	85%	September 30, 1974 - September 30, 1979
NYC-Rockaway	11,260	30	85%	January 31, 1975 - January 31, 1980
Mainenides Inst.	1.5	30	85%	June 30, 1975 - June 30, 1980
NYC-Jamaica	25,020	30	85%	January 31, 1975 - January 31, 1980
NYC-Spring Cr. Auxiliary	***	**	**	January 31, 1975 - June 30, 1977
NYC-26th Ward	21,300	30	85%	January 31, 1975 - January 31, 1980
NYC-Coney Island	41,300	45	55%	January 31, 1975 - June 30, 1977

1. Values given are for 30-day averages for municipal discharges and daily averages for industries.
2. Where limits are given for lbs./day and for mg/1, the more stringent is the controlling.
3. The symbol ____, indicates that a value has not been established.
4. The symbol ***, indicates that self-monitoring schedules have been established, in lieu of interim effluent limits.

Table E (contd.)

NPDES/SPDES PERMIT
EFFLUENT RESTRICTIONS

WASTE SOURCE	5 DAY BOD lbs./day	mg/l	REMOV.	EFFECTIVE DATE OF PERMIT TO EXPIRATION DATE
VIII. Great South Bay-Atlantic Ocean				
Patchogue	***	**	***	July 31, 1974 - June 30, 1977
Ocean Beach	125	30	85%	June 28, 1974 - June 27, 1979
Yaphank SD (Proposed)	—	—	—	PROPOSED
Suffolk SD #2 (Proposed)	—	—	—	PROPOSED
IX. South Oyster Bay-Atlantic Ocean				
S.W.S.D. (Under Const.)	—	—	—	PROPOSED
West Central S.D. (Proposed)	—	—	—	PROPOSED
X. East Bay-Middle Bay-Hempstead Bay-Atlantic Ocean				
Nassau SD #3 Cedar Creek	11,300	30	85%	January 31, 1975 - January 31, 1980
Jones Beach	625	30	85%	May 31, 1975 - May 31, 1980
Freeport	2,837	85	72%	May 31, 1975 - June 30, 1977 (To be discontinued)
Nassau SD #2 Bay Park	—	30	85%	December 31, 1974 - June 30, 1977
Long Beach	—	35	75%	February 28, 1975 - June 30, 1977
West Long Beach	375	30	85%	January 31, 1975 - January 31, 1980
Lawrence	375	30	85%	February 28, 1974 - February 28, 1979

I. INTRODUCTION

I.1. Scope and Purpose

The following water quality management plan outlines the Department of Environmental Conservation's water quality management program in planning area 17 - Atlantic Ocean-Long Island Sound. This is neither a broad water and related land use plan nor a basinwide facility plan; it is a document that identified the basin's water quality problems and solutions including a determination of existing water quality, applicable standards and known significant point and non-point sources of pollution. It includes effluent limitations, remedial solutions, priorities and abatement schedules. Moreover, this plan centralizes the results of all levels of water quality planning and it is compatible with water resources and land use planning in the basin.

Planning area 17 is a basic resource unit for which plans to meet water quality objectives can be developed somewhat independently of plans in adjacent hydrologic units. Boundaries of this unit were selected on the basis of relationships between present and future waste discharges and water quality impact and response. This is one of several phase I basin plans that are being prepared Statewide to coordinate and direct the State's water quality decisions and to provide essential documentation of wise use and management of several billion dollars in public funds for pollution abatement. On-going areawide waste treatment management programs will result in the development of phase II plans for all the basins of the State.

I.2. Process of Plan Formulation

This water quality management plan was prepared under New York State's continuing planning process pursuant to Section 303(e) of the 1972 Federal

Water Pollution Control Act (PL 92-500). It is a basic component of New York State's pollution abatement program submittal to the Environmental Protection Agency under Section 106 of the 1972 Act and is a prerequisite for program grants and participation in the National Pollution Discharge Elimination System. Plan formulation has been in accordance with regulations promulgated by the U. S. Environmental Protection Agency and published as Title 40 Part 130 and 131 of the Code of Federal Regulations and in accordance with EPA planning guidelines published in September 1974.

Four basic steps are involved in the plan formulation process.

First, water quality problems are identified in physical, chemical, biological and qualitative terms through water quality monitoring and surveillance programs.

Second, existing and proposed classifications and standards are identified for the water bodies. The classifications and standards set forth the highest and best use objective for the waters and the criteria for evaluating the attainment for each objective. Proposed reclassifications are identified from available plans for water supply, fish, wildlife and recreation.

Third, significant industrial, municipal and known non-point sources of pollution and wastewater characteristics are identified.

Fourth, effluent limitations, abatement schedules, remedial solutions and priorities are set forth for each significant discharge. Determination of effluent limitations and abatement schedules are an integral part of the US EPA permit program and New York State certification process. Part of 303(e) plan formulation is accomplished simultaneously with the evaluation of permit requirements. Effluent limitations are established in accordance with best practical treatment requirements defined in the 1972 Federal Water Pollution

Control Act and USEPA regulations, or in accordance with NYS treatment requirements to maintain water quality standards. Municipalities and industries are required to meet the more stringent of these two limitations.

Remedial solutions for pollution abatement are integrated into the plan based on completed comprehensive sewerage studies, existing wastewater facility reports, periodic municipal need assessments, and available water and land resources programs, plans and activities of Federal, State, local and private organizations. Investigations in the wastewater facility reports include assessments of flood hazard areas and use of available floodplain information for proper siting of future treatment plants.

The most recent Department of Environmental Conservation list of priorities for pollution abatement is dated May 21, 1976. These priorities are reviewed and revised annually.

I.3. Public Participation - Public Hearings

Participation of the public has been provided for and encouraged throughout the planning process so as to obtain greater responsiveness of governmental actions to public concerns and priorities and to improve popular understanding of official programs and actions. The New York State Department of Environmental Conservation is quite proud of its conservation education program and the dialogue that has developed with grass root organizations over the years. Through the media of the bimonthly magazine "The Conservationist" and the monthly newsletter "Environment", environmental sciences, subjects of interest and issues are explained and the public is kept informed of the progress and status of pollution abatement, government funding, environmental legislation and plans for pollution abatement.

Each of the many components of this water quality management plan was developed cooperatively with local governmental units or subject to public hearings. The countywide comprehensive sewerage studies which identify both the short-range and long-range facility needs, were conducted under the direction of county units of government. The need and scope of areawide waste treatment management planning, conducted under Section 208 of PL 92-500, was defined through public meetings sponsored by designated local-regional planning agencies. New York State's municipal priority system was featured in several articles of New York-DEC's newsletter "Environment" and presented at public hearings as part of the annual State 106 program grant submittal to USEPA. Effluent limitations and compliance schedules were developed as part of the EPA-NYS permit program. Again, opportunities for public hearings are a requirement in the permit-certification process.

Finally, this plan with each component presented in context of the total is presented at a hearing for public review and comment. A record of the hearing and major controversies raised at the hearing, along with the disposition thereof, will become part of New York State's plan submittal to US EPA.

I.4. Updating the Plan

Portions of the plan will be revised annually or as necessary to reflect changes in State policies, programs, standards, permits and water quality management defined through ongoing 208, 201, Coastal Zone Management and other planning studies.

I.5. Terminology

Throughout the report, technical terms, letter symbols and acronyms are used for explanation and abbreviation purposes. A glossary has been added at the end of this report to aid the reader in understanding these terms and symbols.

II.1. Description of Area

All of the marine waters of New York State, with the exception of the Lower Hudson River, are included within Planning Area 17. Boundaries of the area are defined along watershed divides, to include all land that drains into these marine waters. The area includes all of Long Island and Staten Island, portions of Manhattan Island and Westchester County, and most of the Bronx. Three states border the planning area: New Jersey to the west, Connecticut to the northeast, and Rhode Island to the east in Block Island Sound. Figure 1 shows the boundaries of this 2,200 square mile area.

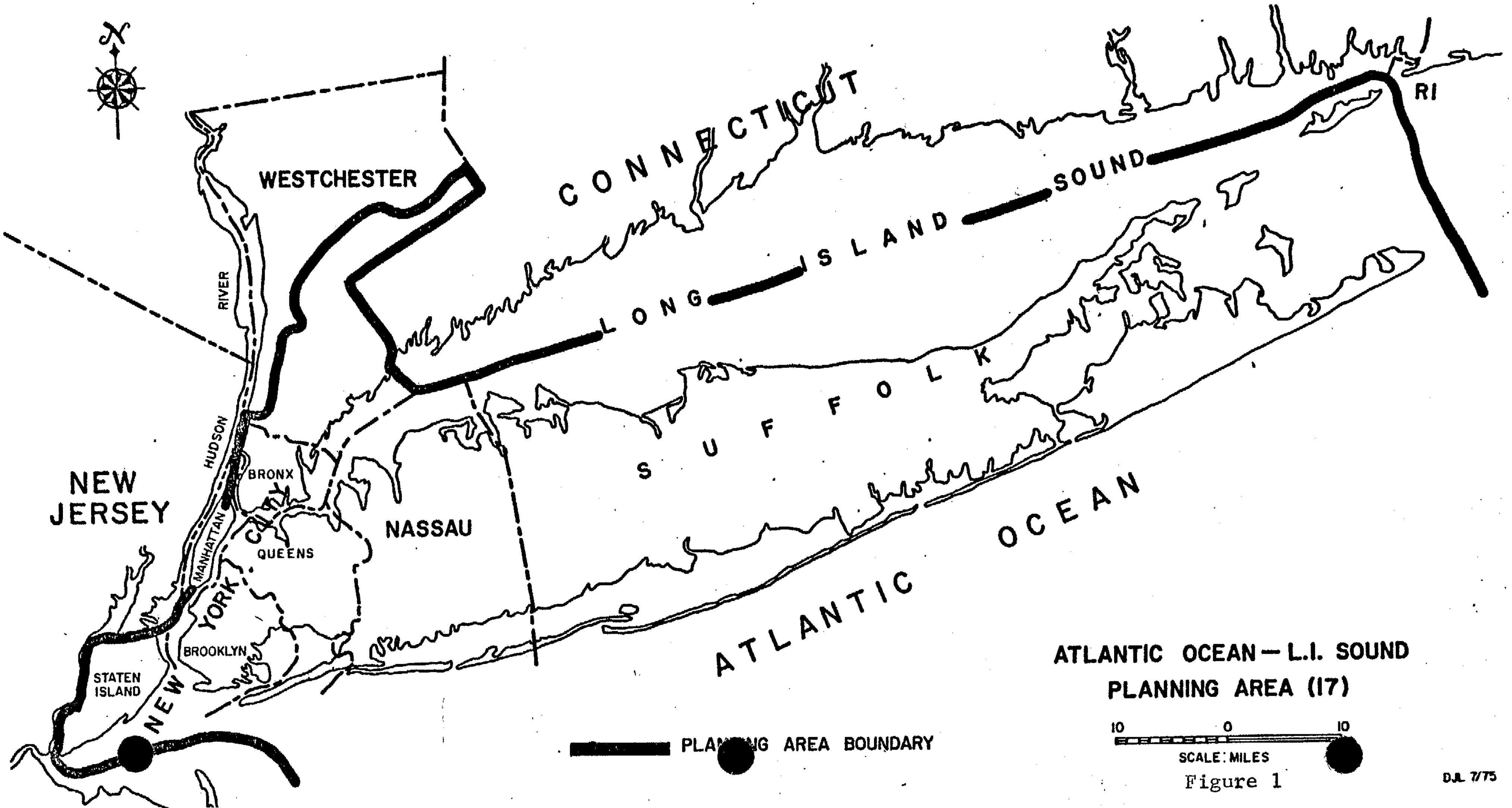
The western portions of Manhattan, Bronx and Westchester Counties drain into the Hudson River and are included in Planning Area 17-01 - Hudson River-Main Stem. In northern Westchester County, the planning area is bounded by Planning Area 13-02 - Hudson River-Croton Watershed.

There are numerous fresh water streams and ponds within the planning area, but the dominant waters of the area are groundwater and tidal salt water. Major water bodies are the Atlantic Ocean, Long Island Sound, the East River, Harlem River, the New York Harbors, Great South Bay, Great Peconic Bay, and Block Island Sound.

Nassau County and Suffolk County and a portion of Queens County use the groundwater of Long Island as a primary water supply. The groundwater feeds streams and bays with fresh water and is an important water resource of the area.

II.2. Economy, Population and Land Use

The Atlantic Ocean-Long Island Sound Planning Area encompasses the Nassau-Suffolk Standard Metropolitan Statistical Area (SMSA). The



ATLANTIC OCEAN — L.I. SOUND PLANNING AREA (17)

Figure 1

remainder of the planning area comprises a portion of the New York-New Jersey SMSA, which in total includes the five Boroughs of New York City, Westchester, Rockland, Putnam and Bergen, New Jersey.

II.2.a. Population

In 1970 the planning area, part of the most urbanized and most densely populated area of the nation, had approximately 10,800,000 inhabitants. New York City, with a population of nearly 7.9 million, accounted for about 73 percent of the total basin population. The Nassau-Suffolk SMSA contained about 24 percent of the basin population, and Westchester County the remaining three percent. Table 1 summarizes historical and projected population change. In this and other tables, the January 1976 county population projections, prepared by the NYS Economic Development Board, are shown in parentheses, while sub-county units and totals were compiled in September 1975 and based on June 1974 or earlier projections.

Basin population increased by seven percent from 1960 to 1970, compared to nearly nine percent for the State and 13 percent for the nation as a whole. Growth within the basin was uneven, with the Nassau-Suffolk area accounting for 82 percent of the basin population increase and New York City nearly 16 percent.

Population densities within the basin are among the highest in the nation and range from 67,000 persons/square mile in the Borough of Manhattan to 160 persons/square mile in the Town of Pound Ridge in Westchester County. Urbanization, a correlative of the high densities which occur in most of the basin, is very extensive in the study area. New York City is 100 percent urbanized, as is practically all of Nassau County. Approximately 90 percent of Suffolk's population is urban. The section of the basin in Westchester County ranges from complete

TABLE 1

HISTORICAL AND PROTECTED POPULATION
ATLANTIC OCEAN AND LONG ISLAND SOUND BASINS

1960-2000

	1960	1970	1980	1990	2000
Atlantic Ocean and Long Island Sound Basins	10,070,639	10,787,431	10,952,000	11,311,200	11,484,500
New York City (Total)	7,781,984	7,895,563	7,759,600 (7,362,200)	7,725,400 (7,082,100)	7,607,200 (6,876,200)
Nassau-Suffolk SMSA	1,966,955	2,555,868	2,867,600 (2,766,200)	3,268,700 (3,044,500)	3,564,300 (3,216,100)
Nassau County	1,300,171	1,428,838	1,457,300 (1,394,800)	1,538,100 (1,391,100)	1,563,200 (1,349,900)
Suffolk County	666,784	1,127,030	1,410,300 (1,371,500)	1,730,600 (1,653,400)	2,001,100 (1,866,100)
Westchester County (Part)	321,700	336,000	324,800	317,100	312,800
Westchester County (Total)	808,891	894,406	900,000 (880,600)	900,100 (882,300)	900,000 (873,000)

NOTE: Values in parentheses are EDB 1/76 values for counties, and the other county and subcounty projections were compiled in 9/75 and based on 6/74 county values.

SOURCE: U. S. Bureau of the Census, Census of Population: 1970 NYS
Economic Development Board, June 1974 (January 1976)
NYS Department of Environmental Conservation, September 1975

9/75
Rev. 9/76

urbanization to little or none in the Towns of Lewisboro and Pound Ridge ("urban", according to the Bureau of the Census, is any village, city, etc. (not town) with 2,500 or more population).

II.2.b. Economy

The almost total urbanization of the planning area has produced the largest and most concentrated industrial and consumer market in the nation. Economic concentrations are to be found in manufacturing, wholesale and retail trade, service industries, banking, finance, advertising, engineering, business management and research. In addition, the area offers a rich diversity of cultural, social, education and recreational amenities not readily available in other regions of the nation.

The planning area, with an economy that dwarfs other regional economies, had a labor force of about 4.5 million persons in 1970. This concentrated reservoir of manpower, of whom 4.3 million were employed, were engaged in producing a myriad of products and services. Non-manufacturing, including service industries, employed about 79 percent of basin residents in 1970, or almost four times the number engaged in manufacturing (20.6 percent). In contrast, the nation as a whole employed 70 percent in non-manufacturing and nearly 26 percent in manufacturing. During the sixties, area service-oriented businesses grew, especially in New York City, increasing the number employed in non-manufacturing as opposed to manufacturing which began to decline.

II.2.c. New York City

New York City is, of course, the major economic entity of the basin. With more than 3.5 million employed in non-agricultural jobs in 1973, the City is the largest labor market in the nation. The service industry is the leading employer, followed by trade, manufacturing and government.

II.2.a.c.1. Population

The demand for services in New York City stems from its huge resident population. As the gateway to the rest of the nation during most of our nation's history, New York City reached a peak population in 1970 of 7,895,563, up 1.5 percent from 1960. The largest city in the nation exceeds the population of 43 of the 50 states. Although natural increase (excess of births over deaths) generated the aforementioned increase, net out-migration during the past two decades has been significant.

For the period from 1950 to 1960, City net migration totalled 792,000 or -10 percent of the 1950 population of 7,891,957. During the 1960-1970 decade, net migration declined to 519,000 or -6.7 percent of the 1960 population of 7,781,984. Latest Bureau of the Census preliminary estimates for the 1970-1974 period are 464,200 net migrants or -5.9 percent of the 1970 population of 7,895,563. Table 4 summarizes historical and recent migration data for the metropolitan area as published by the U. S. Bureau of the Census.

II.2.c.2. Economy

Manufacturing is highly diversified with about 24,000 small and medium sized firms as of 1972. The variety of skills of the ample labor force and the availability of low-cost manufacturing locations have made the City an innovator of products and new industries. Although, the recent economic decline has greatly impacted the manufacturing sector, 39 percent of all manufacturing employment in the State was in the City as of March 1975.

New York City is the service, trade and finance center of the nation. In 1973, employment in these three industries accounted for over one-half of all non-agricultural employment. Of the three, services employed 788.8 thousand persons or 41 percent of the 1,916 million three-industry employment total.

The service industries, growing since 1960, are expected to continue to expand in employment, due in part to their labor intensiveness and relatively low productivity per employee. The shift to a service-oriented economy is a national phenomenon and is a characteristic, according to some economic observers, of mature industrial economies. At the national level, services employment increased, relatively, from 21 to 24 percent of total employment from 1960 to 1970. By way of contrast, the percentage of people employed in manufacturing decreased by 10 percent.

Services employment in New York State increased by 28 percent from 1960 to 1970 while the nation's grew by 37 percent. From a relative point of view, services employment in the State has been greater than that of the nation, 27 versus 24 percent in 1970. Within the State, New York City services employment accounted for slightly less than one-half of all State services employment in 1970. The most significant services industry employment is found in hospitals, health services, schools and colleges, welfare, religions and non-profit organizations, and legal, engineering and miscellaneous professional services.

II.2.c.3. Outlook

Although decadal out-migration rates were declining for the City as a whole, recent economic downturns suggest the rate may be on the increase. Population projections prepared as of January 1976 by the NYS Economic Development Board indicate an overall City population decline of nearly 13 percent by the year 2000. These projections, demographic in nature, are based upon a series of related assumptions concerning future fertility, mortality and migration rates.

Population projections for the State and individual counties were prepared by the NYS Economic Development Board in January 1976. These projections indicate a greater decline in New York City populations than had been projected in June 1974. Both 1974 and 1976 projections are summarized in Table 5. Only Richmond County is now projected to experience a population increase.

Non-farm employment projections for the State as a whole, while tentative in nature and subject to revision, show an increase of seven percent for the 1970-1980 decade, much lower than the experience of the 1960-1970 perid. This slower growth is based in part on the performance of the State's economy vis-a-vis the national economy during the recovery period of the 1970 recession. Although the nation began its recovery in November of 1970, non-farm employment in the State in 1973 was still below the level of 1969. The reduced growth rate also seems logical from a population projection point of view, discussed earlier. In addition, recent economic declines, notably rising unemployment rates during the 1974-1975 period, also tend to reinforce the slow employment growth projected for the State.

New York City, with approximately 51 percent of State total employment in 1970, is expected to have an employment decline of eight percent by 1980. Manufacturing employment will decline absolutely and relatively from 20 to 15 percent of total 1980 employment, continuing the long term decline of the 1960's. In line with State projections, non-durable goods employment, as a percent of total employment, will fall from 16 percent to 12 percent.

Non-manufacturing industries, particularly services, will be relatively more important by 1980. In 1980, nearly 85 percent of all City employment will be in non-manufacturing as opposed to 80 percent in 1970. Within this sector, services and miscellaneous employment in 1980 will rise to 34 percent from slightly over 29 percent in 1970, an increase of 17 percent.

In summary, the New York City economic outlook, while far from outstanding, nevertheless is one of great strength, if for no other reason than sheer size. Recent budgetary problems will undoubtedly force a review of City economic weaknesses as well as its strengths, and corrections developed. As the trade, financial and services center of the nation, the City will continue to be a significant economic force in the State and nation.

II.2.d. Nassau-Suffolk

II.2.d.1. Population

Jutting eastward into the Atlantic Ocean, Long Island is a finger of land extending east from New York City. With 2.6 million inhabitants as of 1970, the Nassau-Suffolk SMSA is the second largest SMSA in the State, and has a population larger than 23 states. Population increased by nearly 600,000 or 29.9 percent during the 1960's. The nation's population increased by 13.3 percent and that of New York State by 8.7 percent during the 1960-70 decade.

Nassau-Suffolk experienced a population explosion beginning in the 1950's. Residents of New York City and other areas faced with urban pressures, rising real income and the availability of Island undeveloped land, migrated in large numbers to Nassau and Suffolk counties.

These areas have all experienced significant in-migration since 1950. Nassau, for example, had a net migration rate of 70 percent for the 1950-1960 decade. Suffolk's rate, 116 percent, was one of the highest in the nation. Net migration for the State as a whole was 1.8

percent. During the 1960-1970 period, Nassau County, largely at saturation level, had a net migration rate of 1.1 percent. Suffolk on the other hand, continued to have substantial net migration, 49.3 percent. These influxes of new residents raised densities to 5000 in Nassau and in the five western towns of Suffolk to a little over 1800 persons per square mile in 1970.

II.2.d.2. Economy

Accompanying this population growth was a proliferation of people-serving facilities. Schools, churches, shopping plazas and highways increased at a rapid rate. Sewage treatment plants became overloaded. Single-family residences began to dot the Island landscape and gobbled land in a prodigious fashion. These single-family residences were initially constructed with cesspools. Since cesspools have a limited useful life and subsequently fail, health hazards due to overflowing cesspools are created. In addition, as the density and development increased, widespread pollution of the groundwater aquifer resulted.

As the population base grew, the economy expanded and office and industrial space construction accelerated. National defense needs, particularly aircraft, added inpetus to the industrial development of the economy. Aircraft, electronics and the instrument industries flourished. Gradually, however, diversification reduced the importance of defense-related production and non-manufacturing activities became paramount in the Island economy. Table 6 summarizes non-agricultural employment statistics for the Nassau-Suffolk SMSA.

Non-agricultural employment in the two county SMSA increased at slightly more than double the population growth rate at 30 percent or 62 percent from 1960-1970. The State as a whole increased by nearly 16 percent and the nation by 30 percent during the same period. Greatest staff gains were made in Island non-manufacturing industries. These included finance, insurance and real estate; trade; services and government. The shift to service-oriented employment over goods-producing employment is a national phonomenon as well as a regional one. This trend is projected to continue, although at a decreasing rate.

Manufacturing employment increased by 24 percent from 1960 to 1970, chiefly in the non-durable goods industries. Within this sector, employment in the textile mill product industry more than doubled. Employment gains in the apparel and printing industries were also impressive during the decade. Statewide, non-durable goods employment declined by 12 percent and total manufacturing employment by six percent. Table 7 summarizes State non-agricultural employment data.

II.2.d.3. Outlook

Within the SMSA, changes in the economies of Nassau and Suffolk Counties have occurred and will occur in the future as national and regional economic and demographic forces continue to have their impact. The latter, the eastward movement of population on Long Island, has been the most significant force for change in the Island's history.

Nassau County has largely experienced the population wave which is now impacting Suffolk County. Recent Bureau of the Census data indicate a slight decline in Nassau population and an eight percent increase in Suffolk's population since 1970. Natural increase was chiefly responsible for Nassau's 60-70 growth, while Suffolk's was in-migration.

Since 1970, both the national and the regional economies have been beset by energy shortages, unemployment and inflation. Falling birth rates have resulted in near zero population growth for the nation and the State, and the impact of this and the twin ills of inflation and unemployment call for short term projections based on most recent data. For comparison purposes, two population projections are presented: those of OPS, now the NYS Economic Development Board, and a preliminary set prepared by the Nassau-Suffolk Regional Planning Board. Tables 1 and 8 summarize these projections.

For the bi-county area, the January 1976 NYS Economic Development Board projections show a 30-year rate of increase (1970-2000) of 26 percent increase in Nassau County and a 66 percent increase in Suffolk County. These projected increases are roughly half the increases which had been expected in 1973.

Migration, the main component of Suffolk's population growth in the last 20 years, is expected to moderate, and a continuing decline in the County's general fertility rate is probable. The general fertility rate (births/number of women 15-44) has declined from 85.5 in 1970 to a provisional estimate of 65.1 in 1975 or 24 percent.

Accompanying a slow growth population projection and the previously noted current economic woes of the nation and the region, a generalized short-term employment forecast is reasonable.

Preliminary projections of employment by industry prepared by the NYS Department of Labor for occupational manpower purposes for the 1970-1980 decade indicate continued growth of Island employment, but at a reduced rate. New York State non-agricultural employment for the 1970-1980 period is expected to increase by 7.6 percent. Island employment, however, is forecast to increase by 40 percent, with most of the growth occurring in Suffolk. Good gains are expected in the service, trade, finance and government sectors. More moderate gains and some declines characterize industries within the manufacturing sector.

The projected distribution of employment by industry shows a continuing decline in the importance of manufacturing, in terms of total employment, and a rise in that of non-manufacturing. Manufacturing employment, however, is expected to increase by about 11 percent. Employment in the durable goods industries will slip from 14 to 10 percent of total employment in line with past trends. Non-durable goods employment in the textiles, paper, chemicals, plastics, etc. industries is forecast to expand by one-third and account for six percent of total employment by 1980.

Preliminary non-manufacturing Island employment projections indicate an increase by nearly one-half by 1980. A little over four-fifths of all Island employment will be in this sector. As previously mentioned, services employment, which includes business, professional and personal services, if forecast to continue its historical growth. Regionally, services employment will increase by about 60 percent, while that of the State will grow by one-quarter during the coming decade. Family median income, $13,475 in 1970, was over 25 percent greater than that of the State, which was $10,617. This relative affluence augurs well for the future of the Island economy.

II.2.e. Westchester County

The last section of the Atlantic Ocean--Long Island Sound Basin--to be discussed is in the eastern section of Westchester County.

Located immediately north of New York City and part of the New York, New York-New Jersey SMSA, Westchester County is one of the wealthiest in the nation. In 1970, median family income was $13,784 compared to $10,617 for the State and $9,590 for the nation. Over 44 percent of Westchester families had incomes of $15,000 or more compared to 26.5 percent for the State as a whole

One of the nation's most famous suburban counties, Westchester has numerous pleasant residential communities and rural sections dotted with large estates. Commuting is heavy to New York City, with nearly 30 percent of the County's residents working in the City.

II.2.e.1 Population

With an average density of 2000 person/square mile, nearly one-half of the County population lives in five cities. They include Yonkers, New Rochelle, Mount Vernon, White Plains and Rye. Portions or all of the latter four are within the basin. All are within 15 miles of New York City. Population of the County increased by 10.6 percent from 1960 to 1970 (808,891 to 894,406).

Most of the growth, however, has been outside the cities, mainly in villages and the unincorporated areas in the northern part of the County. Basin population grew slowly during the 1960's, 4.5 percent, as the western section along the Hudson River and the northern section of the County gained population in response to industrial and residential development. As of 1970, approximately 94 percent of the County population was classified as urban, one percent greater than in 1960. Density of the two areas wholly within the basin, the City of New Rochelle and the Town of Rye, had 1970 densities of 7,400 and 6,200, respectively. Table 10 summarizes historical and projected population for Westchester County and that section of the basin within the County.

II.2.e.2. Economy

The economy of Westchester County has continued to expand for several decades. Non-agricultural employment, for example, increased by 31 percent from 1960 to 1970, while New York State grew by 16 percent. Some of the largest industrial plants in the New York metropolitan area are located in the County. General Motors, International Business Machine Corporation and the Standard Oil Company are but a few of the well-known national corporations located in the County.

The manufacturing sector, employing 21 percent of County residents in 1970, has concentrations of employment in the following industries: machinery (except electrical), food products, printing and publishing, electrical machinery and apparel. For the most part, these were growth industries during the 1960's.

In 1970, approximately 78 percent of County residents were employed in non-manufacturing industries. This percentage was somewhat greater than the 75 percent for the State as a whole and reflects the large number of "white collar" occupations in this sector. More than two-fifths of those employed in non-manufacturing were engaged in providing services of a business, personal or professional nature. Trade activity, retail and wholesale, employed an additonal 25 percent of non-manufacturing employment. The balance of those employed in non-manufacturing are to be found in the following industries: utilities, finance, construction, mining and public administration.

More recent employment data, summarized in Table 9 and based on place of work series, presents the growth of the non-manufacturing sector, particularly services jobs. From 1960 to 1970, services and miscellaneous employment increased by more than two-fifths in contrast to a 12 percent increase in total manufacturing employment. Floor space growth during the 1963-1972 period has been large in non-residential construction in the County according to the Westchester County Department of Planning. Office space accounted for one-third of all commercial floor space constructed. Transportation, communication and utilities, retail, and wholesale, warehousing, and automotive floor space construction totalled 32 percent, with industrial accounting for the balance of 12 percent. The non-goods producing segment of the County economy, as in other State regions and the nation, is becoming increasingly significant.

II.2.e.3. Outlook

Although the economy of Westchester County and that section of the basin has been expanding, the linkages to the New York City economy are still significant. Commuting flows are but one indication of the economic ties between Westchester and the City. Indirectly, therefore, the health of the County's economy is partially dependent upon the City economy. The forecast flow-growth and/or decline of employment in the City will have an adverse effect upon the County economy, which is not measurable at present.

Recent population estimates by the Bureau of the Census suggest a minor decline in County population from the 1970 April Census Level of 894,406. Net migration of some -24,000 residents or -2.7 percent of the 1970 figure is the principal reason for the estimated 1974 decline in total population of -1.5 percent. Net migration is the difference between net change and natural increase.

Preliminary population projections by the Westchester County Planning Department assume a relatively stable population in the neighborhood of 900,000 to 1985. This projection is based, in part, on recent declines in population attributable to out-migration and declining birth rates. More recent total County population projections prepared by the NYS Economic Development Board indicate a two percent decline in population to 873,000 to 2000.

A preliminary allocation of the 900,000 figure to the MCD level and below, presented in Table 10, is schematic and a tentative allocation at best. However, basin population is forecast to decline by seven percent by the year 2000. All cities within or partially within the basin--Mount Vernon, New Rochelle and Rye--are expected to slowly lose population or stablize at best. Rye, however, may make slight gains if recent trends continue. Population growth is also forecast for the northern areas of the basin, particularly the Towns of Bedford, Lewisboro and North Castle. Moderate growth may occur in the villages in line with past trends. Small area projections for 30 years, at best, are educated guesses and subject to large errors.

While no employment projections are presented for this section of the basin, an assumption of slow growth in labor force and employment can be predicted upon the preliminary stable population projection and the previously discussed New York City employment forecast.

II.2.f. Land Use

Land use has been identified in detail in the State's Land Use and Natural Resource Inventory Study (LUNR). The inventories are based on 1967-1968 areal photographs for upstate New York and 1969-1970 areal photographs for New York City and Long Island.

Table 11 is a summary of land use for the planning area. Over one-quarter of the area is water. New York City, Nassau and Westchester are predominantly residential, with much land use for transportation. Westchester and Suffolk Counties have large areas in woodland, and there are even significant areas of agriculture in Suffolk County.

In summary, land use varies from the intensive urban-industrial New York City area to the rural-agricultural areas of eastern Long Island. To some extent, water quality parallels land development--the more intensive the development, the more difficult the water quality problem.

TABLE 2

LABOR FORCE AND EMPLOYMENT
UNITED STATES
NEW YORK STATE
ATLANTIC OCEAN AND LONG ISLAND SOUND BASINS

1970

	LABOR FORCE	EMPLOYMENT	AGRICULTURE	MANUFACTURING	NON-MANUFACTURING
UNITED STATES	80,051,046	76,553,599	2,840,488	19,837,208	53,875,903
New York State	7,421,579	7,124,001	90,076	1,722,377	5,311,548
Basin - Total	4,466,178	4,292,333	16,676	883,847	3,391,810
New York City	3,330,803	3,191,370	6,408	657,054	2,527,908
Nassau-Suffolk SMSA	988,686	958,177	8,913	198,838	750,426
Nassau County	585,516	569,199	3,479	114,154	451,566
Suffolk County	403,170	388,978	5,434	84,684	298,860
Westchester County*	146,689	142,786	1,355	27,955	113,476

*Estimates

SOURCES: U.S. Bureau of the Census, Census of Population: 1970
NYS Department of Environmental Conservation

TABLE 3

NON-AGRICULTURAL EMPLOYMENT
NEW YORK CITY

1960, 1970 - 1974
(000)

INDUSTRY	1960	1970	1971	1972	1973	1974
TOTAL	3538.4	3743.6	3609.4	3561.3	3538.4	3458.4
Mining	1.9	1.9	1.6	1.5	1.4	1.5
Contract construction	125.3	110.1	110.7	102.8	105.6	100.4
Transportation, public utilities	318.1	323.3	299.1	297.5	293.3	283.8
Wholesale, retail trade	744.8	735.5	704.3	695.2	685.8	666.4
Finance, insurance, real estate	386.0	459.6	450.9	446.5	435.2	428.3
Services and miscellaneous	607.3	784.2	771.2	777.4	789.9	790.1
Government	408.2	562.8	569.2	564.5	574.4	580.7
Manufacturing	946.8	766.2	702.4	675.8	652.8	607.2
Durable goods	228.5	177.7	158.0	152.5	149.1	142.0
Non-durable goods	718.3	588.5	544.4	523.4	503.6	465.2

SOURCE: New York State Department of Labor

9/75

TABLE 4

HISTORICAL AND RECENT MIGRATION RATES
NEW YORK METROPOLITAN AREA

1960, 1970, 1974

	NET MIGRATION			NET MIGRATION PERCENT		
AREA	1950 1960	1960 1970	1970 7/1/74	1950 1960	1960 1970	1970 7/1/74
NEW YORK CITY	-791,904	-519,338	-464,200	- 10.0	- 6.7	- 5.9
Manhattan (New York)	-353,795	-218,566	- 93,000	- 18.1	-12.9	- 6.0
Bronx	-148,476	- 88,308	-116,200	- 10.2	- 6.2	- 7.9
Queens	74,361	19,151	- 48,600	4.8	1.1	- 2.4
Brooklyn (Kings)	-372,001	-279,994	-225,500	- 13.6	-10.7	- 8.7
Staten Island (Richmond)	8,007	48,379	19,100	4.2	21.8	6.5
PUTNAM	8,990	20,824	7,300	44.3	65.6	12.9
ROCKLAND	34,643	71,700	9,000	38.9	52.4	3.9
WESTCHESTER	110,278	17,464	- 24,000	17.6	2.2	- 2.7
NASSAU-SUFFOLK	789,171	342,843	10,800	83.2	17.4	0.4
Nassau	467,926	14,390	- 43,300	70.2	1.1	- 3.0
Suffolk	321,245	328,453	54,100	116.5	49.3	4.8

SOURCE: U.S. Bureau of the Census
Current Population Reports
P. 23, No. 7
P. 25, Nos. 461, 599

TABLE 5

HISTORICAL AND PROJECTED POPULATION

ATLANTIC OCEAN AND LONG ISLAND SOUND BASIN

NEW YORK CITY

1960-2000

	1960	1970	1980	1990	2000
New York City	7,781,984	7,895,563	7,760,000 (7,362,200)	7,725,000 (7,082,100)	7,607,000 (6,876,200)
Manhattan (New York)	1.698,281	1,539,233	1,429,000 (1,371,000)	1,385,000 (1,254,600)	1,345,000 (1,169,600)
Bronx	1,424,815	1,471,701	1,476,000 (1,344,200)	1,451,000 (1,274,300)	1,410,000 (1,222,900)
Queens	1,809,578	1,987,174	2,029,000 (1,932,000)	2,050,000 (1,887,900)	2,002,000 (1,830,700)
Brooklyn (Kings)	2,627,319	2,602,012	2,468,000 (2,358,100)	2,401,000 (2,225,900)	2,354,000 (2,127,800)
Staten Island (Richmond)	221,991	295,443	358,000 (356,900)	439,000 (439,500)	496,000 (525,200)

NOTE: The projections in parentheses are EDB 1/76 values for counties. The other projections were compiled for county and sub-county areas in 9/75, and were based on 6/74 projections.

SOURCE: U. S. Bureau of the Census, Census of Population: 1970
New York State Economic Development Board, June 1974
(January 1976).

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TABLE 6

NON-AGRICULTURAL EMPLOYMENT

NASSAU-SUFFOLK SMSA

1960, 1970 - 1974
(000)

INDUSTRY	1960	1970	1971	1972	1973	1974
TOTAL	448.5	725.6	728.7	751.6	793.6	803.9
Contract construction	34.9	38.0	39.9	40.7	46.1	41.2
Transportation, public utilities	21.6	33.4	33.5	35.4	35.2	34.7
Wholesale, retail trade	99.6	190.8	192.9	202.6	210.8	213.0
Finance, insurance, real estate	17.4	33.8	36.4	39.0	41.3	43.3
Services, mining, miscellaneous	72.0	133.3	137.7	141.9	153.6	159.3
Government	78.8	144.1	147.4	149.2	154.2	159.8
Manufacturing	124.1	153.3	140.8	142.8	152.4	152.6
Durable goods	95.2	104.6	92.1	92.9	99.3	100.8
Non-durable goods	29.0	48.7	48.7	49.9	53.1	51.8

SOURCE: New York State Department of Labor

9/75

TABLE 7

NON-AGRICULTURAL EMPLOYMENT

NEW YORK STATE

1960, 1970 - 1974
(000)

INDUSTRY	1960	1970	1971	1972	1973	1974
TOTAL	6181.9	7152.9	7005.2	7027.5	7124.5	7084.8
Mining	9.1	7.9	7.4	7.1	7.3	7.5
Contract construction	261.8	266.6	272.1	268.1	279.0	262.7
Transportation, public utilities	482.2	500.6	471.7	472.8	470.2	457.8
Wholesale, retail trade	1251.2	1445.7	1422.3	1445.0	1459.7	1443.0
Finance, insurance, real estate	483.2	595.6	592.3	594.7	589.6	587.2
Services and miscellaneous	978.0	1358.1	1367.0	1395.7	1434.6	1453.5
Government	837.7	1217.7	1238.9	1242.6	1265.7	1292.0
Manufacturing	1878.7	1760.6	1633.4	1601.5	1618.4	1581.2
Durable goods	817.7	828.1	757.7	749.8	784.1	790.1
Non-durable goods	1061.0	932.6	875.8	851.8	834.2	791.1

SOURCE: New York State Department of Labor

9/75

Table 8

NASSAU-SUFFOLK REGIONAL PLANNING BOARD
POPULATION PROJECTIONS FOR THE NASSAU-SUFFOLK REGION
1980, 2000, AND 2020

Town or City	Projected Population 1980 (Preliminary Revision)	First Estimate 2000*	First Estimate 2020**
Glen Cove	28,500	29,500	31,500
Hempstead	850,000	885,000	935,000
Long Beach	35,000	40,000	45,000
North Hempstead	250,000	260,000	280,000
Oyster Bay	355,000	370,000	400,000
Nassau	1,518,500 (1,394,800)	1,584,500 (1,349,900)	1,691,500
Babylon	240,000	290,000	290,000
Brookhaven	425,000	810,000	890,000
East Hampton	15,000	55,000	85,000
Huntington	240,000	285,000	290,000
Islip	360,000	390,000	400,000
Riverhead	32,000	95,000	175,000
Shelter Island	2,000	7,000	11,000
Smithtown	160,000	172,000	179,000
Southampton	45,000	116,000	200,000
Southold	23,000	65,000	120,000
Suffolk	1,542,000 (1,371,500)	2,285,000 (1,866,100)	2,640,000
The Region	3,060,500 (2,766,200)	3,869,500 (3,216,100)	4,331,500

* Modification of O.P.S., Solid Waste Study (Nassau) and Water Supply Study (Suffolk) Projections

** Modification of Solid Waste Study and Water Supply Study Projections

NOTE: Values in parentheses are EDB 1/76 values for counties.

Source: Nassau-Suffolk Regional Planning Board, March 12, 1973
NYS Economic Development Board, (January 1976).

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TABLE 9

NON-AGRICULTURAL EMPLOYMENT

WESTCHESTER COUNTY

1960, 1970 - 1974
(000)

INDUSTRY	1960	1970	1971	1972	1973	1974
TOTAL	232.8	304.0	300.9	305.3	313.3	307.5
Contract construction	15.8	19.1	17.8	18.0	18.7	16.8
Transportation, public utilities	16.1	19.4	18.7	18.7	18.7	18.0
Wholesale, retail trade	49.3	69.2	68.9	70.8	72.8	69.6
Finance, insurance, real estate	10.9	14.4	14.6	15.3	15.9	16.1
Services, mining, miscellaneous	44.3	63.7	64.3	66.9	69.6	70.6
Government	30.3	44.3	46.3	47.4	49.0	50.0
MANUFACTURING	66.3	74.0	70.2	68.2	68.7	66.3
Durable goods	35.2	38.9	36.3	34.5	35.4	33.2
Non-durable goods	31.0	35.1	33.9	33.7	33.2	33.1

SOURCE: New York State Department of Labor

9/75

TABLE 10

HISTORICAL AND PROJECTED POPULATION*
ATLANTIC OCEAN AND LONG ISLAND SOUND BASINS
WESTCHESTER COUNTY
1960 - 2000

			1960	1970	1980	1990	2000
WESTCHESTER COUNTY			808,891	894,406	900,000 (880,600)	900,000 (882,300)	900,000 (873,000)
BASIN TOWNS			321,651	335,998	324,800	317,100	312,900
Bedford	T.		3,514	4,455	4,800	4,800	4,900
Eastchester	T.		8,178	9,500	8,800	8,400	8,200
Harrison	T.		17,970	20,163	20,309	20,215	20,215
Lewisboro	T.		1,080	1,714	2,100	2,300	2,500
Mamaroneck	T.		29,107	31,243	30,800	30,300	29,800
Larchmont	V.		6,789	7,203	7,700	7,900	8,000
Mamaroneck	V.	(Pt.)	10,555	11,038	9,700	9,700	9,700
Mount Vernon	C.		63,341	60,648	55,200	52,200	50,700
New Castle	T.		423	612	700	700	700
New Rochelle	C.		76,812	75,385	70,300	67,300	65,800
North Castle	T.		5,026	7,092	8,100	8,700	8,900
Pelham	T.		13,404	13,933	13,500	13,200	13,000
North Pelham	V.		5,326	5,184	5,100	5,000	5,000
Pelham Manor	V.		6,114	6,673	6,300	6,100	6,000
Pelham	V.		1,964	2,076	2,100	2,100	2,000
Pound Ridge	T.		1,871	2,758	3,300	3,500	3,600
Rye	C.		14,225	15,869	16,000	15,900	15,800
Rye	T.		38,147	43,234	43,800	43,800	43,700
Mamaroneck	V.	(Pt.)	7,118	7,871	6,900	6,900	6,900
Port Chester	V.		24,960	25,803	24,100	23,300	22,900
Scarsdale	T.		13,331	14,267	14,000	13,800	13,800
Scarsdale	V.		13,331	14,267	14,000	13,800	13,800
Whiteplains	C.		35,222	35,125	33,139	32,000	31,300

*Preliminary Projections

SOURCE: U.S. Bureau of the Census, Census of Population: 1970
New York State Department of Environmental Conservation, September 1975
NYS Economic Development Board (January 1976)
9/75

TABLE 11

LAND USE

TYPE OF USAGE	PLANNING AREA 17 S.M.	2,3/ %	NASSAU S.M.	%	NYC 2/ S.M.	%	SUFFOLK S.M.	%	WESTCHESTER 3/ S.M.	%
ACTIVE AGRICULTURE	108	5	5.1	1	0.2	0	101.3	8	1.4	1
WOODLANDS	377	17	25.0	7	14.3	4	293.2	23	44.3	29
WETLANDS	51	2	16.8	5	7.9	2	25.0	2	1.1	1
WATER	577	26	65.1	19	112.3	27	376.0	29	23.9	16
RESIDENTIAL	585	27	153.9	44	135.9	33	249.6	19	45.6	30
COMMERCIAL	60	3	14.7	4	24.3	6	17.4	1	3.3	2
INDUSTRIAL	50	2	8.4	2	17.8	4	22.3	2	1.7	1
PUBLIC, SEMI-PUBLIC	90	4	18.0	5	28.3	7	38.5	3	4.8	3
OUTDOOR RECREATION	126	6	24.0	7	29.4	7	59.2	5	12.9	9
TRANSPORTATION	61	3	6.4	2	25.0	6	26.2	2	3.8	3
INACTIVE	108	5	12.5		16.7	4	72.2	6	7.0	5
	2,193	100	349.9	100	412.2	100	1,280.9	100	149.8	100

1/ Values from NYS OPC Lunar Study (1967-68 Upstate photos)(1969-70 New York-Long Island photos)

2/ New York City was not disaggregated so portions of Manhattan and the Bronx which drain to the Hudson are included.

3/ Westchester County was aggregated by Drainage Basins and represents that portion of the county within Area 17

II.3. Planning Jurisdictions and Related Planning Activities

Planning jurisdictions and special planning activities in the eight counties which lie wholly or partially within the area of the Long Island Sound/Atlantic Ocean Basin range from city, town and village planning boards to various regional and interstate boards and commissions.

Within the basin area, there exist all or parts of 135 cities, towns and villages, nearly all of which have planning or zoning boards. Suffolk, Nassau and Westchester counties have individual county planning boards, with staffs providing extensive local planning assistance to municipalities as well as comprehensive countywide planning. The counties of Bronx, Kings, New York, Queens and Richmond are consolidated under the New York City Planning Commission.

In addition, there are various interstate and regional agencies and commissions with planning responsibilities in the Long Island Sound/ Atlantic Ocean Basin. The Tri-State Regional Planning Commission prepares projections of land use needs and coordinates the actions of planning agencies in 12 counties of New York, nine counties of New Jersey and six planning regions of Connecticut. Agencies concerned with water management problems of the region are the New England Interstate Water Pollution Control Commission, New England River Basins Commission and Interstate Sanitation Commission. Special State and Federal studies such as the Southeast New York Water Supply Study and the Long Island Sound Study, having significant implications for water management, have also been undertaken in the area from time-to-time. County comprehensive water supply and sewage studies, facilities planning and groundwater investigations have been conducted. Supplementing the work of government planning agencies, there are several voluntarily supported groups doing work in the areas, such as the Regional Plan Association of New York and the Metropolitan Regional Council.

II.3.a. New York City Planning Commission

The New York City Planning Commission serves all five boroughs (counties) of the City. In 1969, they completed the first Citywide comprehensive plan which, while generally accepted in principal, has met with numerous specific controversies in implementation, a major one being revision of the City zoning.

Subsequently, the voters of New York City, in November 1975, by a nearly three to two majority, agreed to do away with the City's charter section which requires a Citywide master plan. Plans can now be initiated by the Mayor, the City Planning Commission, the boards of the five boroughs, or any of 62 community planning boards throughout the City, which up to now have been strictly advisory to the City Planning Commission.

The 1975 New York City charter revisions also establish a uniform method for reviewing land use changes that gives initial reviews to these community planning boards. This uniform procedure covers zoning, site selection, housing and urban renewal, and the sale and lease of City property. The community planning boards can now initiate their own planning procedures and hire their own professional planners. However, their plans are subject to adoption by the six-member City Planning Commission, which must have a representative from each of the five boroughs.

II.3.b. County Planning Agencies

Planning and zoning powers, in particular zoning, are among the most jealously guarded powers of local governments since they deal with land use regulations. In New York State only cities, villages and towns for areas outside of villages have zoning powers. Not all choose to exercise these powers since, especially in rural areas, zoning is still very controversial. However, as another indicator of the very urban character of the Long Island Sound/Atlantic Ocean Basin, there are virtually no unzoned communities within it.

While counties have no direct zoning powers in New York, they do, under certain circumstances, review local zoning changes. In addition, the technical assistance from their planning agencies and their countywide plans influence local zoning decisions.

Nassau County's Planning Department and Board serve two cities, three towns and 64 villages in a planning assistance and coordinating role. Because of the great number of individual communities with independent planning powers--in many cases, such home rule self-determination was the very motivation for the formation of these communities--the coordination role of the county in intermunicipal planning cannot be underestimated.

No county in the State has more cities, towns and villages than Nassau and, except for New York City, more people (1.4 million). As a consequence, the provisions of Sections 239(1) and (m) of the General Municipal Law, providing for county planning board review of zoning changes within 500 feet of all municipal boundaries and of State or county lands or rights-of-way, have been heavily invoked in Nassau County. During the past five years, over 10,000 such zoning changes have been reviewed by the Nassau County Planning Commission.

County planning activities in Suffolk and Westchester counties are quite similar to those in Nassau. While parts of these counties are less densely settled than Nassau, both Westchester and Suffolk have large total populations, one about 10 percent less than a million, the other, Suffolk, about 10 percent over. Both county planning agencies provide technical assistance to localities and have produced countywide master plans.

In addition to county-level zoning review functions under Section 239(l) and (m) of the General Municipal Law, the Suffolk County Planning Department, by county law, reviews and approves subdivisions within 500 feet of municipal boundaries and of State and county lands. The county exerts special building controls over all shorefront development. Suffolk County also reviews zoning changes and approves subdivisions within one mile of nuclear plants; this particular provision is undoubtedly a consequence of the several nuclear facilities proposed on Long Island Sound within the county at Shoreham and at Jamesport.

In all three counties, the county planning departments assist municipal Conservation Advisory Commissions in their efforts to identify and preserve environmentally sensitive areas within their communities. In the case of Nassau and Westchester, there are also county-level Environmental Management Councils whose planning activities are closely linked with their respective county planning departments.

In Nassau and Suffolk counties, the county planning agencies participate in areawide waste treatment management planning by making input to the Nassau-Suffolk Regional Planning Board, which is the designated areawide planning agency under Section 208 of PL 92-500. In Westchester County, the Planning Department is participating in "208" planning through the county Environmental Coordinating Agency, which has county planning representation on its policy board.

II.3.c. County Water Management and Planning

While zoning assistance and subdivision review functions of the county planning agencies strongly influence local development in all three counties, there is even more direct control at county level through the review actions of the county health, public works or environmental control agencies.

New York State has had long-standing laws (Public Health Law, Article 11, Title II, and Environmental Conservation Law, Article 17, Title 15), which have provided that residential subdivisions of five or more lots have adequate water supply and waste water disposal systems. Where city or county health departments, exist, as in the case of New York City and Nassau, Suffolk and Westchester Counties, the review and approval of sewer and water facilities for such subdivisions has usually been delegated to them. In addition, where waste treatment facilities are necessary for a new development, city or county health, environmental and/or public works agencies have approved such facilities on behalf of the State when they have demonstrated sufficient technical expertise to perform such review.

Recently, under provisions of Section 402 of PL 92-500 (Federal Water Pollution Control Act Amendments of 1972) and of the New York State Environmental Conservation Law, Article 17, Title 8, the State Department of Environmental Conservation has received responsibility for issuance of all surface and subsurface discharge permits. This program is known as the State and National Pollutant Discharge Elimination System (SPDES/NPDES). The Department, in conjunction with county governments, is reviewing the desirability of delegating to the counties the authority for issuing subsurface discharge permits. Permit authority has already been delegated to Suffolk County for privately owned sanitary waste discharges to groundwater.

The extension of public water supply systems outside presently approved jursidictions, or the taking of either ground or surface waters for public supply or (beyond certain minimum flows) for private use, is subject to approval by the State Department of Environmental Conservation. Protection of such supply sources from contamination is also part of the

State Public Health Law. Again, city and county agencies may participate in such reviews and approvals and, in the case of pollution from contamination, may, if they are water suppliers, invoke and enforce through the State Health Commissioner, necessary protective regulations.

The Nassau County Charter authorizes that county to plan for, organize and develop a county sewer system and other water treatement or supply facilities. It also provides that other municipal and private systems must obtain county approval. In Nassau County, such system and facility design approvals are carried out by the county Department of Public Works. In addition, of course, all State reviews and approvals such as SPDES/NPDES must also be obtained.

In Suffolk County, the Department of Environmental Control has jurisdiction over water pollution control, including planning design, construction and maintenance of sewage disposal systems for the county sewer agency. Individual septic tanks and cesspools must be approved by the Suffolk County Health Department; also subject to such approval are industrial and other wastes not discharged into a municipal system. Again, the State SPDES/NPDES permits are also required for all discharges.

The Westchester County Department of Environmental Facilities is responsible for construction and operation of both county water supply and waste water treatment facilities. Approval of other public and private water supply and sewage treatment facilities is the responsibility of the county Department of Health.

II.3.d. Other County Environmental Management and Planning Activity

Other environmental management activities which affect or are affected by the placement and intensity of development include the management of solid wastes, the control of air quality, the control of surface--generally stormwater--runoff and shoreline erosion and the location of public buildings and transportation facilities. For all three counties outside New York City in the Long Island Sound/Atlantic Ocean Basin, there are public works departments which handle their counties' responsibilities for certain public buildings, highways and other county transportation facilities. However, the other public works more directly related to environmental management concerns are split among several special agencies, differing in each county

In Westchester, stormwater and solid wastes facilities are handled at the county level by their Department of Public Works. Some local municipalities also maintain their own solid wastes disposal facilities, including incinerators, but long range plans call for much consolidation. County involvement in air quality maintenance planning for the region is through the Westchester County Health Department. The Soil and Water Conservation District in Westchester is involved in flood and erosion control in a number of small watershed areas throughout the county, in conjunction with State and Federal agencies.

In Suffolk County, the Department of Environmental Control, in addition to its county water resource protection and pollution control functions, is involved in air pollution abatement, solid wastes management and in the protection of the quality of the marine resources of the county. In Nassau County, solid wastes management is the prime responsibility of the city, town and village governments, subject to Nassau County Health Department approval. The county health department also enforces the county air pollution control ordinances in conjunction with State air quality regulations. Continuous air monitoring data (NYS Air Quality Report, and NYC Metropolitan Area Air Quality Implementation Plan Transportation Controls) show that much of Nassau's air quality problem is due to motor vehicle use in the county and adjacent New York City.

The Nassau County Department of Public Works reviews and approves drainage plans and projects for all its constituent municipalities. In Suffolk, the county planning board carries out a similar approval function, based on specific county regulations of stormwater runoff. The Suffolk County Department of Public Works, towns, villages and NYS Department of Transportation also review, approve and/or construct stormwater recharge facilities. It should be noted that recharge of stormwater into the aquifers beneath Long Island is a critical factor in slowing the depletion of groundwater supplies for Long Island. Since about 1960, recharge basins have been included as design features in subdivision plans in both Nassau and Suffolk Counties.

II.3.e. The New York City Environmental Protection Administration

Within New York City, the Environmental Protection Administration has been the principal agency for the planning and management of all environmentally related programs. Different departments and divisions within the Administration are responsible for the various programs, from water supply and sewage treatment to air quality and solid wastes management. They are the Bureau of Water Supply and the Bureau of Water Pollution Control in the Department of Water Resources, the Department of Air Resources and the Department of Sanitation, the latter having responsibility for all aspects of solid wastes management from collection to incineration to sanitary land fills. It should also be noted that the New York City Board of Water Supply, which is not part of the City EPA, has planning and construction responsibilities for new municipal water supply facilities. The EPA Bureau of Water Supply operates and maintains such facilities after their construction.

Because of the overwhelming size of New York City's population, essentially all of its environmental management plans and activities have impacts on areas outside the City. Discharges from the City's sewage treatment plants are suspected of having a carryover effect on the marine waters of the other counties in the Long Island Sound/Atlantic Ocean Basin. Provision of the City's water supply, primarily from the Catskills and Westchester, obviously, has impacts upon these areas and, in balance, also affects the groundwater supplies on Long Island. Ocean dumping of residual wastes by New York and other coastal communities impacts the quality of the adjacent marine resources of the basin. Incineration of solid wastes and operation of municipal heating and power facilities adds to the air pollution problems of the entire area.

The interdependencies and interactions of the many municipalities in the New York City metropolitan area make totally independent planning by an individual community both impractical and unreal. Considerable intermunicipal coordination is essential, even for town and village plans.

II.3.f. Regional Planning in the New York Metropolitan Area

The New York Metropolitan Planning and Development Region is one of the 11 regional areas designated in New York State by the Governor in 1971. It is composed of 14 counties, eight of which are included wholly or partially in the Long Island Sound/Atlantic Ocean Basin; most of the balance of the region lies in the Hudson Basin. The region contains nearly 12.3 million people, which is over two-thirds of the total population of the State. Because of its size and diversity, at the time of designation as a planning and development region, three subregions were also designated for regional planning purposes. These are the Nassau-Suffolk subregion which covers those two counties and is served by a bi-county regional planning board, the New York City subregion served by the New York City Planning Commission, and the Mid-Hudson subregion covering Dutchess, Orange, Putnam, Rockland, Sullivan

Ulster and Westchester counties. There is no official regional planning unit for this latter subregion. Only a small portion of it in southern Westchester County lies in the Long Island Sound/Atlantic Ocean Basin.

II.3.g. Tri-State Regional Planning Commission

The Tri-State Regional Planning Commission is the official regional planning and coordinating agency for the New York Metropolitan Planning and Development Region in New York State and for those portions of the states of Connecticut and New Jersey lying within the greater New York metropolitan area.

Tri-State was created in 1961 as a transportation planning agency for the multi-state metropolitan area and expanded into a comprehensive planning agency by interstate compact 10 years later. While the original emphasis remains, regional transportation planning is now integrated with land use, housing, parks and recreation, and environmental management planning. The generalized land use plan, the Regional Development Guide, provides policy guidance for public decisions on the kinds of facilities that can serve and shape the Region's physical development. The Guide includes adopted estimates of people, housing and jobs which, in turn, are used to forecast land and facility needs and to evaluate project proposals.

Although the powers of the Commission are advisory in nature, it acts to encourage increased levels of cooperation and efficiency. The Commission has been designated the Metropolitan Clearinghouse under the A-95 Project and Notification Review System by the U. S. Office of Management and Budget. The Technical Advisory Group, composed of State, county and major public authority planners, is actively engaged in planning processes. Coordination activities are being further developed through expanded citizen participation and contact with local elected officials via the Metropolitan Regional Council, Inc. (Section II.3.j.).

Planning at Tri-State is a continuing, comprehensive, coordinated multi-functional process which integrates long-range plans with shorter-range plans, programs and projects. Consistency of plans is furthered through cooperative planning contracts, memoranda of agreement, and through the formalized land use plan cross-acceptance process. In addition, the agency maintains liaison with most of the substate and interstate bodies mentioned in this chapter.

II.3.h. Nassau-Suffolk Regional Planning Commission and Marine Resources Council

As noted above, regional planning agencies working for two of the subregions of the New York portion of Tri-State's region are the New York City Planning Commission and the Nassau-Suffolk Regional Planning Commission. Work of the former has been noted above in the description of local and county-level planning. The latter agency, also known as "Bi-County" is closely tied to the two county planning agencies, in particular Suffolk, with which it shares the same staff director. Nassau-Suffolk is one of the earliest regional planning operations in the State, preparing a two-county comprehensive plan with State and Federal planning assistance during the mid-1960s. From time-to-time, elements of the plan have been detailed and updated and a very significant outcome of the process has been the formulation of the bi-county Marine Resources Council as an offshoot of the Nassau-Suffolk Regional Planning Commission. The Council, which serves as a coordinating body for the many public interests in the Long Island marine areas, has been of assistance in the formulation of positions on coastal planning and development matters, such as off-shore energy facilities and water quality with respect to marine fisheries and in encouraging much needed marine resources research. Nassau-Suffolk regional planning staff is providing significant input into the State/Federal Coastal Zone Planning Program, and the agency has also been designated to prepare the two-county areawide wastes treatment management plan under Section 208 of PL 92-500.

It is the usual role of multi-jurisdictional planning agencies to act primarily in an advisory capacity. They have no authority to go beyond this, although findings of some of their project review-type functions can often influence decisions by other governments, from Federal to local This certainly is the case with the Tri-State Planning Commission. So, too, with Nassau-Suffolk, but there is the advantage of at least a much greater level of plan concurrence when only two counties are involved. Of course, the New York City subregion is unique in that only one agency, ostensibly, is responsible for overall planning. Nevertheless, there are overwhelming problems between plans and implementation in the City due to size and independence of individual program agencies and, of course, due to severe fiscal constraints.

II.3.i. Regional Plan Association

Somewhat parallel to, but complimentary with, the work of the Tri-State Regional Planning Commission, is the work of the Regional Plan Association (RPA), a non-profit citizen's planning organization serving much the same New York metropolitan region as Tri-State, the difference being only a bit less coverage in Connecticut. RPA produced a plan for the Connecticut/New Jersey/New York region in 1929, the first of its kind for a major metropolitan area, worldwide. Through a continuing program of public involvement, RPA has had some notable success throughout the area in influencing development decisions. However, as a private organization, they are dependent on contributary funding and powers of pursuasion, rather than the capacity to take direct governmental action.

A "Second Regional Plan" was produced in 1968, offering broad regional guidelines for housing, transportation, open space and public facilities, with some special focus on development of regional centers peripheral to New York City itself. In 1974, RPA co-authored a plan for the mid-Hudson Valley from Putnam and Orange Counties, as far north as Columbia and Greene, in conjunction with another private regional planning organization, Mid-Hudson Patterns for Progress.

Both these regional plans have some influence upon the more official planning activities of Tri-State, and of the county and local governments affected. Recently, RPA examined the influence and work of Tri-State as the official regional planning agency; this has encouraged Tri-State to try to provide more public contact and open forums in both their planning and program review functions.

II.3.j. Metropolitan Regional Council

The Metropolitan Regional Council is a non-profit organization which serves as a means of communication between the 600 municipalities in the New York/New Jersey/Connecticut area. It consists of elected local government officials, including the Mayor of New York City and, at annual meetings, three State governors. It has set up MRC-TV which has, as its exclusive purpose, transmission of training and informational programs to local governments in the New York/New Jersey/Connecticut area. Though it spends little of its time on planning, it can serve as a supplemental means of communication, both publicly and intergovernmentally. Tri-State has use of its facilities for some technical advisory group (staff level) and Commission meetings.

II.3.k. Intergovernmental Planning Coordinating Committee

The Intergovernmental Planning Coordinating Committee is a special ad hoc committee, established by the Mayor of the City of New York and the county executives of Nassau and Westchester counties, specifically for the purpose of identifying and resolving three-way problems affecting the three municipalities. The Committee is especially concerned with problems of water supply, sludge disposal, air and noise pollution and energy conservation. Committee members include the planning, health, environmental and public works department heads from the City and two counties.

II.3.1. Other Special Function Regional Agencies Impacting Water Quality

Because the metropolitan New York area serves as a very major port facility, the management of its harbor facilities must be considered in water quality planning for the area. Much of this planning is within the jursidictions of the Port of New York Authority (which is an interstate agency set up between New Jersey and New York), and/or the U. S. Army Corps of Engineers. Environmental problems caused by shipping wastes and spillage, dock facility locations and channel deredging all impact upon water quality and marine life. In addition, of course, the manner of operation of the Port of New York Authority airports has impact upon air pollution in the region. Storm runoff from these airport facilities affects water quality, and terminals are fairly large sewage sources.

There are several other regional agencies in the Long Island Sound/ Atlantic Ocean Basin with special functional jurisdictions whose plans should be examined with respect to their development impacts, which indirectly relate to water quality management. These include three New York State Park Regions: the Long Island State Park and Recreation Commission, the State Park and Recreation Commission for the City of New York, and the Taconic State Park and Recreation Commission. Also of interest are the transportation planning activities of the New York

State Metropolitan Transportation Authority which has jurisdiction over mass transportation in the metropolitan area.

II.3.m. Interstate Water Pollution Control Agencies

There are special interstate water-related regulatory agencies responsible for planning input in the Long Island Sound/Atlantic Ocean Basin. The planning and research activities of the Interstate Sanitation Commission and the New England Interstate Water Pollution Control Commission are closely related. Each deals primarily with pollution, its abatement, and recovery of the areas that have been damaged by pollution.

The Interstate Sanitation Commission covers the New Jersey and Long Island coast between Sandy Hook and Fire Island Inlet, extends north up the Hudson to the Bear Mountain Bridge and includes Long Island Sound as far east as New Haven and Port Jefferson. It was organized in 1936 and has the power to make rules and regulations and orders regarding the pollution of coastal, estuarine and tidal waters. It also determines the adequacy of treatment afforded by the various sewage treatment works and makes recommendations for State enforcement of the pollution programs.

The balance of Long Island, except for the Atlantic Coast is within the jurisdiction of the New England Interstate Water Pollution Control Commission whose basis, the New England Interstate Water Pollution Control Compact, directs that it should cooperate with the signatory states of New York, Vermont, New Hampshire, Connecticut, Rhode Island and Massachusetts in the abatement of existing pollution and the control of future pollution in the interstate waters of the New England area. Its area of jurisdiction covers all waters which are contiguous to two or more signatory states, except for those waters under the jurisdiction of the Interstate Sanitation Commission in New York and Connecticut.

II.3.n. Corps of Engineers Permits

It should be noted that the U. S. Army Corps of Engineers also plays a significant role in the management of the quality of the water areas of the Long Island Sound/Atlantic Ocean Basin and prevention of undesirable coastal land alternations through the enforcement of Title 404 of the Federal Water Pollution Control Act Amendments of 1972. In addition, the Corps of Engineers, under Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972, is also responsible for the issuance of permits which authorize disposal of dredged material in Ocean waters. Under Section 404, which is a reaffirmation of early authority granted, the Department of the Army, through the Chief of Engineers, may issue permits, after notice and hearing, for disposal of dredged or fill material into navigable waters only at specified sites determined in cooperation with EPA and other Federal and State agencies. Similar procedures and coordinations are accomplished in connection with issuance of permits for disposal of dredged material in Ocean waters. Recent indications are that the Corps intends to extend application of Section 404 to virtually all inland waters of the United States under a broadened interpretation of navigable waters. Around Long Island and New York City, however, such regulation has been in effect for many years and some 400 permits per year are for filling activity in the numerous bays, sounds and estuaries of the basin. In addition, some fifty permits a year are issued for disposal of dredged material in Ocean waters.

II.3.o. New England River Basins Commission

The New England River Basins Commission was created in 1967 by the President of the United States under authority of Title II of the Water Resources Planning Act of 1965. The purpose of this Commission is to serve as the principal agency for coordination of water and related land use planning in the region, including Federal, State, interstate, local and non-governmental water planning. The Commission also prepares a comprehensive coordinated joint plan for use and development of water and related land resources. The Commission served as the lead agency in the preparation of the recently completed Long Island Sound Study.

II.3.p. Delaware River Basin Commission

The Delaware River Basin Commission created by compact between New Jersey, New York and Pennsylvania, has interest in the management of New York City reservoirs in the Delaware watershed. Their recommendations and certain specific water release requirements must be considered in any study involving water planning for New York City, and also for Long Island if upstate import of water is contemplated.

II.3.q. Long Island Sound Study

The Long Island Sound Study (LISS) is a Level "B" planning effort, generally authorized under the Water Resources Planning Act of 1965 (PL 89-80) and initiated in 1971 under the lead of the New England River Basins Commission, with participation by the states of New York and Connecticut and by various Federal agencies. Section 209 of the Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) directs development, through the U. S. Water Resources Council of Level "B" plans, for all river basins of the United States by 1980. Such studies are intermediate-term (15-25 years) plans which identify further need for water resource planning. A Level "B" plan includes examination within a major basin of water quality, flood plain management, coastal zone management, and overall land use, among other elements of natural resources management. A Level "B" study is flexible in scope and detail, but its objectives are to identify actions, plans and programs to be carried out at all levels of government, and to recommend more detailed implementation studies for authorization of specific projects and measures.

The final Long Island Sound Study was released in September, 1975. Many of its recommendations may be implemented through ongoing programs, and may set precedents for other areas. It is felt that LISS will not only benefit the basin, but the State and nation as well. The study did not cover those parts of Long Island and New York City which drain outside Long Island Sound.

Those portions of Westchester and Bronx counties and New York County (Manhattan) adjacent to the Long Island Sound, but not covered by the Long Island Sound Study, will be covered in the Hudson-Mohawk Level "B" study which recently has been started. It will be the first managed by a state, with DEC as the lead agency in cooperation with the Federal Water Resources Council.

II.3.r. Northeastern Water Supply Study

The Northeastern U. S. Water Supply Study (NEWS) is a special Congressionally-authorized study started at the time of severe droughts in the mid-60's. The project includes all of New York State except for the westernmost basins. The NEWS study has focused on the major water supply problem areas of the northeast, including those of the three-state region around New York City. It evaluates probable water supply strains anticipated by the year 1980. The study examines such matters as water supply sources and their quality, engineering, preliminary environmental impact and institutional alternatives. In the New York metropolitan area, basins outside those draining directly into the area are also involved because of interbasin transfer of water supplies.

For example, potentials for expansion of the New York City water supply in the Catskills and other upstate areas can have considerable impact outside of the immediate New York metropolitan area, in terms of, say, reservoir construction. Conversely, decisions on upstate land uses affecting New York City water supply have impact within those portions of the Long Island Sound/Atlantic Ocean Basin, which are dependent on such supplies. A next step in the NEWS study in the New York metropolitan area will be to examine several specific water supply alternatives suggested in the preliminary study. Several of these involve a process referred to as "flood skimming" or taking of excess Hudson River flow and storing for use in dryer perids.

II.3.s. Commission on Water Supply Needs of Southeastern New York

Completing its work in the spring of 1975, the Temporary State Commission on the Water Supply Needs of Southeastern New York made a study involving much the same aspects as did NEWS, but confined essentially to downstate New York. Similar conclusions are drawn with respect to water supply needs and potentials in the New York City metropolitan area, but more detailed examination and recommendations are made in the Southeastern New York Water Supply Study, especially with respect to institutional arrangements and non-structural water conservation measures. Both studies concur that sources of supply of water in the region are at critical levels, that is, near amounts below which, in dry years, they would be inadequate to meet demands. The quality of possible alternate sources is inadequate, and planning for new sources and supply systems has been delayed too long. However, recommendations are being made, including legislation, which would provide first for improved system management, including water conservation measures such as metering, and for ultimate expansion of the system, probably to upper Hudson tributaries, if and when necessary. Future facilities alternatives are being studied for impact. Obviously, areas outside the Long Island Sound/Atlantic Ocean Basin will be most impacted by such facility development.

II.3.t. Groundwater Studies on Long Island

The problems of groundwater supplies on Long Island, especially in Nassau and Suffolk counties, have received particular attention. In recent years, a large part of the investigatory work has been done through cooperative programs of the U. S. Geological Survey, Nassau DPW, Suffolk DEC, the Suffolk County Water Authority, NYS Department of Environmental Conservation and the county health departments. The studies point out that drawdown of the underlying freshwater aquifers of Long Island through over use may result in saltwater intrusion. In addition, failure to recharge wastewater and losses through stormwater runoff in developed areas is resulting in further decline of supplies. In certain areas recharge from exfiltrating sewers and septic tanks, and similar individual waste treament facilities, has caused notable decline in groundwater quality. Use of low phosphate, biodegradable detergents has helped to alleviate some of the problem. Because of the integral relationship between water supply and waste water disposal on Long Island, water supply planning recommendations for Nassau and Suffolk are very important considerations in waste water management for this basin.

In Kings and Queens counties a contrary condition exists. Pumping has decreased and water tables have risen to cause flooding of cellars. Sewers are taxed by increased infiltration and by the demand for discharge of sump pump waters.

II.3.u. North Atlantic Regional Water Resources Study

The North Atlantic Regional Water Resources Study (NAR) is the broadest-based of the various levels of water resources studies done under guidelines set by the Federal Water Resources Council. Started in 1965, primarily under the direction of the U. S. Corps of Engineers, substantial input was also provided by other State and Federal agencies and existing river basin commissions. The NAR study was completed in 1972 and serves as the basis for follow-up Level "B" studies in all the North Atlantic River Basins.

II.3.v. Coastal Zone Planning

The New York State Department of State is the lead State agency to carry out the coastal zone management planning program in New York State under the Federal Coastal Zone Management Act of 1972, as amended. The objective of the program is to develop an implementable State Coastal Zone Management Program for the effective management, beneficial use, protection and development of the coastal zone. Substantial technical support is provided to the work by DEC. Under the coastal zone program, the Long Island Sound/Atlantic Ocean Basin is included in shoreline studies being done by planning departments of various counties and regions. Specifically, the Nassau-Suffolk Regional Planning staff has work underway for their two counties. New York City has contracted for similar work. Westchester County is expected to work on such studies, both on Long Island Sound and the Hudson in the next year of the program.

Such studies are aimed at the restoration, protection and preservation of the tidal waters; the beaches, bluffs, wetlands and other fish and wildlife habitats; and the identification of policies and regulations to carry out such protection. A second phase of the program will involve commitment to implementation of various aspects of the plan.

II.3.w. Air Quality Planning

In response to Federal requirements under Section 110 of the Clean Air Act of 1970, air quality maintenance planning areas have been identified throughout the State where national air quality standards may be exceeded because of expected growth and development between 1975 and 1985. New York City, Nassau, Suffolk, Westchester and Rockland counties comprise one such air quality maintenance area. The New York metropolitan area has one of the most severe air quality problems in the country, but it is expected that exercise of certain stationary source and transportation controls will improve air quality and prevent further deterioration.

A Transportation Control Plan has been worked out jointly by New York City, the Federal EPA and DEC to help the City area reach and maintain national air standards by 1979. The plan provides for such strategies as staggered working hours in lower Manhattan, express bus lanes, vehicle inspection, fitting trucks and buses with additional emission control equipment, and stricter enforcement of City traffic regulations. Over the longer range, air quality maintenance plans may be necessary through much of the Long Island Sound/Atlantic Ocean Basin, and more stringent land use controls in dense-population areas may be needed. Such constraints on land use must also be reconciled with land use decisions related to the maintenance of water quality standards throughout the basin. Much basic input for air quality maintenance planning, in the form of population projections and transportation data is provided by Tri-State Planning Commission staff.

II.3.x. Solid Wastes Management Planning

Comprehensive solid wastes management studies, 100 percent State funded, are being conducted by consultants on behalf of county and regional agencies. In addition, some counties have utilized Federal funds under Section 207 of the Solid Wastes Disposal Act of 1965 to undertake similar studies without State aid. Nearly 50 counties, covering 95 percent of the State's population, have been studied or have such studies in progress. Their purpose is to identify major alternative solutions to solid wastes management problems which are intermunicipal in nature. This includes the identification of the most economic and environmentally sound systems of collection and disposal. Some of the completed studies include examination of resources recovery (RR) as an alternative. **In New York City a RR potential report is in final review and in Westchester County a RR study has been completed. Both studies were state funded. Westchester County has proceeded to develop RR projects. Early solid wastes management studies were made for both Nassau and Suffolk counties, but these did not include analysis of resource recovery potentials.**

II.3.y. Agricultural Land Preservation

Since 1972, New York State counties have had the opportunity to establish Agricultural Districts in an effort to encourage the preservation of viable agricultural land and farmsteads. While such districts must be certified by the State as to their consistency with State plans and resource conservation efforts, the basic initiation of such districting is up to the individual landowners. Since one of the mechanisms within an Agricultural District to minimize development and continue farming activity has been to make it economically difficult to establish or extend public sewer and water facilities in the district, Agricultural Districts should be recognized as limiting factors in water quality management planning and especially in 303(e) basin plans and 208 areawide plans.

As of now, there are no certified Agricultural Districts in existence within the Long Island Sound/Atlantic Ocean Basin due, in part, to high urban density. Nevertheless, Suffolk County remains one of the highest dollar value agricultural production counties in the State. The county is engaged in an Agricultural Land Acquisition Program, designed to preserve some of its prime agricultural land from mounting economic pressures caused by urban land development. In an area where land values even for agricultural property are exceedingly high, it was felt that agricultural districting would not work as a preservation device in and of itself. There was concern voiced that the approximately 45,000 remaining productive acres of agricultural land in Suffolk County would go the way of the other 123,000 acres that existed in 1950. Thus, county acquisition of development rights on some of the remaining agricultural land was proposed. Most of this land is located at the eastern end of Long Island, away from the population centers. The program would allow the farmer to stay in production by purchasing 80 percent of the full fee value, thus reducing taxes and supplying additional income for farm improvements. The county then possesses the option to decide whether developers may later purchase the land. The importance of keeping the area agricultural is stressed because the area is vital to the fresh food needs of the entire New York metropolitan area. Prices are kept from rising at greater than present rates because of the close proximity of these food sources. It has been suggested that the Agricultural Districts Program may be applied to those areas where development rights have been acquired to further insure their preservation.

II.3.z. Soil and Water Conservation Planning

Suffolk and Westchester counties are the only counties in the basin with established Soil and Water Conservation Districts, Nassau County is soon to become a district, and the city of New York is considering establishing such districts in each of its boroughs (counties). Soil and Water Conservation Districts are responsible for the control of erosion and prevention of floodwater and sediment damages, both through the application of land management plans to individual rural land holdings and through support of small watershed maanagement programs, often involving some structural protection. A recent law passed by the New York State Legislature had made the development of individual soil and water conservation plans mandatory by 1980 for productive land holdings of over 25 acres. In addition, reclamation plans for proposed mining activity are also required under a law passed in 1974. Both such land management plans will be undertaken with assistance of County Soil and Water Conservation Districts.

II.3.aa. Small Watershed Plans

The Small Watershed Planning Program under PL 83-566, administered by the U. S. Soil Conservation Service, in cooperation with local governments and the State Department of Environmental Conservation, is intended to develop and improve the management of land and water resources in small watersheds (less than 250,000 acres) through projects and actions planned and carried out jointly by all levels of government, with the full understanding and support of a majority of private landowners and farm operators involved. Assistance is authorized primarily for flood provention and erosion control, with supplemental benefits available for fish and wildlife, agricultural water management, recreation, forestry and water supply purposes. The planning phase includes preparation of watershed work plans, after which specific detailed project plans are prepared for implementation. There are no completed small watershed projects in the Long Island Sound/Atlantic Ocean Basin. Blind Brook near Rye and Port Chester in Westchester County has been approved for a planning study.

II.3.ab. Shore Erosion Control

Shore erosion control and protection from hurricane flooding are available in the basin through a combination of cooperative Federal, State and local programs applicable to the Atlentic shoreline, including lower New York Bay and to the north shore of Long Island. Over 100 State-local government shore protection projects have been built since 1946, totalling over $27,000,000. Federal involvement, primarily through the U. S. Corps of Engineers, in beach erosion control and hurricane protection in the last 15 years has reduced the State-local program to projects in limited areas not covered under the Federal program or to interim protection works pending completion of a Federal study. The Federal-State-local projects are usually much larger in scope and may cost from 20-150 million dollars. Hurricane protection projects may require construction of artificial barriers across intlets, which may impact on water quality within the enclosed embayments.

II.3.ac. Flood Plain, Wetland and Special River Management and Protection

Several other resource management activities involving cooperative State and local planning should be mentioned because of their direct impact on water quality management or upon land uses which, in turn, affect the needs for and/or quality of the water in the Long Island Sound/Atlantic Ocean Basin. Perhaps the most significant of these is the flood plain management/flood insurance program, wherein local communities, in order to establish eligibility of developed property for Federal flood insurance, must come up with systems for control or flood-proofing of development in all flood hazard areas. Flood hazard areas include those subject to coastal flooding. Lack of flood insurance can severely limit the availability of development financing and mortgage money. Most of the communities in the Long Island Sound/Atlantic Ocean Basin are involved. Modification or adoption of zoning or building regulations regarding flood hazard areas is the usual means of compliance.

A recently initiated State-local program preserves legislatively-designated stretches of Wold, Scenic and Recreational Rivers through environmentally sound land management and limitations on types of development. In Suffolk County, a nine-mile stretch of the Carmans River has been intermittently classified "Scenic" and "Recreational", and a five-mile stretch of the Connetquot River, mostly adjoining publicly held land, has been classified "Recreational". Two other segments of the Connetquot and a portion of the Carmans River have been statutorily specified for study with respect to possible further designation.

Another similar program has been recently legislated for designation of freshwater wetlands. An inventory to identify such areas is underway Statewide. Far more important in the Long Island Sound/Atlantic Ocean Basin is the Tidal Wetlands Program established in 1973, which covers all of the coastline of the basin. Activities affecting a wetland in or within 300 feet of its boundary may be regulated by DEC.

While these several flood and wetland area controls are somewhat piecemeal, they collectively provide considerable guidance for development in the vicinity of critical environmental areas throughout the basin, and consequently impact upon water quality management plans.

II.3.ad. County and Local Environmental Conservation Commissions

A program supported by DEC which provides substantial citizen planning input into the "303(e)" basin planning either directly or through influence upon the planning effort of the other agencies is the work of local Conservation Advisory Commissions and county Environmental Management Councils. At local levels, such bodies identify and prepare open space plans for their communities and identify critical areas of concern. Such plans and studies become part of local comprehensive development plans. County Environmental Management Councils prepare overall county environmental management plans which, among other matters, must include recommendations on water resources and water quality management.

The operations of the Westchester County Environmental Management Council are also particularly noteworthy because of the Council's organization and responsibilities. The Council is unique in that it is made up of two parts: the County Environmental Coordinating Agency (CECA) which is an interdepartmental county review and policy board whose constituent agencies provide staff support, and the County Environmental Advisory Council made up of appointed representatives from the various Westchester municipalities. The CECA technical members are the heads of the county departments of Health, Planning, Public Works, Environmental Facilities, and Parks, Recreation and Conservation. They are supplemented by the District Conservationist of the U. S. Soil Conservation Service, the County Agricultural Extension Agent, the citizen members of the county Soil and Water Conservation District, a representative from the county Parks Board and the Chairman of the county Environmental Advisory Council. The Westchester CECA is the designated 208 agency responsible for the production of that county's Section 208 Areawide Waste Treatment Management Plan. It is felt that through the combined influences of CECA and the Advisory Council there will be excellent representation of both citizen and agency interests in the development of water quality management and other environmental plan elements in Westchester County.

Overall standards and criteria for water, land and air resource management programs may be developed by the State, but county and regional planning agencies represent the only realistic way in which sufficient manpower can provide support for solutions at local levels. The Department of Environmental Conservation will continue its policy of close association with such agencies as part of its increasing effort toward local government and general public involvement in all its resource management programs.

II.4. 208 Areawide Waste Treatment Management

II.4.a. Authority and Regulations Governing 208 Planning

On October 18, 1972, the Federal Water Pollution Control Act Amendments of 1972, Public Law 92-500, became effective. Section 208 of this Act authorized a 100 percent Federally funded areawide waste treatment management program for qualified areas of states. Initial rules and regulations issued by EPA on September 14, 1973, stated that to qualify, areas must be of an urban-industrial nature, and have complex water quality problems.

Under the regulations, the Governor had three specific choices of action: he could designate areas and agencies; remain silent; or non-designate specific areas. If the Governor remained silent, the chief elected officials of general purpose local governments could make designations on their own and request approval from EPA. The regulations did not allow the states to obtain any direct funding from EPA for state 208 planning activities.

The regulations required that the Governor execute his options within 180 days from September 14, 1973. Within the 180 days, the areas and agencies in the state that might have been eligible for the Governor's designation had not sufficiently met the Federal criteria necessary to have a Governor's designation approved by EPA. Therefore, on March 14, 1974, the Governor of New York State sent a letter to the EPA Administator that non-designated the entire state. The Governor noted that his non-designation would not preclude future designations.

Subsequent to the Governor's March 14, 1974 non-designation, EPA published rules and regulations (Title 40 - Chapter 35) on May 13, 1974, which described the 208 grant procedure and plan content requirements and, most significantly, by the fall of 1974, EPA announced that $150 million was available for 208 grants. Subsequently, State DEC personnel assisted representatives of areas and agencies in the preparation of acceptable designation materials. By June 30, 1975, the final date under the law (PL 92-500, Section 208), whereby designated agencies could receive 100 percent Federal funding, the Governor had designated seven areas and agencies. Six of the agencies received grants.

In the Long Island Sound/Atlantic Ocean Basin, the following grants were made:

1. Nassau-Suffolk Regional Planning Board -- Nassau and Suffolk Counties.
2. New York City Environmental Protection Administration --- New York City
3. Westchester County -- Westchester County.

Therefore, all of the counties in New York State which are in the Long Island Sound/Atlantic Ocean Basin will be developing areawide waste treatment management plans under Section 208.

On November 28, 1975, EPA issued new rules and regulations (Title 40 - Parts 35, 130 and 131) which give further detail on the preparation of Water Quality Management Plans. These regulations require that Section 208 planning must be done on a Statewide basis by either the State or areawide planning agency pursuant to 40 CFR, Part 130. Hence, the substantive planning requirements were deleted from the 208 grant regulations and incorporated in "Policies and Procedures for Continuing Planning Process" (40 CFR, Part 130) and "Preparation of Water Quality Management Plans" (40 CFR, Part 131).

II.4.b. Purpose and Responsibilities for Section 208 Planning

The objective of the Areawide Waste Treatment Management Plans developed under Section 208 is to develop plans, strategies and waste treatment management organizations needed to meet the 1983 national goal of swimmable/fishable waters.

The areawide planning process allows local areas, under the auspices of a local planning agency to develop, implement and manage solutions to its water pollution control problems.

At a minimum, the 208 planning process will:

a) Identify all anticipated municipal and industrial treatment work over at least a 20-year period.

b) Identify urban runoff and combined sewer overflow treatment needs, as well as non-point sources of pollution and feasible control methods.

c) Develop alternative systems which incorporate all technical and institutional contraints.

d) Recommend the most cost effective alternative establishing construction priorities and a timetable.

e) Identify land use requirements where necessary to meet water quality standards.

f) Establish a regulatory program and select a management agency or agencies to implement the plan.

g) Insure public participation during all phases of development.

h) Provide for annual updating and certification.

New York State is responsible for 208 planning on a Statewide basis. In the designated areas, the designated agency is responsible for the development of the 208 plan.

II.4.c. 208 Studies Underway in Long Island Sound/Atlantic Ocean Basin

Figure 2 is a map of the designated 208 study areas in New York State. The 208 studies in Westchester County, New York City and Nassau-Suffolk counties are in the Long Island Sound/Atlantic Ocean Basin.

The following Table lists the designated 208 programs in the Long Island Sound/Atlantic Ocean Basin:

TABLE 12

Designated Area	Designated Agency	Study Cost	Grant Approved	Completion Date
New York City	New York City EPA	$ 8,111,533	6/23/75	3/31/78
Nassau & Suffolk Counties	Nassau-Suffolk Regional Planning Board	5,207,000	6/9/75	12/31/77
Westchester County	Westchester Co.	1,080,000	6/18/75	3/31/78
		$14,398,533		

II.4.d. Relationship of 208 Planning with Other Programs

II.f.d.1. Relationship Between Section 208 and Section 303(e) Basin Plans

303(e) basin plans constitute the overall framework within which 208 plans are developed for specific portions of a basin with complex pollution control problems. Basin pans: 1) identify point source discharges and existing abatement plans; 2) provide water quality standards and goals; 3) define critical water quality conditions; and 4) within the limits of available information, provide waste load constraints. The results of 208 planning will constitute an ingegral part of these basin plans. The 208 plans and basin plans must be mutually consistent, and should be annually certified as so by the Governor.

NEW YORK STATE

DESIGNATED AREAS & AGENCIES FUNDED UNDER SECTION 208 OF PL 92-500

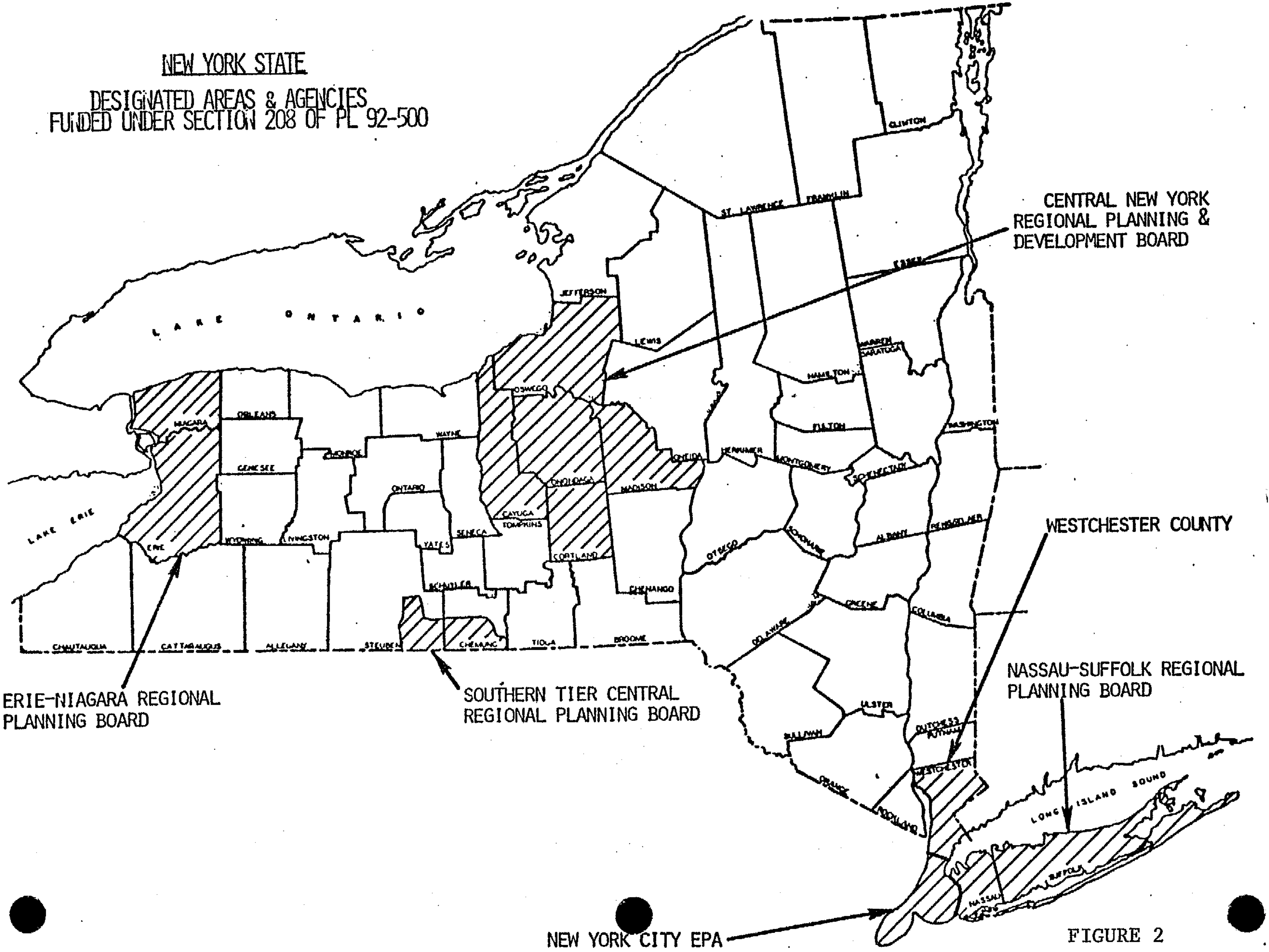


FIGURE 2

II.4.d.2. Relationship Between 208 and 201 Facilities Plans

Facility planning consists of plans and studies prerequisite to the award of an assistance grant for detailed design or construction of public sewerage facilities. Upon completion and approval of a water quality management plan, new 201 grants will be made to the designated 208 management agency. A program Guidance Memorandum (SAM-1) issued by US EPA is presented in the Appendix. This memorandum delineates in detail the relationship between 208 and 201 plans for grant awards during all phases of 208 planning.

II.4.d.3. Relationship Between 208 and 209 Water Resource Plans

Section 209 authorizes the preparation of Level "B" plans for all basins in the United States. These plans are to analyze water related land resources management problems and serve as a basis for recommendation to Congress of priorities for investigation, planning and construction of projects.

The Long Island Sound Study included development of a Level "B" plan for the Long Island Sound portion of the planning area. NYS DEC has been authorized to conduct a Level "B" study of the adjoining Hudson River Basin. The New York City, Westchester County and Nassau-Suffolk 208 studies will be coordinated with these Level "B" plans.

II.4.d.4. Relationship Between Section 208 Plans and Section 402 Permit Program

The 402 National Pollutant Discharge Elimination System Permit Program is designed to ensure that pollutant dischargers will not exceed prescribed levels. The permit system provides an essential tool for implementation of the 208 plans within the framework of the 303(e) basin plans. No permits may be issued for point sources which are in conflict with approved 208 plans since they automatically become part of the overall 303(e) basin plans. The 208 planning agency should assess current permit requirements and, when needed to achieve the 1983 goals, recommend appropriate conditions for future permit issuance.

II.4.d.5. Relationship Between 208 and Air Quality Programs

Sections 107, 108, 109 and 110 of the Clean Air Act provide for the establishment of ambient air quality standards, the partitioning of the nation into Air Quality Control Regions, and the preparation of implementation plans to show how the attainment and maintenance of the standards in each region will be accomposhed. To simplify planning for the maintenance of standards, many Air Quality Control Regions are also partitioned into Air Quality Maintenance Areas pursuant to 40 CFR 51.12(f). States are responsible through State Implementation Plans (SIPs) for the attainment and maintenance of the air quality standards.

During the 208 planning process, planners will acquire a general familiarity with the requirements of the applicable SIP in the Air Quality Region(s) in which the 208 area is located. If any portion of a 208 area is located within an Air Quality Maintenance Area, planners will coordinate their activities with the Air Quality Maintenance Area plan development and implementation process. This coordination will include:

1. Use of a consistent data base, especially growth projections;
2. Promotion of complementary air and water quality management strategies;
3. Assessment of 208 plan implementation on air quality, especially the primary and secondary effects of sewage treatment facilities;
4. Review by the appropriate agency(s) to ensure that 208 plans are consistent with applicable portions of the State Implementation Plans. It would be advisable to arrange periodic reviews rather than relying on a single review at the end of the planning process.

Planners will also review the applicable State procedures for implementing and encorcing Section 111 (Standards of Performance or New Stationary Sources) and Section 112 (National Emission Standards for Hazardous Air Pollutants) of the Clean Air Act to ensure compatibility with 208 planning. These standards may be important because of their impact on decisions, for example, concerning sludge incineration and the location of facilities generating air pollutants.

II.4.d.6. Relationship Between 208 and Solid Waste Programs

Section 208(b) calls for regulatory programs over all dischargers as well as processes to control disposition of residual waste and disposal of pollutants on land or in subsurface excavations. Thus, with regard to water quality impact, solid waste and sludge disposal regulation is needed in a 208 program. Further information on regulatory programs and information on sludge utilization or disposal are contained in Chapters 5 and 7 of the EPA "Guidelines for Areawide Waste Treatment Management Planning".

In developing programs for dealing with water pollution from solid waste and residual disposal, State plans for solid waste management will be examined for recommended organizational and technological solutions pertaining to the 208 area. Local agencies having primary responsibility for regulating and implementing solid waste management controls will be identified. The effects of the control program will be considered and appropriate measures taken in cooperation with local agencies to ensure compatibility between the water quality management provisions of 208 planning and solid waste management within the area.

II.4.d.7. Relationship Between 208 and Other Areawide Managment Programs

The land use aspects of 208 planning provide a direct linkage with other areawide planning efforts within the area, including those supported under the HUD 701, water and sewer, and flood insurance and disaster programs, DOT transportation plans and NOAA coastal zone management plans. 208 planning is viewed as providing the water quality component of the comprehensive plan for the area. Other area planning activities will be considered to ensure that their impact on water quality is incorporated into the 208 planning process and that 208 plans are consistent with these activities. This will facilitate the development of a coordinative relationship between 208 agencies and related agencies which will be carried over into the 208 implementation phase.

Special attention wil be given to related plans which are being developed concurrently with the 208 plan. It is likely, for example, that many areas will be preparing land use elements under the HUD 701 program and/or coastal zone management plans. These types of plans will be of particular importance since they will be examining issues related to development, land use and water quality. The 208 planning agency will establish procedures to ensure that such plans are consistent with the 208 plan.

II.4.e. Nassau-Suffolk 208 Program

The Nassau-Suffolk Regional Planning Board is the agency designated to develop the 208 plan for Nassau and Suffolk counties.

Major surface and groundwater pollution problems have been identified on Long Island. In the marine waters, the problems include nutrient enrichment and the closing of beaches and shellfishing areas due to bacterial contamination. These are attributed to both point and non-point sources of pollution. Some freshwater streams have dried up and others are threatened because of lowered groundwater levels due to sewering with surface water disposal and excessive well pumpage.

Groundwater quality has been degraded by nitrates, chlorides and other contaminants from cesspools, fertilizers, recharge of wastewater, landfill leachate and stormwater recharge. Groundwater is the only source of water supply in Nassau and Suffolk Counties.

NSRPB has developed an extensive work program including the development of mathematical models of Long Island's surface and groundwater to permit determination of:

- -- the probable response of ground and surface waters to specific stress situations resulting from various groundwater-waste water management alternatives.
- -- the permissable volume and quality of effluent that can be discharged into marine and surface waters without causing adverse environmental impacts.
- -- the impacts of various groundwater levels on salt water intrusion and further pollution of the groundwater resources.

Surface water quality models to predict DO, coliform, etc. will be developed for the following water bodies:

1. Great South Bay complex, including South Oyster Bay, Hempstead Bay and Middle Bay
2. Manhasset Bay
3. Hempstead Harbor
4. Oyster Bay complex
5. Huntington Bay complex
6. Port Jefferson Harbor
7. Carll's River
8. Peconic Estuary and Flanders Bay
9. Peconic River

These models can then be used to evaluate management alternatives and develop quantitative estimates of effects of proposed management alternatives.

An existing analog model of the groundwater system of Long Island Counties will be used to identify hydrologic conditions resulting from various water and waste water management alternatives.

In addition, a two dimensional salt water interface model of the South Fork will be employed to determine the impact of various technical water and waste water management alternatives.

An evaluation of existing surface and groundwater data will be made and an assessment of the existing water quality presented.

Sampling of major streams during the storm events will be conducted to obtain data on the impact of urban runoff. In addition, small specific drainage areas will be selected for in-depth study of the urban runoff problems.

A program will be initiated to identify the nature and extent of rural runoff problems. Current management practices will be evaluated and structural or non-structural solutions recommended.

The 208 study will develop and evaluate a series of alternatives, including the no-action alternative. These alternatives will include both structural and non-structural solutions to the water quality problems. The environmental, social and economic impact of the various alternatives will be evaluated. Based on a comparison of these alternatives, a final plan will be selected.

II.4.f. New York City 208 Program

New York City EPA is responsible for developing the 208 plan for New York City.

The existing water quality problems arise from several general source classifications, including municipal plant effluents, untreated discharges of dry weather sewage, combined sewer overflows, stormwater runoff, direct industrial discharges, overflows from poorly operating septic tanks and cesspools, and possibly leachates from sanitary and industrial landfills. One major effort of the New York City 208 program will be to develop means of rationally evaluating the effects of these source types, singley and in combination, on specific water quality problems in the harbor. This will involve the development of dynamic two dimensional simulation models which take into account the complex flow patterns which interact to transport pollutants in parts of the harbor.

Presently available basic relationships and mathematical models will be exhanced and verified to depict water quality interrelationships in the study area and will be used in the 208 planning process to determine the most beneficial and cost-effective waste water management strategies. These will include:

-- Overall steady state harbor model to give background water quality characteristics (DO, coliforms, phosphorus, etc.) which are chiefly determined by continuous point source discharges (municipal waste water treatment effluents) and untreated dry weather flow and industrial discharges (most New Jersey). This will be a further adapted and validated version of the Interstate Sanitation Commission model and will permit evaluation of continuous point source loads.

-- Intertidal time variable, advective-dispersive model for the harbor complex to permit superposition of intermittent discharges on the steady state situation to determine short-term coliform variation. This will depict general areas of the harbor following storm events or waste spillages.

-- A rainfall-runoff model is being developed for drainage areas of New York City and adjacent areas of New Jersey. This model will simulate storm events and, based on the effects of current and future land uses, predict the quantity-quality of storm and combined sewer discharges. These models will provide input to both the intertidal harborwide model.

Structural and non-structural abatement alternatives and combinations of the two will be produced and evaluated for cost-effectiveness and recommendations will be made.

Groundwater use will be determined, along with its quality and quantity. Adequacy of the supply will be evaluated for current and future needs. Policies, classifications and future disposition of supplies will be reviewed, with emphasis on Queens and Richmond supplies.

Non-point sources, such as overflows from areas served by failing septic tanks and leachate from oil handling areas are considered to be localized public health problems in the New York City area. These sources will be monitored and their impact and importance evaluated.

Combined sewer overflows are of major importance in this area. Extensive sampling and monitoring of flows will be performed to assure that their full impact is assessed. Using these data and land use information, rainfall-runoff models will be produced that will be used to estimate the combined sewer overflow load throughout the area, and to project future loadings for various population and land use conditions. Coupled with the water quality models, they will be a valuable tool in the assessment of impacts of overflows on specific areas, and the evaluation of abatement alternatives, as well as possibly aiding in the design of combined sewer overflow control systems.

A vital output of the study will be recommendations for a legal-institutional-financial framework that will provide for the implementation of recommended remedial measures.

II.4.g. Westchester County 208 Program

The Westchester County government, through a Water Quality Planning Task Force, is the agency responsible for preparing an Areawide Waste Treatment Management Plan for the County.

Westchester is a County of varied conditions and requirements. The northern portion of the County is primarily rural. While pressure for development is high, much of the area drains into the New York City water supply system (the Croton and Kensico Basins), thus restricting development. The area itself relies on groundwater for its source of water supply, while its wastes are consigned to a number of small tertiary treatment plants and individual septic systems. These pose a threat to the groundwater supply, and the quality of Croton Reservoir water has been deteriorating in spite of existing controls.

The southern portion of the County contains most of the County's population, including the cities of Yonkers, New Rochelle and White Plains. This area obtains most of its drinking water from New York City. It is almost completely sewered, and treatment levels are generally being upgraded to secondary. However, present treatment plants become overloaded during heavy storms, and urban runoff is suspected to be a significant contributor to pollutant loadings, particularly into Long Island Sound. Occasionally, some Long Island Sound beaches have been closed due to high bacterial counts after heavy rainstorms.

Existing water quality information indicated that the County's goals are not currently being met and that much more quantitative information is needed on existing stream conditions before planning can proceed. Westchester's work program, therefore, includes extensive stream survey work in the Croton, Hudson River, Bronx River and Long Island Sound Basins. An initial evaluation will be made based on existing water quality data and flow data, with some additional stream flow measurements where necessary. Analysis of non-point and intermittent point sour-es will be included. These surveys will serve as inputs for the development of a plan for sewerage facilities in the County.

In response to the concern for groundwater in the northern part of the County, a study will be conducted to identify potential groundwater/surface water quality relationships and the extent to which the aquifers can be utilized for subsurface waste disposal without polluting them. Outputs will include regulations limiting the types of quantities of pollutants discharged to groundwater aquifers, establishment of maximum safe yield guidelines, and establishment of maximum development densities compatible with the natural environment.

Another major element of the Westchester County 208 study is the identification of present landfill conditions, leachate generating and migration characteristics, and alternative methods for arresting leachate migration into surface and subsurface receiving waters.

III. Hydrologic Profile

The Atlantic Ocean - Long Island Sound Planning Area comprises (with the exception of the Hudson River drainage basin) all of the marine waters of New York State and all of the land that drains into these waters. The area includes all of Long Island, all of Staten Island, the eastern half of Manhattan Island, most of the Bronx and the Southeastern section of Westchester. The roughly 2,000 square mile planning area comprises 500 square miles of water and 1500 square miles of land.

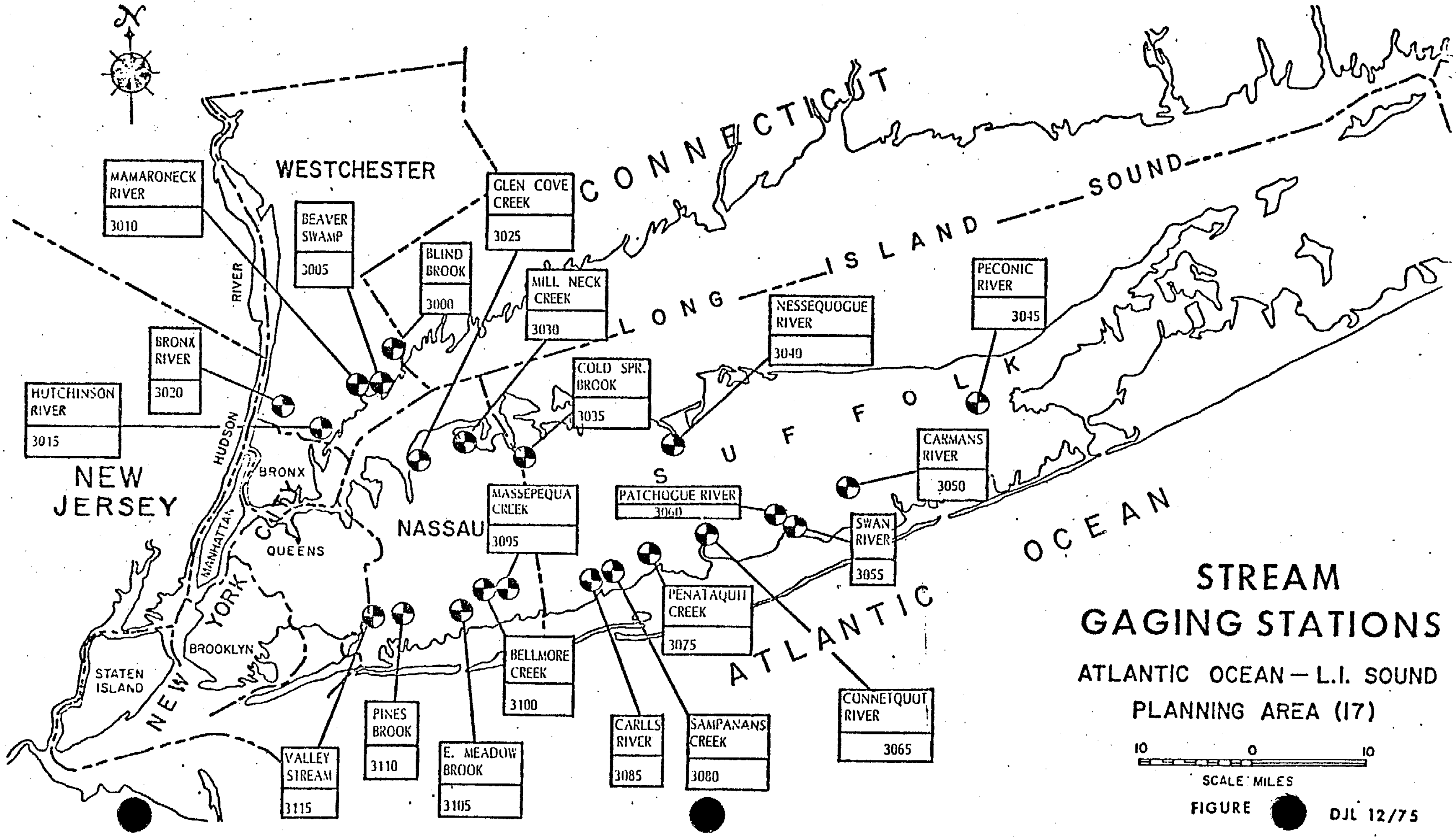
III. 1. Stream Gaging Network

Freshwater streams and ponds are numerous within the planning area, but even the largest of these is small in comparison to the vast marine waters and the important groundwater. Streams are fed by groundwater in dry weather and receive increased flow for short duration during wet weather periods. Table 13 is a summary of stream gaging information and Figure 3 shows the locations of these 21 active gaging stations. Stream gaging data has also been collected for more than 70 partial record stations.

III. 2. Tide and Tidal Current Gaging Stations

Tides are gaged at five reference stations: Willets Point, the Battery, Bridgeport, New London and Sandy Hook. About 200 subordinate stations exist within the planning area. Tidal currents are gaged at three reference stations: the Race, the Narrows and Hell Gate. There are around 250 subordinate tidal current stations within the planning area.

Tables in Appendices B and C are summaries of tide and tidal current data. Figure 4 shows spring tidal current charts for New York Bays and Figure 5 shows charts for Long Island Sound. Tides are caused by the moon and sun. Wind, ocean storms, runoff, and droughts also affect tides. The tabulated data are for average conditions. Daily values vary significantly from the average because of moon phase, season, and weather.



STREAM GAGING STATIONS

ATLANTIC OCEAN — L.I. SOUND PLANNING AREA (17)

FIGURE ● DJL 12/75

TABLE 13

STREAM GAGING STATIONS

	Gaging Stream #	Name of Stream	DA sq.mi.	Number Of Years	Average flow-cfs	Minimum flow-cfs	Minimum Daily Discharge
I.	New York Bays - Arthur Kill-Kill Van Kull						
	NONE						
II.	Jamaica Bay 1-3115	Valley Stream	4	21	2.95	0.0	0.0
III.	Hempstead Bay to Great South Bay 1-3110	Pines Br. Outlet	10	38	4.12	0.0	0.0
	1-3105	East Meadow Br.	31	38	14.9	0.0	---
	1-3110	Bellmore Cr.	17	38	10.5	---	1.1
	1-3095	Massapequa Cr.	38	38	11.3	0.95	---
	1-3085	Carlls R.	35	31	26.0	0.05	4.5
	1-3080	Sampanans Cr.	23	31	9.53	1.6	---
	1-3075	Penataquit Cr.	5	30	6.29	0.9	---
	1-3065	Connetquot R.	24	32	37.8	---	16.0
	1-3060	Patchogue R.	14	26	20.4	---	2.1
	1-3055	Swan R.	9	29	12.4	0.06	4.3
	1-3050	Carmans R.	71	33	23.0	2.8	6.2
IV.	Peconic River to Block Island Sound 1-3045	Peconic R.	75	33	34.9	1.4	3.7
V.	East River-Harlem River 1-3020	Bronx R.	26.5	31	40.2	1.0	---
VI.	Western Long Island Sound 1-3000	Blind Br.	9.20	31	15.2	0.12	---
	1-3005	Beaver Swamp Br.	4.71	31	6.31	0.0	---
	1-3010	Mamaroneck R.	23.4	29	32.7	0.06	0.10
	1-3015	Hutchinson R.	5.76	31	6.77	0.01	0.02
	1-3025	Glen Cove Cr.	11	37	6.43	2.1	---
VII.	Central-Eastern Long Island Sound 1-3030	Mill Neck Cr.	12	38	9.05	0.09	---
	1-3035	Cold Spring Br.	7.3	25	2.41	0.20	---
	1-3040	Missequogue R.	27	32	40.7	16.00	19.00

SOURCE: U.S. Geological Survey Water Data Report NY-75-1

Figure 4

Tidal Current Charts, New York Harbor

(Spring Tides-Knots)

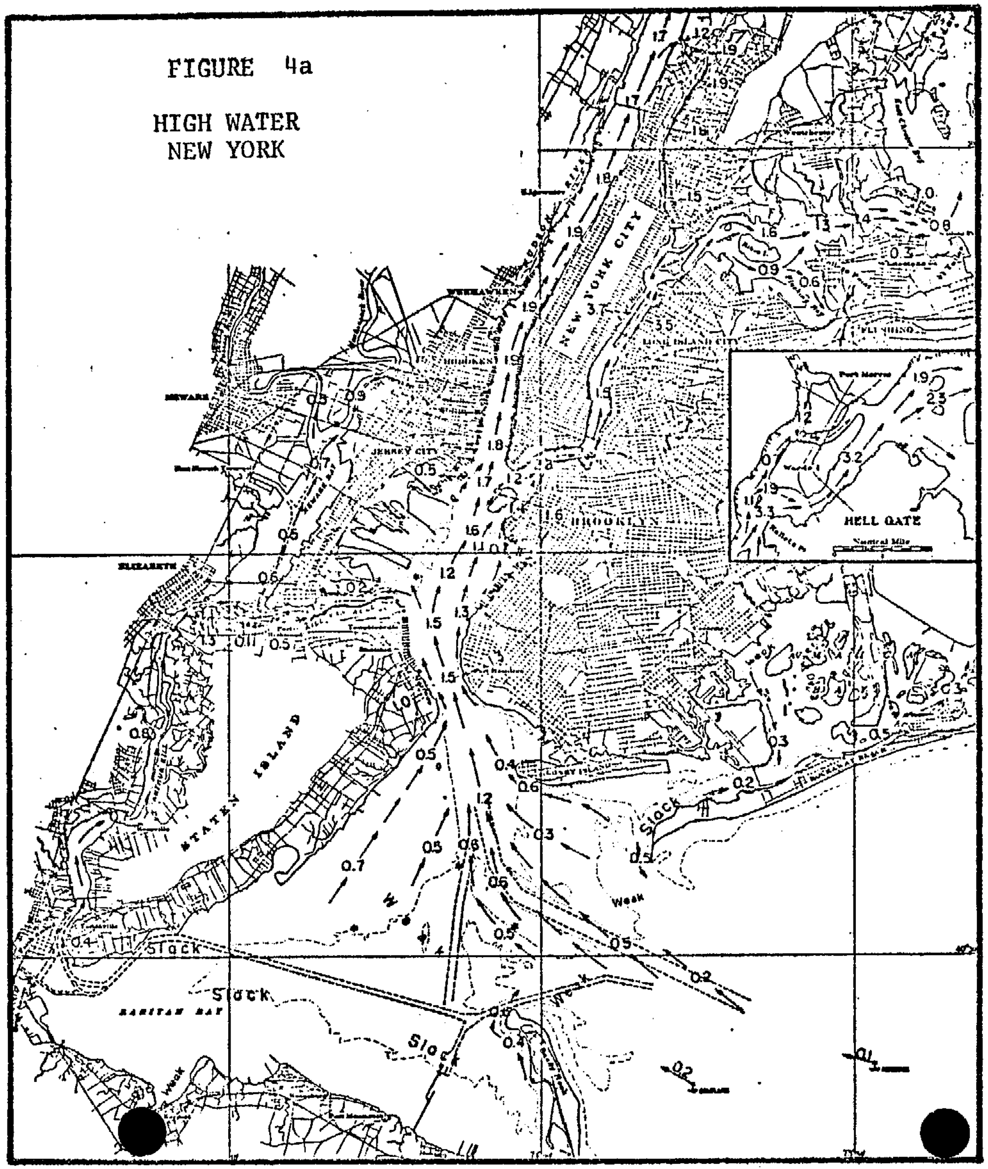


FIGURE 4a

HIGH WATER NEW YORK

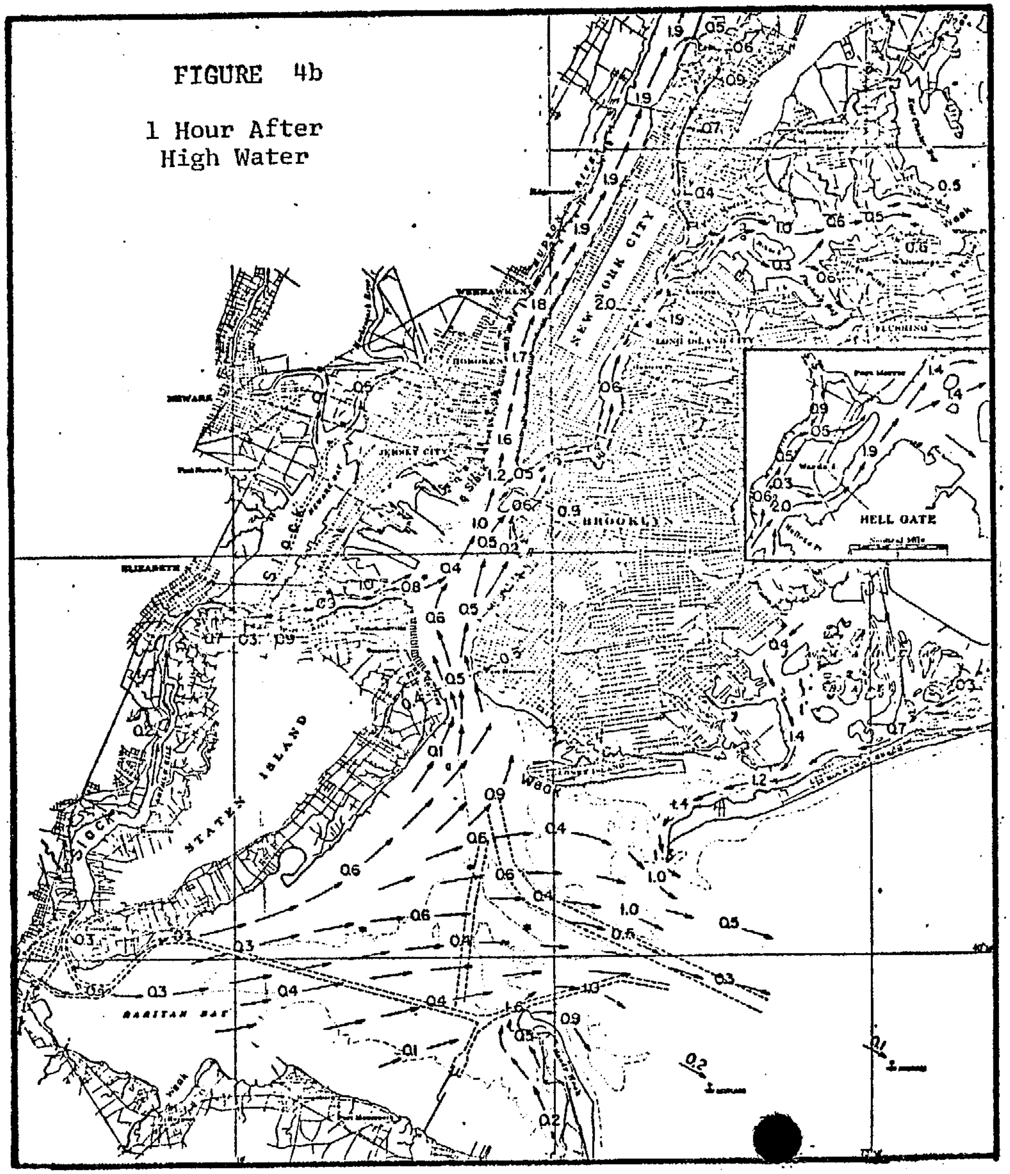


FIGURE 4b

1 Hour After High Water

Figure 4 (cont'd)
Tidal Current Charts, New York Harbor
(Spring Tides-Knots)

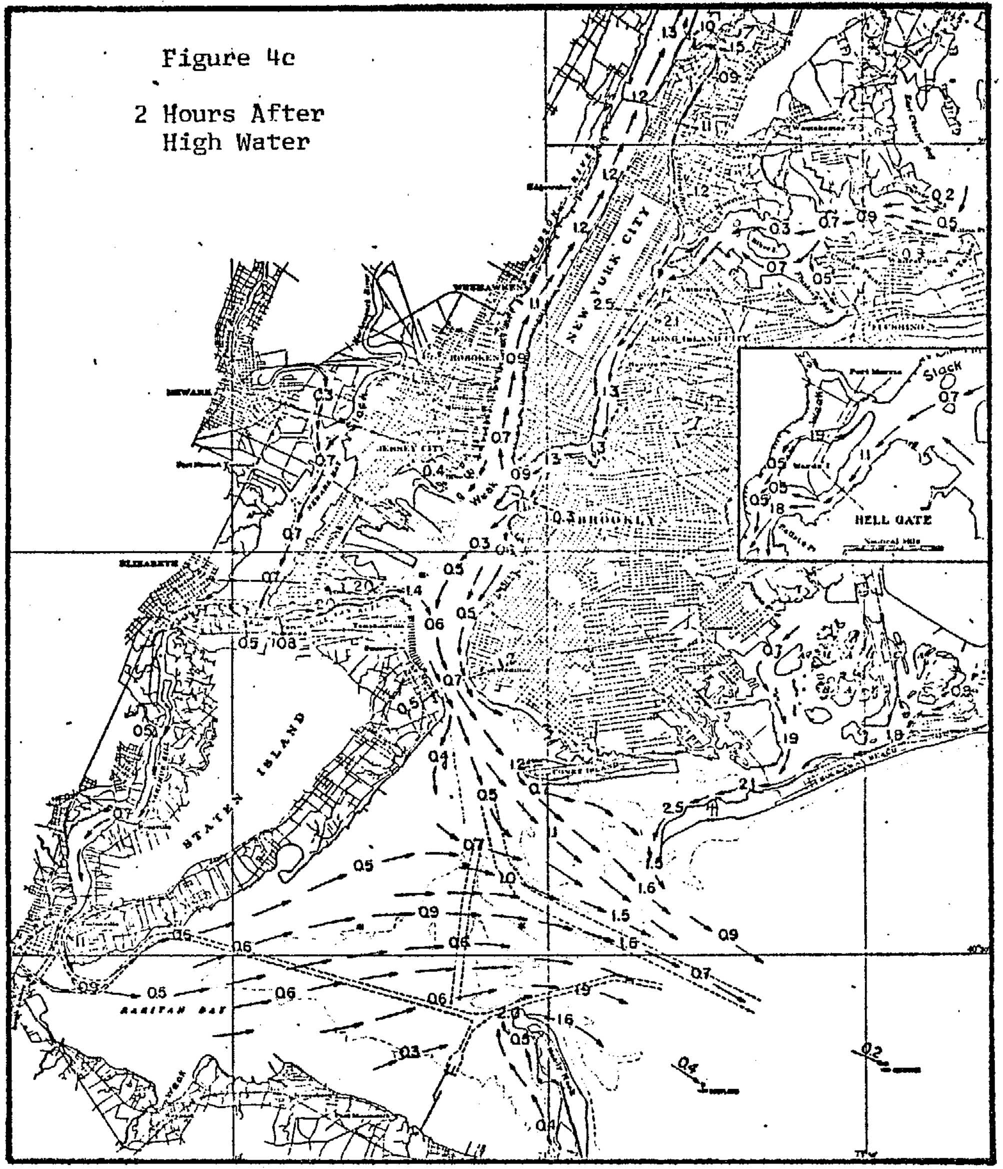


Figure 4c

2 Hours After
High Water

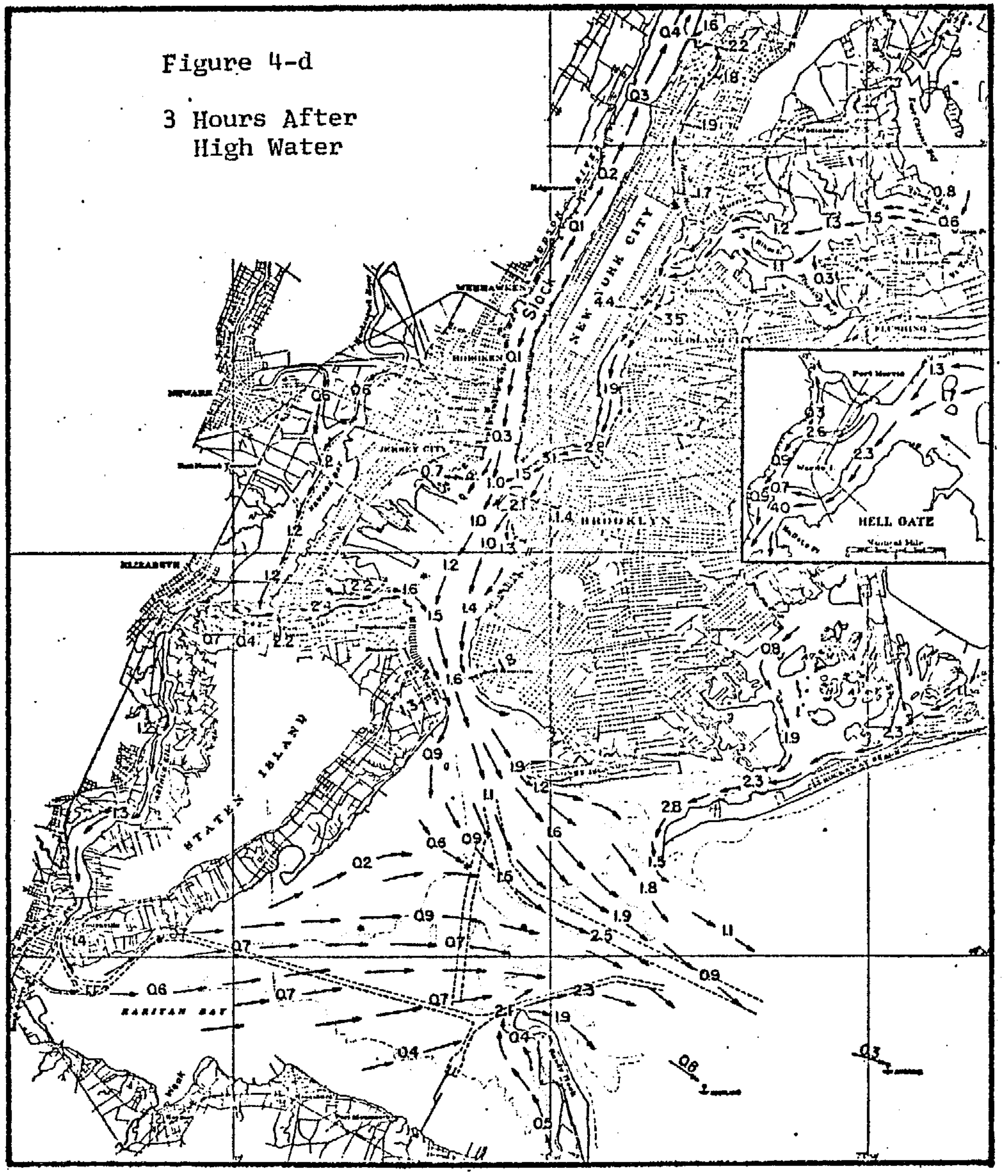


Figure 4-d

3 Hours After
High Water

Figure 4 (cont'd)

Tidal Current Charts, New York Harbor
(Spring Tides-Knots)

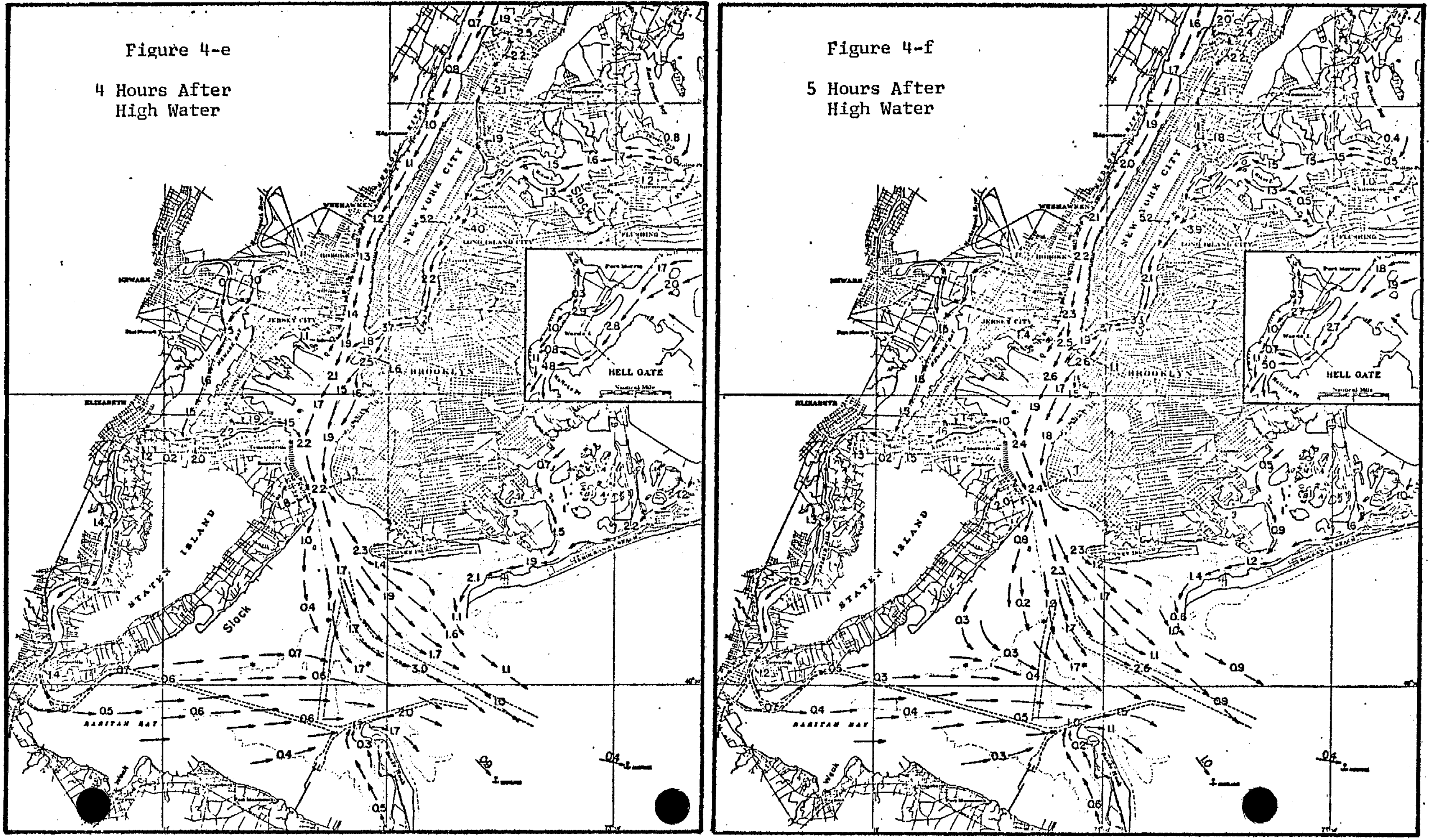


Figure 4 (cont'd)

Tidal Current Charts, New York Harbor

(Spring Tides-Knots)

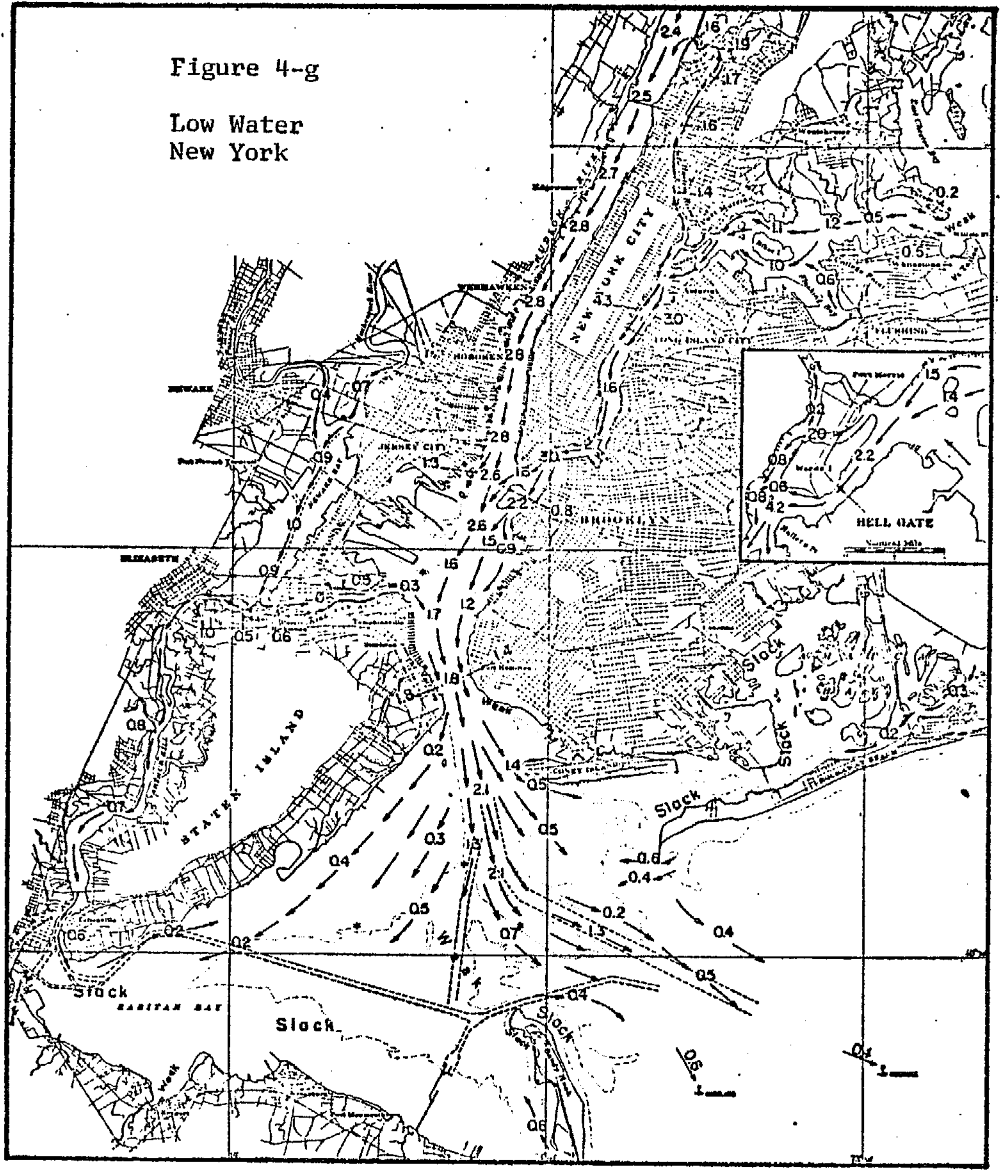


Figure 4-g

Low Water
New York

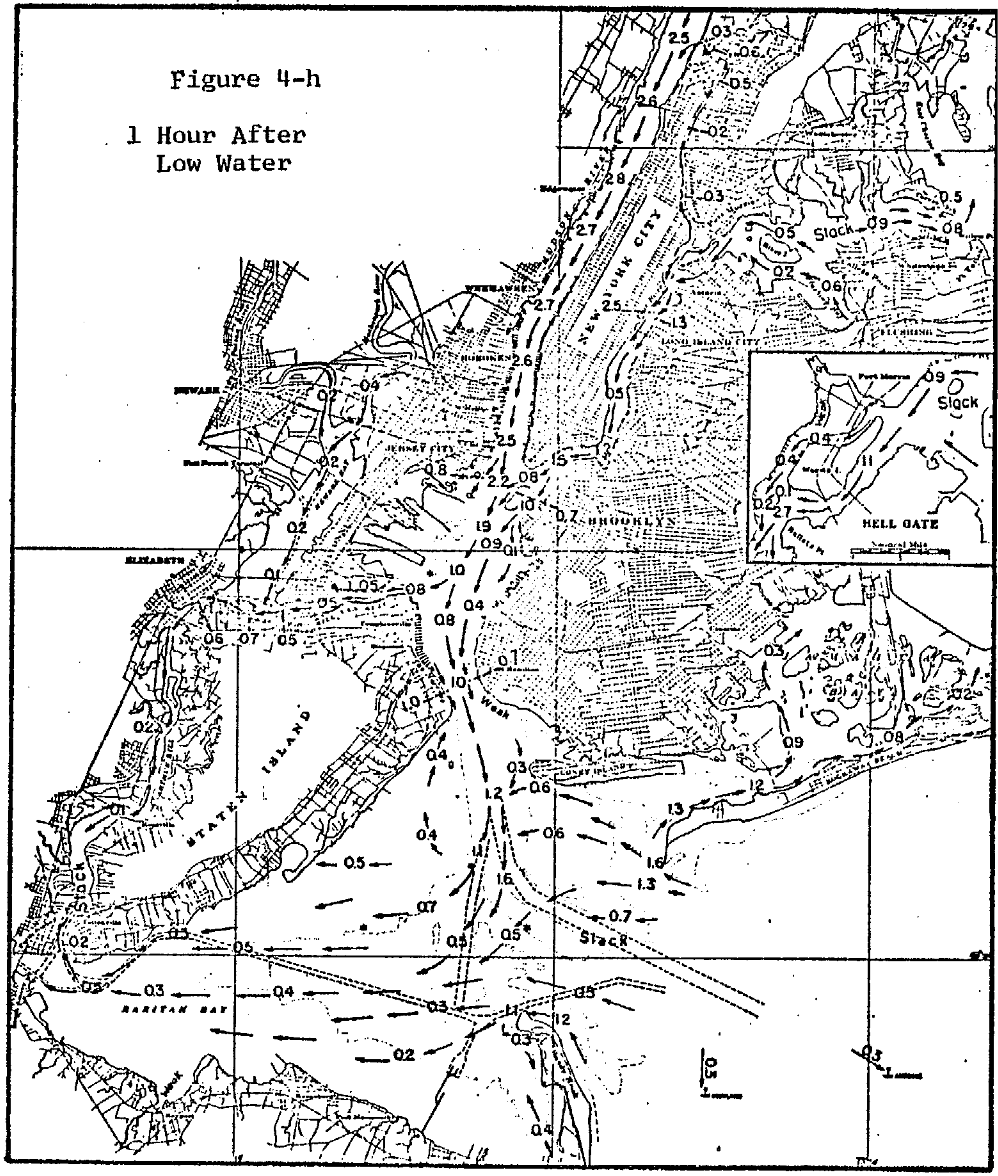


Figure 4-h

1 Hour After
Low Water

Figure 4 (cont'd)

Tidal Current Charts, New York Harbor

(Spring Tides-Knots)

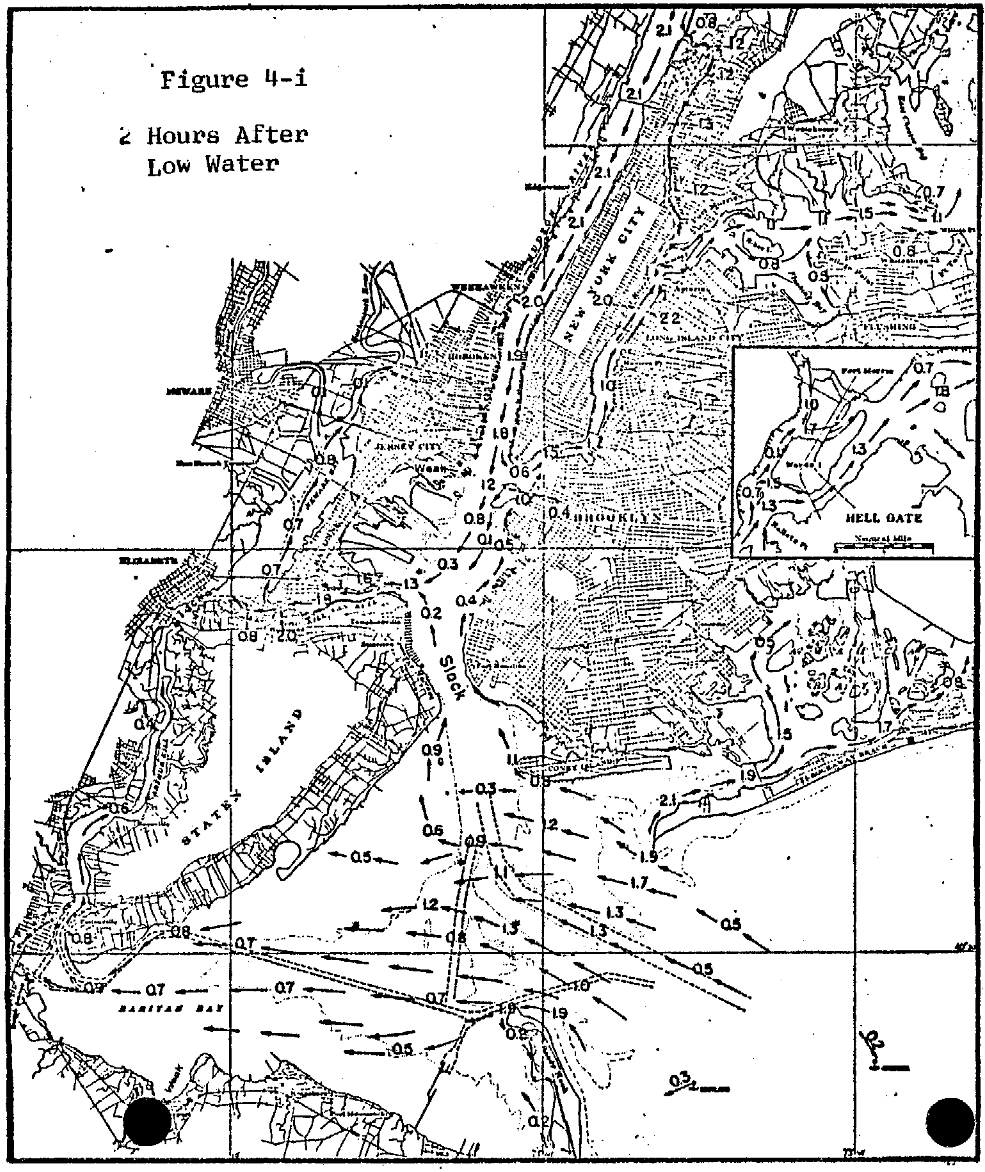


Figure 4-i

2 Hours After
Low Water

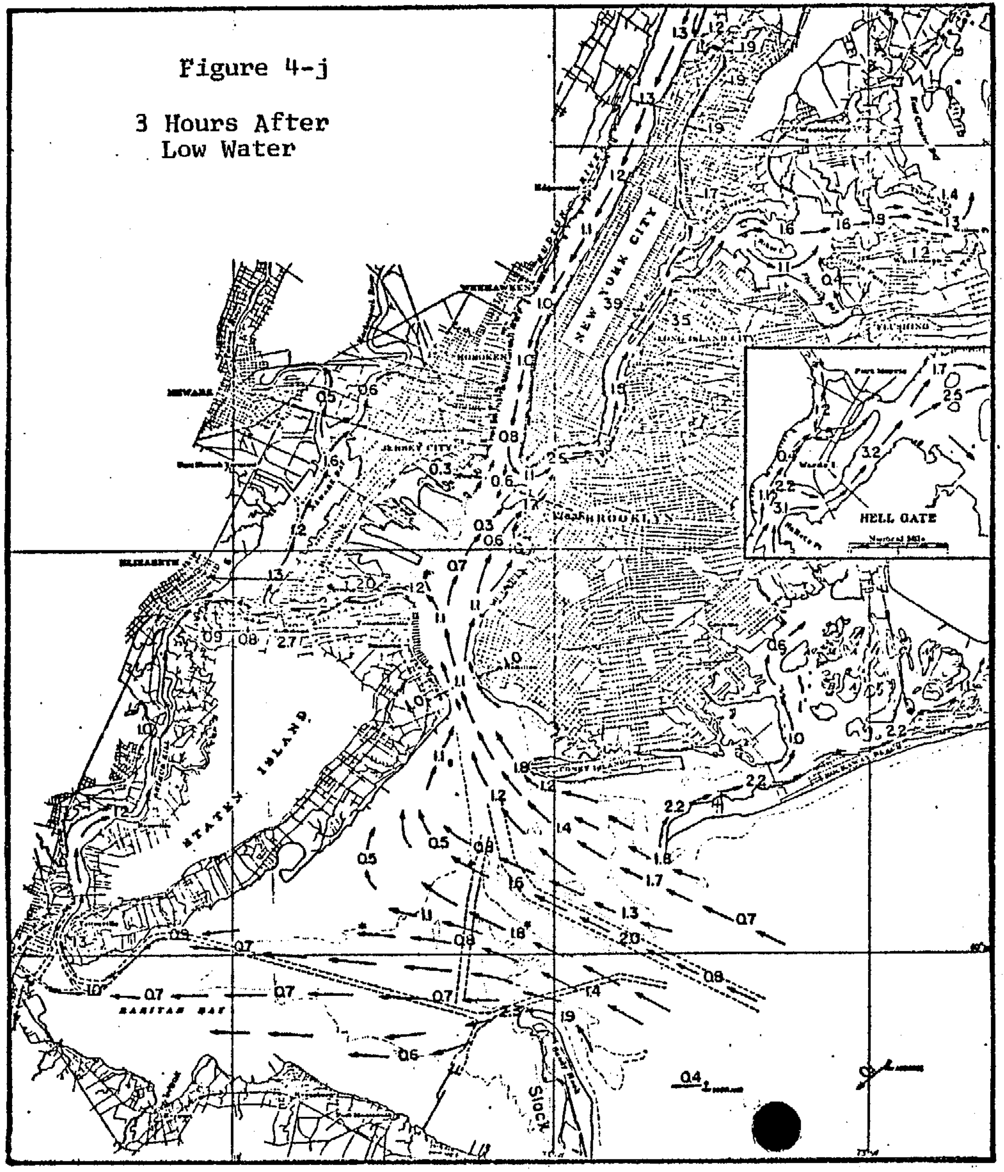


Figure 4-j

3 Hours After
Low Water

Figure 4 (cont'd)

Tidal Current Charts, New York Harbor

(Spring Tides-Knots)

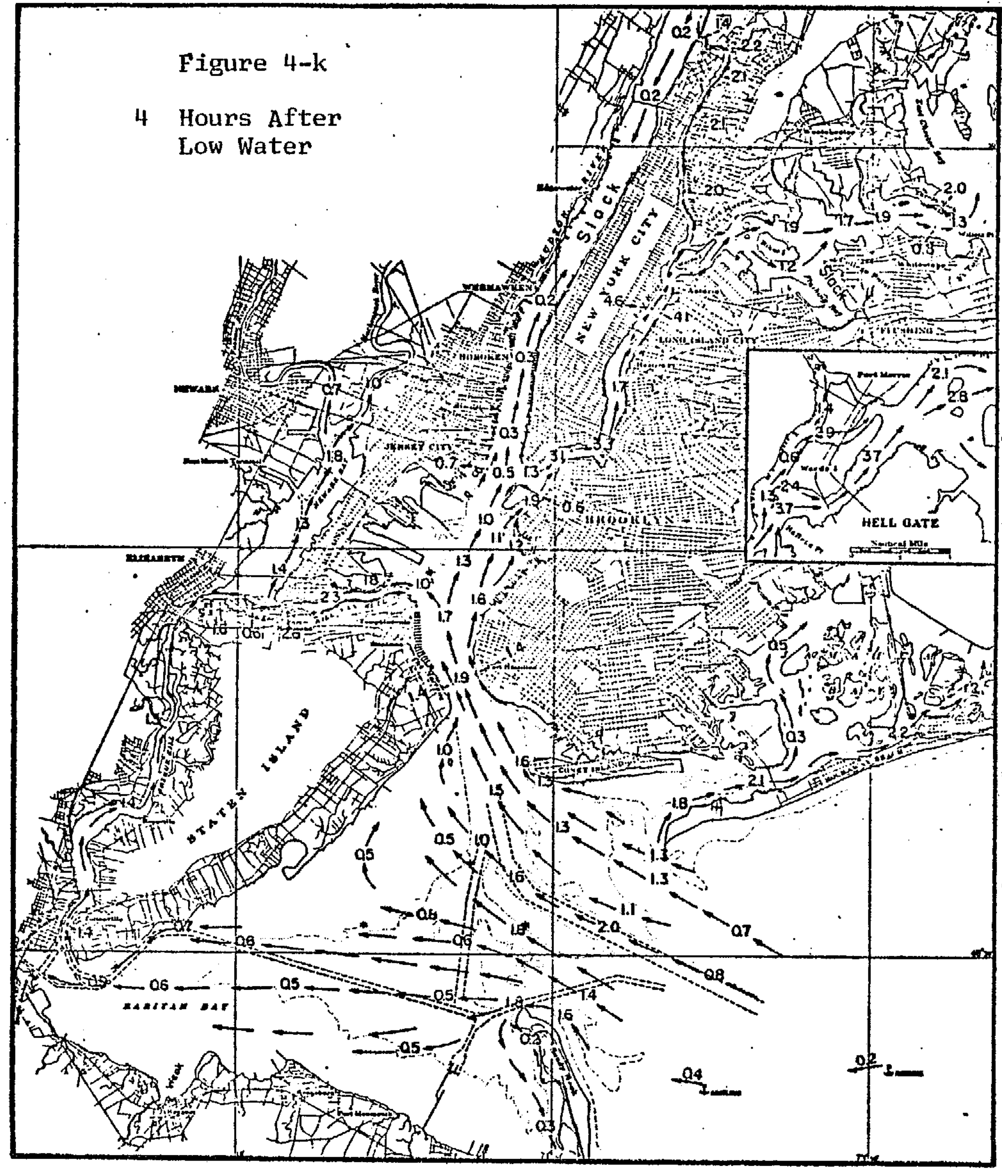


Figure 4-k

4 Hours After Low Water

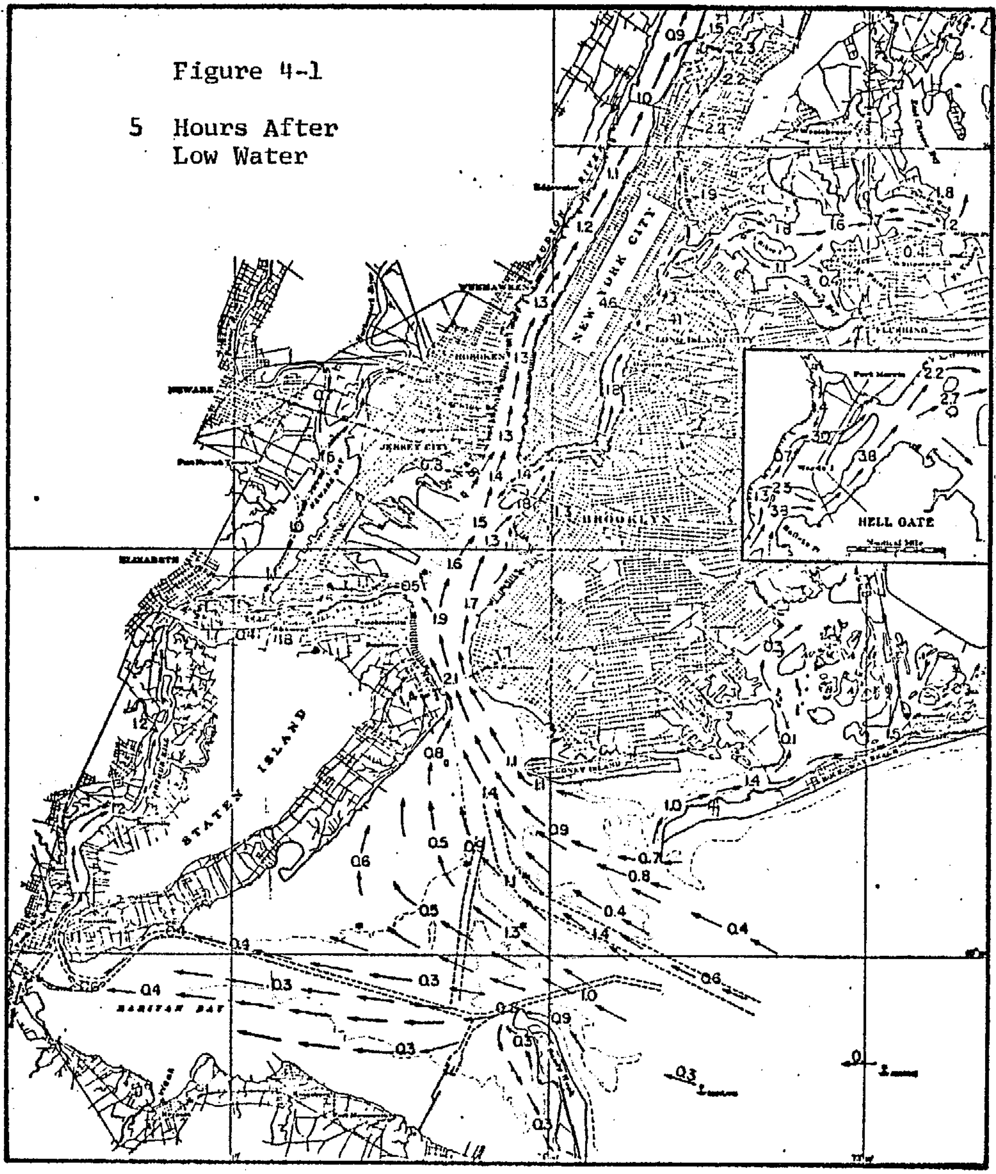


Figure 4-l

5 Hours After Low Water

Figure 5
Tidal Current Charts, Long Island Sound
(Spring Tides-Knots)

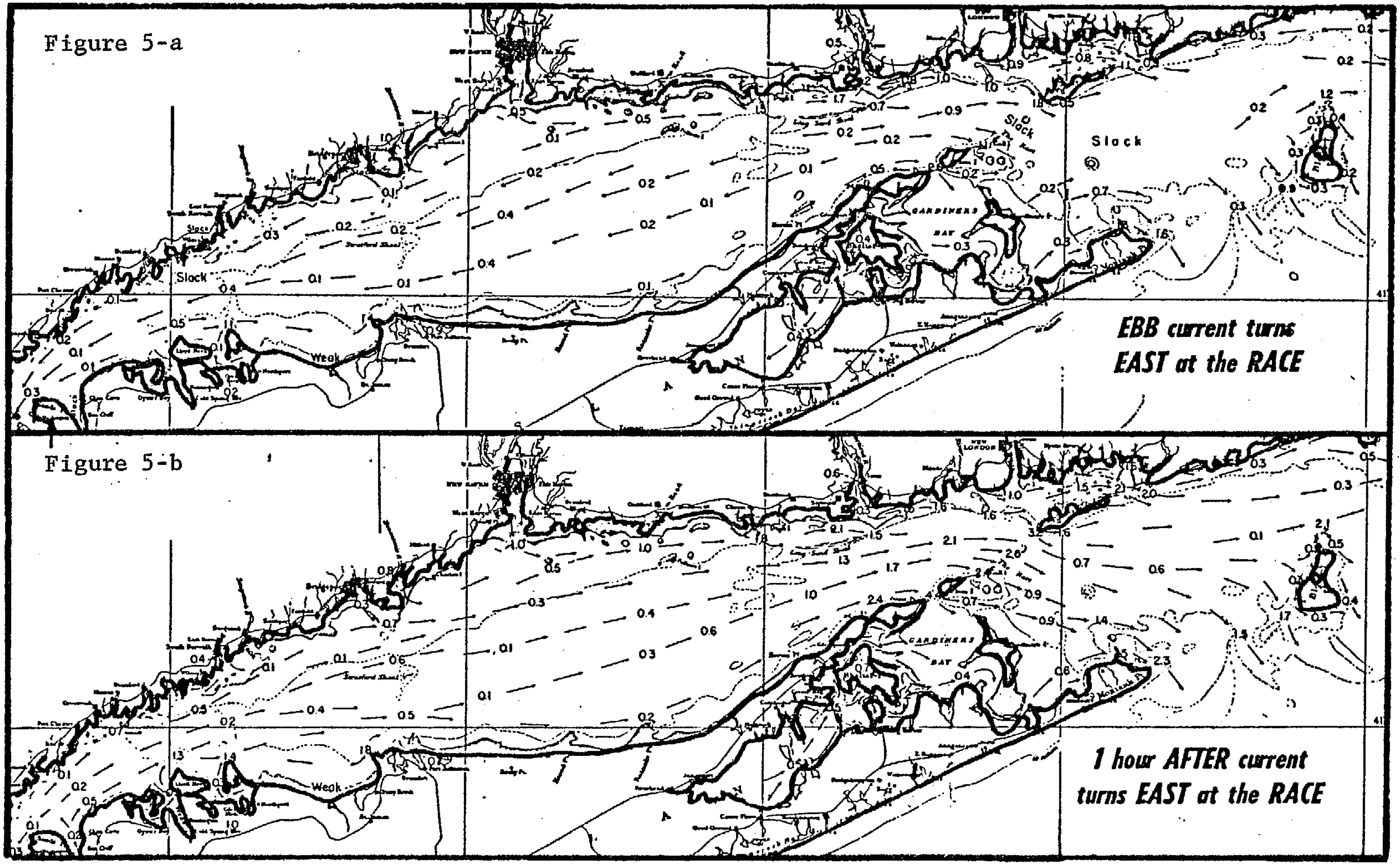
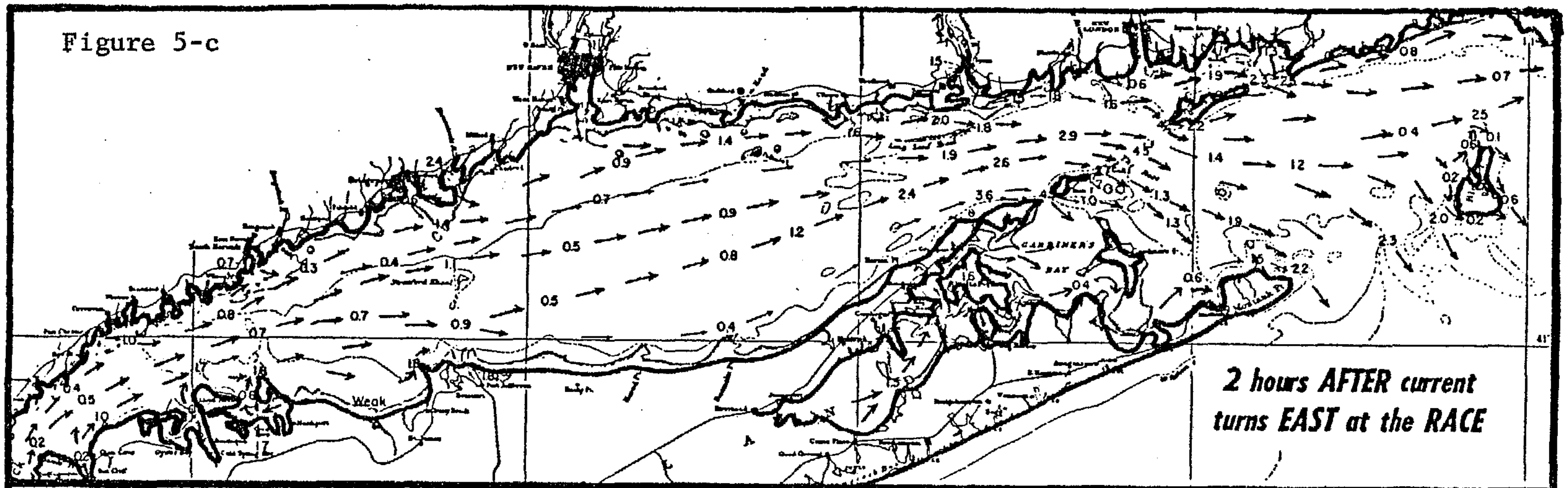


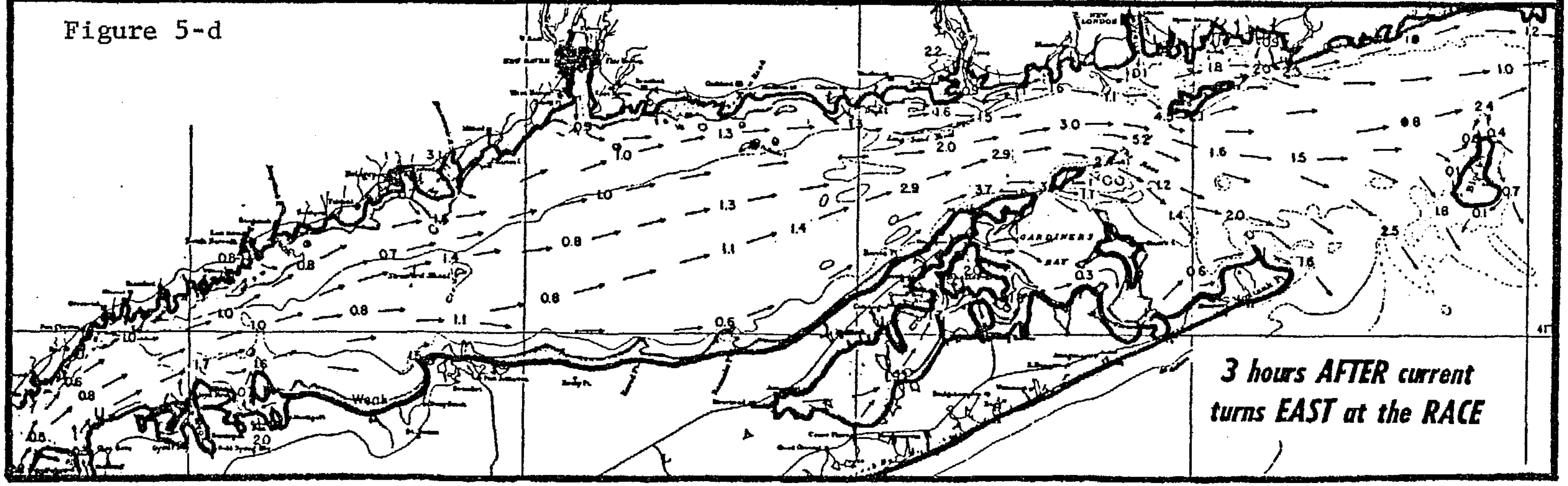
Figure 5 (Cont.)

Figure 5-c



2 hours AFTER current turns EAST at the RACE

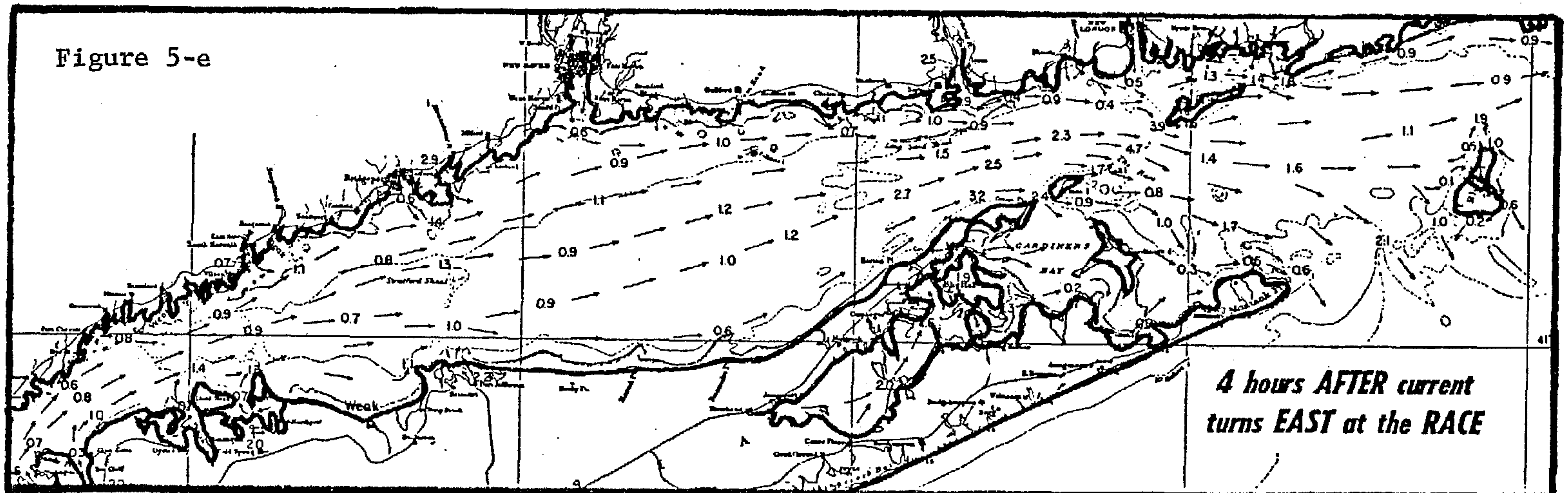
Figure 5-d



3 hours AFTER current turns EAST at the RACE

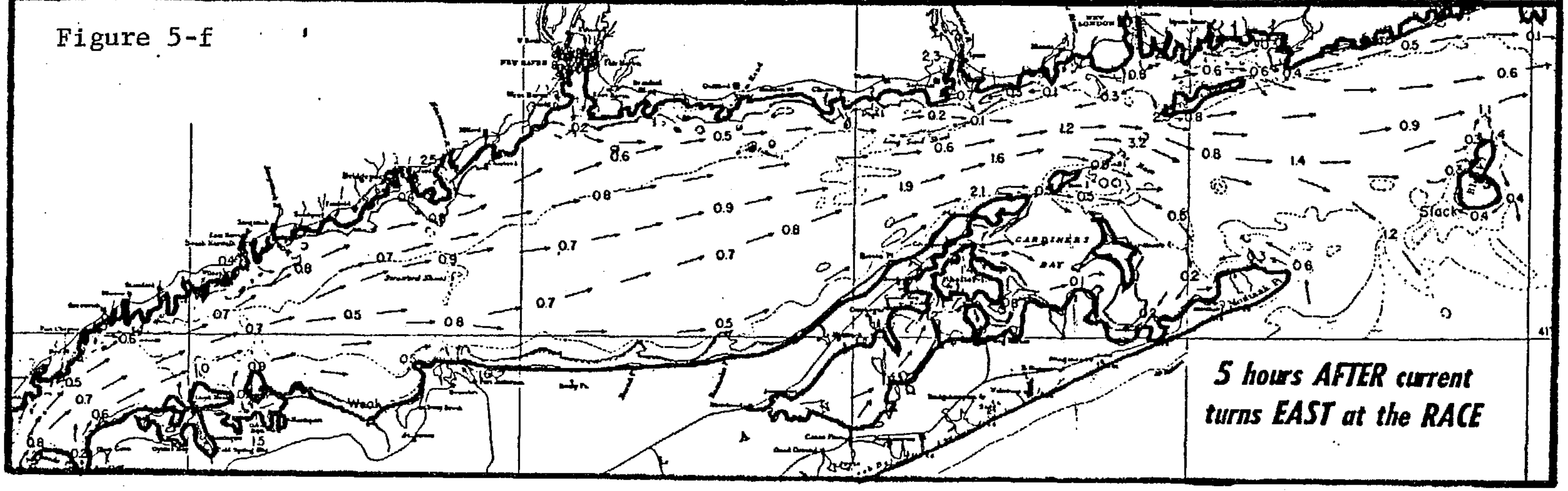
Figure 5 (Cont.)

Figure 5-e



4 hours AFTER current turns EAST at the RACE

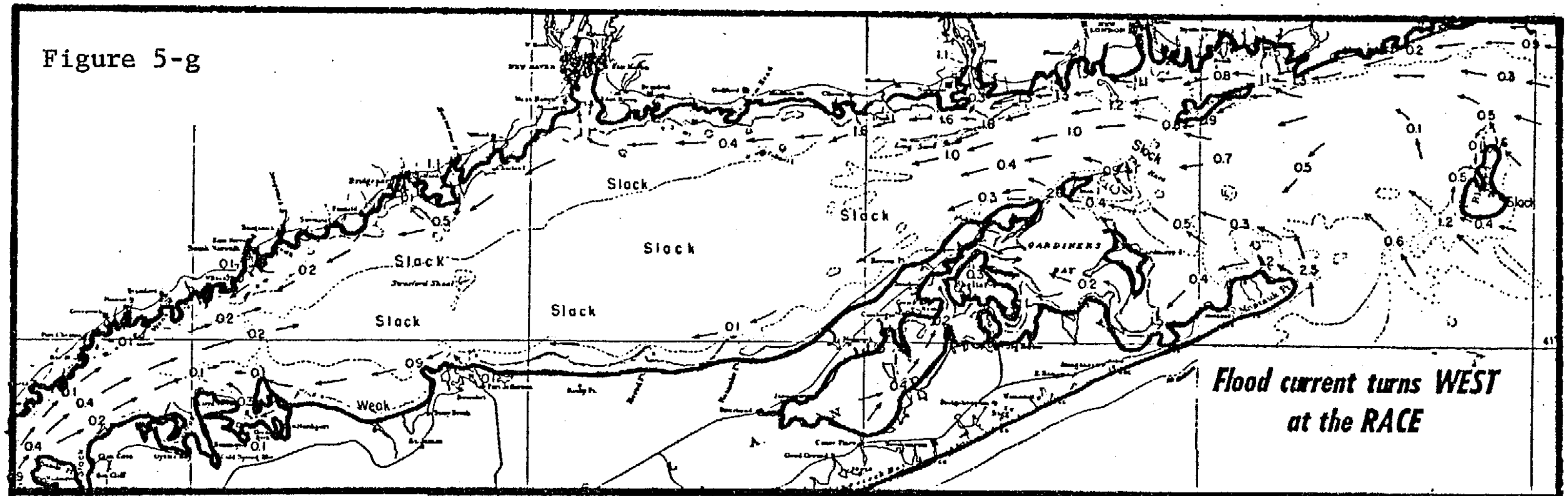
Figure 5-f



5 hours AFTER current turns EAST at the RACE

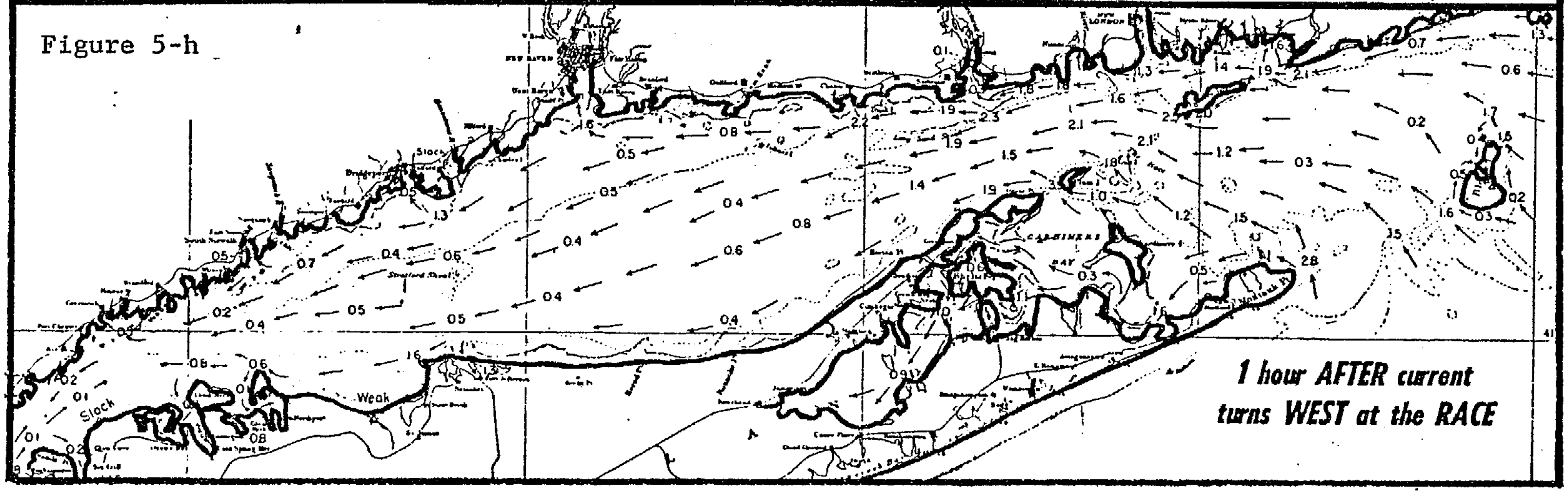
Figure 5 (Cont.)

Figure 5-g



Flood current turns WEST at the RACE

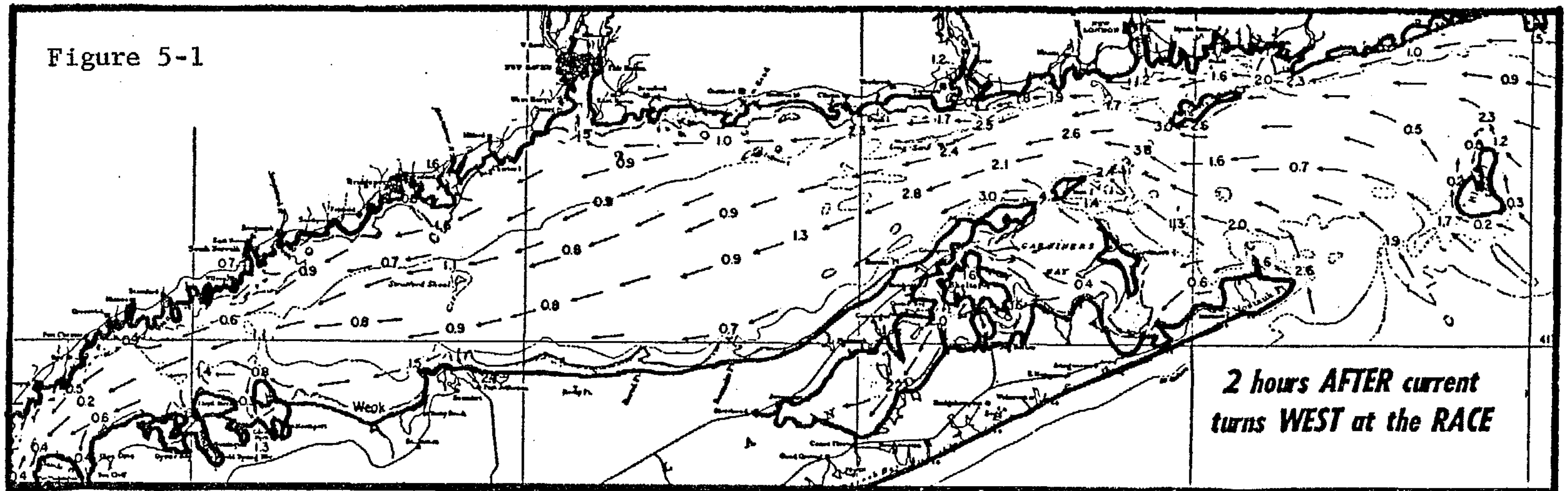
Figure 5-h



1 hour AFTER current turns WEST at the RACE

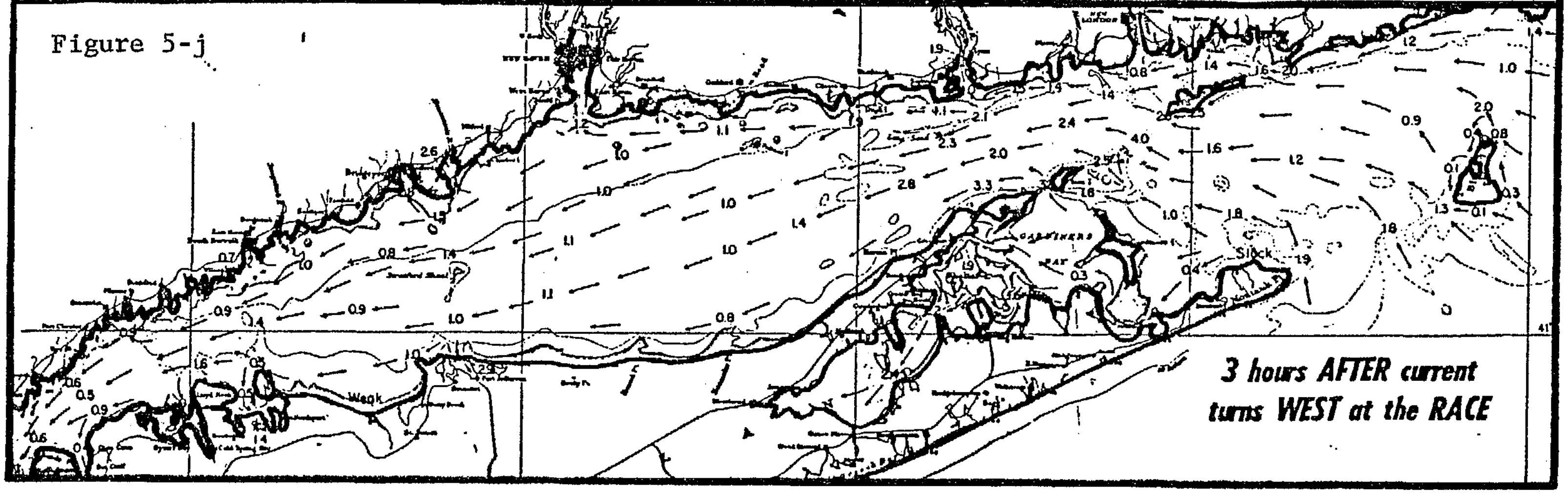
Figure 5 (Cont.)

Figure 5-1



2 hours AFTER current turns WEST at the RACE

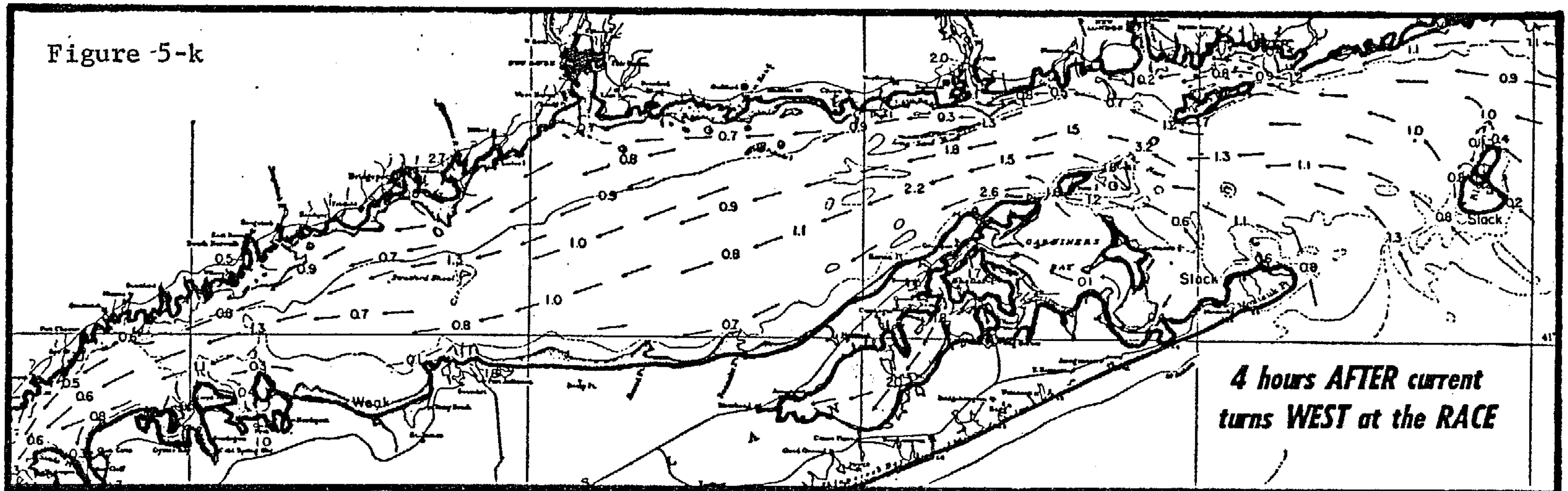
Figure 5-j



3 hours AFTER current turns WEST at the RACE

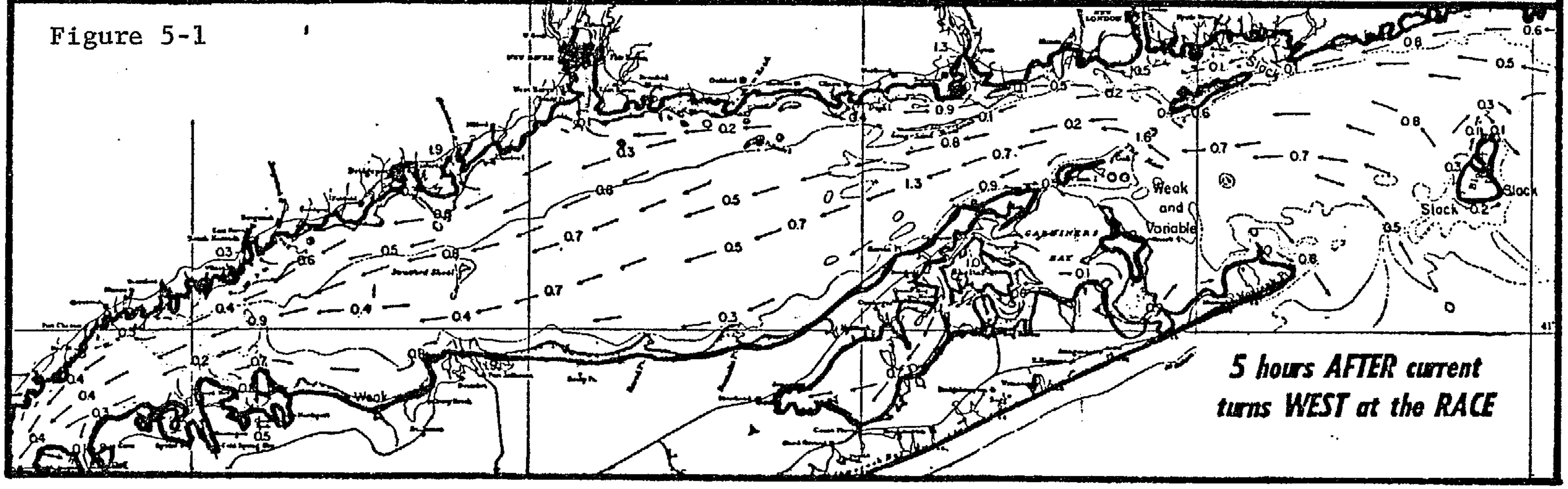
Figure 5 (Cont.)

Figure 5-k



4 hours AFTER current turns WEST at the RACE

Figure 5-1



5 hours AFTER current turns WEST at the RACE

Tidal current station data are for predicting flow of water at or near the surface. Circular flow, current variations with depth and distance from shore, and mixing are characteristics of flow which are not reflected in the tidal current data. In many areas tidal data is insufficient to predict net tidal flows.

III. 3. Groundwater Gaging Network

The groundwater of Long Island is the sole fresh drinking water supply for Nassau and Suffolk Counties. The aquifers are independent from mainland aquifers and all of the groundwater comes from percolation of rainfall or recharge directly on Long Island. Groundwater leaves the aquifers through gaining streams, subsurface discharge to bays, evapotranspiration and water supply withdrawals. The water levels in aquifers have been measured for the past 43 years. Appendix A is a copy of the monthly "Water Resources Summary, Long Island, New York, March 1975".

III.4. Precipitation-Temperature

Weather stations are located at LaGuardia, Newark, Bridgeport and New Haven Airports. These and other stations are located on Figure 6. The average annual precipitation for NOAA's Coastal Division is 45.47 inches. Average annual and monthly precipitation and temperature data for area stations are presented in Table 14.

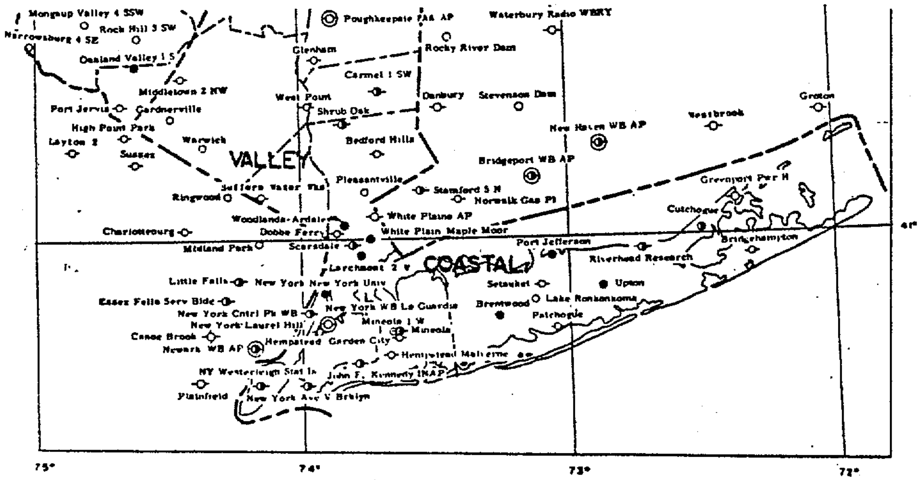
III.5. Hydrologic Cycle

Precipitation, surface runoff, groundwater flow, evapo-transpiration, and surface water evaporation are phases of the hydrologic cycle. Moisture in the air which causes rainfall comes from the evaporation of surface water and evapo-transpiration of plants. Stream flow is from runoff of precipitation and from groundwater. Groundwater which feeds streams and bays comes from the percolation of precipitation.

Bay and Sound salinities, stream flows, water stages are dependent on the hydrologic cycle. Sewering, water supply withdrawals, and land use changes can effect change in the hydrologic cycle. Chapter VIII provides more detail.

Figure 6

Weather Station Locations



STATION LEGEND

○ ● ◑ Precipitation only

⦶ Precipitation storage

-○- -●- -◑- Precipitation and Temperature

⌖ ⌖ ⌖ Precipitation, Temperature and Evaporation

Type of Gage: Non-Recording ○

Recording ● Both types ◑

Double circle combinations indicate the availability of more detailed meteorological data.

Table 14

CLIMATOLOGICAL DATA

PRECIPITATION (IN.)

STATION COASTAL DIVISION	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Bridgehampton	4.20	3.59	4.61	3.62	3.44	2.88	2.92	4.42	3.67	3.55	4.66	4.10	45.6
Central Park	3.31	2.84	4.01	3.43	3.67	3.31	3.70	4.44	3.87	3.14	3.39	3.26	42.3
Kennedy	3.23	2.93	4.15	3.48	3.67	3.35	4.04	4.97	4.16	3.21	3.51	3.23	43.9
LaGuardia	3.31	3.09	4.23	3.57	3.58	3.38	3.71	5.08	3.92	3.37	3.59	3.39	44.2
Scarsdale	3.36	2.78	4.39	4.10	4.21	3.79	4.51	4.90	4.40	3.81	4.10	3.73	48.0
Setauket	3.87	3.19	4.26	3.70	3.55	3.40	3.55	4.10	3.91	3.36	4.12	3.64	44.6

TEMPERATURE (^{o}F)

	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Bridgehampton	32.0	31.9	37.6	46.6	56.1	65.3	71.3	70.7	64.4	55.1	45.3	34.8	50.9
Central Park	33.2	33.4	40.5	51.4	62.4	71.4	76.8	75.1	68.5	58.3	47.0	35.9	54.5
Kennedy	31.8	31.6	38.7	49.0	60.2	70.1	75.9	74.5	67.8	57.6	46.2	34.9	53.2
LaGuardia	33.6	33.6	40.8	51.2	62.1	71.5	76.8	75.4	68.8	58.6	47.4	36.4	54.7
Scarsdale	30.5	31.2	38.5	49.7	60.5	69.3	74.3	72.7	65.6	55.3	44.2	33.1	52.1
Setauket	33.0	32.8	39.2	49.5	59.8	68.4	73.8	72.5	66.3	57.1	46.8	35.8	52.9

IV. WATER QUALITY MONITORING AND SURVEILLANCE

I. Surface Water Sampling Programs

There are numerous sampling programs within the planning area. The oldest active program is New York City's Harbor Survey for which there are 60 years of record.

No two sampling programs are the same. Some sampling is done once a week; other sampling cruises are run a single time. Sampling may be related to tides or rainfall. Some samples are measured for bacterial indicators, some for heavy metals, others BOD, nitrogen, chlorophyll, turbidity, temperature, or species diversity. Samples may be from the surface, below the surface, near the bottom, or even bottom sediments.

Even established routine sampling programs are changed. New stations are established, old stations discontinued, new measurements are taken, and short term mass samplings of areas are made. Table 15 summarizes the major routine sampling program, as of 1974. The 200 stations, which were regularly sampled and tested for both bacteria and various chemical and physical characteristics, are located on Figures 7, 8 and 9. These programs have changed over the years. Table 15 and Figures 7, 8 and 9 are representative of program status as of 1974. In 1975, NYS DEC initiated additional monthly sampling at 17 ocean stations between Rockaway Point and the west end of Fire Island. Suffolk DEC has sampled streams and estuaries for several years. In 1974, the program was expanded to develop numerous open water stations. Since 1974, various station changes have been made, and the tables for this case may, therefore, not be fully representative.

The routine bacteriological sample stations are in addition to the 200 more completely evaluated samples. They are used to insure the adequacy of water quality in bathing beach areas.

The New York State Department of Environmental Conservation does additional sampling in shellfish areas to insure the acceptability of shellfish for marketable purposes.

The National Ocean and Atmospheric Administration routinely samples benthic macrofauna, samples sediments and measures the hydrography of larger bodies.

In addition to these large routine sampling programs, there have been numerous othersurveys which include: the Marine Sciences Research Center of the State University of New York surveyed the water and sediments of the North Shore Bays in the summer of 1971. In 1968, the Town of Hempstead conducted a study of Hempstead Bay, Oyster Bay and the Atlantic off Jones Inlet. The tides and currents of Jones Inlet were measured in 1964. Cruises have been made from New York Harbor to Long Island Sound. Connecticut has begun a routine sampling program. Eaton's Neck dumping ground is one of four dump sites in the nation studied in the Aquatic Disposal Research Project; and many others.

Rather than establishment of additional sampling stations or more extensive sampling, a primary need for the basin is a coordination of the various sampling programs. Data collected in one program cannot readily be compared with data from another and data must generally be obtained directly from each collecting agency. Efforts are being made by the State DEC Bureau of Monitoring and Surveillance to standarize collection, test parameters, and develop compatible data storage-retrieval systems. STORET, a US EPA computer storage of data on a basin basis, provides for some coordination of data.

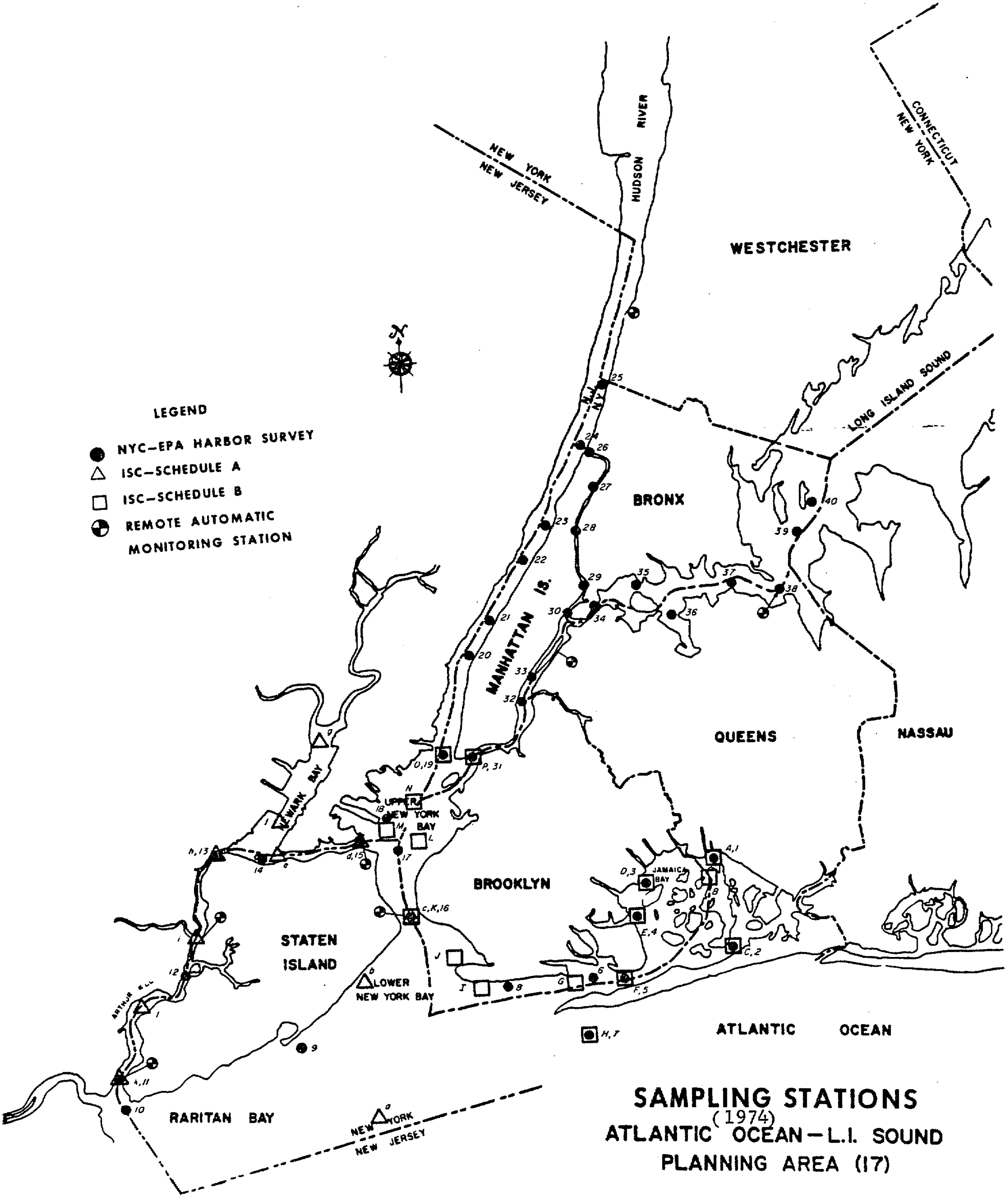
TABLE 15

MAJOR ROUTINE SAMPLING PROGRAMS
(as of 1974)

ROUTINE CHEMICAL/BACTERIOLOGICAL SAMPLING				Regularly Measured									
SAMPLING PROGRAM	APPROX. NO. STATIONS	APPROX. YEARS OF RECORD	FREQUENCY OF SAMPLING	Water Temp.	PH	Salinity	DO	BOD	T. Coliform	F. Coliform	Chlorophyll A	Nitrogen Forms	Phosphates
NYC-Harbor Survey	40	60	Weekly; Jun-Sep.	x		x	x	x	x				
ISC-Schedule A	15	2	Monthly	x	x	x	x	x	x	x	x	x	x
ISC-Schedule B	16	2	Monthly	x	x	x	x	x	x	x	x	x	x
ISC-Schedule C	14	2	Monthly	x	x	x	x	x	x	x	x	x	x
Westchester-HD	36	3	Summer biweekly	x	x	x	x	x	x	x	x		x
Nassau-HD	64	10	Monthly	x	x	x	x	x	x	x	x	x	x
Suffolk-DEC**	100	1	Quarterly	x	x	x	x	x	x	x	x	x	x
NYS	5	7	Summer-Monthly	x	x	x	x	x	x	x	x	x	x

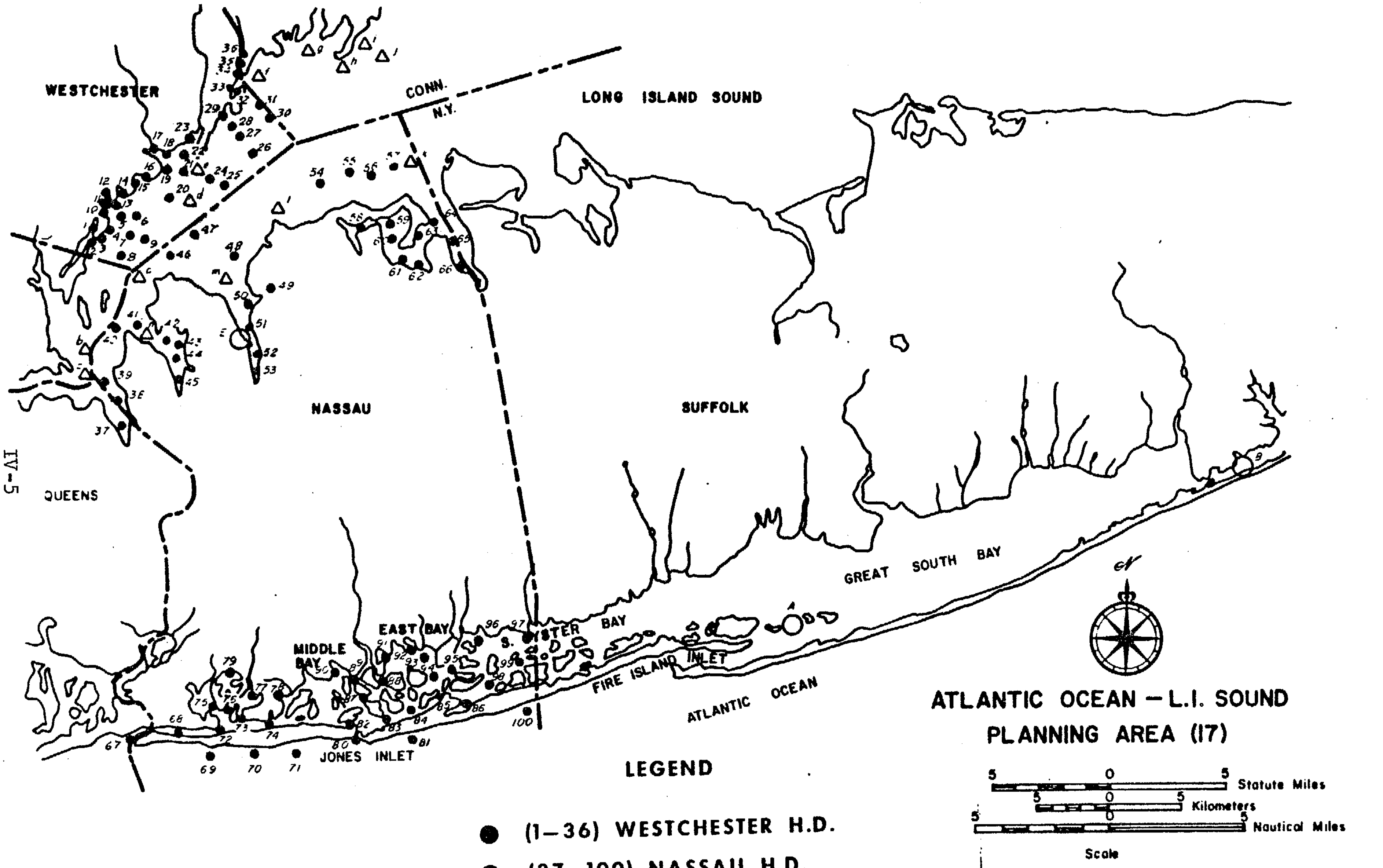
ROUTINE BACTERIOLOGICAL SAMPLING			
Sampling Program	Approx. No. Stations	Approx. Years of Record	Approx. No. Beaches
NYC-DH	28	25	6 areas
Westchester-HD	48		32
Nassau-HD	116		80
Suffolk-HD	168		224

OTHER SAMPLING		
Sampling Program	Areas Sampled	Sampled
NOAA	L.I. Sound, Raritan Bay	Benthic macrofauna, sediments
NOAA	NY Bight, N.J. Shore	Hydrography
NYS-DEC	L.I. Sound, Great South Bay, Peconic Bay, Gardners Bay Atlantic	Shellfish bed certification



SAMPLING STATIONS
(1974)
ATLANTIC OCEAN – L.I. SOUND
PLANNING AREA (17)

FIGURE 7

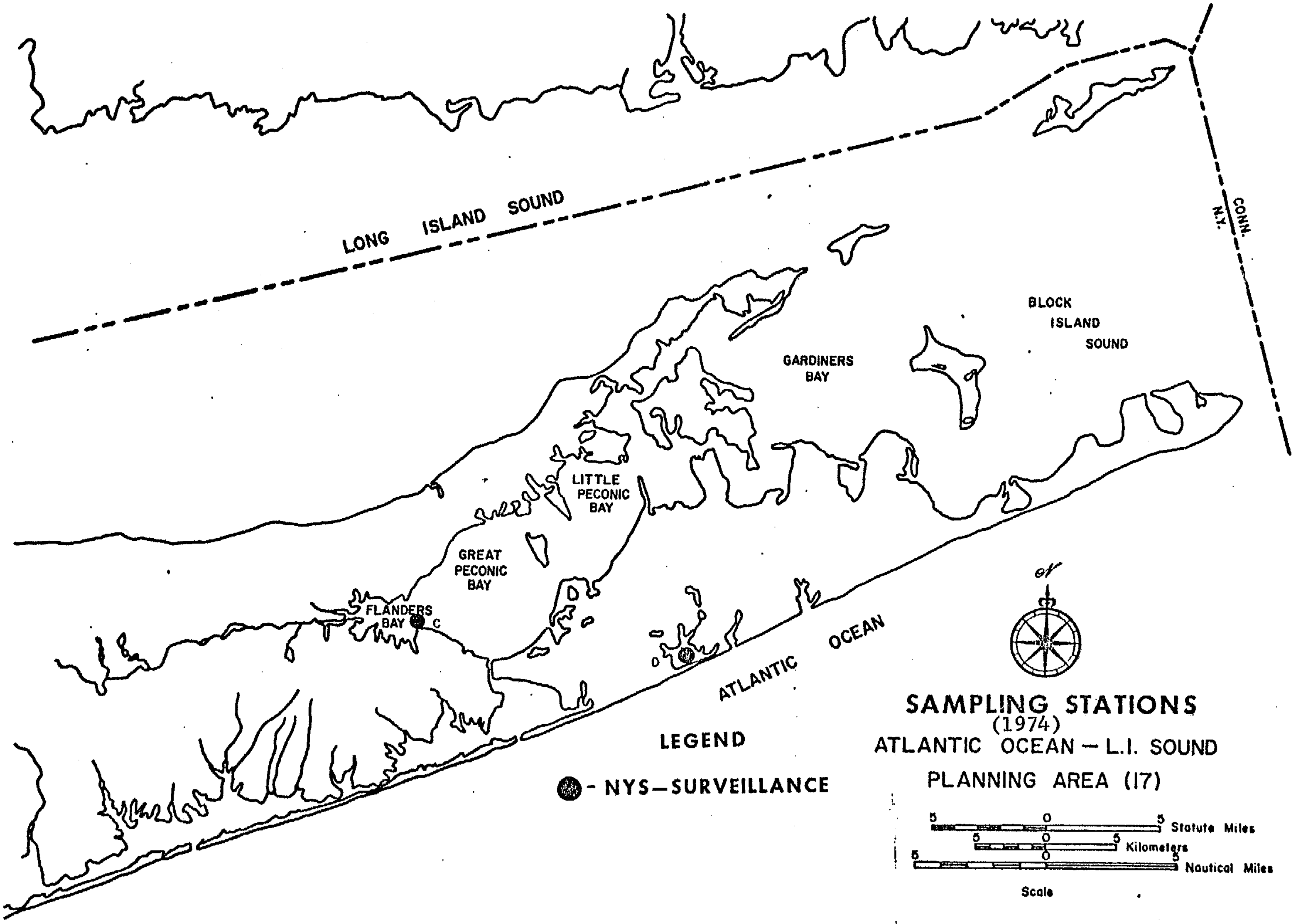


LEGEND

- ● (1–36) WESTCHESTER H.D.
- ● (37–100) NASSAU H.D.
- ▲ (a–n) ISC–SCHEDULE C
- ○ NYS–SURVEILLANCE

SAMPLING STATIONS (1974)

FIGURE 8



SAMPLING STATIONS
(1974)
ATLANTIC OCEAN – L.I. SOUND
PLANNING AREA (17)

FIGURE 8

DJL 7/75
BRK 3/76

TABLE 16
LOCATIONS OF CHEMICAL STATIONS

MAP NO.	STATION NO.	WATER BODY - LOCATION
NYC - Harbor Survey		
1	J-7	Jamaica Bay - off Bergen Basin
2	J-5	Jamaica Bay - Center pier, Beach Channel, Hammel
3	J-3	Jamaica Bay - 400 ft. S. of Canarsie pier
4	J-2	Mill Basin - East end of channel
5	J-1	Rockaway Inlet-Center Barren I. Bridge
6	N-9A	Rockaway Inlet-Lt. Buoy "2"
7	N-16	Atlantic Ocean - Gong, 1.7 mi. S. Rockaway Pt.
8	N-9	Lower Bay - 200 ft. S. Steeplechase pier
9	K-6	Lower Bay - 500 ft. Old Orchard Lt.
10	K-5A	Raritan River - Lt. Buoy "5"
11	K-5	Arthur Kill - off Tittenville Ferry Slip
12	K-4	Arthur Kill - Soffresh Kills
13	K-3	Arthur Kill - B & O Railroad Bridge
14	K-2	Newark Bay - SE of Shooters Island
15	K-1	Arthur Kill - at Upper Bay
16	N-8	Narrows - mid channel
17	N-7	Upper Bay - Lt. Bell "24"
18	N-6	Upper Bay - Lt. Bell "IG"
19	N-5	Upper Bay - off Pier A, the Battery
20	N-4	Hudson River - off 42nd Street
21	N-3A	Hudson River - off 72nd Street
22	N-3B	Hudson River - off 125th Street
23	N-3	Hudson River - off 155th Street
24	N-2	Hudson River - off Spuyten Duyvil
25	N-1	Hudson River - off Mt. St. Vincent Academy
26	H-1	Harlem River - Spuyten Duyvil
27	H-2	Harlem River - Morris Heights
28	H-3	Harlem River - 155th Street
29	H-4	Harlem River - Willis Ave.
30	H-5	Harlem River - foot of East 106th
31	E-1	East River - off Pier 10 Manhattan
32	E-2	East River - foot of East 23rd Street
33	E-3	East River - foot of East 42nd Street
34	E-4	East River - Hell Gate under RR Bridge
35	E-5	East River - 1/3 off Barretto Pt. to Riker's I.
36	E-6	Flushing Bay - 500 ft. W. College Pt. Ferry Slip
37	E-7	East River - 1/3 off Whitestone Point
38	E-8	East River - mid channel at Throgs Neck
39	E-9	Long Island Sound - 0.5 mi. N of Stepping Stones Lt
40	E-10	Long Island Sound - 200 ft. off Hart Island
ISC - SCHEDULE A		
a	LB-1	Lower Bay - 500 feet off Old Orchard Lt.
b	LB-2	Lower Bay - B.W. Bell off Midland Beach
c	UH-13	Narrows - Mid-Channel, Under Bridge
d	UH-11	Kill Van Kull - Mid-Channel opposite Lt. Buoy "3"
e	NB-5	Newark Bay - between Lt. Buoy "14" and Nun "2A"
f	NB-3	Newark Bay - South Reach, above R.R. Bridge
g	NB-12	Newark Bay - North Reach, above L.U. R.R. Bridge
h	AK-3	Arthur Kill - at B & O R.R. Bridge
i	AK-7	Arthur Kill - at Rahway River
j	AK-13	Arthur Kill - between Lt. Buoy "12" and Lt. Buoy "1"
k	AK-18	Arthur Kill - Ward Point Bend
(l)	RB-10	Raritan Bay - Lt. Buoy "3"
(m)	RB-14	Raritan Bay - Can "3" off Conaskonk Pt.
(n)	RB-8	Raritan Bay -
(o)	RB-7	Raritan Bay - Lt. Buoy "4" off Leonardo Pier

MAP NO.	STATION NO.	WATER BODY - LOCATION
ISC - SCHEDULE B		
A	JB-7	Jamaica Bay - Mouth Bergin Basin
B	JB-8	Jamaica Bay - Trestle, Broad Channel
C	JB-5	Jamaica Bay - Hammel Bridge, Beach Channel
D	JB-3	Jamaica Bay - 400 feet S. Canarsie Pier
E	JB-2	Mill Basin - east end
F	RI-2	Rockaway Inlet - Coney Island outfall
G	RI-1	Rockaway Inlet - Barren Island Bridge
H	AO-1	Atlantic Ocean - Lt. Gong "2"
I	LB-3	Lower Bay - 200 ft. S. of Steeplechase Pier
J	LB-4	Lower Bay - 1/4 mi. NE Norton Point, W. Nun
K	UH-13	Narrows - Mid-Channel, under bridge
L	UH-22	Upper Bay - Mid Bay Ridge Channel
M	UH-3	Upper Bay - Passaic Valley Outfalls
N	UH-21	Upper Bay - Main Ship Channel Lt. Bell "30"
O	UH-28	Upper Bay - Off Pier A, the Battery
P	UH-29	Upper Bay - Mouth East River
ISC - SCHEDULE C		
a	LI-15	Long Island Sound-Middle of Throgs Neck Bridge
b	LI-17	LIS-500 yd. off Stepping Stone, N. of Horn
c	LI-19	LIS-Off Bell "27" at Gang Way Rock
d	LI-24	LIS-NRSTP boil
e	LI-25	LIS-Mamaroneck Bell "42"
f	LI-26	LIS-Port Chester Nun "2"
g	LI-27	LIS-Captain's Harbor - LB "4"
h	LI-28	LIS-Greenwich Point Nun "34"
i	LI-29	LIS-Stamford between Lt. Horn & Light
j	LI-30	LIS-Stamford Lt. Bell "32" & Lt. Bell "15" and Lt. Whistle "32A" and Nun "28"
k	LI-31	LIS-Oyster Bay Gong "1"
l	LI-32	LIS-Matinecock Pt. Lt. Bell "21"
m	LI-33	Hempstead Harbor - Bell "6" and Light
n	LI-34	Manhasset Bay - Lt. Buoy "1"
WESTCHESTER HEALTH DEPARTMENT		
1	34	New Rochelle Harbor - N. of Lt.
2	33	New Rochelle Harbor LB "14"
3	32	Davenport Neck - Park
4	31	Davenport Neck - Pine I. Beach
5	24	Echo Bay - between LB "3BR" and N "2H"
6	22	Long Island Sound - LB "2"
7	23	Long Island Sound - NRSTP boil
8	35	Long Island Sound - Pea I. Beach
9	36	Long Island Sound -
10	30	Echo Bay - Hudson Pk. Beach
11	29	Echo Bay - Nun "10"
12	28	Echo Bay - Sutton Manor Beach
13	25	Echo Bay - Echo Bay YC Outfall
14	27	Echo Bay - below Premium Mill Pond
15	19	Larchmont Harbor - N.W. side
16	18	Larchmont Harbor - N.E. side
17	16	Mamaroneck Harbor - Mouth Mam. River
18	17	Mamaroneck Harbor - Can "11"
19	15	Mamaroneck Harbor - LB "5"
20	13	Long Island Sound - MSTP boil
21	14	Mamaroneck Harbor - Nun "4"
22	21	Milton Harbor - Between LB "5" and N "6"
23	20	Milton Harbor - Mouth of Blind Brook
24	12	Long Island Sound - L Bell "42"
25	11	Long Island Sound - 130°, 1 mi., L Bell "42"
26	9	Long Island Sound - 138°, 1 mi., L Bell "38A"
27	7	Long Island Sound - BBSTP boil
[illegible]	[illegible]	Long Island Sound - L Bell "38A"

TABLE 16 (cont'd.)
LOCATIONS OF CHEMICAL STATIONS

MAP NO. WESTCHESTER	STATION NO. HEALTH DEPARTMENT	WATER BODY - LOCATION
29	10	Long Island Sound - BBSTP boil
30	6	Long Island Sound - 130°, 1 mi., N "2"
31	5	Port Chester Harbor - Nun "2"
32	4	Port Chester Harbor - mouth, off jetty
33	4A	Port Chester Harbor - near Guion Road
34	3	Byram River - Zeh's Boat Yard
35	3A	Byram River - PCSTP boil
36	2	Byram River - NET Bridge
NASSAU HEALTH DEPARTMENT		
37	8-403	Little Neck Bay - 300 yd. off Udalls Mill Pond
38	8-405	Little Neck Bay - Midharbor off F. Totten Mast
39	14-407	LIS-between T. Neck Stack & Kings Pt. Mast
40	14-418	Long Island Sound - off Hart I. Lt.
41	9-414	Manhasset Bay - Mouth of Bay
42	9-409	Manhasset Bay - Nun, "4"
43	9-406	Manhasset Bay - between C "5" & N "6"
44	9-412	Manhasset Bay - Midbay off Port Wash. YC
45	9-413	Manhasset Bay - Midchannel 250 yd. S. Shelter H. YC
46	14-422	Long Island Sound-1000 ft. N of Bell "23"
47	14-423	LIS-bet. Exec. Lt. & L Bell "21" and Larch. Lt. & Glen C. Lt.
48	15-54	Long Island Sound-1600 yd. E. Spring Beach
49	10-50.1	Hempstead Harbor-GCSTP boil
50	10-49.1	Hempstead Harbor-between WC "A" & WN "B"
51	10-48.0	Hempstead Harbor - 50 yd. N. Can "9"
52	11-46	Hempstead Harbor - S. Nun "12"
53	11-402	Hempstead Harbor - off Incinerator stack
54	15-402	LIS-between L. Bell 21 & C "19", off Fox Pt.
55	15-403	Long Island Sound-100 yd. N. of C "19"
56	15-404	LIS-between C "19" & Bell "17"
57	15-405	Long Island Sound-100 yd. N. Bell "17"
58	12-8	Mill Neck Creek - Center, South of pink house & wall
59	12-6	Oyster Bay Harbor - 150 yd. off & 500 yd. E. of C.S. Bridge
60	12-13	Oyster Bay Harbor - Middle West
61	12-2	Oyster Bay Harbor - 200 yd. off Roosevelt P. Fp.
62	12-401	Oyster Bay Harbor - OBSTP boil
63	12-22	Oyster Bay Harbor - 300 yds. off Center I. Shore
64	12-23	Oyster Bay Harbor - 150 yd. S. of Nun "2A"
65	13-403	Cold Spring Harbor - mid harbor off Cooper Bluff
66	13-405	Cold Spring Harbor - mid harbor near tower
67	1-401	East Rockaway Inlet - Nun "8"
68	3-418	Reynolds Channel & Bannister Creek
69	1-403	Atlantic Ocean - 1/4 mi. & 250 yd. W. of El Patio
70	1-405	Atlantic Ocean - 1/4 mi. off Long Beach T. Hall
71	1-409	Atlantic Ocean - 1/4 mi. off T. Hemp. Park
72	3-416	Reynolds Channel - L Buoy "7"
73	3-408	Reynolds Channel - off Simmons Hassock
74	4-49	Reynolds Channel - 150 yd. E. Long Beach Bridge
75	3-415	Post Lead and Woodsburgh Channel
76	3-420	Broad Channel-off S. end of Pearsalls Hassock
77	3-412	Hog Island Channel - at Barnums Channel
78	4-403	Barnums Channel - off NE corner of Garrett Marsh
79	3-401	Hewlett Bay-250 yd. off Bay Park Beach

MAP NO.	STATION NO.	WATER BODY - LOCATION
NASSAU HEALTH DEPARTMENT		
80	2-401	Jones Inlet-250 yd. W. E Bn 317 Kc
81	2-403	Atlantic Ocean-1/4 mi. off Parking West End 1
82	4-116	Reynold Channel-off T. Hempstead Marina
83	4-123	Sloop Channel-South of DB "30"
84	5-126	Sloop Channel-between DB "36" and DB "39"
85	5-130	Sloop Channel and Horserace Channel
86	6-28	Zachs Bay - 125 yd. off S. Shore, between entrances
87	4-80	Sea Dog Creek and Long Creek
88	5-173	Broad Creek Channel -
89	4-102	Long Creek -
90	4-93	Baldwin Bay - south of Millburn Creek
91	5-402	Merrick Bay - West End
92	5-160	East Bay - 100 yd. W. Wantagh Marina Entrance
93	5-178	East Bay - 500 yd. S. White Pt.
94	5-176	Horserace Channel and Goose Creek
95	6-19	Channel - E. Goose Creek Bridge, N DB "64"
96	6-9	Massapequa Creek - 300 yd. off W. Mouth
97	6-401	South Oyster Bay-300 yd. S.
98	6-32	Amity Channel-between DB "51-1" and Squaw I.
99	6-39	Amity Channel-300 yd. S. Unqua Pt.
100	2-409	Atlantic Ocean-1/4 mi. off Tobay Beach
NYS - SURVEILLANCE		
A	B 100	State Boat Channel - 750 St. W. Captree Bridge
B	B 101	Moriches Bay - Narrow Section 1 mi. SW Mastic
C	B 105	Flanders Bay - Off Indian Island
D	B 110	Mecox Bay - Off Flying Point Road
E	B 200	Hempstead Harbor - Off Bar Beach

SUFFOLK DEC

LH-1	Lloyd Harbor Trib.	West Neck Road
MC-1	Mill Creek	Mill Place
SH-1	Stony Hollow Run	Route 25A
FP-1	Fresh Pond	Brookfield Road
SM-1	Sunken Meadow	Route 25A
NIS-1	Nissequogue	U.S.G.S. gage
NIS-2	Nissequogue	Brooksite Drive
NIS-3	Nissequogue	Route 347
SB-1	Stony Brook	Grist Mill Road
WR-1	Wading River	North Country Road
PJ-1	Port Jefferson	Brook Road
PR-5	Peconic River	Brookhaven Lab gage - North Street
PR-4	Peconic River	Schultz Road
PR-1	Peconic River	U.S.G.S. gage - LILCO dam
LR-1	Little River	County Center Road
MI-1	Mill Creek	Flanders Road
WB-1	White Brook	Flanders Road
BC-1	Birch Creek	Route 24
HC-1	Hubbard Creek	Red Creek Road
EA-1	Sawmill Creek	E. Main Street
TR-1	Terry Creek	Hubbards Creek Road
MT-1	Meetinghouse Creek	Hubbards Creek Road
EA-1	East Creek	Peconic Boulevard
AC-1	Amityville Creek	Route 27A
KC-1	Ketchams Creek	Pearl Place
CN-1	Great Neck Creek	Route 27A
SC-1	Strong's Creek	Liberty Avenue
NC-1	Neguntatogue Creek	Neguntatogue Park
NC-2	Neguntatogue Creek	East Hoffman
SS-1	Santapogue Creek	East Hoffman
SS-2	Santapogue Creek	Sunrise Highway
SS-3	Santapogue Creek	East Hoffman

TABLE 16 (cont'd.)
LOCATIONS OF CHEMICAL STATIONS

MAP NO. WESTCHESTER	STATION NO. HEALTH DEPARTMENT	WATER BODY - LOCATION	
SUFFOLK DEC	CS-1	Carlls River	Route 27A
	CS-2	Carlls River	Park Avenue
	CS-3	Carlls River	U.S.G.S. gage
	CS-4	Carlls River	Sunrise Highway
	CS-5	Carlls River	Sunrise Highway
	CS-6	Carlls River	Elda Lake Outlet
	CS-7	Carlls River	August Road
	CS-8	Carlls River	Belmont Lake Outlet
	CS-9	Carlls River	August Road
	CS-10	Carlls River	Grand Boulevard
	SAM-2	Sampawams Creek	U.S.G.S. gage
	SAM-3	Sampawams Creek	Sunrise Highway
	SAM-4	Sampawams Creek	Hunter Avenue
	SAM-5	Sampawams Creek	Bay Shore Road
	SK-1	Skookwams Creek	Magoun Road
	WC-1	Willetts Creek	South End of High School
	TH-1	Thompson Creek	Montauk Highway
	TC-1	Trues Creek	Route 27A
	CL-1	Cascade Lakes	Route 27A
	WA-1	Watchogue Creek	Route 27A
	PS-1	Penataquit Creek	U.S.G.S. gage
	PS-2	Penataquit Creek West Branch	Brook Avenue
	PS-3	Penataquit Creek	South Shore Mall
	AW-1	Awixa Creek	Route 27A
	AW-2	Awixa Creek	Sunrise Highway
	OR-W-1	Orowoc Creek W. Branch	Moffit Boulevard
	OR-E-1	Orowoc Creek E. Branch	Moffit Boulevard
	CH-1	Champlin Creek	U.S.G.S. gage
	GR-1	Great River	Great River Road
	WB-1	West Brook	Sunrise Highway
	CO-1	Connetquot River	U.S.G.S. gage
	CO-4	Connetquot River	Distributary
	CO-3	Connetquot River	Veterans Highway
	CO-5	Connetquot River	Johnson Avenue
	CC-1	Greene Creek	Brook Road
	BRN-1	Brown Creek W. Branch	Route 27A
	BRN-2	Brown Creek E. Branch	Route 27A
	TU-1	Tuthills Creek	Route 27A
	PAT-1	Patchogue River	Route 27A
	PAT-2	Patchogue River	Patchogue Ave.-W. Trib.
	PAT-3	Patchogue River	Canaan Lake Outlet
	SW-1	Swan River	Route 27A
	MU-1	Mud Creek	So. Country Road
	AB-1	Abets Creek	
	HG-1	Hedges Creek	So. Country Road
	HC-1	Howells Creek	Golf Course
	MS-1	Motts Brook	So. Country Road
	BC-1	Beaverdam Creek	So. Country Road
	CA-1	Carmans River	U.S.G.S. gage
	CA-3	Carmans River	Upper Pond Outlet
	CA-4	Carmans River	Bartlett Road East
	JN-1	Johns Neck Creek	Off Bogota Road
	PQ-1	Pattersquash Creek	Neighborhood Road
	FW-1	Forge River W. Branch	Route 27A
	FW-2	Forge River E. Branch	Route 27A
	MM-1	Mud Creek	Cynthia Lane
	TE-1	Terrell River	Route 27A
	LSE-1	Little Seatuck Creek	Moriches Boulevard
	SE-1	Seatuck Creek	Route 27A
	ER-1	East River	Route 27A
	SR-1	Speonk River	Route 27A
	BE-1	Beaverdam Creek	Route 27A
	AS-2	Aspatuck Creek	Route 27A
	QU-1	Quantuck Creek	South Country Road
	PH-1	Phillips Creek	Route 27A
	WE-1	Weesuck Creek	Route 27A
	TIA-1	Tiana Creek	Route 27A

V. WASTEWATER SOURCES AND PLANS FOR ABATEMENT

V.1. Pollutant Sources, Characteristics and Effluent Requirements

Sources of pollutants may be grouped in many ways. Ten categories have been used in this plan:

1. Municipal discharges
2. Industrial discharges
3. Combined sewer overflows
4. Thermal discharges
5. Oil and grease sources
6. Dredge spoil and sewage sludge disposal
7. Vessel wastes
8. Duck farms
9. Radioactive wastes
10. Non-point sources

V.1.a. Municipal Discharges

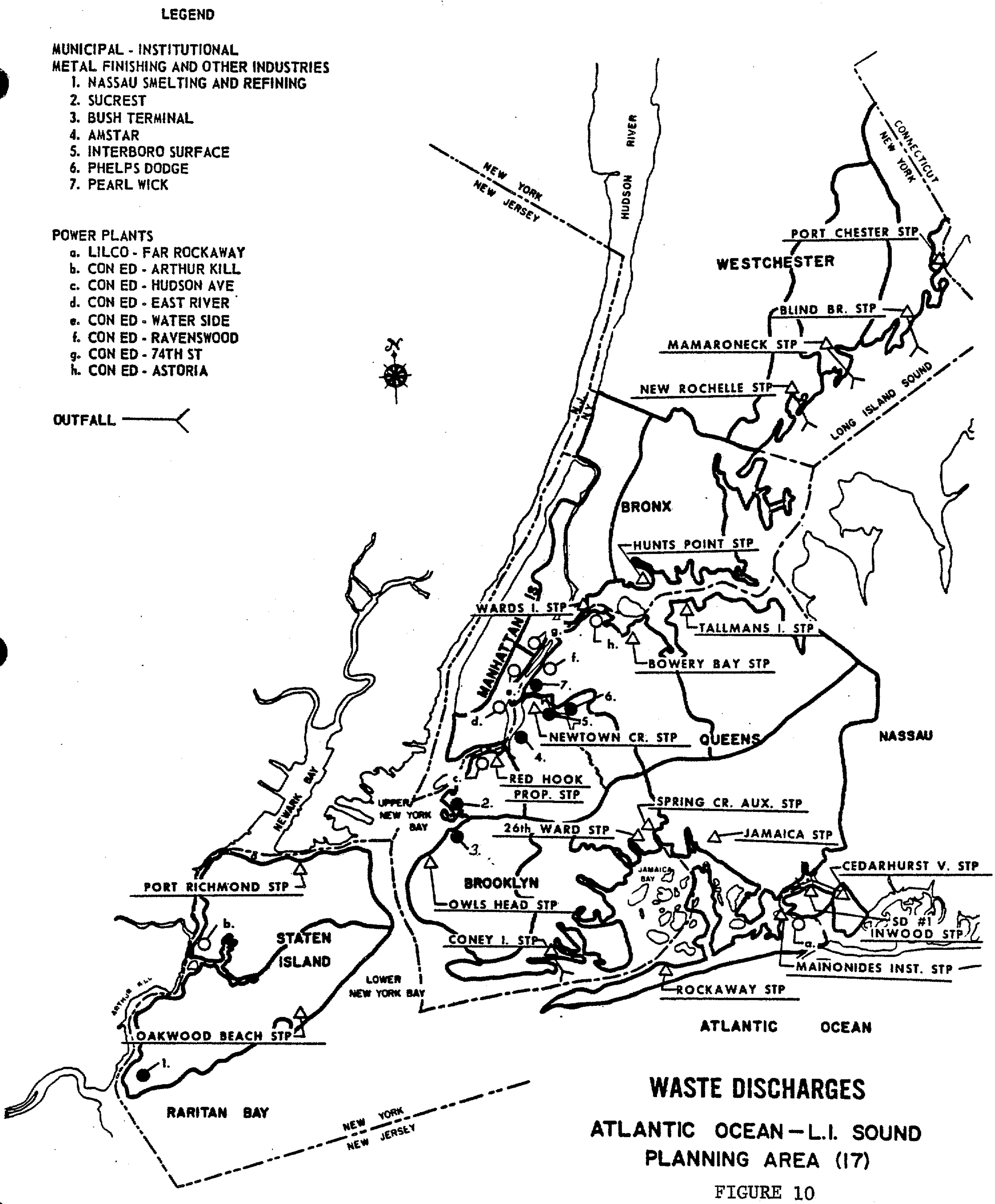
Municipal discharges have the largest single impact on water quality. The total discharge to the Atlantic Ocean/Long Island Sound area averages 1,600 million gallons per day. Inadequately treated municipal discharges can cause low dissolved oxygen concentrations, high coliform bacteria counts, sludge banks, turbid water, and contribute phosphorus and nigrogen compounds as nutrients to aquatic growth. Standard "secondary treatement" will reduce biochemical oxygen demand and suspended solids by 85 percent. In most cases, this is sufficient to eliminate problems of low dissolved oxygen and turbidity. "Advanced waste treatment" methods are used to achieve higher than 85 percent removals of BOD, trace metals and organics removal, increased bacterial destruction, virus inactivation, and nutrient removal.

Appendix D contains a listing of over 500 industries, municipalities, institutions, etc. that have been identified as dischargers to waters of the planning area. Section V.2.b. and Table 17 provide details on the more significant municipal discharges. Discharges may be located on Figures 10, 11 and 12.

Municipal dischargers are required by law to provide at least secondary treatment by July 1, 1977. The effluent limits to be met through secondary treatment are presented in Table 18. Where secondary treatement is inadequate to meet in stream water quality standards, more stringent effluent limits are established, and advanced waste treatment must be provided. Municipalities that are unable to meet the July 1, 1977 deadline because of insufficient time are issued interim discharge requirements and placed on a schedule for abatement. Effluent limits are included in SPDES/NPDES permits and where treatment is inadequate, the schedules of compliance are also included within the permits. These permits are on file with NYS-DEC and US EPA. Copies are available to anyone for inspection.

Models developed through the 208 studies will be used to determine needs for advanced waste treatment for BOD removals on a water segment basis. With the exceptions of expanded discharges to confined bays, limited modeling and survey results have indicated that secondary treatment will be adequate in terms of BOD removal.

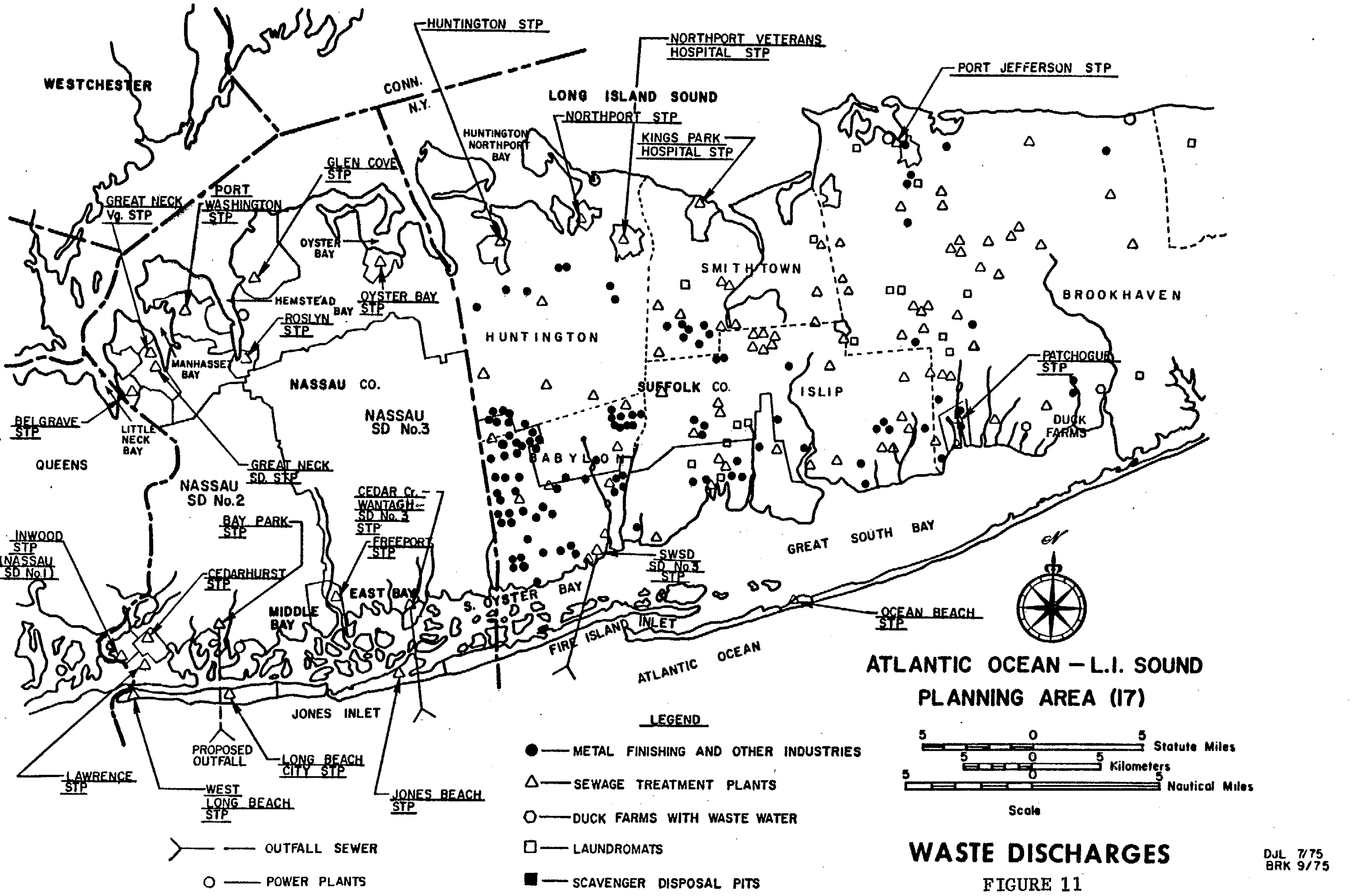
Removal of nitrogen requires the application of advanced waste treatment; conventional secondary treatment provides only about 20 percent nitrogen removal. Nitrogen is a principal nutrient for plant growth. In most marine environs, carbon, phosphorus and sulfur are readily available to plants, while nitrogen is scarce and limiting to plant growth. Dissolved nitrogen is provided to aquatic plants in bay areas by fresh



WASTE DISCHARGES

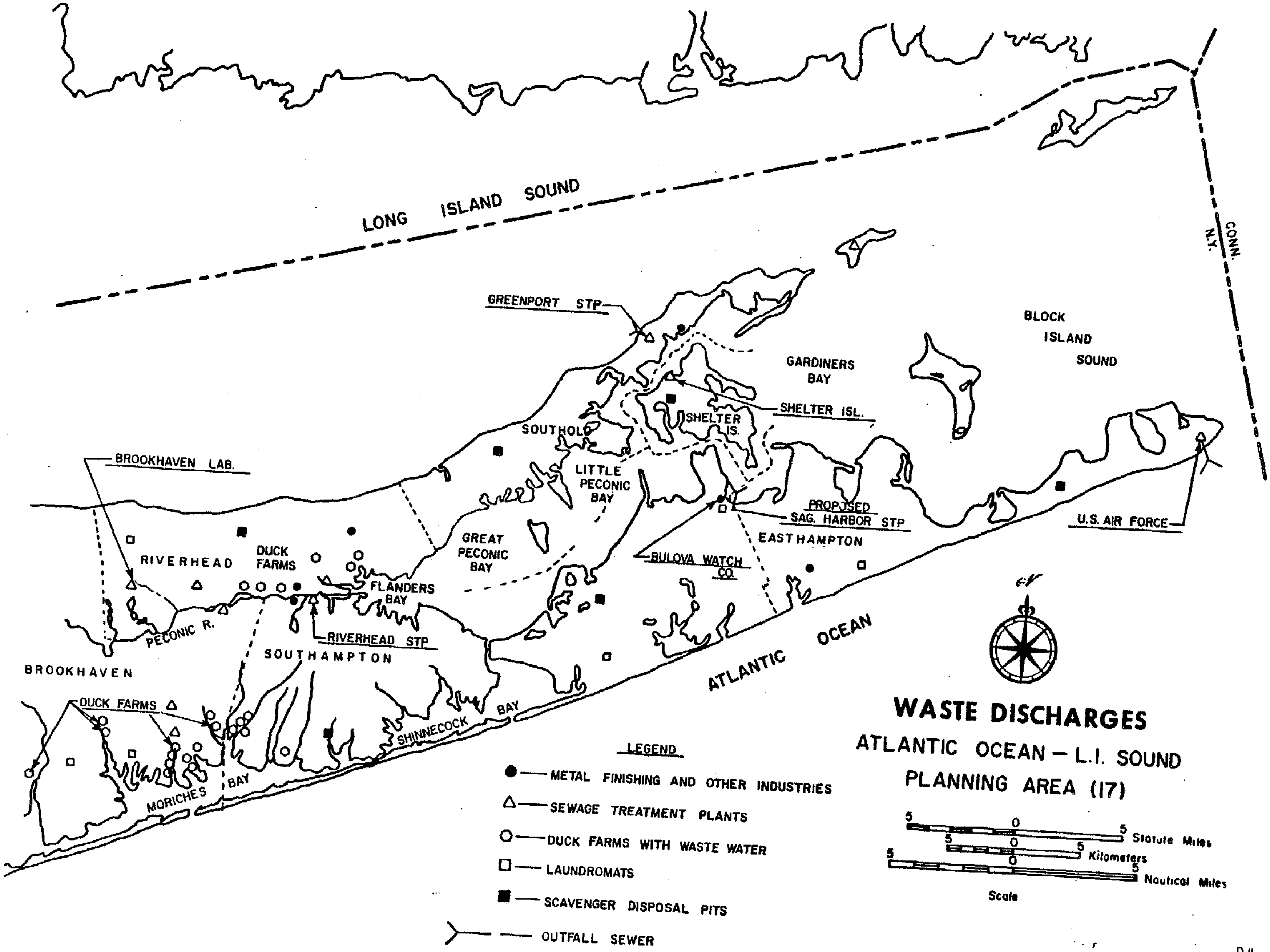
ATLANTIC OCEAN—L.I. SOUND
PLANNING AREA (17)

FIGURE 10



WASTE DISCHARGES

FIGURE 11



WASTE DISCHARGES

ATLANTIC OCEAN – L.I. SOUND

PLANNING AREA (17)

FIGURE 12

DJL 7/75
BRK 9/75

Table 17

Waste Sources and Abatement Status
Long Island-Atlantic Ocean (17)

*** MAJOR MUNICIPAL AND INDUSTRIAL DISCHARGES ***
(Note: Major Thermal Discharges at end of table)

I. New York Bays - Arthur Kill - Kill Van Kull

Waste Source	Project Number	Receiving Stream & Classification	Treatment Facilities	Year Built	Design Plant Eff. -%-	Design Raw Loading -#/day-	Design Flow MGD	Status & Abatement Requirement
Nassau Smelting and Refining	---	Mill Creek, I	-Chemical addition and precipitation to remove metals and adjust pH -Cooling Tower	1973	-------	Metals	0.331 (Actual)	-Sanitary waste to Oakwood Beach STP upon completion of interceptor -Meet BPT with existing treatment process
NYC-Port Richmond, WPCP	346 593	Kill Van Kull, II	Primary	1953, 1964 Under Construction	BOD ~ 24 (Actual) BOD ~ 85 (Proposed)	BOD_u = 150,000 NOD = 90,000 (New Design)	10 (Design) 17.1 (Actual) 60 (New Design)	-Under construction to upgrade to 60 MGD step aeration STP -Expand collection system -Convert to separate sewers
Sucrest Corporation	---	Erie Basin, I	None	----	-------	BOD_u = 2,500	9.65 (Actual Primary Cooling)	-Process waste to Red Hook STP in future or provide BPT -Continue barometric condenser cooling water discharge
Bush Terminal Associates	---	Gowanus Bay, I	None	----	-----	BOD_u = 7,000	0.995 (Actual San., Proc. & Cooling)	-Inventory of tenants needed to establish combined BPT limits -Provide treatment or join Owls Head System
NYC-Owls Head, WPCP	402 357	Upper New York Bay, I	Modified Aeration	1952	BOD ~ 55 (Actual) BOD ~ 85 (Proposed)	BOD_u = 225,000 NOD = 135,000 (New Design)	160 (Design) 99 (Actual) 135 (Proposed Design)	-Achieving only 55% removals -Facilities planning underway. -Probably provide 135 MGD Activated Sludge STP using pure oxygen -Abate combined sewer overflows
NYC-Oakwood Beach, WPCP	392	Lower New York Bay, SB	Modified Aeration	1956, Under Construction	BOD ~ 58 (Actual) BOD ~ 85 (Proposed)	BOD_u = 68,000 NOD = 40,000 (New Design)	16 (Design) 19.1 (Actual) 40 (New Design)	-Achieving only 58% removals -Under construction to upgrade to 40 MGD step aeration STP -Expand collection system -Project priorities 12 & 13

Table 17 (cont'd)

Waste Sources and Abatement Status
Long Island-Atlantic Ocean (17)

Waste Source	Project Number	Receiving Stream & Classification	Treatment Facilities	Year Built	Design Plant Eff. -%-	Design Raw Loading -#/day-	Design Flow MGD	Status & Abatement Requirement
II. **East River-Harlem River**								
NYC-Red Hook, WPCP (Proposed)	394	East River, SD	-None; Raw and Combined Sewer Discharges -Step Aeration under Construction	Under Construction	BOD ~ 85 (proposed)	BOD_u = 175,000 NOD = 105,000	70 (Design)	-70 MGD step aeration under construction -5% complete -Abate wet weather combined sewer overflows -To include flows from Newtown Creek -Project Priorities #37,38,39 & 40
Amstar Corp.	---	East River, SD	-Sanitary waste to municipal system -Barometric condenser discharges	----	---------	BOD_u = 2,100	9.27 (Actual)	-Sanitary waste is conveyed to municipal system -Meet BPT for other wastes
NYC-Newtown Creek WPCP	86 713	East River, SD	310 MGD Activated Sludge Includes 20 MGD UNOX Demonstration Project	1967, 1975	BOD ~ 60	BOD_u = 850,000 NOD = 500,000 (Actual)	310 (Design) 340 (Actual)	-Manhattan pumping station tied in 5/76. -The plant is limited in size by land availability & presently overloaded -Engineering studies are proposed to evaluate pure oxygen, inflow infiltration problems, diversion to other collection systems & subdivisions of district as means of reducing flows or increasing plant capabilities -Diverted flow is being incorporated into Red Hook design
Interboro Surface	---	Newtown Creek, II	-Dust Scrubber Sedimentation Pit Overflow	----	---------	TSS = 1500	.020 (Actual)	-Meet BPT, especially suspended solids reduction
Phelps-Dodge Ref. Corp.	713	Newtown Creek, II	-Sanitary : Raw -Process: Neutralization and Precipitation -Cooling Water: Cooling Towers	----	---------	Metals and Cooling Water	.565 (Actual)	-Sanitary wastes will be conveyed to municipal system -Meet BPT for metals, pH, temperature, etc.
Pearl Wick, Corp.	---	East River, SD	None	----	---------	Metals and Cooling Water	.041 (Actual)	-Sanitary wastes will be conveyed to municipal system -Meet BPT for metals, temperature, etc.
NYC-Wards Island, WPCP	214 363 395	East River, SD		1937, 1948, Under Construction	BOD ~ 60 (Actual) BOD ~ 85 (Proposed)	BOD_u = 440,000 NOD = 260,000 (New Design)	210 (Design) 150 (Treated) 115 (Bypassed) 250 (New Design)	250 MGD step aeration under construction -Abate combined sewer overflows

Table 17 (cont'd)

Waste Sources and Abatement Status
Long Island-Atlantic Ocean (17)

Waste Source	Project Number	Receiving Stream & Classification	Treatment Facilities	Year Built	Design Plant Eff. -%-	Design Raw Loading -#/day-	Design Flow MGD	Status & Abatement Requirement
NYC-Bowery Bay, WPCP	398 406	Rikers I. Channel, SD	Activated Sludge	1939, 1958, Under Construction	BOD ~ 63 (Actual) BOD ~ 85 (Proposed)	BOD$_u$ = 380,000 NOD = 220,000 (New Design)	120 (Design) 113 (Actual) 150 (New Design)	-150 MGD step aeration under construction -Abate combined sewer overflows
Hunts Point, WPCP	143 397 399	East River, I	Step Aeration	1952, 1964, Under Construction	BOD ~ 85 (Proposed)	BOD$_u$ = 335,000 NOD = 200,000 (New Design)	150 (Design) 151 (Actual) 200 (New Design)	-Being upgraded and expanded to 200 MGD step aeration STP -Harts Island; City Island and Orchard Beach STPs have been abandoned with flow now to Hunts Point STP -Abate combined sewer overflows
Tallmans Island, WPCP	166 404	East River, I	Activated Sludge	1939, 1965, Under Construction	BOD ~ 80 (Actual) BOD ~ 85 (Proposed)	BOD$_u$ = 133,000 NOD = 80,000 (New Design)	60 (Design) 61 (Actual) 80 (New Design)	-Only primary removal while under construction -80 MGD modified aeration by June 1976 -80MGD step aeration by January 1977 -Abate combined sewer overflows
III. Western Long Island Sound								
Port Chester	069 695	Byram River, SC	Primary	1964	BOD ~ 18 (Actual) BOD ~ 85 (Proposed)	BOD$_u$ = 16,000 NOD = 9,300 (Existing)	6.0 (Design) 6.2 (Actual)	-Upgrade to 6 MGD activated sludge STP -Effluent to discharge to proposed Blind Brook outfall -Provide sludge disposal service to Blind Brook -Project priorities #173 and #174
Blind Brook	105 696	Long Island Sound, SB	-Primary -Outfall to Sound	1963	BOD ~ 19 (Actual) BOD ~ 85 (Proposed)	BOD$_u$ = 8,300 NOD = 5,000 (Existing)	5.0 (Design) 2.9 (Actual)	-Upgrade to 5 MGD activated sludge STP -Install new outfall to serve Blind Brook & Port Chester -Pump sludge to Port Chester -Project priorities #145 & #146
Mamaroneck	908	Long Island Sound, SB	-Primary -2.5 Mile Outfall to Sound	1965	BOD ~ 28 (Actual) BOD ~ 85 (Proposed)	BOD$_u$ = 31,000 NOD = 19,000 (Existing)	18 (Design) 18.5 (Actual)	-Existing plant designed to handle 60 MGD storm flows -Upgrade to 18 MGD secondary STP
New Rochelle	5	Long Island Sound, SB	-Primary -1.7 Mile Outfall to Sound	1935, 1964	BOD ~ 13 (Actual) BOD ~ 85 (Proposed)	BOD$_u$ = 24,000 NOD = 14,000 (Existing Design)	15 (Design) 14.5 (Actual)	-Upgrade to 15 MGD pure oxygen secondary STP -Abate overflows -Correct excessive inflow & infiltration -Project priority #10

Table 17 (cont'd)

Waste Sources and Abatement Status
Long Island-Atlantic Ocean (17)

Waste Source	Project Number	Receiving Waters & Classification	Treatment Facilities	Year Built	Design Plant Eff. -%-	Design Raw Loading -#/day-	Design Flow MGD	Status & Abatement Requirement
III. Western Long Island Sound								
Belgrave S.D.	609	Little Neck Bay, SB	High Rate Trickling Filter	1935, 1965	BOD ~ 80	BOD_u = 5000 NOD = 3000	2.0	Meet BPT requirements
Great Neck Vg.	341	Manhasset Bay, SB	High Rate Trickling Filter	1933, 1968	BOD ~ 85	BOD_u = 3750 NOD = 2250	1.5 (Design) 1.0 (Actual)	Meet BPT requirements
Great Neck S.D.	629	Manhasset Bay, SB	High Rate Trickling Filter	1962, 1967	BOD ~ 85	BOD_u = 6740 NOD = 4040	2.7 (Design) 2.9 (Actual)	Overloaded; expand facilities in future and extend service to adjacent area
Port Washington	351, 666	Manhasset Bay, SB	High Rate Trickling Filter	1951, 1968	BOD ~ 75	BOD_u = 7500 NOD = 4500	3.0	-Unranked pending project; 201 planning needed -Plant overloaded -Extend services to Vg. of Roslyn and adjacent area -Expand capacity to 6.5 MGD -Install outfall to Sound
Roslyn Vg.	342	Hempstead Harbor, SB	High Rate Trickling Filter	1942, 1968	BOD ~ 80	BOD_u = 1250 NOD = 750	0.5	- Meet BPT requirements - Abandon plant and join with Port Washington in regional system in future
Glen Cove (C)	236, 665	Glen Cove Creek-I Hempstead Harbor, SB	High Rate Trickling Filter	1919, 1964	BOD ~ 80	BOD_u = 10,000 NOD = 6,000	4.0 (Design) 5.23 (Actual)	-Expand to 8 MGD activated sludge STP with discharge to the tidal mouth of Glen Cove Creek -Extend service to Sea Cliff, Roslyn Harbor, Brookville-Old Westbury Area in future -Project priorities 52 & 53
Oyster Bay	---	Oyster Bay Harbor, SA	High Rate Trickling Filter	1963	BOD ~ 85	BOD_u = 3000 NOD = 1800	1.2	-Plant periodically flooded at high tide -System receives excessive infiltration/inflow

Table 17 (cont'd)

Waste Sources and Abatement Status
Long Island-Atlantic Ocean (17)

Waste Source	Project Number	Receiving Waters & Classification	Treatment Facilities	Year Built	Design Plant Eff. -%-	Design Raw Loading -#/day-	Design Flow MGD	Status & Abatement Requirement
IV. Central & Eastern Long Island Sound								
Huntington SD, STP	343	Huntington Harbor, SA	High Rate Trickling Filter	1927, 1956, 1970	BOD $\sim$ 85 NOD $\sim$ 0	BOD_u = 5000 NOD = 3000	2.0	- Sewer system receives considerable infiltration
Northport STP	237	Northport Harbor, SA	Extended Aeration	1973	BOD $\sim$ 85 NOD $\sim$ 50	BOD_u = 825 NOD = 495	0.5	- Serves Centerport S.D. - Abated - Plant expansion and sewer services to surrounding area being studied
Northport Veterans Hospital	---	Subsurface Discharge	Trickling Filter Sand Filtration	----	BOD $\sim$ 85	BOD_u = 775 NOD = 465	0.31	-----------
Stony Brook Subdivision	---	Subsurface Discharge	Rated Aeration	1965 1975	BOD $\sim$ 85	BOD_u = 900 NOD = 540	0.36	- Upgrade
Kings Park SD #6	---	Long Island Sound, SA	Activated Sludge	1935, 1963	BOD $\sim$ 85 NOD $\sim$ 50	BOD_u = 2500 NOD = 1500	2.0	-Planning area has been defined -Capacity available for expansion
Port Jefferson STP SD #1	709	Port Jefferson Harbor, SC	Primary, Chlorination	1957, 1962 1973	BOD $\sim$ 35	BOD_u = 3680 NOD = 2210	2.27 (Design)	- Existing system has considerable infiltration - 201 and 208 studies are underway. Completion of 201 study scheduled for 6/77 - Serves SUNY at Stony Brook and Lace Mill
Greenport Vg.	621	Long Island Sound, SA	Primary, Imhoff Tank	1940	BOD $\sim$ 33 NOD $\sim$ 0	BOD_u = 1251 NOD = 750	0.5 Actual (0.3)	- Plant being upgraded to 0.5 MGD STP consisting of 2 aerated lagoons for extended biological oxidation - Under construction - Project priority #69
V. Peconic River - Peconic Bay Area								
Brookhaven National Laboratory	---	Trib. to Peconic River	Primary Clarifier, Sand filters	Unknown	N.A.	N.A.	1.3	Low level radioactive wastes and san[illegible] waste are withi[illegible] acceptable limits

Table 7.7 (cont'd)

Waste Sources and Abatement Status
Long Island-Atlantic Otean (17)

Waste Source	Project Number	Receiving Stream & Classification	Treatment Facilities	Year Built	Design Plant Eff. -%-	Design Raw Loading -#/day-	Design Flow MGD	Status & Abatement Requirement
Duck Farms (5 Farms)	---	Peconic River	Aerated Lagoons	1965-1970	BOD ~ 85	N.A.	N.A.	Duck Farms to improve operation and convert to dry farming by 1983
Riverhead, New York	536	Peconic River - Peconic Bay, SC	High Rate Trickling Filter	1937, 1971	BOD ~ 85	BOD_u = 3000 NOD = 1800	1.2 Actual = 0.6	-Abated -201 underway
Shelter Island Heights Association	---	Dering Bay, SA	Septic Tank, Outfall Sewer	1925	BOD ~ 35	BOD_u = 100 NOD = 60	0.04	Provide secondary treatment
Bulova Watch Company	---	Sag Harbor Bay, SA	None	----	-----------	Metals, Toxic Substances	0.1	- Segregate cooling, sanitary and process waste. Submit engineering report. - Sanitary waste to Sag Harbor STP
Sag Harbor Vg. (Proposed)	433	Sag Harbor Bay, SA	None, 2 Sewer Outfalls and Individual Sub-surface systems	Proposed	-----------	BOD_u = 250 (Proposed) NOD = 150 (Proposed)	0.1 (Proposed)	- New, extended aeration plant under construction to provide 90% over-all removal - Outfall to be located outside breakwater - Future expansion to 0.5 MGD planned - Project priorities #46 & 47
VI. Montauk Point - Atlantic Ocean								
U.S. Air Force (Montauk)	---	Atlantic Ocean, SA	High Rate Trickling Filter	1973	BOD ~ 85	BOD_u = 118 NOD = 70	0.049	-Abated
VII. Moriches Bay - Atlantic Ocean								
Duck Farms (17 Farms)	---	Tributaries to Moriches Bay	Aerated Lagoons	1965-1970	BOD ~ 85	N.A.	N.A.	-Duck farms to improve operation and convert to dry farming by 1983
VIII. Great South Bay - Atlantic Ocean								
Duck Farms (2 Farms)	---	Tributaries to Great South Bay	Aerated Lagoons	1965-1970	BOD ~ 85	N.A.	N.A.	-Duck farms to improve operation and convert to dry farming by 1983
Patchogue, Vg.	741	Patchogue Cr., D	Primary Settling	1927, 1951	BOD ~ 35	BOD_u = 1250 NOD = 750	0.5	-Upgrade level of treatment, expand service -Participate in regional 208 Study, Suffolk Co. South Central Study Area -Planning area has been defined

Table 17 (cont'd)

Waste Sources and Abatement Status
Long Island-Atlantic Ocean (17)

Waste Source	Project Number	Receiving Stream & Classification	Treatment Facilities	Year Built	Design Plant Eff. -%-	Design Raw Loading -#/day-	Design Flow MGD	Status & Abatement Requirement
Ocean Beach STP	---	Great South Bay, SA	Primary Chlorination	1917, 1950	BOD 35	BOD_u = 1251 NOD = 750	0.05	-Seasonal flows limited Limited room for expansion -Provide secondary treatment -Under construction -Project priority #55
Yaphank Regional S.D. (Proposed)	994	-----------	Proposed	Proposed	---------	----------	Undefined	-208 study is underway -completion date for the study is 1/77 -Regional system, STP sites & design capacities are undefined -Planning area has been defined
South Central Study Area Disposal District #2	---	-----------	Proposed	Proposed	---------	----------	Undefined	-Regional projects to be defined in 201 & 208 studies -Planning area has been defined
IX. South Oyster Bay - Atlantic Ocean								
Suffolk Co. Southwest S.D. #3	624	Atlantic Ocean, SA	Activated Sludge	Under Construction	BOD 85	BOD_u = 75,000 NOD = 45,000	30	-Regional STP & interceptors under construction. Completion scheduled for January 1978 -Finalize plans for ocean outfall -Complete environmental restoration along route of outfall -Includes substantial amount of industrial waste -Project priorities #140, 141, 142, 143 & 144
West Central S.D. (Proposed)	995	---------	Proposed	Proposed	--------	----------	Undefined	-208 study is underway -Regional system, STP sites & design capacities are undefined -Planning area has been defined

Table 17 (cont'd)

Waste Sources and Abatement Status
Long Island-Atlantic Ocean (17)

Waste Source	Project Number	Receiving Stream & Classification	Treatment Facilities	Year Built	Design Plant Eff. -%-	Design Raw Loading -#/day-	Design Flow MGD	Status & Abatement Requirement
XI. Jamaica Bay (cont'd)								
NYC-Rockaway, WPCP	68 403	Jamaica Bay, SB	Modified Aeration	1952, 1961, Under Construction	BOD ~ 20 (Actual) BOD ~ 85 (Proposed)	BODu = 75,000 NOD = 45,000	30 (Design) 19.3 (Actual) 45 (New Design)	-Being expanded and upgraded to 45 MGD step aeration STP -Abate combined sewer overflows
Maimonides	---	Jamaica Bay, SB	-Activated Sludge -Also raw discharges	----	BOD ~ 85	BODu = 15 NOD = 9 (Design)	.0060 (Design) .0017 (Actual)	-Buildings not currently connected to treatment facility shall be connected
NYC-Jamaica, WPCP	109, 321, 400	Jamaica Bay, SB	Step Aeration	1943, 1964, Under Construction	BOD ~ 70 (Actual) BOD ~ 93 (Proposed)	BODu = 170,000 NOD = 100,000	100 (Design) 93 (Actual)	-Being upgraded step aeration -Abate combined sewer overflows
Spring Creek Auxiliary STP	347	Old Mill Creek, I	-Temporary storage of combined sewage -Primary settling and chlorination of excess combined sewage -Retained sewage treated at 26th Ward WPCP in dry weather	1972	----------	----------	1,300,000 of storage	-Continue operation and monitoring of operation -Use results of observations as basis for designs of other combined sewer overflow corrective measures
26th Ward, WPCP	405	Hendrix Creek, I	Step Aeration	1944 1951 Under Construction	BOD = ~ 85 (Proposed)	BODu = 140,000 NOD = 85,000 (New Design)	60 (Design) 66 (Actual) 85 (New Design)	-Being expanded and upgraded to 85 MGD step aeration STP -Continue treatment of stored combined sewage from Spring Creek Auxiliary STP -Abate remaining combined sewer overflows
NYC-Coney Island, WPCP	396 345 044	Rockaway Inlet, SB	Modified Aeration	1936 1963	BOD ~ 55 (Actual) BOD ~ 85 (Proposed)	BODu = 183,000 NOD = 110,000	110 (Design) 100 (Actual)	-Upgrade to step aeration STP

Table 17 (cont'd)

Waste Sources and Abatement Status
Long Island-Atlantic Ocean (17)

Waste Sources	Project Number	Receiving Stream & Classification	Treatment Facilities	Year Built	Design Plant Eff. -%-	Design Raw Loading -#/day-	Design Flow MGD	Status & Abatement Requirement
X. East Bay-Middle Bay-Hempstead Bay-Atlantic Ocean								
Nassau Co. SD #3 - Cedar Creek-	361, 628, 982	Atlantic Ocean, SA	Activated Sludge	1974	BOD ~ 85	BOD_u = 112,700 NOD = 67,500	45	-Project 982 to include 5.0 MGD pilot advanced wastewater treatment-recharge facility -Plant to be expanded to 90 MGD in 1981 to include Freeport and other areas -Project priorities #178, 179 & 180
Jones Beach State Park STP	---	Sloop Channel, SA	Trickling Filter	----	BOD ~ 85	BOD_u = 6,250 NOD = 3,750	25 (Design) 0.225 (Actual Summer Flow)	-Meet BPT requirements
Freeport V. STP	---	Stadium Park Canal, SC (Trib. of Freeport Cr. And Hempstead Bay), I	High Rate Trickling Filter	1927, 1961	BOD ~ 85	BOD_u = 10,000 NOD = 6,000	4.0 (Design) 3.7 (Actual)	-Connect to Nassau SD #3 -Receives some industrial plating waste -Some infiltration inflow problems
Nassau Co. S.D. #2 Bay Park STP	891	Reynolds Channel, SB	Activated Sludge	1951, 1961	BOD ~ 90	BOD_u = 150,000 NOD = 90,000	60 (Design) 65 (Actual)	-Plant to be expanded to 90 MGD -Install 3.0 mile long ocean outfall to depth of 56 ft. -Receive waste from Cedarhurst and Lawrence in future
Long Beach (C)	305	Reynolds Channel, SB	High Rate Trickling Filter	1952, 1968	BOD ~ 85	BOD_u = 16,000 NOD = 9,600	6.4 (Design) 6.9 (Actual)	-Discontinue discharge to Reynolds Channel -Tie into proposed Bay Park ocean outfall
West Long Beach STP	---	Reynolds Channel, SB	High Rate Trickling Filter	1927, 1960	BOD ~ 85	BOD_u = 7,500 NOD = 4,500	1.5 (Design) 0.65 (Actual)	-Meet BPT requirements
Lawrence STP	---	Banister Creek, I (Trib. to Reynolds Channel)	High Rate Trickling Filter	1933, 1966	BOD ~ 85	BOD_u = 3,750 NOD = 2,250	1.5 (Design) 0.76 (Actual)	-Pump to Bay Park
XI. Jamaica Bay								
Cedarhurst STP	---	Motts Cr., I	High Rate Trickling Filter	1934, 1968	BOD ~ 85	BOD_u = 2,500 NOD = 1,500	1.0	-Pump to Bay Park
Inwood STP (Nassau Co. S.D.#1)	---	Jamaica Bay, SB	High Rate Trickling Filter	1963	BOD ~ 85	BOD_u = 6,250 NOD = 3,760	2.5 (Design) 1.5 (Actual)	-Meet BPT requirements

Table 17 (cont'd)

Waste Sources and Abatement Status
Long Island-Atlantic Ocean (17)

Waste Source	Project Number	Receiving Stream & Classification	Treatment Facilities	Year Built	Design Plant Eff. -%-	Design Raw Loading -#/day-	Design Flow MGD	Status & Abatement Requirement
			*** MAJOR THERMAL DISCHARGES ***			CAPACITY -MW-		
Con-Ed - Arthur Kill	---	Arthur Kill	None	----	---------	911	654 (Actual)	
Con-Ed - Hudson Avenue	---	East River	None	----	---------	700	967 (Actual)	
Con-Ed - East River	---	East River	None	----	---------	513	541 (Actual)	
Con-Ed - Waterside	---	East River	None	----	---------	596	555 (Actual)	-Standards for thermal discharges were approved March, 1975
Con-Ed - Ravenswood	---	East River	None	----	---------	1828	1390 (Actual)	
Con-Ed - 74th Street	---	East River	None	----	---------	209	317 (Actual)	
Con-Ed - Astoria	---	East River	None	----	---------	1550	1363 (Actual)	-Requirements for tri-axial temperature measurements and other permit requirements are being contested by dischargers; adjudicatory hearings are to be held
Con-Ed - Astoria, Unit 6 (Proposed)	---	East River	None	----	---------	800	785 (Proposed)	
LILCO - Glenwood Landing	---	Hempstead Harbor	None	----	---------	381	395 (Actual)	
LILCO - Northport	---	Long Island Sound	None	----	---------	1125	682 (Actual)	
LILCO - Port Jefferson	---	Port Jefferson Harbor	None	----	---------	438	375 (Actual)	
LILCO - Shoreham, Nuclear (proposed)	---	Long Island Sound	None	----	---------	820	863 (Actual)	
LILCO - Far Rockaway	---	Mott Basin	None	----	---------	100	82 (Actual)	
LILCO - E. F. Barrett	---	Barnums Island Channel	None	----	---------	380	294 (Actual)	

12/75
Revised 9/76

TABLE 18

EFFLUENT LIMITS FOR MUNICIPAL DISCHARGES TO EFFLUENT LIMITED WATERS

- SECONDARY TREATMENT -

EFFLUENT CHARACTERISTIC	MAX. DISCHARGE	CONCENTRATION	MIN. REMOVAL
	30 Day Ave.	7 Day Ave.	
5-day-20°C Biochemical Oxygen Demand	30 mg/l	45 mg/l	85%
Suspended Solids	30 mg/l	45 mg/l	85%
pH	Between the limits of 6.0 - 9.0		
Fecal Coliform	The geometric mean for samples collected in a period of 30 consecutive days less than 200/100 ml, and in 7 consecutive days 400/100 ml.		
Floating solids or visible foam	None		

water runoff, direct rainfall, inflow of groundwater, wastewater discharges and benthic resuspension. Some bays are "overfertilized" and algae blooms develop. In some areas, nitrogen removal, phosphorus removal or alternate out-of-bay discharge are strategies to reduce nutrient concentrations sufficiently to allow only the more desirable plant life to establish. In other areas, grazing fauna, wave action, tidal exchange, or temperature are limiting, and nitrogen removal is not justified or even desirable.

Some municipal treatment plants on Long Island recharge the groundwater through recharge basins. Nitrate build-up in groundwaters is a health hazard. Methemoglobinemia can be caused by nitrates in drinking water. It is a rare "blue baby" disease for which the U. S. Public Health Service and New York State have established a drinking water standard maximum of 45 mg/l as Nitrate (10 mg/l as N). Also, nitrates are suspected of being carcinogenic. Most municipal recharge is in Suffolk County where nitrogen removal has been included in the newer treatment facilities. There are now some 21 facilities with nitrogen removal and another 15 are in stages of planning.

Any significant recharge project on Long Island will necessarily require nitrogen removal. Nitrification-denitrification is one of several advanced waste treatment methods for nitrogen removal. Nitrogen compounds (principally urea and ammonia) are biochemically oxidized to nitrates and then biochemically reduced to free nitrogen gas.

Partial nitrogen removal through the removal of ammonia may be accomplished by ammonia stripping or breakpoint chlorination. Ammonia stripping releases free ammonia gas to the air through a raised pH and aeration. The addition of chlorine in breakpoint chlorination results in the release of nitrogen gas and the formation of hydrochloric acid.

Both of these processes are temperature dependent and are very inefficient at low temperatures.

Algae harvesting and aqua culture are biochemical processes which transform dissolved nitrogen compounds into living bio-mass, which is physically removed from the system. With appropriate soil conditions and vegetation, irrigation and groundwater recharge through controlled land application can effectively remove nitrogen.

Electrodialysis, distillation, reverse osmosis and ion exchange are additional methods for nitrogen removal.

Septic tanks with leach fields and cesspools allow recharge without nitrogen removal. The effluents contain about 40-95 mg/l total nitrogen which is 4 to 10 times the drinking water standard. Most of this is oxidized to nitrate nitrogen, very little is lost to the atmosphere, absorbed by the soil, or used by plants. Septic systems in rural areas are of little effect on groundwater, as infiltration of precipitation is locally a dominant source of recharge. In suburban-urban areas, septic systems do have an effect. Problems of nitrate build-ups and surface well closures are attributed to septic systems. Chapter VIII provides more on groundwater.

V.1.b. Industrial Discharges

Industrial discharges may be sanitary wastes, process wastes, cooling water or a combination of these. Sanitary wastes are similar to domestic wastes or municipal wastes and are usually given secondary treatment or sent to a municipal system.

Cooling water from condensers, boiler blowdown or air conditioning or refrigerator condensers are heated wastes. They do not, or should not, contain pollutants and are generally not sent to municipal systems. They are discharged or cooled and then discharged at the site. Cooling water discharges are thermal discharges (q.v.).

Process wastes may be high in biochemical oxygen demand, suspended solids, bacterial counts, toxic chemicals, dyestuffs, floating debris, heavy metals, oil or grease, etc. Process wastes may also be sent to a municipal system, but they frequently must be given special treatment at the industry, so that the waste will be compatible with the municipal treatment. Without this pretreatment, some process wastes would "upset" or overload the municipal treatement plant, others would not be adequately treated by a municipal process. Some process wastes require only pH adjustment, or sedimentation and are simply treated at the site.

Effluent limits for industrial waste discharges, which parallel secondary treatment for municipal waste discharges, have been established by EPA and termed "Best Practical Control Technology Currently Available" (BPCTCA or BPT). Industries are required to provide BPT by July 1977. Effluent limits more stringent than BPT may be required in water quality limited waters.

Effluent limits for industries are included in NPDES/SPDES permits. Where treatment is inadequate, or in-plant modifications will be needed to meet BPT effluent limits, schedules of compliance are also included within the permits. These permits are on file with NYS DEC and US EPA. Copies are available to anyone for inspection. As with municipal discharges, locations and details are provided in Appendix D, Section V.2.b., Table 17 and Figures 10,11 and 12.

V.1.c. Combined Sewers

Combined sewers exist in New York City and Westchester County (Nassau and Suffolk counties have separate sanitary and storm sewer systems exclusively). During periods of heavy rainfall, treatment plants and parts of the combined sewer collection systems become hydraulically overloaded and overflows or bypasses of untreated sewage result. Some overflow points presently discharge even in dry weather. After correction of the relatively few dry weather overflows, there will still be over 300 overflow points in need of abatement.

TABLE 19

COMBINED SEWER OVERFLOWS

AREA	NO.	AREA	NO.
Port Richmond	8	Wards Island	71
Owls Head	19	Bowery Bay	40
Coney Island	3	Hunts Point	24
26th Ward	3	Tallmans Island	16
Jamaica	3	Blind Brook	2
Rockaway	27	Mamaroneck	3
Red Hook	33	New Rochelle	3
Newton Creek	74	TOTAL	331

Combined sewer overflows are commonly high in suspended and settleable solids, fecal coliform and debris. In some cases overflows may be high in BOD, heavy metals, nutrients, toxic chemicals, or oil and grease. The frequency of occurrence, volume discharged and strength of discharge vary from overflow to overflow. Some overflows presently discharge even in dry weather.

The strength of an overflow is largely dependent on the "first flush" phonemonon. The first volumes of runoff tend to clean the streets and scour sediments from sewers and are thus of higher pollutant concentration than subsequent runoff volumes. Similarly, a storm after a dry spell is likely to cause a stronger overflow than a storm following wet weather.

Combined sewer overflows cannot be effectively treated by standard secondary treatment systems--flow rates and pollutant concentrations are too sporadic. Storage and partial treatment at overflow points is possible, but it is generally more economical and effective to modify the sewer system so as to contain flows, especially first flush flows, for subsequent treatment at the main plant.

Effluent limits have not yet been imposed on combined sewer overflows, as the approach is to reduce the occurrence and strengths of overflows before resorting to overflow treatment or storage. General interim requirements are that the treatment plant and sewer system must be operated to minimize discharges from combined sewer overflows and bypasses, and that no new sources of inflow shall be connected to any separate sanitary sewers in the collection system. Additionally, overflows are to be monitored, and the system is to be studied with the objective of developing plans to reduce overflows through the elimination of inflow, the installation, repair, or modification of regulators, the increase in capacities of sewers and pump stations and temporary storage within or outside of the sewers.

V.1.d. Thermal Discharges

Thermal discharges have been considered separately from other industrial discharges. The major thermal discharges within the planning area are the condenser cooling water discharges from the 14 electric power generating stations.

The metabolic rates of fish and other fauna and flora are affected by temperature and temperature changes. Dissolved oxygen saturation and BOD oxidation rates are also temperature dependent.

Thermal discharges have "near field" and "far field" effects. Effluent limits emphasize conditions in the immediate area of the thermal discharge. This is where temperature changes are largest. A temperature prediction model of Long Island Sound was developed by Stone and Webster Engineering Company. This model predicted that existing and proposed power plant discharges would cause a maximum (both in season and depth) temperature difference of 0.25°F or less throughout most of the Sound, and up to 1°F in areas of the western Sound. The seasonal range of temperature is roughly 32°F to 73°F in the western Sound. These results reinforce the premise that "near field" effects have control over "far field" effects.

Cooling towers are an alternate to once-through cooling, but are not necessarily superior. These towers may be 600 feet high, create noise, or cause fog and precipitation.

The National Environmental Policy Act of 1969 (NEPA) requires the development of environmental impact statements prior to the construction of new power plants, or major modification of existing plants. These statements are based on biological and water quality surveys, power needs, aesthetics, etc. Adverse environmental effects must be considered to be minimal or construction will be prohibited. In addition to NEPA requirements, Article VIII of the NYS Public Service Law has required, since 1972, that extensive studies and several public hearings be held prior to construction of new power plants. The Nuclear Regulatory Commission has additional requirements and reviews for atomic power plants.

All power plants which discharge heated wastewater are required to have SPDES/NPDES permits.

V.1.e. Oil and Grease

Federal and State laws prohibit discharges of oil in harmful quantities and require that spills be reported day or night to NYS-DEC (518-457-7362), US EPA (201-548-8730) or USGS (800-424-8802). In accord with the National Oil and Hazardous Substances Contingency Plan, spills in coastal waters should be reported to the Coast Guard and spills in inland waters to EPA. Rapid initiation of emergency contaminant and cleanup is important. Primary responsibility for cleanup of spillage is placed on the discharger and, in addition, the Coast Guard and EPA have access to a revolving contingency fund for cleanup of oil spills into surface waters where responsibility cannot be immediately determined.

Bulk storage rules and regulations for non-transportation related facilities have been administered by US EPA Since 1974. Bulk handlers and users of oil are required by US EPA to have and implement spill prevention, control and countermeasures (SPCC) plans. These plans identify effective methods, procedures and equipment requirements. As a minimum, onshore facilities must be provided with contaminant and/or diversionary structures or equipment such as the placement of dikes around storage areas to contain oil in the case of a tank failure. Floating booms or fences that can be deployed to keep oil from spreading and oil-water separation pumps are required for offshore facilities.

Coast Guard regulations govern oil transfer operations from vessels to onshore terminals and to offshore terminals within the 12-mile limit. Facility operators must submit operation manuals which describe the duties and responsibilities of operations personnel in conducting transfer operations and the procedures and means to be used in meeting operating rules and equipment requirements. Contingency plans for reporting and containing oil discharges, two-way communications between the facility and vessel and lighting are some of the equipment requirements.

Harbor authorities and local governments also have controls over vessels and transfer operations.

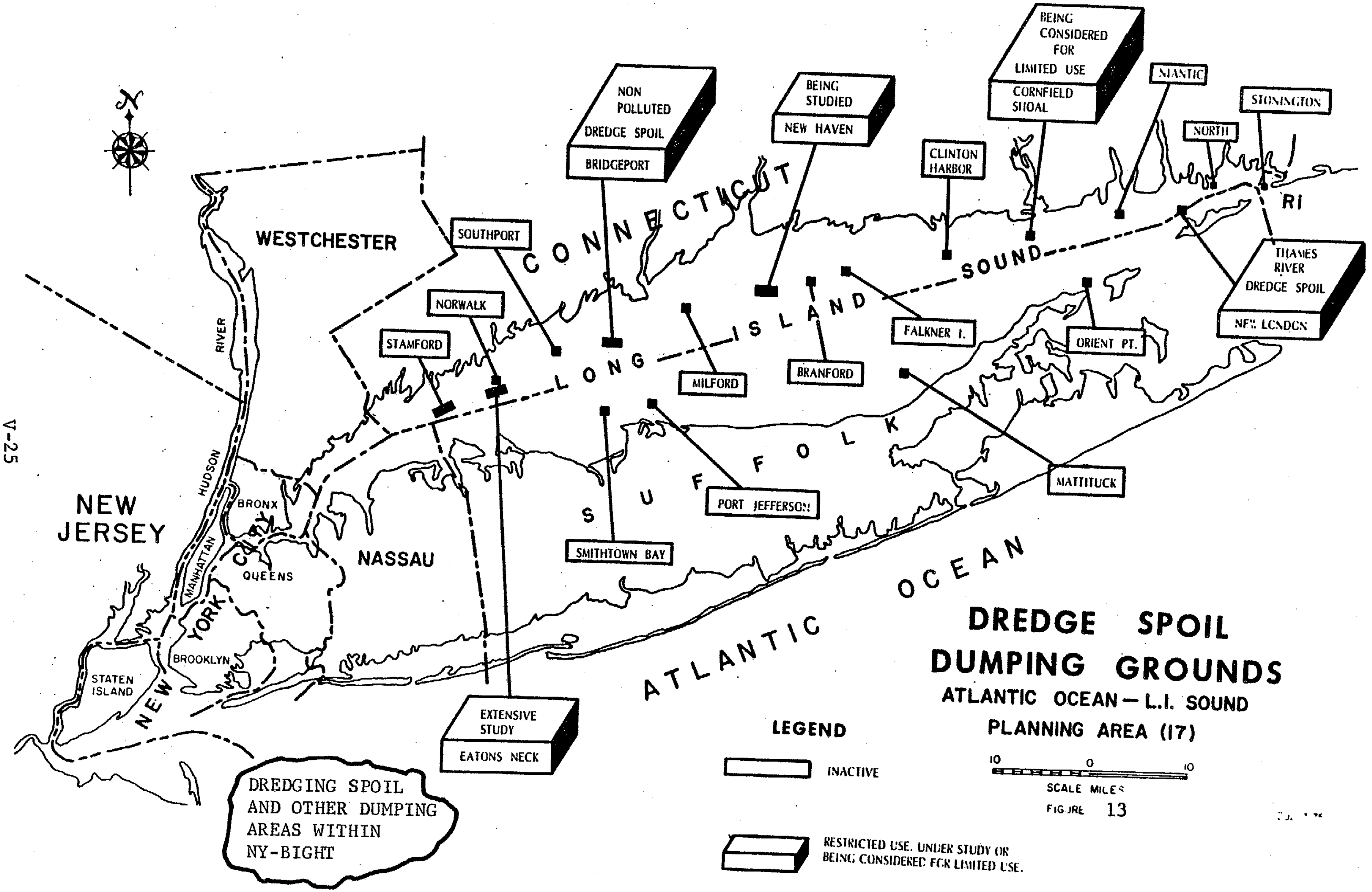
While efforts to prevent and mitigate spillage of oil to surface waters are being actively pursued, response to groundwater spills rests solely with the State without benefit of Federal contingency funds or clearcut policy on removal of contaminants. The complexity of groundwater systems and substantial lack of proven methods to assess and mitigate groundwater damage has limited spill response to essentially defensive measures, such as closing well supplies, evacuation of fume-contaminated buildings, etc. DEC is, however, gradually developing expertise in investigating and controlling underground spills which will be invaluable to protection of the critical groundwater supplies of Long Island.

While many measures have been taken to insure against oil, spills, accidents do happen. Additional precautions and restrictions will continue to be developed.

V.1.f. Dredge Spoil and Sewage Sludge Disposal

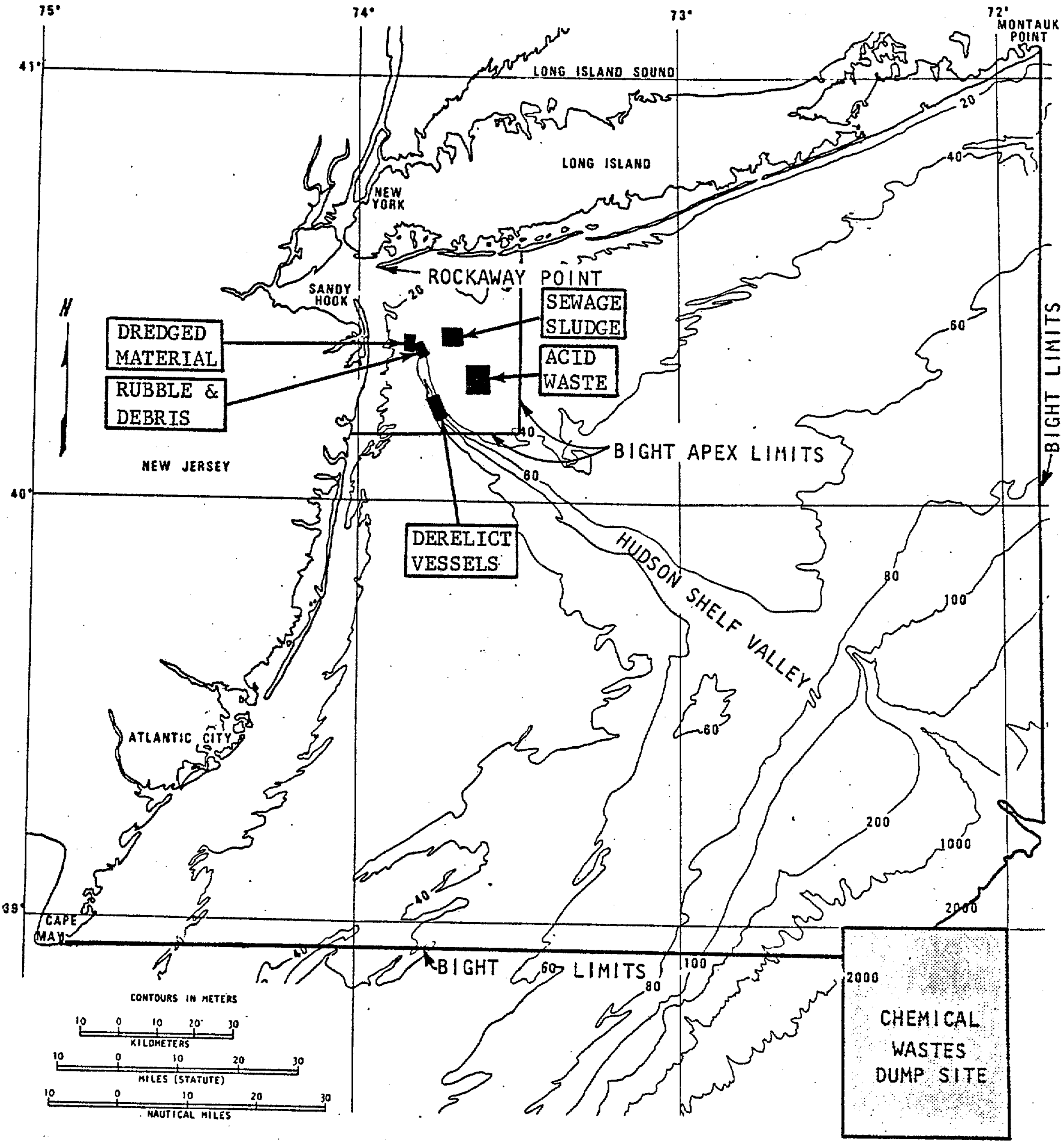
Dredge spoil and sewage sludge disposal can cause pollution problems. Until about four years ago, there were 19 defined dumping grounds in Long Island Sound (New York, Connecticut and Rhode Island waters). As a result of interstate activities, the number of dumping sites has been limited to five in number and severely limited in usage. The Bridgeport site is used exclusively for non-polluted spoil. The New London site is being used for spoils of the Thames River Dredging Project. The Eaton's Neck, New Haven and Cornfield Shoals sites are being studied and considered for limited usage.

Sewage sludge must be disposed of through incineration, ocean dumping or land disposal. Sewage sludge cannot be dumped in area waters. The pollution effects of dredging and dredge spoil dumping are not well known. It appears evident that dredging of sediments containing trapped



DREDGE SPOIL DUMPING GROUNDS
ATLANTIC OCEAN — L.I. SOUND
PLANNING AREA (17)

FIGURE 13



NEW YORK BIGHT
DUMPING GROUNDS
ATLANTIC OCEAN — L.I. SOUND
PLANNING AREA (17)

Figure 14

pollutants will allow pollutants to some degree to reenter the waters at the dredge site and the dump site, and that dumping in excess of a certain rate adversely affects the environment at the dump site, but to what extent is not known.

Eatons Neck is one of four dump sites in the nation studied by the Corps of Engineers in the Aquatic Disposal Research Project. The distribution of sediments and the distribution of currents affecting sediment erosion, transport and deposition within the site have been determined by the Department of Geology and Geophysics at Yale. The baseline water quality and sediment physiochemistry of the site and adjacent reference area have been determined by the Marine Science Research Center at Stony Brook. The baseline spatial and temporal distribution patterns of planktonic, nektonic and benthic communities within the site, the reference area and the area surrounding the dump site were determined by the New York Ocean Science Laboratory in Montauk. The controlled dumping of dredge spoil within the Eatons Neck site was expected to indicate the extent to which dumping could be permitted at this and other sights. Public opposition has caused cancellation of this study.

The Bridgeport site is being used for disposal of non-polluted spoil, such as dredged from marinas; the New London site is being used for spoil from the Thames River and is being considered for use by the Coast Guard and by General Dynamics Electric Boat Division; the Cornfield Shoals site is under consideration for use for non-polluted spoil, and the New Haven site is being studied, but in less detail than the Eatons Neck site.

Under Section 404 of PL 92-500, the Army Corps of Engineers has primary responsibility for regulation of the discharge of dredged or fill materials into defined areas of navigable waters. Permits may be issued only after notice and opportunities for public hearings. U.S. EPA is authorized to define new dumping grounds or to prohibit dumping in defined areas, and is in the process of developing standards for dredged material quality. Significant projects, under the National Environmental Policy Act of 1969, are required to develop Environmental Impact Statements.

New York State, under the Protection of Waters Act, Article 15, NYS Environmental Conservation Law, requires permits for dredging or dumping. These permits require review and legal public notification. States also have a certification responsibility in federal permit processes. Tidal wetlands permits under Article 25 of the Environmental Conservation Law and the State Environmental Quality Review Act are also controls on dredging and disposal.

Dredging is required to maintain navigation depths. Moratoriums and restrictions have delayed projects, but not eliminated the demand. As mentioned, efforts are being made to determine the extent to which dredged material may be disposed of with minimum adverse environmental impact. New York and Connecticut are in the process of developing a Dredged Materials Interim Management Plan to provide regional guidance in enhancing federal regulation and investigatory procedures.

Bordering the planning area, the New York Bight is an area of the Atlantic Ocean off the Coasts of New York and New Jersey. As shown in Figure 14, there are currently five dump sites located within the apex of the Bight, and a sixth sight for chemical wastes is located on the edge of the continental shelf just outside the Bight limits.

New York City, Nassau County, Westchester County, the City of Long Beach, West Long Beach SD, and the City of Glen Cove, along with 6 municipal and 6 biological industrial treatment plants in New Jersey have Interim Permits for ocean dumping of sewage sludge at the site. An average of 4.3 million cubic yards per year was dumped between 1960 and 1975.

EPA's stated goal is to implement environmentally acceptable alternatives to ocean dumping of all sewage sludge in the Bight by 1981, where environmentally, technically, and economically feasible. Schedules have been established for phasing out sludge dumping by three industries by 1977. Middletown, N.J., Glen Cove and West Long Beach are to begin incineration of sewage sludge as are Westchester and Nassau Counties.

The United States Environmental Protection Agency (EPA) authorized through the Inter-State Sanitation Commission (ISC) a study of possible alternatives to ocean disposal, which is the principal method of sludge disposal now employed in the NYC area.

EPA and ISC formulated a three-phase program, referred to as the "Sludge Program" to develop a coordinated system for the New York and North Jersey Metropolitan Area. Phase 1 - a technical examination of applicable alternative methods for sludge processing and disposal. Phase 2 - evaluation of the feasible alternatives identified in Phase 1. Phase 3 - examination of legal and institutional aspects of a regional sludge management program. That work is being separately conducted by the ISC.

In June, 1974, ISC engaged Camp Dresser and McKee to conduct the Phase 1 study to:

1. Define the problem in terms of present and future quantities and properties of sludge produced in the study area. The sources include all municipal plants in the area, including those disposing of sludge by methods other than ocean dumping.

2. Identify how each public wastewater treatment system in the area now disposes of its sludge.

3. Identify feasible alternatives.

4. Compare these alternatives. Factors to be considered include environmental impact, energy conservation, technical feasibility, convenience, and cost for collection, treatment, transportation, and disposal as waste or unable products.

5. Recommend a limited number of alternatives for in-depth investigation in Phase 2.

The Phase 1 Study was completed in June of 1975 and recommended further study of the following alternatives:

1. Incineration or pyrolysis with Solid Wastes.
2. Land application of limited quantities.
3. Drying and composting for Use on Land.
4. Siting and transportation.

The Phase 2 technical report was issued in June, 1976 and recommends a number of regional pyrolysis plants for sludges produced in the treatment plants within the highly urbanized portion of the study area and the land application or composting of sludges produced by treatment plants in outlying areas.

Phase 3 of the Sludge Study covering the legal and institutional constraints is being prepared by ISC and is due out by the end of November, 1976.

In light of present study being conducted by the ISC concerning alternatives to ocean disposal of sewage sludge the 208 studies for Nassau-Suffolk, N.Y.C. and Westchester are not emphasizing sludge disposal studies. The alternatives of continued barging to the N.Y. Bight or some other sight will not be investigated since EPA has issued ocean dumping permits which require that alternative means of sewage sludge disposal be developed and implemented by December, 1981. A special condition in each permit establishes the following interim deadlines which are eligible for 75% Federal funding under PL 92-500:

Step I - Facility Planning

Submit Application for funding	10/1/76
Start Planning and EAS	12/31/76
Complete plan	12-31-77

Step II - Plans and Specifications

Submit Application for funding	2/15/78
Start	7/1/78
Complete plans and specifications	6/30/79

Step III - Construction

Submit Application for funding	7/31/79
Start Construction	12/31/79
Start-up	12/31/81

The 208 studies will concentrate their efforts on the investigation of alternatives to ocean dumping and will rely heavily on the final DEC report and ongoing 201 facility plans for guidance in developing and evaluating these alternatives.

In mid-June, 1976 materials associated with human activities such as garbage, tar ball, grease balls and other floatable materials began washing up on the beaches of Southern Long Island. Several beaches were closed, including those at Robert Moses State Park and Jones Beach, for approximately one week. The decision to close these beaches was based on the potential health hazard implied by the nature of the materials deposited on the shores.

Materials observed along the beaches were "floatables" consisting of flotsam, grease balls, tar/oil balls, burnt wood debris, papers, fabrics, chicken heads, hair, vegetables, cigarette and cigar tips, and other human items of plastic or rubber composition.

This problem on Long Island's bathing beaches gives dramatic publicity to a problem which has existed for decades to varying degrees. However, incidents in June of 1976 were magnified due to several important factors:

1. the "creeping sludge" concept from the New York Bight.
2. New York City raw sewage and combined sewer discharges.
3. formation of a persistent and dominant southerly wind flow pattern.
4. barge dumping in the New York Bight.
5. unusual accidents such as oil spills and Nassau County's Bay Park sludge holding tank explosion on June 2, 1976.

All of these coincided to create the abnormal situation encountered. As a result, concerned federal, state and local officials closed down the various beaches within their respective jurisdictions until water quality testing and debris cleanup operations could be completed.

Analyses of the materials collected from the area by the U.S. Coast Guard revealed that, by far, the major components (over 90% by volume) were wood (60-95%) seaweed (4-17%), and normal beach litter (4-20%). Sewage related plastic debris (7%) were collected only from beaches east of Robert Moses State Park beaches. Sewage and petroleum-related debris were collected from Jones Beach (1%) and beaches east of Robert Moser (3%).

Probable sources of pollutants include:

1. <u>Dredge Spoils</u> - Approximately 11 million cubic yards of dredge materials per year are dumped at a site five miles from the nearest shore line in the New York Bight. It is estimated that dredge spoil dumping contributes 38% of the total input of oil and grease to the Bight.

2. <u>Sewage Sludge</u> - Barge dumping of sewage sludge into the Bight at the 12 mile sight accounts for approximately 3% of the total oil and grease discharged to the Bight.

3. <u>Urban Runoff</u> - Combined and stormwater runoff from New York - New Jersey metropolitan area contributes an estimated 31% of the oil and grease discharged to the Bight.

4. <u>Municipal Wastewater</u> - Untreated and treated sanitary sewage from New York and New Jersey accounts for another 20% of the oil and grease discharged to the New York Bight.

5. Water Quality Accidents - During May, June and July, 1976 various incidents of oil and hazardous material spills occurred including the explosion at Nassau County's Bay Park STP sludge facilities.

6. Municipal Solid Waste Disposal - The possibility of windblown material from open barges and refuse in barge ships entering the water system and the possibility of short dumps.

7. Mobile Marine Sources - Garbage, debris, oil and grease are contributed by pleasure craft, freighters and tankers.

All of the above sources, activities and incidents occurred during meteorological conditions which were unusually persisent for early summer.

Wind directions were from the south to southwest 86% of the time with wind speeds greater than 5 MPH 94% of the time. The persistent and strong wind pattern contributed significantly to the transport of unusually large amounts of floatable debris and other pollutants toward the south shores of Long Island. This meteorological condition, abornmal because of its persistence and strength, coupled with various sources listed previously combined to create the unique intensity of beach wash-up materials.

V.1.g. Vessel Wastes

Vessel wastes include the discharge of oily bilge water, sanitary discharges from heads, and discharges of debris. Section 33-c of the Navigation Law of New York State of 1966 prohibited or restricted discharges of wastes and debris. The Law became effective in 1970. Parts 656 and 657 of the Environmental Conservation Law established effluent standards to marine toilets and standards for marine toilet certification. To date, 49 models of holding tanks and 26 models of recirculating assemblies are the only approved equipment. No flow through devices yet developed are expected to meet the standards. While it is expected that certain incinerating devices could be approved, none have been submitted for certification.

Public Law 91-224 of April 3, 1970 and Public Law 92-500 of 1972, provided for development of no-discharge requirements on a national basis. Since many areas do not have sufficient pumpout facilities, flow through treatment systems such as macerator-chlorinator installations are being permitted on an interim basis. Treatment systems certified during this interim period will continue to be acceptable even after no-discharge requirements become fully effective. This Federal Law supersede the New York State restrictions on all navigable waters, except Lake George.

Figure 11 and Table 14 give the locations of sewage pumpout facilities. As indicated on the Table, copies of this information are available at Environmental Conservation, Health, and State Parks Commission offices. Additional facilities are expected to be constructed at private marinas. Construction of facilities at new municipal treatment plants may make them eligible for 87½ percent construction aid. Prime public sites include Glen Cove, Long Beach, West Long Beach, Northport, Ocean Beach, Sag Harbor, New Rochelle, Port Chester, Hither Hills S. P., Montauk Point S.P., and Orient Beach S.P.

SEWAGE PUMP-OUT FACILITIES

EFFECTIVE JUNE 1, 1975

WATERCRAFT POLLUTION CONTROL PROGRAM
NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

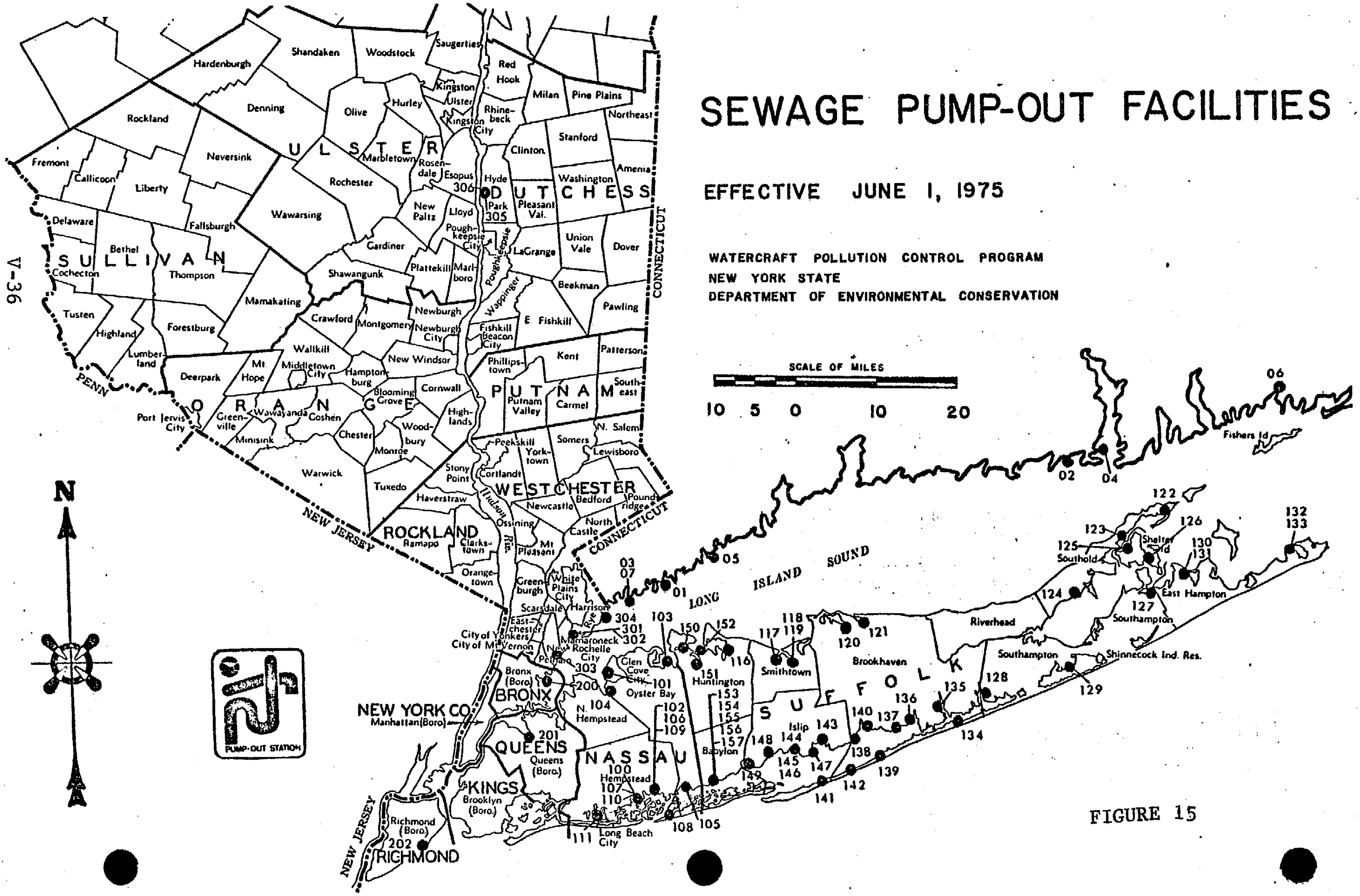


FIGURE 15

TABLE 20

SEWAGE PUMP-OUT FACILITIES

The following locations of pumpout facilities for boat toilets correspond to the map on the opposite side. The map is divided into counties and towns; town names being designated by (T). These facilities are available for use by the general boating public. Additional information, and copies of this map are available at the following offices:

Department of Environmental Conservation
Region 1 - Bldg. 40, SUNY, Stony Brook, NY 11790
Region 2 - 2 World Trade Center, 61st floor, New York, NY 10047
Region 3 - 21 South Putt Corners Road, New Paltz, NY 12561

Bureau of Sewage Programs, Special Projects Section, 50 Wolf Rd., Albany, NY 12233

County Health Departments
Dutchess, Nassau, Rockland, Suffolk, Ulster & Westchester; New York City

State Park Commissions
Taconic, Staatsburg, NY 12580 --- Palisades, Bear Mt., NY 10911
Long Island, Babylon, NY 11702

Dutchess County - Region 3
305. M.L. Norrie State Park, Rt. 9, Hyde Park (T) (914-889-4646)
306. Poughkeepsie Yacht Club, Hyde Park (T)

Nassau County - Region 1
100. Aqua Marine Associates, Inc., 55 Hudson Ave., Freeport, Hempstead (T)
101. Glen Cove Yacht Service, 88 Shore Rd., Glen Cove, Oyster Bay (T)
102. Island Bay Marina, 2920 Island Channel Rd., Seaford, Hempstead (T)
103. Roosevelt Memorial Park, 58 Main St., Oyster Bay, Oyster Bay (T)
104. Tappen Beach Marina, Shore Rd. & Tappen Beach, Glenwood Landing, Oyster Bay (T)
105. Tobay Beach, South Oyster Bay, Oyster Bay (T)
106. Wantagh Park County Marina, Wantagh Pkwy. & Merrick Rd., Hempstead (T)
107. Schatz Bros. Boatyard, Gordon Place, Freeport, Hempstead (T)
108. West End Beach Marina, Jones Beach State Park, Wantagh, Hempstead (T)
109. Treasure Island Marina, 2880 Ocean Ave., Seaford, Hempstead (T)
110. Al Grover's Hi & Dry Marina, 500 S. Main St., Freeport, Hempstead (T)
111. Sacken's Boatyard, 5 R.R. Place, Island Park, Hempstead (T)

New York City - Region 2
200. Minneford Boat Yard, City Island, Bronx (885-2000)
201. World's Fair Marina, Flushing, Queens (898-6300)
202. Great Kills Boat Yard, Staten Island, Richmond (984-6716)

Suffolk County - Region 1
116. Woodbine Marina, Northport Harbor, Huntington (T)
117. Long Beach Marina, Long Beach Road, Smithtown (T)
118. Nissequoque Yacht Club, Jericho Turnpike, Smithtown (T)
119. Little Africa Town Park, Nissequoque, Smithtown (T)
120. Port Jefferson Marina, Port Jefferson Harbor, Brookhaven (T)
121. Cedar Beach Marina, Mt. Sinai Harbor, Brookhaven (T)
122. Orient by the Sea Marina, Mair Road, Southold (T)
123. Mitchel's Sea Resort, Front St., Greenport, Southold (T)
124. North Folk Shipyard, Inc., Main St., New Suffolk, Southold (T)
125. Dering Harbor Marina, Dering Harbor, Shelter Island (T)
126. Coecles Harbor Marina, Coecles Harbor, Shelter Island (T)
127. Baron's Cove Marina, W. Water Rd., Sag Harbor, Southampton (T)
128. Seatuck Cove Marina, South Bay Ave., Eastport, Southampton (T)
129. Shinnecock Canal Marina, Shinnecock Canal, Southampton (T)
130. Maidstone Marina, 3 Mile Harbor Road, East Hampton (T)
131. Three Mile Harbor Boat Yard, 3 Mile Harbor Road, East Hampton (T)
132. Deep Sea Marina, Star Island Lake, Montauk, East Hampton (T)
133. Montauk Marina Basin, W. Lake Drive, Montauk, East Hampton (T)
134. Great Gun Beach Marina, Fire Island, Brookhaven (T)
135. Forge River Boat Basin, Brookhaven (T)
136. Dockside 500, Colonial Drive, E. Patchogue, Brookhaven (T)
137. Sandspit Marina, Brookhaven (T)
138. Blue Point Marina, Brookhaven (T)
139. Davis Park, Fire Island, Brookhaven (T)
140. Corey Creek Marina, Brookhaven (T)
141. Sailor Haven, Fire Island, Islip (T)
142. Watch Hill, Fire Island, Brookhaven (T)
143. Oakdale Yacht Service, Oakdale, Islip (T)
144. Bay Shore Marina Basin, S. Clinton Ave., Bay Shore, Islip (T)
145. Captree State Park, Moses & Ocean Pkwys, Babylon, Islip (T) (516-669-0449)
146. Land's End Marina, Sayville, Islip (T)
147. Robert Moses State Park, Robert Moses Pkwy., Babylon, Islip (T) (516-669-0449)
148. Pete Newins, 121 Maple Avenue, Bay Shore, Islip (T)
149. Timber Point County Park, Islip (T), 2 facilities
150. Knutson's Marina, Mill Dam Road, Huntington (T)
151. Halesite Marina, Huntington Harbor, Huntington (T)
152. Milldam Marina, Mill Dame Road, Huntington (T)
153. Anchorage Marina, E. Shore Rd., Lindenhurst, Babylon (T)
154. Babylon Yacht Marina, Lindenhurst, Babylon (T)
155. Babylon Yacht Marina, 415 Fire Island Ave., Babylon (T)
156. Pebler's Marina, 710 S. Wellwood Ave., Lindenhurst, Babylon (T)
157. Rutherig Marina, Lindenhurst, Babylon (T)

Westchester County - Region 3
301. Nichols Yacht Yards, Inc., Mamaroneck (V), by appointment (OW8-6065)
302. Mamaroneck Boat & Motor, Mamaroneck (V) (598-2700)
303. Municipal Marina, New Rochelle City, by appointment (NE2-2032)
304. Tide Mill Yacht Basin, Rye (T) (WO7-2995)

Connecticut
01. Stamford Landing Yacht Corp., Stamford, Conn.
02. Clinton Harbor, Clinton, Conn.
03. Mianus Marine Corp., Cos Cob, Conn.
04. Black Swan Marina, Old Saybrook, Conn.
05. Rex Marina, S. Norwalk, Conn.
06. Slen Moor Marine, Mystic, Conn.
07. Harbor Marine Center, Cos Cob, Conn.

There is not an overabundance of pumpout facilities in New York State, but there are presently enough facilities in New York and adjoining states to effectively maintain the existing New York State no-discharge laws. Efforts are being made to continue New York State's prohibition of macerator-chlorinators which do not meet approved New York State standards.

Discharges of untreated or inadequately treated sewage from vessels do not commonly cause a widespread pollution problem. Pollution is through discharge of visible clumped material in harbors near shore or near bathing waters or the discharge of inadequately disinfected wastes near shellfish areas, bathing waters or Class "A" waters. There are some 25,000 New York State registered boats in the metropolitan area and numerous transient craft that have heads, many of which are unsatisfactorily equipped.

V.1.h. Duck Farms

Duck farms have been a pollution problem in Suffolk County for many years. The wastes generated in duck production are typically high in suspended solids, oxygen demanding organics, ammonia, nitrogen, phosphorus and coliforms. These wastes have caused sludge deposits in streams and bays, violations of DO and ammonia standards, and have caused or contributed to the closing of shellfishing areas. Nitrogen and phosphorus in combination with poor exchange of bay and ocean waters is considered to have caused undesirable algae blooms.

Separation of duck pens from streams and ponds was accomplished around 1965 by the placement of dikes or barriers. Aerated lagoons, settling lagoons and chlorination were typical treatment systems installed by 1968. In 1972, effluent requirements of 50 mg/1 BOD_5, 50 mg/1 SS, and total coliform of 70 MPN/100 ml were standardized for all duck farm effluents. With proper operation and maintenance, these limits can be obtained.

To adequately treat these duck farm wastes, extraordinary treatment, including nitrogen removal, would be needed. The 1983 effluent limitations for "Best Available Technology Economically Achievable" (BAT) for duck farms are zero discharge of process wastes and containment of process wastes and runoff from a 25-year, 24-hour rainfall. Rather than require installment of advance waste treatment facilities which would be obsolete in 1983, it is more economical to convert to dry farming directly.

V.1.i. Radiological Wastes

Radiological wastes could derive from hospitals, research labs or atomic power plants. The use of radioactive materials is stringently controlled by the Nuclear Regulatory Commission. Discharge limits set by the NRC, EPA and NYS are also stringent. Accidents during transport and storage, or catastrophies such as crashes, explosions or fires involving radioactive materials are rare, but these pose more danger of radiological pollution than the very limited amounts of radioactive materials tolerated in discharges.

V.1.j. Non-Point Sources

Non-point sources of pollution result from activities of man which have adverse effects on groundwater or in-stream water quality and which do not have point discharges to a stream or other body of water. They result from man's use or disturbance of the land, air or adjacent waters.

Non-point pollutants can enter the waters of the planning area as:

-- Sediment from construction sites, mining sites, cropland, suburban and urban areas.

-- Nutrients from cropland, pastures, feed lots, suburban and urban area.

-- Pathogens and toxic chemicals from feed lots, croplands, suburban and urban areas (both overland and underground flows).

-- Pestcides.

-- Oxygen demanding organics from fields, forests, agricultural wastes suburban and urban runoff.

-- Salt, oil, heavy metals, etc. from roadways, airports and parking lots.

-- Oil, nutrients, sediment, etc. from rainfall.

-- Organics, nutrients, heavy metals from resuspension of benthic deposits.

-- Various pollutants from the inflow from adjoining waters.

-- Leachates from landfills.

Non-point source control is in its infancy. It is known that oil is washed from roadways, that shellfish areas near urban and suburban areas must be closed as a result of high bacterial counts after rainfalls and that waters become debris filled from storms, but what measures can be taken that will be cost-effective? "Buffer zones" of vegetation between urban development and waterways; diversion, collection and treatment of stormwater; use of pervious pavements; improvement of air quality; placement of membranes under landfills; and control of runoff at construction sites are some of the many ways to combat non-point source pollution. The 208 studies are to provide assessment and cost effective recommendations on non-point sources.

V.2. Inventories and Descriptions

Appendix D contains a listing of over 500 industries, municipalities, institutions, etc. that have been identified as dischargers to waters of the planning area. Various Tables and Figures provide details on about 80 of these dischargers. The remaining discharges are comparatively small and will not have significant impact on water quality. Descriptions of major municipal and industrial discharges are followed by descriptions of power plants. Point discharges may be located on Figures 10, 11 and 12.

V.2.a. Municipal and Industrial Discharges

I. New York Bays - Arthur Kill - Kill Van Kull

1. Nassau Smelting and Refining Company, Inc. is located at 286 Richmond Valley Road, Tottenville. The company discharges .331 MGD of waste, treated through chemical addition and precipitation, to Mill Creek (Class I), a tributary of the Arthur Kill (Class I). Plans are to discharge sanitary wastes to the Oakwood Beach system when possible and continue present treatment.

2. The Port Richmond Water Pollution Control Plant is located at Richmond Terrace and Bodine Street, Richmond. The primary treatment plant is designed for an average daily flow of 10 MGD, but is overloaded and currently discharges 17.1 MGD. The outfall is located on the Kill Van Kull east of the plant at U. S. Bulkhead (Class II). The plant will serve the northern 1/3 of Staten Island, including the Sun Oil Corporation and the Proctor and Gamble Manufacturing Company. Plant expansion to 60 MGD, upgrading to the step aeration process and placement of interceptors are under construction. Eight wet weather overflows exist.

3. <u>Sucrest Corporation</u>, located at 280 Richards Street, Brooklyn, is a manufacturer of refined liquid and crystalline sugar from 1000 tons/day of raw sugar cane. The industry has several separate discharges, all to Erie Basin (Class I) in the vicinity of the plant. The major source of flow is from 4 outfalls (#007, #009, #020 and #021) which discharge 9.65 MGD of wastwater which is primarily barometric condenser cooling water. Plans are to connect to Red Hook for treatment of process wastes (which are high in BOD and TSS), but to continue Erie Basin discharge of cooling waters.
4. <u>Bush Terminal</u> leases loft buildings to approximately 130 tenants. These tenants' activities include plastics molding, metal plating, food packing and the manufacture of flavors and fragrances. There are two discharges: #001 is 0.02 MGD to Gowanus Bay (Class I) at the south end of the 31st Street Pier and #002 is 0.943 MGD to Gowanus Bay at the Slip.
5. The <u>Owls Head Water Pollution Control Plant</u> is located at Bay Ridge Avenue and Narrows Avenue, Brooklyn. The treatment plant is designed for an average daily flow of 160 MGD and currently discharges with modified aeration, 99 MGD to the Upper New York Bay (Class I). Industries discharging to the system include:

   <u>Metal Fabricating or Finishing Companies</u>

   French, Rhoda, Marino Polishing and Plating, Inc.
   Custom Plating Company
   Barrett Plating and Polishing Company
   S'Electro Plating Company, Inc.
   Roger's Silversmith, Inc.
   Coney Island Electro Plating Works, Inc.
   Lincoln Metal Products Corporation
   Aetnacraft Industries, Inc.
   Demarlo Electro Plating Company
   J.F.D. Electronics Corporation
   English Silver Manufacturing Corporation
   Baltio Finishing Corporation

Greco Manufacturing Corporation
Delizza and Elster, Inc.
Halcolitr Company, Inc.

Plans are to upgrade treatment and place interceptors. Facilities plans for this project have not been completed, but it is likely that plant capacity may be reduced to around 135 MGD.

There are 19 combined sewer overflows.

6. The Oakwood Beach Water Pollution Control Plant is located at Emmet Avenue and Mill Road, Richmond. The treatment plant is designed for an average daily flow of 16 MGD, but is overloaded and currently discharges 19.1 MGD. The outfall is to the Lower New York Bay (Class SB). Expansion to 40 MGD, upgrading from modified aeration to step aeration, placement of interceptors, and a new outfall are under construction. Projects for addition of interceptors have statewide priorities of 12 and 13. Bypass and five raw discharges will be eliminated. Sludge is to be pumped to Port Richmond for treatment.

II. East River - Harlem River

1. The Red Hook Water Pollution Control Plant is to be located at the Brooklyn Navy Yard, with discharge to the East River (Class SD). Presently, there are 33 combined sewer discharges. The 70 MGD step aeration Red Hook plant will treat dry weather flows, but wet weather overflows will persist. This project was ranked 10, but construction has been dealyed due to New York City budget problems. Projects are ranked 37, 38, 39 and 40.

The following industries will be discharging to the Red Hook System:

Metal Finishing Industries (SIC Code #3471)

1. Specified Plating and Anodizing Corporation
2. Trio Polishing Corporation
3. Alabey Polishing and Plating Corporation
4. Electrical Manufacturing Company, Inc.
5. Majestic Metal Spinning and Stamping Company, Inc.

Organic Dyestuffs and Pigment for Food (SIC Code #2815)

1. H. Rohnstamm and Company, Inc.

2. The Amstar Corporation Brooklyn Cane Sugar Refinery is located at 49 South Second Street, Brooklyn. The 9.27 MGD discharge to the East River (Class SD) is located just upstream of the Williamsburg Bridge. The discharge is primarily water from barometric condensers. Sanitary and other wastes are discharged to Newtown Creek sewer system.

3. The Newton Creek Water Pollution Control Plant is located at 329-69 Greenpoint Avenue, Brooklyn. The plant is designed to treat an average flow of 310 MGD. The plant currently discharges around 340 MGD to the East River (Class SD) to an area about 440 feet past the bulkhead line. An alternate outfall for treated effluent is to the head of Whale Creek (Class II). Industries which discharge to the system include:

Major Contributing Industries

Etco Knitgoods Processing Company
Acme Dye works
Royal Yarn Dyeing Corporation
Cosmo Dye Works, Inc.
Pfizer, Inc.
Duveen Soap Corporation
The Borden Chemical Company
Supreme Synthetic Dyers, Inc.
Lori Dye Works
Reichold Chemicals, Inc.
Art Plating Corporation
Sicania Electroplating

Globe Plating Company
Jomar Metal Finishing Corporation
State Pipe and Nipple Company
General Instrument Corporation
The Nelkin Companies
Supreme Platers
Regent Metal Products, Inc.
Fischer Chromium Plating Company, Inc.
Presto Electroplating Corporation
United Metal Goods Manufacturing Company, Inc.
Egyptian Polishing and Plating Works
Alberts Plating Works, Inc.
Chromium Plating and Polishing Company
S.C. Plastic Electrofinishing Company
Grant Chromium Plating Corporation
Imperial Plating Company, Inc.
Kings Automatic Plating Company, Inc.
Structural Processing Corporation
Triboro Platers, Inc.
Service Plating Company
Leviton Manufacturing Company
Berkman Brothers
Republic Steel Corporation
G.M.C. Process
Spectranome Plating Company, Inc.
Standard Plating Corporation
Sun-Ray Electroplating Company
Atlas Metal Products
Hardchrome Electro Processing Corporation
Ruebro Manufacturing Company, Inc.
Industrial Electronic Hardware Corporation
The Ravenware Company, Inc.
Revere Copper and Brass, Inc.
Columbia Meal Frame Company
Ainsley Lamps, Inc.
Nova Manufacturing Company
Tome Silver Smiths, Inc.
Duro Bronze Company
National Graphics Service
Silverman-shaw, Inc.
T&M Electroplating and Polishing Corporation
Colgate Plating Corporation
Nelson Brothers Metal Ornaments, Inc.
King Kaster, Inc.
Bumper and Auto Processing of New York, Inc.
Cohan-Epner
Bay White Metal Casting Company
Spray Art Finishing Corporation
E. B. Stimpson Company, Inc.

The Manhattan Pumping Station was placed on line in May, 1976, thus eliminating many untreated dry weather discharges from Manhattan. The plant, however, is overloaded and there are extensive I/I problems. The plant is limited in size, new modifications and treatment processes such as pure oxygen and biodiscs are being studied. Projects rank 37, 38 39 and 40.

4. Interboro Surface Company produces approximately 1,000 tons of bituminous concrete per day. About 0.020 MGD of overflow from a dust scrubber sedimentation tank is discharged to the south bank of Newtown Creek (Class II) 500 feet west of Whale Creek. The discharge contains excessive suspended solids and iron.

5. The Phelps-Dodge Refining Corporation, Laurel Hill Refinery, is located at 42-02 - 56 Road, Queens. Secondary copper is refined and copper sulfate and basic copper sulfate are produced. There are nine discharges from the plant to Newtown Creek (Class II), three of which are via the 43rd Street municipal sewer. The remaining six are about 1,000 feet southeast of Kosciusko Bridge on the east bank. The discharges averaging 0.565 MGD contain process waste and sanitary wastes. Sanitary wastes are to be sent to the municipal system upon sewer construction. Process wastes are treated by neutralization and clarification. Cooling water is recycled through cooling towers.

6. The Pearl Wick Corporation is located at 27-50 First Street, Long Island City, Queens. The company manufactures tubular products used in the manufacture of hampers and juvenile furniture. Four discharges have been discontinued. The single remaining 0.041 MGD discharge is to the East River (Class SD) at the plant.

7. The Wards Island Water Pollution Control Plant is located on Wards Island, New York. The plant is being expanded from

210 MGD to 250 MGD and upgraded from conventional aeration to step aeration. The plant presently receives 265 MGD, . There are three outfalls to the East River (Class SD). The two main outfalls to the Upper East River are being replaced by a twin outfall between the existing two. The third outfall is a primary effluent bypass.

Industries discharging to the system include:

Textile Products (SIC Code 22)

Gotham Dyeing and Finishing

Metal Fabricating and Finishing (SIC Code 3471)

Art Steel Company
S. W. Farber Division
Bronx Metal Polishing Company, Inc.
Merit Plating Company, Inc.
Okala Plating Company
Ace Plating Works, Inc.
Rapid Plating, Inc.
Grand Silver Company, Inc.
X-L Brass Company, Inc.
B & D Polishing and Plating Corporation

There are 71 combined sewer overflows.

8. The Bowery Bay Water Pollution Control Plant is located at 4301 Berrian Boulevard and Steinway Street, Queens. The plant is designed for treatment of 120 MGD and is being expanded to 150 MGD of step aeration. The plant presently discharges 113 MGD to Rikers Island Channel (Class SD) 1,000 feet past the bulkhead line. An emergency bypass also discharges to this area.

Industries discharging to the system include:

Miscellaneous Manufacturers

West Chemical Products, Inc.
Warner-Lambert Company
Equitable Paper Bay Corporation

Sny-Tex Dyers
Long Island Processing
Master Dye Works
Marblette Corporation

Metal Platers

Eagle Electric Company
Legion Utensus Company, Inc.
Black Ox Metal Finishing Company, Inc.
Anacote Corporation
Defianca Button Machine Company
Acme Associates, Inc.
Gould-Merseru Company, Inc.
Guilp Platters, Inc.
Intaglio Service Corporation
Admiral Plating, Inc.
Brooklyn and Queens Polishing
Salkover Metal Processing of New York, Inc.
Eagle Metals Works, Inc.
Berger Industries, Inc.
Bulova Watch Company
Federal Pacific Electric Company
Abbro Metallics, Inc.
Star Chromium Corporation
Savoy Brass Manufacturing Company, Inc.
Levco Metal Finishers, Inc.
J. Sklar Manufacturing Company, Inc.
Long Island Mechanical Plating Company
Kollsman Instrument Corporation
Jacoby-Bender, Inc.
Peer Plating Company
Matson Manufacturing Company, Inc.
Rotobroil Corporation of America
Monarch Barrel Plating Works, Inc.
Vernon Plating Works, Inc.
Waldes-Kokinoor, Inc.
Continental Connector Corporation
Accurate Casting Company, Inc.
Slide-rite Manufacturing Corporation
U. S. Optical Frame Company
Plastro Metric, Inc.
Sil-Glo Sales Company, Inc.
Pell Jewelry Company
Master Metal Polishing Corporation
Programatic Platers, Inc.
Joseph Carruba, Jr., Inc.
Eclador Int. LTD
George Dietrickn and Sons
Queens Plating Company, Inc.
Nelson Galvanizing, Inc.
Electra Color Corporation
Anoca Plating Service Corporation
Unit Processes Assemblies
Latin Watch Case Company
Wolgro Products Company

Stylebuilt Accessories, Inc.
Western Sealant Metal Finishing Corporation
Buglecraft, Inc.
LS Plate and Wire Corporation

There are 40 combined sewer overflows.

9. The Hunts Point Water Pollution Control Plant is located at Coster Street and Ryawa Avenue, Bronx. The plant is being upgraded and modernized to provide 200 MGD of step aeration. Flows from Orchard Beach, Harts Island and City Island have been diverted to Hunts Point. The plant currently discharges 151 MGD to the East River (Class I).

Industries discharging to the system include:

Chemical Manufacturer (SIC 2819)

Dexter Chemical Corporation

Organic Chemical Manufacturer (SIC 2865)

Hexagon Laboratories

Textile Mill Products (SIC 22)

Keystone Dyeing and Finishing, Inc.

Metal Fabrication and Finishing (SIC 3471)

Local Electronics
Victoria Plating Company
National Wire Products
Stevens Plating Works
Embee Plating Corporation
Express Electroplating Corporation
General Galvanizing and Supply, Inc.
Electro-Chemical Engraving Company
American Bank Note Company
Eastern Rolling Mills, Inc.
Audio Matrix Corporation
Clarmil Anodizing Corporation
Riverdale Plating Corporation
U. S. Components, Inc.
U. S. Metal Treating Corporation
Lamo Fashion Manufacturing

There are 24 combined sewer overflows.

10. The Tallmans Island Water Pollution Control Plant is located at 127th Street and East River, College Point, Queens. The plant is designed for 60 MGD and is being expanded to 80 MGD and upgraded to step aeration. The plant presently discharges 61 MGD to the East River (Class I) at the bank adjacent to the plant. An emergency bypass also discharges to this area. Inadequacies in the collection/interceptor system are suspected of causing several dry weather discharges.

Industries discharging to the system include:

Metal Finishing and Plating (SIC 3471)

Park Nameplate Company
Kent Electroplating Corporation
Serval Slide Fasteners, Inc.
Miller Tube Corporation
EDO Corporation
North American Specialties Corporation
Levin Fixture Corporation
Styl-Rite Optics, Inc.
Paramount Silversmith, Inc.

There are 19 combined sewer overflows.

III. Western Long Island Sound

1. The Port Chester Sewage Treatment Plant is located on Fox Island Road. The plant provides primary treatment of municipal and industrial wastes of average flow of 6.2 MGD. The 6.0 MGD design capacity plant discharges to the Byram River (Class C). Plans are to combine treatment with Blind Brook. Port Chester will provide 6.0 MGD of secondary treatment, sludge disposal service to both plants, and the Blind Brook outfall will be used. The Sound discharge will negate the need for classifying the Byram River as Water Quality Limited. Facility plans for upgrading this plant have recently been completed. The projects are ranked 173 and 174.

2. The Blind Brook Wastewater Treatment Plant is located at 141 Oakland Beach Avenue, Rye. The system provides primary treatment for an average flow of 2.9 MGD with a plant design capacity of 5.0 MGD. Portions of the collection system are combined sewers. The principal outfall is to the Sound, about a mile offshore, at a depth of 46 feet. This is at the center of a 1 square mile section of SB water, surrounded by presently closed SA waters. Wet weather flows in excess of 12 MGD are screened, chlorinated and discharged to an unnamed ditch which flows into Blind Brook. Two other wet weather discharges occur: one is from a manhole overflow to a ditch near the plant and then to Blind Brook (Class I). The other is a pump station emergency bypass to Playland Lake (Class I).

   Plans are to combine treatment with Port Chester to provide secondary treatment with Sound discharge. Investigations are to be made on reducing wet weather problems. Facility plans for upgrading this plant have recently been completed. The projects are ranked 145 and 146.

3. The Mamaroneck Wastewater Treatment Plant is located on West Boston Post Road, Mamaroneck. The system provides primary treatment for an average flow of 18.5 MGD, with a plant design capacity of only 18 MGD. The collection system is partially combined sewers. The principal discharge is to the Sound at the center of a 1 square mile section of SB water that is surrounded by presently closed SA waters. A plant bypass for wet weather flows discharges to SB waters of the East Basin of Mamaroneck Harbor. Another bypass

discharges from Harbor Island to the SB waters of the West Basin of Mamaroneck Harbor. Two pump station bypasses and an overflow discharge to Larchmont Harbor.

A plan of study to upgrade and expand treatment and to determine methods of reducing overflows has recently been completed. There is no facility plan and the project is not yet ranked.

4. The New Rochelle Wastewater Treatment Plant is located on LeFerve Lane, New Rochelle. The system provides treatment of an average flow of 14.5 MGD of municipal and industrial wastewater by a 15 MGD primary plant. The collection system is combined. The principal discharge is to the center of a 1 square mile section of SB water, surrounded by Water Quality Limited SA waters. Overflows and bypasses discharge to Larchmont Harbor (SB), Echo Bay (SB), Lower Hudson (SB) and Pine Brook (D).

Industrial discharges include:

Metal Plating

Accessecraft Products Corporation
Techni-Plate, Inc.

A plan of study and engineering report have been completed for this project. It is ranked 10 Statewide

5. The Belgrave Water Pollution Control Plant is located at 34th Avenue and 255th Street in North Hempstead Town. The plant is a 2.0 MGD trickling filter. The plant presently treats an average daily flow of 1.5 MGD with discharge to Water Quality Limited Little Neck Bay (Class SB).

6. The Village of Great Neck Sewer District Sewage Treatment Plant is located at 265 East Shore Road, Great Neck. The 1.5 MGD trickling filter discharges 1.0 MGD to Water Quality Limited Manhasset Bay (CLass SB) just offshore from the plant.

7. The Great Neck Sewer District, East Shore Road Sewage Treatment Plant is located at 236 East Shore Road, Great Neck. The plant is a 2.7 MGD trickling filter which presently discharges 2.9 MGD to Water Quality Limited Manhasset Bay (Class SB). The district serves Kensington (V), Saddle Rock (V), parts of Thomaston (V), Great Neck Plaza (V), Great Neck Estates (V), Great Neck (V), and some of the unincorporated areas of North Hempstead (T) in Great Neck and Manhasset.

8. The Port Washington Water Pollution Control District Sewage Treatment Plant is located at 70 Harobr Road, Port Washington. The 3.0 MGD trickling filter currently discharges 3.12 MGD to Water Quality Limited Manhasset Bay (Class SB). Industries discharging to the system include:

   Thomson Industries, Inc.
   Primate Imports Corporation
   Dependable Fastener

   An evaluation is to be made of the feasibility of expanding the plant or diverting flow along with flow from Roslyn and neighboring unsewered areas to the Cedar Creek plant.

9. The Roslyn Village Sewage Treatment Plant is located on Skillman Street, Roslyn. The 0.52 MGD trickling filter currently discharges 0.46 MGD to Hempstead Harbor (Class SB) at the extreme upper end of the Harobr at about mean sea

level. Plans were to abandon the plant and connect to the Port Washington system via a newly formed collection district between Roslyn and Port Washington. Formation of the collection district has been delayed and this plan abandoned. Plans are to connect to Sewer District No. 3.

10. The City of Glen Cove Sewage Treatment Plant is located on Morris Avenue in Glen Cove. The plant is a 4.0 MGD trickling filter which presently discharges 5.2 MGD to Water Quality Limited Glen Cove Creek (Class I) adjacent to the plant. Industries discharging to the system include:

    Edmos Products Corporation
    Photo Circuits
    Eastern Heat Treating and Brazing Corporation
    Long Island Metal Plating, Inc.
    Long Island Paint and Chemical Company
    Slater Electric, Inc.
    Colubmia Ribbon and Carbon Manufacturers
    Pall Corporation
    Powers Chemco

    The comprehensive sewerage plan for the north shore of Nassau County calls for treatment of sewage from the future Sea Cliff-Roslyn Harbor and Brookville-Old Westbury sewer collection districts at the City of Glen Cove sewage treatment plant. In 1970, Nassau County announced its intention of forming the Sea Cliff-Roslyn Harbor collection district and requested the City of Glen Cove to provide capacity at the City sewage treatment plant to handle the sewage from the proposed collection district. In 1973, Glen Cove prepared construction plans and specifications for an activated sludge sewage treatment plant adequate to serve both the City of Glen Cove and the Sea-Cliff-Roslyn Harbor sewer collection district. In 1974, however, there was unexpected strong public opposition to the formation of the Sea Cliff-Roslyn Harbor sewer collection district, and the Nassau County Board of Supervisors postponed indefinitely the formation of the district. Thus, it became necessary for the City of Glen Cove to revise its plans and provide for construction of a smaller capacity treatment plant designed to meet the needs of the City only, with provision for expansion of the plant in the future to serve the Sea Cliff-Roslyn Harbor and Brookville-Old Westbury sewer collection districts, if and when they are formed. The present proposal is to construct an 8 MGD tertiary treatment system which will provide nitrification (i.e., oxidation of organic nitrogen and ammonia to nitrates). The projects are ranked 52 and 53.

11. The <u>Oyster Bay Sewer District</u> treatment facility is located on Bay Street, Oyster Bay. The 1.2 MGD trickling filter which discharges to Oyster Bay (Class SA) near the plant is occasionally overloaded. An area around the outfall is closed to shellfishing. There are no immediate plans to expand the plant. Long range plans are to sewer surrounding areas, expand the plant and construct an outfall to Long Island Sound. Operation and maintenance will be examined with the aim of achieving required removals. Inflow/infiltration correction could substantially reduce flow to the plant.

IV. Central and Eastern Long Island Sound

1. The <u>Huntington Sewer District Sewage Treatment Plant</u> is located on Creek Road, Huntington. The 2.0 MGD trickling filter currently discharges 1.83 MGD to Huntington Harbor (Class SA) near Mill Creek. An alternate pump discharge is

used at high tide and is located within 300 feet of the gravity outfall. An area around the outfall is closed to shellfishing. Inflow and infiltration corrections and operation and maintenance improvements are proposed.

2. The Northport Village Municipal Sewage Treatment Plant is located on Beach Street, Northport. The 0.5 MGD activatated sludge plant currently discharges 0.15 MGD to Northport Harbor (Class A) 1,100 feet from shore. An area around the outfall is closed to shellfishing.
3. The Suffolk County Sewer District No. 6 - Kings Park Sewage Treatment Plant is located at St. Johnland Road and Squire Lane, Kings Park. The 2.0 MGD activated sludge plant currently discharges 1.0 MGD to Long Island Sound (Class SA) about 1 mile offshore in water 16-18 feet deep at low water. Water quality in an area around the outfall generally meets SA standards, but is closed to shellfishing as a precaution.
4. The Suffolk County Sewer District No. 1 - Port Jefferson Treatment Plant is located on Beach Street in Port Jefferson. The 2.27 MGD primary plant currently discharges 1.8 MGD to Port Jefferson Harbor. The facility serves a portion of the Village of Port Jefferson and the NYS University at Stony Brook.
5. The Village of Greenport Sewage Treatment Plant is located on Moore's Lane, Greenport. The 0.50 MGD Imhoff Tank (primary treatment) currently discharges 0.323 MGD to Long Island Sound (Class SA). Plans are to upgrade the plant to secondary treatment and the project is ranked 69 Statewide.

V. Peconic River - Peconic Bay Area

1. The Brookhaven Area Office, U. S. Atomic Energy Commission is located in Upton. This basic reaearch laboratory discharges about 1 MGD of treated sewage effluent to the Peconic River. The effluent contains radioisotopes which are reported to be well within MRC effluent standards for off-site radioactive discharges.

2. H. F. Corwin and Son is a commercial duck farm which processes and freezes approximately 4,000 ducks per day with an average population of 150,000. The facilities are located in Aquebogue. Wastes collected from farming and processing are provided with primary settling, biological treatment in an aerated lagoon (4-5 days detention), final settling and chlorination. The 1.35 MGD discharge is to Meeting House Creek (Class SD:, 900 feet north of the Long Island Railroad and 1,500 feet east of Edgar Avenue.

3. The Town of Riverhead, Riverhead Sewer District Facility is located on Riverhead Drive, Riverhead. The 1.2 MGD trickling filter plant currently discharges 0.6 MGD to the Peconic River. There are no plans for immediate plant improvement. A 201 study is underway.

4. The Shelter Island Heights Association Sewage Treatment Plant is located at Summerfield Place and Clinton Avenue, Shelter Island Heights. The .030 MGD primary plant currently discharges 0.04 MGD to Shelter Island Sound about 350 feet offshore from the sewage treatment plant.

5. Bulova Watch Company is located on Washington Street, Sag Harbor. The industry, in production of 2,000 watch cases

per day, discharges a combined 0.517 MGD of non-contact cooling water, process water and sanitary waste to Sag Harbor. Plans are to send sanitary wastes and some process wastes to the Sag Harbor facility. The industry presently has a settling basin.

6. The Village of Sag Harbor presently discharges 0.02 MGD of raw sewage to Sag Harbor Bay. Plans to provide o.1 MGD of advanced treatment potentially including nitrogen removal. Projects are ranked 46 and 47.

VI. Montauk Point-Atlantic Ocean

1. The U. S. Air Force Station at Montauk operates an 0.02 MGD secondary treatment plant which discharges treated domestic waste water through an outfall to the Atlantic Ocean (Class SA).

VII. Moriches Bay-Atlantic Ocean

1. Long Island Duck Farms Cooperative is located on Moriches Boulevard, Eastport. Approximately 13,000 ducks per day are processed with no farming at the site. Wastewater is biologically treated in an aerated lagoon (5 day detention), a settling lagoon and chlorination. The 0.25 MGD discharge is to Seatuck Creek (Class SD), 1,000 feet west of Seatuck Avenue and 1,250 feet south of Montauk Highway.

2. Moriches Duck Farms, Inc. processes 2,000 ducks per day with an average population of 45,000 ducks. The facility is located on Barnes Road, Moriches. Wastes collected from the farm and processing are provided bioligical treatment in an aerated lagoon (5 day detention), sedimintation and chlorination. The 0.16 MGD effluent is discharged to Swift Stream

(Class D) 1,000 feet west of Barnes Road and 3,500 feet north of Montauk Highway.

3. Jurgielewicz Duck Farm processes approximately 5,000 ducks per day with a population of 45,000. The facilities are located on Barnes Road, Moriches. Wastes collected from farm and processing are provided biological treatment in an aerated lagoon (5 day detention), a settling lagoon and chlorination. The 0.37 MGD discharge is to Swift Stream (Class D), 1,000 feet west of Barnes Road and 2,300 feet north of Montauk Highway.

VIII. Great South Bay-Atlantic Ocean

1. The Village of Patchogue Sewage Treatment Facility is located on Hammond Street, Patchogue. The 0.35 MGD primary plant currently discharges variable flows to Patchogue River. Plans are to develop an 0.5 MGD secondary treatment plant, and in the interim, attempt to eliminate excessive infiltration and inflow.

2. The Village of Ocean Beach facility is located on Bay and Surfview Walk, Ocean Beach. The .05 MGD primary plant currently discharges 0.15 MGD to Great South Bay. The plant is being upgraded. A collector has priority 55.

IX. South Oyster Bay-Atlantic Ocean

1. The Suffolk County Southwest Sewer District No. 3 is under construction. More than half of the trunk and lateral sewer lines have been placed and the 30 MGD activited sludge STP, to be located on Great East Neck between Lindenhurst and Babylon, is under construction. An ocean outfall is to be build from the plant across Great South Bay and Cedar Island,

through Gilgo State Park and extending out into the Ocean.

X. East Bay-Middle Bay-Hempstead Bay Atlantic Ocean

1. The Nassau County SD #3, Cedar Creek Water Pollution Control Plant is located on Merric Road at Cedar Creek Park, Wantagh. The 45 MGD activated sludge plant has recently gone into operation. The outfall is to the Atlantic Ocean at 40°33' 57" N 73°26'46"W. The outfall was damaged during construction and discharged to South Oyster Bay. The Bay portion has been repaired. The Ocean portion is also being repaired. Water quality in an area around the outfall generally meets SA standards, but is closed to shellfishing as a precaution. A 5 MGD groundwater recharge demonstration project with 3.5 MGD of advanced waste treatement and recharge basins is proposed for this site. This project is ranked 57 Statewide.
2. The Jones Beach Sewage Disposal Plant is located in the State Park at Wantagh. The plant is a 2.5 MGD trickling filter that discharges 0.225 MGD in summer and 0.05 MGD in winter to Sloop Channel about 270 feet offshore. There are no plans for modifying this plant. Water quality in an area around the outfall generally meets SA standards, but is closed to shellfishing as a precaution.
3. The Village of Freeport Sewage Treatment Plant is located at the foot of Albany Avenue, Freeport. The plant is a 4.0 MGD trickling filter which presently discharges 4.2 MGD to Stadium Park (CLass SC). Plans are to discontinue discharge. Sewage is to be transferred to the Nassau County Sewer District #3 at Wantagh.
4. The Nassau County Bay Park Sewage Treatment Plant is located on 4th Avenue in East Rockaway. The 60 MGD activated sludge

plant is currently discharging 63 MGD to Reynolds Channel (Class SB). Industries dischrging to the system include:

A.M.F., Inc.
G.I.M. Metal Products
Great Neck Saw
Norwich Manufacturing Company, Inc.
Bernard Screening

Plans are to upgrade and expand the existing secondary treatment plant and construct an ocean outfall.

5. The City of Long Beach Water Pollution Control Plant is located at West Pine Street and National Boulevard, Long Beach. The 6.36 MGD trickling filter presently discharges 6.9 MGD to Reynolds Channel (Class SB) about 150 feet off the South Bank of Reynolds Channel and about 1,100 feet northeast of the plant.

   Nassau County is preparing a facility plan for this facility.

6. The West Long Beach Sewer District Sewage Treatment Plant is located at 2150 Bay Boulevard, Atlantic Beach. The 1.5 MGD trickling filter discharges 0.65 MGD to Reynolds Channel (Class SB).

7. The Village of Lawrence Water Pollution Control Facility is at Rock Hall Road and Doughty Boulevard, Lawrence. The plant is a 1.5 MGD trickling filter which currently discharges 0.95 MGD to Bannister Creek about 3,000 feet from its confluence with Reynolds Channel (Class SB).

XI. Jamaica Bay

1. The Village of Cedarhurst Water Pollution Control Plant is located on Peninsula Street, Cedarhurst. The plant is a 1.5 MGD trickling filter which presently discharges about 1.0 MGD to Mott Creek (Class I).

2. The Nassau County Inwood Sewage Treatment Plant is located at 1 Incinerator Road. Inwood. The 2.5 MGD trickling filter currently discharges 1.5 MGD to Jamaica Bay (Class SB). There are no plans to modify the system.

3. The Rockaway Water Pollution Control Plant is located at Beach Channel Drive and 106th Street, Queens. The plant is being expanded to an average daily design flow of 45 MGD and presently discharges 19.3 MGD to Jamaica Bay (Class SB) through two outfalls. An emergency bypass discharges to Jamaica Bay at the plant. There are 27 combined sewer overflows. The adjacent Broad Channel area is unsewered and is a source of untreated discharges to Jamaica Bay by roughly 1400 residents. There is no current abatement plan for this area.

4. The Maimonides Institute Sewage Treatment Plant is located at 34-01 Mott Avenue, Far Rockaway, Queens. The plant is designed to provide biological treatment to an average flow of 0.0060 MGD and currently discharges 0.0017 MGD. The outfall is to Jamaica Bay (Class SB) adjacent to and northeast of the plant. There are a number of raw discharges from the Institute to the Bay. Plans are to intercept these discharges for treatment at the plant.

5. The Jamaica Water Pollution Control Plant is located at 150-20 - 134th Street, Queens. The treatment plant is designed for an average daily flow of 100 MGD and presently discharges 93 MGD to Jamaica Bay (Class SB). Discharge #002 is an emergency bypass to Jamaica Bay at the plant site. Industries discharging to the plant include:

Pharmaceutical Company (SIC 2834)

The Vitarine Company

Metal Plating and Fabricating (SIC 3471)

Jamaica Electro Plating Corporation
Sherman Electro Plating, Inc.
Ideal Toy Corporation
Quad Metal Polishing Company
Angel Harp Manufacutring Corporation
Automotive Plating Corporation
Clermont Electro Plating and Polishing

The plant is under construction to upgrade treatment from the modified aeration process to step aeration. An area adjacent to Hawtree Basin consists of numerous homes built on pilings which are a source of untreated discharges. There is no current abatement plan for this area.

6. The Spring Creek Water Pollution Control Plant is located at Autumn Avenue and Fairfield Avenue, Brooklyn. The Spring Creek facility was designed to treat runoff entering combined sewers in the area. The Basin has a capacity of 1.3 million cubic feet; flow in excess of this volume is chlorinated and discharged to Old Mill Creek. Water retained in the Basin is pumped to the 26th Ward water pollution control plant for treatment and discharge.

7. The 26th Ward Water Pollution Control Plant is located at Flatlands Avenue and Hendrix Street, Brooklyn. The plant is being expanded from 60 MGD to 85 MGD of step aeration. The plant currently discharges 66 MGD. There are two discharges to Hendrix Creek.

Industries discharging to the system include:

Textile Mill Products (SIC Code 220)

Nylor Knit Goods Dyeing Company

Metal Fabricating and Finishing (SIC Code 3471)

1. International Appliance Corporation
2. Sheffield Plating Corporation
3. Pivot Metal Works
4. Process Finishing Company, Inc.
5. Norwood Electroplating Corporation
6. Perma Plating Company
7. Beaver Plating and Polishing
8. Ideal Corporation (808 Georgia Avenue)
9. Ideal Corporation (436 Liberty Avenue)
10. Spear Lighting Fixtures, Inc.
11. Badger Aluminum Extrusion
12. J & L Mirror Novelty Company

There are three combined sewer overflows.

8. Coney Island Water Pollution Control Plant is located at Avenue Z and Knapp Street, Brooklyn. The treatment plant is designed for an average daily flow of 110 MGD and currently discharges 100 MGD through two outfalls (#001 and #002) to Rockaway Inlet (Class SB). Discharge #001 is a 90-inch diameter outfall which discharges 41 feet below the water surface. Discharge #002 is a 72-inch outfall which discharges 41 feet below the water surface. A third outfall for treated, but unchlorinated effluent, discharges to Shell Bank Creek (Class I) in 11 feet of water about 35 feet past the bulkhead line.

Industries discharging to the system include:

1. Electro-Knit Fabrics, Inc.

Metal Finishing (SIC #3471)

1. Abie Anodizing Corporation
2. General Iron Corporation
3. Phoenix Lighting Fixture Company, Inc.

There are three combined sewer overflows.

Plans are to upgrade the plant from modified aeration to step aeration.

V.2.b. Thermal Discharges

1. The Consolidated Edison-Arthur Kill Generating Station is located at 4401 Victory Boulevard, Staten Island. The two stream units have a total generating capacity of 911 MW. The single 654.4 MGD discharge to the Arthur Kill is 4500 feet north of Little Fresh Kills.
2. The Consolidated Edison-Hudson Avenue Generating Station is located on Hudson Avenue at the East River, Brooklyn. There are 7 units with a total nameplate capacity of 700 MW. There are two discharges. Number #001 has a maximum flow of 967.9 MGD of condenser cooling water and boiler blowdown, ion exchanger wastes, boiler chemical cleaning wastes, air preheater wash wastes and equipment and floor drain wastes. Discharge #002 with a maximum flow of 0.114 MGD is boiler blowdown only.
3. The Consolidated Edison East River Generating Station is located at 14th Street and the East River, Manhattan. The three steam units have a total generating capacity of 513 MW. The discharge of 541.2 MGD to the East River between 14th and 15th Streets is primarily condenser cooling water.
4. The Consolidated Edison Waterside Generating Station is located at 38th Street and First Avenue, Manhattan. The 12 units have a total nameplate capacity of 596 MW. There are two discharges to the East River between 38th Street and 39th Street. Discharge #001 of 555.0 MGD is primarily condenser cooling water. Discharge #002 of 0.53 MGD consists of boiler blowdown, floor drain wastes, etc. Sanitary wastes are discharged to a municipal system.
5. The Consolidated Edison Ravenswood Generating and Steam Station is located at 3854 Vernon Boulevard, Long Island City, Queens.

The three units have a total capacity of 1828 MW. There are two existing discharges to the east channel of the East River. Discharge #001 of 1390 MGD which is primarily condenser cooling water is located just upstream of a New York City Park. Discharge #002 which is 0.427 MGD of boiler blowdown is located approximately 1300 feet farther upstream.

6. The Consolidated Edison 74th Street Generating Station is located at 506 East 75th Street, Manhattan. The four stream units have a total generating capacity of 209 MW. The discharge of 316.8 MGD to the East River between 74th and 75th Streets is primarily condenser cooling water.

7. The Consolidated Edison Astoria Generating Station is located at 20th Avenue and 21st Street, Astoria, Queens. Steam units 1-5 have a capacity of 1550 MW. Unit 6 is to be constructed with an additional capacity of 800 MW. There is a single 1362.5 MGD discharge (primarily condenser cooling water) to the East River, approximately 300 feet northeast of the intersection of 20th Avenue and Shore Boulevard. Unit 6 is to discharge 758 MGD approximately 2000 feet northeast of the existing discharge.

8. LILCO-Glenwood Power Station is located on Bay Shore Road, Glenwood Landing. The station has a maximum generating capacity of 381 MW. There are four steam units and 21 discharges to Hempstead Harbor. Discharges 001, 002 and 003 are the dominant discharges averaging 392 MGD of condenser cooling water. The remaining discharges average 3.3 MGD and consist of boiler blowdown, floor drains, etc. Discharge #22 is a .003 MGD snaitary discharge.

9. The Long Island Lighting Company Northport Generating Station is located on Waterside Avenue at Eatons Neck Road, Northport. The

three steam units have a total capacity of 1125 MW. There are 9 discharges to Long Island Sound. Discharge #006 of 681.8 MGD of condenser cooling water is the principal discharge. The other discharges are to the facilities intake canal which transports water from the Sound.

10. The <u>Long Island Lighting Company Port Jefferson Power Station</u> is located on Beach Street, Port Jefferson. The station, with 4 steam units, has a maximum generating capacity of 438 MW. There are 24 discharges to Port Jefferson Harbor with a total average flow of 375 MGD.

11. The <u>LILCO Shoreham Nuclear Power Station</u> is being constructed on North Country Road, Wading River. The net generating capacity is to be 820 MW. The discharge of 862.8 MGD to Long Island Sound is primarily non-contact cooling water.

12. The <u>LILCO-Far Rockaway Power Station</u> is located at 1425 Bay 24th Street, Far Rockaway, Queens. The single steam unit has a maximum generating capacity of 100 MW. There are 20 discharges to Mott Basin. Discharge #001 of 82 MGD of condenser cooling water is the predominant discharge.

13. <u>LILCO-E. F. Barrett Power Station</u> is located on McCarthy Road, Island Park. The station has two steam units (No. 1 - 189 MW and No. 2 - 191 MW). There are five discharges to Barnums Island Channel. Discharge #005 is the dominant flow of 294 MGD of condenser cooling water. Other discharges total an average flow of .028 MGD and consist of boiler blowdown, floor drains, etc.

V.3. Municipal Needs and Priorities

To meet water quality standards, municipalities must upgrade wastewater treatment plants, sewer unsewered areas, renovate old equipment or systems, and expand existing facilities. Interceptors must be placed, pump stations must be constructed and outfalls must be improved. Additionally, techniques of aquaculture, groundwater recharge, land disposal, storm water treatment, virus detection, sludge conditioning, runoff control, and dredge disposal methods need to be tested and developed.

V.3.a. Needs Survey

The Department of Environmental Conservation conducted the "1974 Needs Survey" to estimate the cost of construction through 1990 of publicly owned wastewater treatment facilities needed to meet the long-range objectives of PL 92-500. Approximately 2200 survey questionnaires were completed statewide to estimate these costs.

Cost estimates for the planning area are presented in eight categories in Table 21. A more detailed breakdown of these needs is provided in the Appendix. A "1976 Needs Survey" is presently being developed.

V.3.b. Construction Grants

In progressing toward the long-range water quality goals, municipal treatment systems are to be providing secondary treatment (or higher removals where needed to meet water quality standards) by July 1977 or shortly thereafter. Table 21 presents the abatement status of those dischargers located on Figures 13, 14 and 15.

State and federal construction grants were established to promote pollution abatement and to economically assist local governments in construction costs. Funded projects include pump stations (PS), force mains (FM), interceptors (INT), sewage treatment plants (STP), and outfall sewers (OS). Trunk sewers, lateral sewers, house connections, infiltration/inflow corrections, and non-point source

TABLE 21

SUMMARY OF 1974 SURVEY OF NEEDS
FOR
MUNICIPAL WASTEWATER TREATMENT FACILITIES
($1,000 June 1973)

CATEGORY	NYC	WESTCHESTER	NASSAU	SUFFOLK	TOTAL
I	0	68,853	56,747	89,817	215,417
II	1,143,553	2,057	347,096	531,160	2,023,866
IIIA	232,900	35,130	6,630	721	275,381
IIIB	1,795,998	3,168	24,582	0	1,823,748
IVA	1,330,321	7,084	649,026	1,107,413	3,093,844
IVB	216,578	2,950	115,341	750,253	1,085,122
V	2,834,442	0	0	0	2,834,442
Sub total	7,553,792	119,242	1,199,422	2,479,364	11,351,820
VI	99,129	174,017	739,667	1,869,491	2,882,304
Total	7,652,921	293,259	1,939,089	4,348,855	14,234,124

CATEGORY I - *Secondary Treatment (AWT not required)
CATEGORY II - *Secondary Treatment and/or AWT
CATEGORY IIIA - Infiltration/Inflow Correction including treatment
CATEGORY IIIB - Replacement or Major Rehabilitation of sewers
CATEGORY IVA - *New Collectors, etc.
CATEGORY IVB - *New Interceptors, etc.
CATEGORY V - Correction of combined sewer overflows
CATEGORY VI - Treatment and/or control of storm waters

*Categories currently eligible for federal funds under Public Law 92-500.

control were initially all ineligible for construction grants and had to be constructed at local expense. In early 1976, federal grants were extended to include most community sewer construction and repair.

Several construction grants projects are under construction. Table 22 and Figure 16 present those projects for which facilities plans and designs have been completed and are pending construction grants. These are the next projects scheduled to be constructed. Area projects have been compared with projects statewide and assigned the priority ratings indicated.

Table 23 and Figure 17 present those projects pending grants for design, as well as construction. Patchogue is a primary plant which must be upgraded.

Project descriptions are abbreviated in Tables 22 and 23 as:

STP - Sewage treatment plant
STP ADD - Sewage treatment plant addition
STP UP - Upgrading existing sewage treatment plant from primary to secondary
MOD - Modification
PS - Pump station
FM - Force main
OS - Outfall sewer
INR - Interceptor
Site Prep. - Site preparation
Rehab. - Sewer system rehabilitation
Ret. Fac. - Retention facilities

They are also coded as:

TYPE

1. New waste treatment system (NEW)
2. Modification of existing system with increase in capacity (INC)
3. Modification of existing system with increase in treatment level (INT)
4. Modification of existing system with increase in both capacity and treatment level (ICT)
5. Modification to existing system with no increase in capacity or treatment level -- interceptor, pumping station, etc. (MOD)

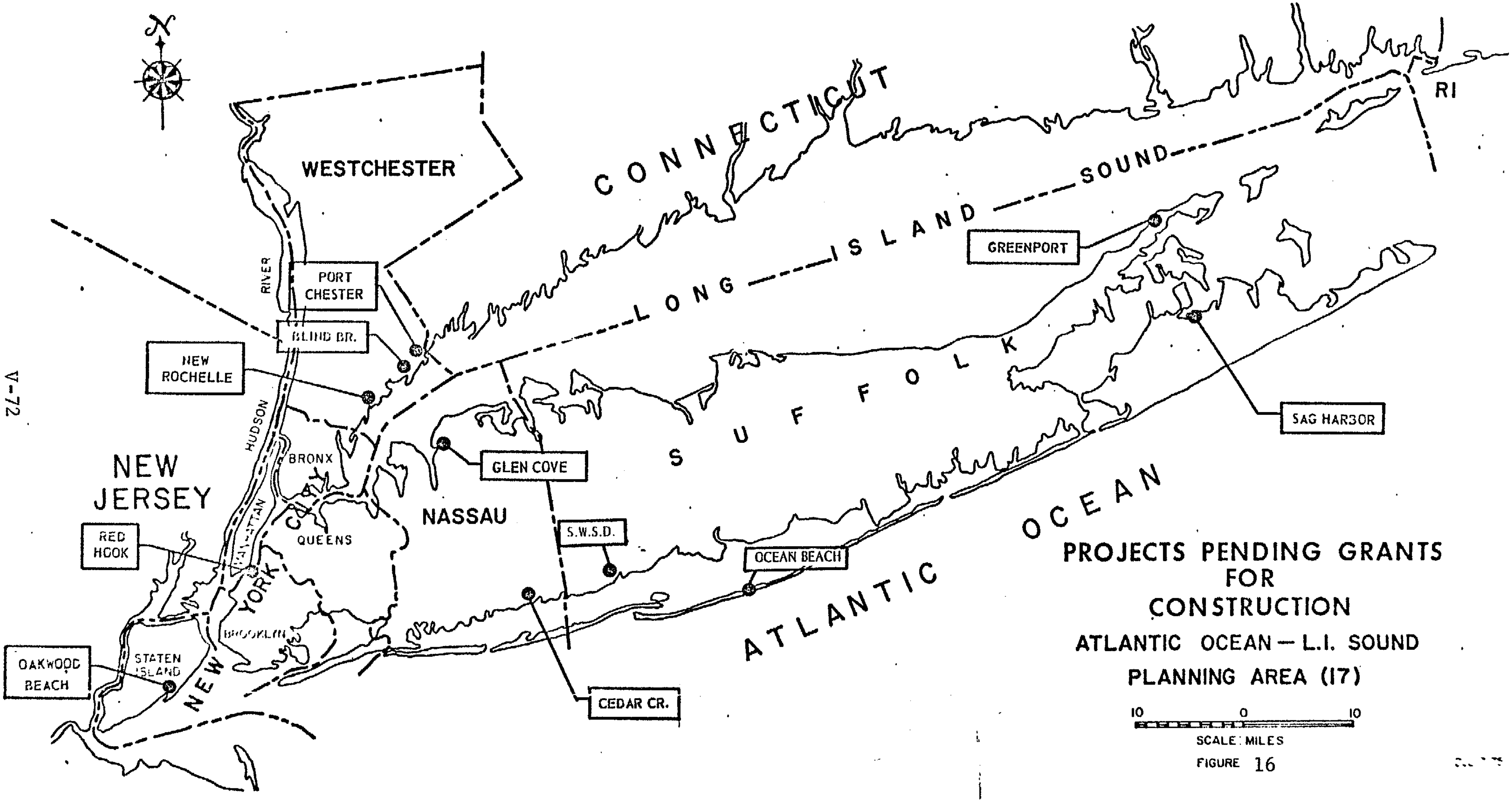
WORKS

1. Outfall sewer
2. Interceptor sewer
3. Collector sewer
4. Forcemain
5. Pumping station
6. Sewer infiltration correction
7. Separation of combined storm/ sanitary sewers
8. Treatment plant
9. Other works

TABLE 22
PROJECTS PENDING CONSTRUCTION GRANTS
(RANKED STATEWIDE)
(5/76)

PRIORITY Ranking	PRIORITY SCORE	APPLICANT LEGAL NAME COUNTY (BASIN)	NPDES NUMBER NY00-	GRANT IDENT. Number C-36-	Step Phase	APPLICATION TARGET DATE (Yr. & Mo.)	PROJECT DESCRIPTION (Facility Need Scope)	Estimated EPA Assistance ($1,000)	Est. Eligible Project Cost ($1,000)
10	81.25	New Rochelle SD Westchester (17)	26697	567	3	12/76	MOD - 3 Col.	498.75	665
12.	81.25	Oakwood Beach NYC (17)	26174	392	II	10/76	MOD-2,4,5 Int,PS,FM	14,700	19,600
13	81.25	Oakwood Beach	26174	392	III	3/77	MOD-2 Int	34,350	45,300
	81.25	Do.	26174	392	IV	7/77	MOD-2,4,5 INT,PS,FM		72,100
	81.25	Do.	26174	392	V	6/77	MOD-2,4,5 INT,PS,FM		18,500
14	81.25	Do.	26174	392	VI	[illegible]/77	MOD-3 Col.	6,600	8,800
37	71.83	Red Hook NYC (17)	27073	394	II	5/76	NEW-8 STP	49,539.25	66,119
38	71.83	Do.	27073	394	III	6/76	NEW-2 Int.	56,611.5	75,482
39	71.88	Do.	27073	394	IV	8/76	NEW-5 PS	8,212.5	10,950
40	71.83	Red Hook NYC (17)	27073	394	V	1/77	NEW-2 Int.	28,755.75	38,341
	71.83	Do.	27073	394	VI		NEW-8 STP		240,215
46	69.57	Sag Harbor (V) Suffolk (17)	28908	433	II	8/76	MOD-1 OS	81	108
47	69.57	Sag Harbor (V) Suffolk (17)	28908	433	III	11/76	MOD-6 Rehab.	162	216
52	68.75	Glen Cove (C) Nassau (17)	26620	665	IA	10/76	MOD-8 STP	4,050	5,400
53	68.75	Do.	26620	665	II	3/77	MOD-3 Col.	607.5	810
55	66/81	Ocean Beach (V) Suffolk (17)		783	3	12/76	MOD-3 Col.	101.25	135
69	60.25	Greenport (V) Suffolk (17)	20079	621	3	12/76	MOD-3 Col.	8.25	11
140	62.50	Suffolk Co. SD#3 Suffolk (17)		1036	I	5/76	MOD-2 INT	12,259.5	16,346
141	62.50	Do.		1036	I	5/76	MOD-3 Col.	21,855	29,140
142	62.50	Do.		1036	II	10/76	MOD-2 INT.	2,897.25	3,863
143	62.50	Do.		1036	II	10/76	MOD-3 Col	24,921	33,228
	62.50	Do.		1036	III	5/77	MOD-2 INT		4,789
144	62.50	Do.		1036	III	5/77	MOD-3 Col	42,559.5	56,746
145	62.50	Blind Brook Westchester (17)	26719	696	I	3/76	INT - 1,8 STP,OS	10,836.75	14,449
146	62.50	Do.	26719	696	II	11/76	MOD-3 Col.	1,666.5	2,222
173	56.25	Port Chester (V) Westchester (17)	26786	695	I	3/76	INT -4,8 STP,FM	16,891.5	22,522
174	56.25	Do.	26786	695	II	12/76	MOD -3 Col.	45	60
178	56.25	Cedar Creek WPCP Nassau (17)	26859	982	I	4/76	NEW - 4,8,9 STP,FM,Recharge	24,807	33,076
178	56.25	Cedar Creek WPCP Nassau (17)	26859	982	II	6/76	MOD-3 Col.	32,640	43,520
179	56.25	Do.	16859	902	III	12/76	MOD-3 Col	24,275.25	32,367
180	56.25	Do.	26859	982	IV	4/77	MOD-3 Col.	26,593.5	35,458
	56.25	Do.	16859	982	V	12/77	MOD-3 Col		128,640
	56.25	Do.	26859	982	VI	12/78	MOD-3 Col.		126,183
	56.25	Do.	26859	982	VII	12/79	MOD-3 Col.		133,708

$ 1,319,019



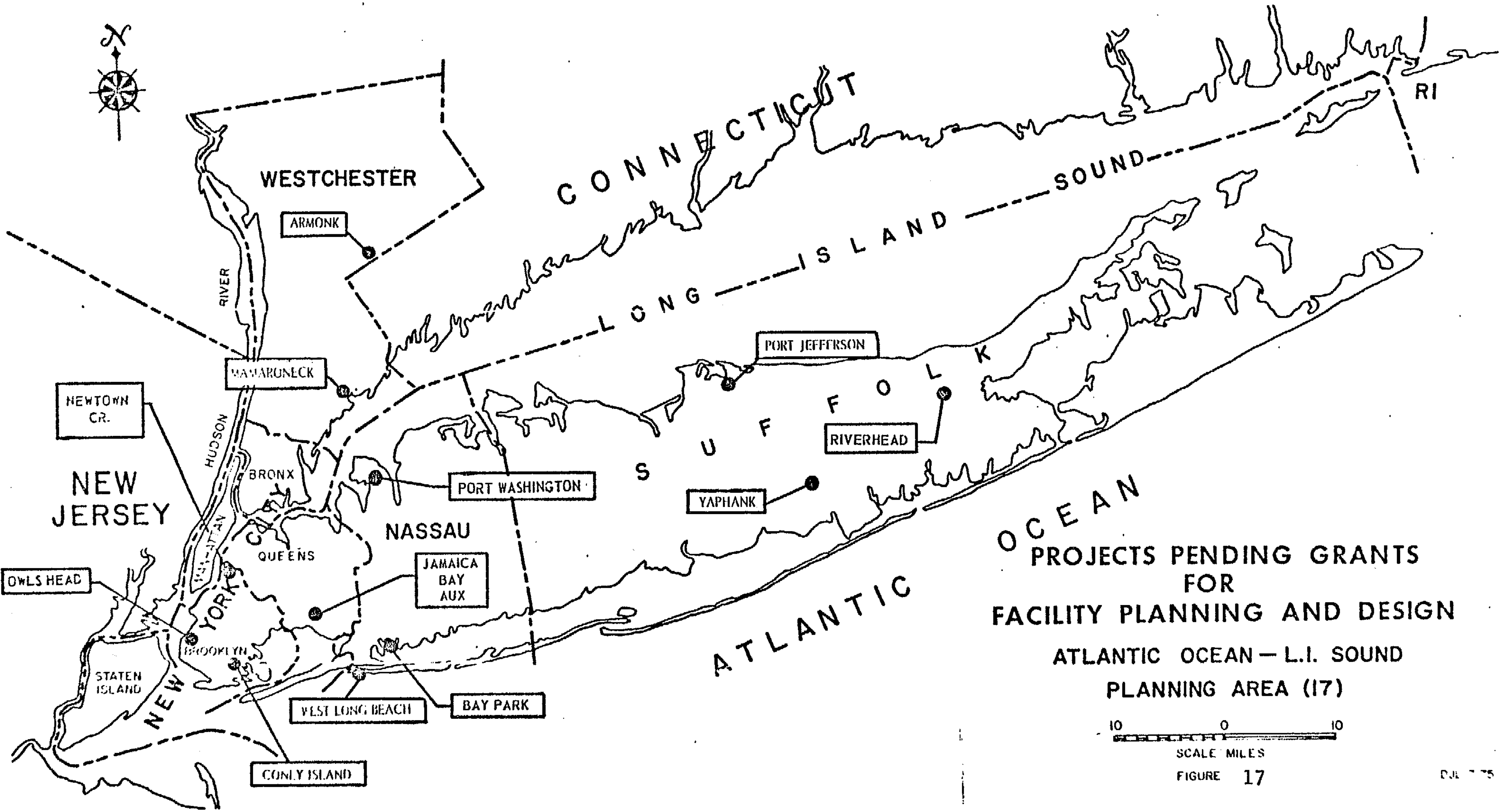
PROJECTS PENDING GRANTS FOR CONSTRUCTION

ATLANTIC OCEAN — L.I. SOUND PLANNING AREA (17)

FIGURE 16

TABLE 23
PROJECTS PENDING GRANTS FOR PLANNING DESIGN AND CONSTRUCTION
(UNRANKED)
(5/76)

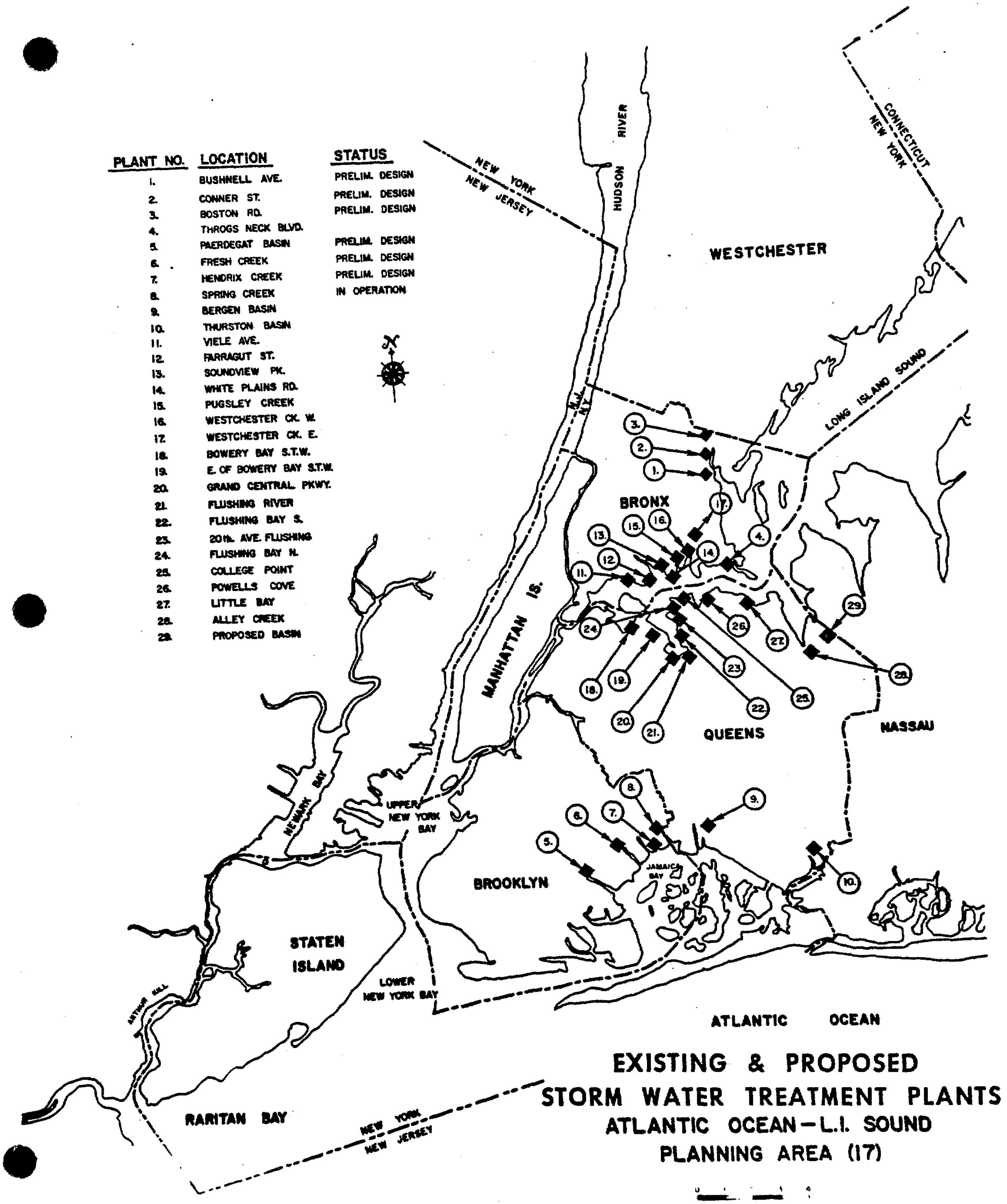
PRIORITY Ranking	PRIORITY SCORE	APPLICANT LEGAL NAME - COUNTY (BASIN)	NPDES NUMBER NY00-	GRANT IDENT. Number C-36-	Step Phase	APPLICATION TARGET DATE (Yr. & Mo.)	PROJECT DESCRIPTION (Facility Need Scope)	Estimated EPA Assistance ($1,000)	Est. Eligible Project Cost ($1,000)
	43.75	Riverhead (T) Suffolk (17)	20061	977	2	5/77	ICT. - 8 STP	1,377	1,836
		Pt. Jefferson SD Suffolk County (17)	21750	709	2	6/77	New - 2,8 Int, STP	1,012.5	1,350
		Mamaroneck SD Westchester (13)	26701	908	2	8/77	MOD-2,3 Int. Col.	2,250	3,000
	56.25	Coney Island NYC (17)	26162	396	1	8/76	Int-8 STP-UP	1,038	1,384 114,394
	56.25	Owls Head NYC (17)	26166	402	1	9/76		1,311.75	1,749
	53.13	Newtown Creek NYC (17)		713	1	5/77		1,620	2,160
	50.00	Nassau Co. SD #2 Nassau (17)	26450	891	1	6/76		810	1,080
	31.25	West Long Beach Nassau (17)	23523	1043	1	10/76		3	4
		Suffolk Co. Yapank SD Suffolk (17)		994	1	11/76		1,083.75	1,445 3,906
		New Castle (T) Armonk SD Westchester (13)		979	1	11/76		30	40
		Suffolk Co. Port Jefferson SD Suffolk (17)	21750	709	1	7/76		238.5	318
		West Long Beach SD Nassau (17)	23523		1	9/77	Sludge Disposal	12	16
		Bowery Bay NYC (17)	26158		1	9/77	Sludge Disposal	150	200
		Hunt's Point NYC (17)	26191		1	9/77	Sludge Disposal	150	200
		Jamaica NYC (17)	26115		1	9/77	Sludge Disposal	150	200
		Rockaway NYC (17)	26221		1	9/77	Sludge Disposal	36	48
		Tallman's Island NYC (17)	26239		1	9/77	Sludge Disposal	120	160
		Port Richmond NYC (17)	26107		1	9/77	Sludge Disposal	54	72
		Ward's Island NYC (17)	26131		1	9/77	Sludge Disposal	240	320
		26th Ward NYC (17)	26212		1	9/77	Sludge Disposal	210	280
									$ 134,160



PROJECTS PENDING GRANTS FOR FACILITY PLANNING AND DESIGN

ATLANTIC OCEAN — L.I. SOUND PLANNING AREA (17)

FIGURE 17



PLANT NO.	LOCATION	STATUS
1.	BUSHNELL AVE.	PRELIM. DESIGN
2.	CONNER ST.	PRELIM. DESIGN
3.	BOSTON RD.	PRELIM. DESIGN
4.	THROGS NECK BLVD.	
5.	PAERDEGAT BASIN	PRELIM. DESIGN
6.	FRESH CREEK	PRELIM. DESIGN
7.	HENDRIX CREEK	PRELIM. DESIGN
8.	SPRING CREEK	IN OPERATION
9.	BERGEN BASIN	
10.	THURSTON BASIN	
11.	VIELE AVE.	
12.	FARRAGUT ST.	
13.	SOUNDVIEW PK.	
14.	WHITE PLAINS RD.	
15.	PUGSLEY CREEK	
16.	WESTCHESTER CK. W.	
17.	WESTCHESTER CK. E.	
18.	BOWERY BAY S.T.W.	
19.	E. OF BOWERY BAY S.T.W.	
20.	GRAND CENTRAL PKWY.	
21.	FLUSHING RIVER	
22.	FLUSHING BAY S.	
23.	20th. AVE. FLUSHING	
24.	FLUSHING BAY N.	
25.	COLLEGE POINT	
26.	POWELLS COVE	
27.	LITTLE BAY	
28.	ALLEY CREEK	
29.	PROPOSED BASIN	

EXISTING & PROPOSED
STORM WATER TREATMENT PLANTS
ATLANTIC OCEAN – L.I. SOUND
PLANNING AREA (17)

FIGURE 18 from NYC Plan

Figure 18 presents a New York City plan for development of storm water treatment plants. These auxiliary plants are one means of controlling combined sewer overflows. Abatement of combined sewer overflows will require auxiliary plant construction and extensive additional construction and controls.

V.4 Abatement Requirements and Compliance Schedules

The State Pollution Discharge Elimination System (SPDES) Permits are part of the National Pollution Discharge Elimination System (NPDES). These permits establish effluent limits and schedules of compliance in meeting these limits. Effluent limits are established for each discharge. For most dischargers, several specific limits have been established. Table 24 presents five-day BOD limitations.

Interim effluent limits and self-monitoring requirements were established for those discharges which did not meet BPT or AWT requirements at permit issuance. When plans, designs, or construction were firmly underway, final effluents were also included in the permits. When plans were not firm, such as when a sewer district expansion was uncertain, final limits could not be established and the permit was set to expire on June 30, 1977. Compliance schedules for these permits include the development of facilities plans, and engineering reports.

By July 1, 1977 or shortly thereafter, all wastewater treatment plants are to be providing at least secondary treatment or BPT. Any exceptions to this will be due to delays in funding, construction, design or planning, and dischargers may be subject to penalties.

Discharges to water quality limited segments may be required to provide removals greater than BPT. Water quality models being developed through 208 studies are expected to evaluate the need.

V.5. Interstate Waters

The planning area shares boundaries with New Jersey, Connecticut and Rhode Island. Discharges from these states to waters which flow into the planning area affect area water quality. Detailed plans for these discharges are to be included in these states' Basin Plans.

The New Jersey discharges to New York Harbor, Raritan Bay, the Kill Van Kull, the Arthur Kill and their tributaries are numerous and many are industrial discharges. The Passaic Valley primary discharge of 250 MGD is the largest discharge in the metropolitan area. The Middlesex County Sewerage Authority, Rahway Valley Sewerage Authority and the Elizabeth Joint Meeting are other municipal discharges. The New Jersey Department of Environmental Protection may be contacted on Basin Plans for these areas.

A restaurant-motel-light industry complex is being developed with septic tanks, followed by an 0.08 MGD AWT process which discharges to Wampus River, a tributary of the Byram River. This flows into Connecticut. Farther northeast, there are several communities with septic tank systems. Increased populations in these areas could create pressure to sewer, provide AWT, and discharge to headwaters of Connecticut water supply watersheds. Title 10, Section 155.108 of the New York State Health Law (see Appendix) places restrictions on activities and discharges within headwaters of the Stamford Water Company water supply reservoirs. There are no active plans to sewer these areas, and unless populations drastically increase, conflict between watershed development for water supply and surface discharge will be avoided.

Connecticut discharges to rivers which flow to the Sound are numerous. The currents of the Sound are considered to minimize the effects of Connecticut discharges on New York waters of the Sound. The Byram River at its mouth appears to be affected not only by the Port Chester discharge, but by Connecticut sources. Dredging and dredge disposal are also a shared concern. The Connecticut Department of Environmental Protection may be contacted on Basin Plans for these areas.

Rhode Island waters on Block Island Sound border New York waters. These waters are of excellent quality.

TABLE 24

NPDES/SPDES PERMIT
EFFLUENT RESTRICTIONS

WASTE SOURCE	5 DAY BOD			EFFECTIVE DATE OF PERMIT TO EXPIRATION DATE
	lbs./day	mg/l	REMOV.	
I. New York Bays - Arthur Kill - Kill Van Kull				
Nassau Smelting & Refining	—	—	—	January 31, 1974 - January 31, 1979
NYC-Port Richmond	15,015	30	85%	May 31, 1975 - May 31, 1980
Sucrest Corp.	768	—	—	June 28, 1975 - June 28, 1979
	(28,285)	—	—	(Until July 1, 1977)
Bush Terminal Assoc.	236	—	—	Dec. 31, 1974-Dec. 31, 1979
	(4,695)	—	—	(Until July 1, 1977)
NYC-Owls Head	80,000	60	55%	May 31, 1975 - June 30, 1977
NYC-Oakwood Beach	10,000	30	85%	May 31, 1975 - May 31, 1980
II. East River - Harlem River				
NYC-Red Hook (Proposed)	—	—	—	May 31, 1975 - June 30, 1977
Amstar Corp.	756	—	—	March 31, 1974 - March 31, 1979
NYC-Newtown Cr.	206,800	80	60%	May 31, 1975 - June 30, 1977
	(111,200)	(43)	(80%)	(Prior to Manhattan PS tie in October of 1975)
Interboro Surface	—	—	—	DRAFT
Phelps-Dodge Ref.	3.3	—	—	July 31, 1974 - July 31, 1979

Table 24 (contd.)

NPDES/SPDES PERMIT EFFLUENT RESTRICTIONS

WASTE SOURCE	5 DAY BOD lbs./day	mg/1	REMOV.	EFFECTIVE DATE OF PERMI TO EXPIRATION DATE
II. East River - Harlem River (contd.)				
Pearl Wick Corp.	———	———	———	September 30, 1974 - September 29, 1979
NYC-Wards Island	66,300	30	85%	May 31, 1975 - May 31, 1980
NYC-Bowery Bay	37,530	30	85%	May 31, 1975 - May 31, 1980
NYC-Hunts Point	50,000	30	85%	May 31, 1975 - May 31, 1980
NYC-Tallmans I.	20,000	30	85%	May 31, 1975 - May 31, 1980
III. Western Long Island Sound				
Port Chester	***	**	**	August 31, 1975 - June 30, 1977
Blind Brook	***	**	**	October 31, 1974 - June 30, 1977
Mamaroneck	***	**	**	December 31, 1974 - June 30, 1977
New Rochelle	***	**	**	December 31, 1974 - June 30, 1977
Belgrave	500	30	85%	June 28, 1974 - June 28, 1979
Great Neck (V)	375	30	85%	December 31, 1974 - December 31, 1979
	(500)	(40)	(80%)	(Until July 1, 1977)

Table 24 (contd.)

NPDES/SPDES PERMIT
EFFLUENT RESTRICTIONS

WASTE SOURCE	5 DAY BOD			EFFECTIVE DATE OF PERMI TO EXPIRATION DATE
	lbs./day	mg/1	REMOV.	
III. Western Long Island Sound (contd.)				
Great Neck SD	—	35	80%	January 31, 1975 - June 30, 1977
Port Washington	—	30	85%	November 30, 1974 - November 30, 1979
	—	(35)	(80%)	(Until July 1, 1977)
Roslyn (V)	130	30	85%	October 31, 1974 - October 30, 1979
	(130)	(30)	(80%)	(Until July 1, 1977)
Glen Cove	—	100	65%	December 31, 1974 - June 30, 1977
Oyster Bay	313	30	85%	March 29, 1974- March 29, 1979
	(—)	(30)	(80%)	(Until July 1, 1977)
IV. Central and Eastern Long Island Sound				
Huntington S.D.	500	30	85%	February 28, 1975 - February 28, 1980
Northport	75	30	85%	February 28, 1974 - February 28, 1979
Kings Park State Hospital	250	30	85%	March 29, 1974 - March 29, 1979
Port Jefferson	***	**	**	March 31, 1975 - June 30, 1977
Greenport	***	**	**	June 30, 1974 - June 30, 1977

Table 24 (contd.)

NPDES/SPDES PERMIT
EFFLUENT RESTRICTIONS

	5 DAY BOD			
WASTE SOURCE	lbs./day	mg/1	REMOV.	EFFECTIVE DATE OF PERMIT TO EXPIRATION DATE
V. Peconic River-Peconic Bay Area				
Brookhaven Nat'l. Laboratory	575	30	85%	January 31, 1975 - January 31, 1980
H. F. Corwin & Sons	326	—	—	January 31, 1975 - January 31, 1980
	(1,400)	—	—	(Until July 1, 1977)
Riverhead	300	30	85%	March 29, 1974 - March 29, 1979
Shelter Island Heights Assoc.	8	30	85%	May 31, 1974 - May 31, 1979
Bulova Watch	—	—	—	February 28, 1975 - February 27, 1980
Sag Harbor (Proposed)	25	30	85%	DRAFT
VI. Montauk Point-Atlantic Ocean				
U.S. Air Force	7.5	30	85%	May 31, 1974 - May 31, 1979
VII. Moriches Bay-Atlantic Ocean				
L.I. Duck Farms Coop.	70	—	—	February 28, 1975 - February 28, 1980
	(200)	—	—	(Until July 1, 1977)
Moriches Duck Farm	113	—	—	February 28, 1975 - February 28, 1980
	(142)	—	—	(Until July 1, 1977)
Jurgielewicz Duck Farm	120	—	—	February 28, 1975 - February 28, 1980
	(230)	—	—	

Table 24 (contd.)

NPDES/SPDES PERMIT
EFFLUENT RESTRICTIONS

	5 DAY BOD			
WASTE SOURCE	lbs./day	mg/1	REMOV.	EFFECTIVE DATE OF PERMIT TO EXPIRATION DATE
VIII. Great South Bay-Atlantic Ocean				
Patchogue	***	**	***	July 31, 1974 - June 30, 1977
Ocean Beach	125	30	85%	June 28, 1974 - June 27, 1979
Yaphank SD (Proposed)	—	—	—	PROPOSED
Suffolk SD #2 (Proposed)	—	—	—	PROPOSED
IX. South Oyster Bay-Atlantic Ocean				
S.W.S.D. (Under Const.)	—	—	—	PROPOSED
West Central S.D. (Proposed)	—	—	—	PROPOSED
X. East Bay-Middle Bay-Hempstead Bay-Atlantic Ocean				
Nassau SD #3 Cedar Creek	11,300	30	85%	January 31, 1975 - January 31, 1980
Jones Beach	625	30	85%	May 31, 1975 - May 31, 1980
Freeport	2,837	85	72%	May 31, 1975 - June 30, 1977 (To be discontinued)
Nassau SD #2 Bay Park	—	30	85%	December 31, 1974 - June 30, 1977
Long Beach	—	35	75%	February 28, 1975 - June 30, 1977
West Long Beach	375	30	85%	January 31, 1975 - January 31, 1980
Lawrence	375	30	85%	February 28, 1974 - February 28, 1979

Table 24 (contd.)

NPDES/SPDES PERMIT EFFLUENT RESTRICTIONS

	5 DAY BOD			
WASTE SOURCE	lbs./day	mg/1	REMOV.	EFFECTIVE DATE OF PERMI TO EXPIRATION DATE
XI. Jamaica Bay				
Cedarhurst	250	30	85%	July 31, 1974 - July 31, 1979
Inwood	625	30	85%	September 30, 1974 - September 30, 1979
NYC-Rockaway	11,260	30	85%	January 31, 1975 - January 31, 1980
Mainenides Inst.	1.5	30	85%	June 30, 1975 - June 30, 1980
NYC-Jamaica	25,020	30	85%	January 31, 1975 - January 31, 1980
NYC-Spring Cr. Auxiliary	***	**	**	January 31, 1975 - June 30, 1977
NYC-26th Ward	21,300	30	85%	January 31, 1975 - January 31, 1980
NYC-Coney Island	41,300	45	55%	January 31, 1975 - June 30, 1977

1. Values given are for 30-day averages for municipal discharges and daily averages for industries.
2. Where limits are given for lbs./day and for mg/1, the more stringent is the controlling.
3. The symbol --- indicates that a value has not been established.
4. The symbol ***, indicates that self-monitoring schedules have been established, in lieu of interim effluent limits.

VI. CLASSIFICATIONS AND STANDARDS OF WATER QUALITY

VI.1. Existing Classifications and Standards

The declared public policy of the State of New York is "to maintain reasonable standards of purity of the waters of the State consistent with public health and public enjoyment thereof, the propagation and protection of fish and wildlife, including birds, mammals and other terrestrial aquatic life, and the industrial development of the State and to that end require the use of all known available and reasonable methods to prevent and control the pollution of the waters of the State of New York".

The classification of New York State's groundwaters, 3.5 million acres of lakes, and more than 70,000 miles of rivers was initiated in 1949, and officially adopted in 1967. Every stream, lake, river, bay and estuary within New York has been classified as to its best usage. Water quality standards have been established to judge the suitability of water for its best usage. Both classifications and standards are periodically reviewed and are modified to reflect changes.

The classifications and standards for marine waters, fresh surface waters and groundwaters are summarized in Tables 25, 26 and 27.

In general, an "A" or "SA" water is for water supply, food processing or shellfish culture, "B" or "SB" waters are for swimming, "C", "SC" or "I" waters are for fishing, and "D", "SD" or "II" waters are suitable for fish survival, but not for fish propagation. The tables are more specific.

Figures 19, 20 and 21 show the assigned classifications of area marine waters. More complete listings, including freshwater classifications, may be found in Article 12, Nassau County Waters, Article 13;

TABLE 25

CLASSIFICATIONS AND STANDARDS FOR FRESH SURFACE WATERS

			DISSOLVED OXYGEN STANDARDS					COLIFORM STANDARD[1]						RADIOACTIVITY STANDARDS		
			Trout Waters			Non Trout Waters										
Classification	Best Usage	Conditions of Best Usage	Trout Waters Spawning	Min. Daily Average	Min.	Min. Daily Average	Min.	Monthly Median Value	20% of Sample	Monthly Geometric Mean	ph	Total Dissolved Solids	Phenolic Compounds	Gross Beta	Radium 226	Strontium 90
Class AA	Water supply for drinking or food processing	Waters will meet Health Department standards	7 mg/1	6 mg/1	5 mg/1	5 mg/1	4 mg/1	Less than 50/100ml coliforms	Less than 240/100ml coliforms	-----	6.5-8.5	As low as practicable. Less than 500 mg/1	Less than 0.001 mg/1 (phenol)	Less than 1000pc/1 (In absence of Sr^{90} and alpha emitters)	Less than 3pc/1	Less than 10pc/1
Class A	Water supply for drinking or food processing	Waters will meet Health Department standards for drinking water with approved treatment	7 mg/1	6 mg/1	5 mg/1	5 mg/1	4 mg/1	Less than 5000/100ml coliforms	Less than 20,000/100ml coliforms	Less than 200/100ml fecal coliforms	6.5-8.5	As low as practicable. Less than 500 mg/1	Less than 0.005 mg/1 (phenol)	Less than 1000pc/1 (In absence of Sr^{90} and alpha emitters)	Less than 3pc/1	Less than 10pc/1
Class B	Contact recreation and other uses except water supply and food processing	------	7 mg/1	6 mg/1	5 mg/1	5 mg/1	4 mg/1	Less than[2] 2,400/100 ml coliforms	Less than[2] 5,000/100 ml coliforms	Less than[2] 200/100ml fecal coliforms	6.5-8.5	None detrimental to aquatic life. Waters currently less than 500mg/1 shall remain below this limit.	-------	-------	-------	-------
Class C	Fishing and other uses except water supply, food processing and contact recreation	-------	7 mg/1	6 mg/1	5 mg/1	5 mg/1	4 mg/1	-------	------	Less than[2] 10,000/100ml coliforms and 2,000/100ml fecal coliforms	6.5-8.5	None detrimental to aquatic life. Waters currently less than 500mg/1 shall remain below this limit.	------	-------	------	------
Class D	Secondary contact recreation. Waters are not suitable for propagation of fish	Waters must be suitable for fish survival	------	------	------	-------	3 mg/1	-----	------	--------	6.0-9.5	---------	-------	-------	------	------
Class N	Enjoyment of water in its natural condition for whatever compatible purposes	No waste discharges whatsoever permitted without approved filtration through 200' of unconsolidated earth	Natural	Natural	Natural	Natural	Natural	Natural	Natural	Natural	Natural	Natural	--------	Natural	Natural	Natural

NOTES:

1) A minimum of five examinations are required.
2) Standard to be met during all periods of disinfection.
3) Additional standards applicable to the above classifications: Turbidity-no increase that will cause a substantial visible contrast to natural conditions; Color-None from man-made sources that will be detrimental to the specified best usage of waters; Suspended, collodial or other solids-None from any waste discharge which will cause deposition to the best usage of water; Oil and floating substances-No residue attributable to a waste discharge nor visible oil film nor globules of grease; Taste and odor-producing substances, toxic wastes and deleterious substances-None that will be injurious to fish life or which will adversely affect the flavor, color or odor, thereof, or impair the waters for the specified best usage of water; Thermal discharges-No discharge which will be injurious to fish life or to make the waters unsafe or unsuitable for any classified use.
4) With reference to certain toxic substances affecting fish life, the establishment of any single numerical standard for waters of New York State would be too restrictive. There are many waters, which because of poor buffering capacity and composition will require special study to determine safe concentrations of toxic substances. However, most of the non-trout waters near industrial areas in this state will have an alkalinity of 80 milligrams per liter or above. Without considering increased or decreased toxicity from possible combinations, the following may be considered as safe stream concentrations for certain substances to comply with the above standard for this type of water. Water of lower alkalinity must be specifically considered since the toxic effect of most pollutants will be greatly increased. Ammonia or Ammonium Compounds-Not greater than 2.0 milligrams per liter expressed as NH_3 at pH of 8.0 or above; Cyanide-Not greater than 0.1 milligrams per liter expressed as CN; Ferro or Ferricyanide-Not greater than 0.4 milligrams per liter expressed as $Fe(CN)_6$; Copper-Not greater than 0.2 milligrams per liter expressed as Cu; Zinc-Not greater than 0.3 milligrams per liter expressed as Zn; Cadmium-Not greater than 0.3 milligrams per liter expressed as Cd.

TABLE 26

CLASSIFICATIONS AND STANDARDS FOR MARINE WATERS

Classi-fication	Best Usage	DISSOLVED OXYGEN STANDARD	COLIFORM STANDARD[1]				TOXIC WASTES AND DELETERIOUS SUBSTANCES[3]	OTHER STANDARDS
		Minimum	MPN Any Time	Monthly[2] Median	20%[2] of Sample	Monthly[2] Geometric mean		
Class SA	Shellfishing for market purposes and primary and secondary contact recreation	5.0 mg/l	Less than 70/100ml coliform	----	-----	-------	None in amounts that will interfere with use for primary contact recreation or ... 4	Garbage, cinders, ashes, oils sludge or other refuse[7]: None in any waters of the marine district as defined by Environmental Conservation Law (§ 17-0105) pH[8]: The normal range shall not be extended by more than one-tenth (0.1) pH unit. Turbidity[8]: No increase except from natural sources that will cause a substantial visible contrast to natural conditions. In cases of naturally turbid waters the contrast will be due to increased turbidity. Color[8]: None from man-made sources that will be detrimental to anticipated best usage of waters. Suspended, collodial or settleable solids[8]: None from sewage, industrial wastes or other wastes which will cause deposition or be deleterious for the specific waters which are assigned to each class. Oil and floating substances[8]: No residue attributable to sewage, industrial wastes or other wastes, nor visible oil film nor globules of grease. Thermal Discharges[8]: No discharge which will be injurious to fishlife or make the waters unsafe or unsuitable for any best usage determined for the specific waters which are assigned to each class.
Class SB	Primary and secondary contact recreation and any other use except for the taking of shellfish for market purposes	5.0 mg/l	----	Less than 2,400/100ml coliform	Less than 5,000/100ml Coliform	Less than 200/100ml fecal coliform	None in amounts that will interfere with use for primary contact recreation or ... 4	
Class SC	Fishing and other uses except primary contact recreation or the taking of shellfish for market purposes	5.0 mg/l	----	----	-----	Less than 10,000/100ml coliform and 2,000/100ml fecal coliform	None in amounts that will interfere with use for secondary contact recreation or ... 4	
Class SD	All waters not primarily for recreational purposes, shellfish culture or the development of fishlife and because of natural or man-made conditions cannot meet the requirements of these uses.	3.0 mg/l	----	----	-----	-------	None alone or in combination with other substances or wastes ... 5	
Class I	Secondary contact recreation and any other usage except primary contact recreation and shellfishing for market purposes	4.0 mg/l	----	----	-----	Less than 10,000/100ml coliform and 2,000/100ml fecal coliform	None in amounts that will interfere with use for secondary contact recreation or ... 4	
Class II	All waters not primarily for recreational purposes, shellfish culture or the development of fishlife	an average of not less than 30 per cent saturation during any week of the year, provided such saturation levels insure adequate oxygen to support fish and shellfish life at all times.	----	-----	-----	--------	None alone or in combination with other substances or wastes ... 6	

Notes:

1) A minimum of five examinations are required.
2) Standard to be met during all periods of disinfection.
3) The Class II standard applies to Toxic wastes, oil, deleterious substances, colored or other wastes, or thermal discharges,
4) ...that will be injurious to edible fish or shellfish or the culture or propagation thereof, or which in any manner shall adversely affect the flavor, color, odor or sanitary condition thereof or impair the waters for any best usage as determined for the specific waters which are assigned to this class.
5) ...in sufficient amounts to prevent survival of fish life or impair the waters for any other best usage as determined for the specific waters which are assigned to the class.
6) ...in sufficient amounts to be injurious to edible fish and shellfish, or the culture or propagation thereof, or which shall in any manner affect the flavor, color, odor, or sanitary condition of such fish or shellfish so as to injuriously affect the sale thereof, or which shall cause any injury to the public and private shellfisheries of this state.
7) Applicable to all marine classifications.
8) Applicable to all marine classifications except Class II, see "TOXIC WASTES AND DELETERIOUS SUBSTANCES" and Note 3.

TABLE 27

CLASSIFICATIONS AND STANDARDS FOR GROUNDWATERS

Classification	Best Usage	Standards	
		Condition I	Condition II
Class GA	Fresh potable water supply	(The water table is an unconsolidated deposit 15 feet or more thick, of which 10 feet or more is saturated.) Biological - none in amounts to render water detrimental to public health, safety and welfare. Color - 50 units. Odor - 33 ml sample diluted to 200 ml with odor free water has no detectable odor. Chemical - ABS 1.5 mg/l — Fe 0.6 As 0.1 — Pb 0.10 Ba 2.0 — Mn 0.6 Cd 0.02 — NO_3 20.0 (N) CCE 0.4 — Phen. 0.002 Cl 500. — Se 0.02 Cr 0.10 — Ag 0.1 Cu 0.4 — SO_4 500. CN 0.4 — TDS 1000 F 3.0 — Zn 0.6 pH 6.5 - 8.5 Fe + Mn 0.6 mg/l	(The water table is in consolidated rock, or the water table is in an unconsolidated deposit of which less than 10 feet is saturated.) Bacterial - 50 coliform/100 ml, arithmetic average of 4 or more samples in 30 day period - 50 coliform/100 ml in not more than 20% of samples in 30 days. Biological - none in amounts to render water unsafe or otherwise objectionable. Color - 15 units Odor - 70 ml diluted to 200 ml with odor free water has no detectable odor. Chemical ABS 1.0 mg/l — Fe 0.3 mg/l As 0.05 — Pb 0.05 Ba 1.0 — Mn 0.3 Cd 0.01 — NO_3 10.0 (N) CCE 0.2 — Phen. 0.001 Cl 250 — Se 0.01 Cr 0.05 — Ag 0.05 Cu 0.2 — SO_4 250 CN 0.2 — TDS 500 F 1.5 — Zn 0.3 pH 6.8 - 8.5 Fe + Mn 0.3 mg/l
Class GSA	Saline water for potable mineral waters, for conversion to fresh potable water, or as raw material for manufacture of NaCl.	None in such manner or amount as to impair the waters best usage.	
Class GSB	Saline water of 1,000 mg/l Cl-, 2,000 mg/l total dissolved solids, or greater, for disposal of wastes.	None which are detrimental to public health, safety or welfare. State permit required.	

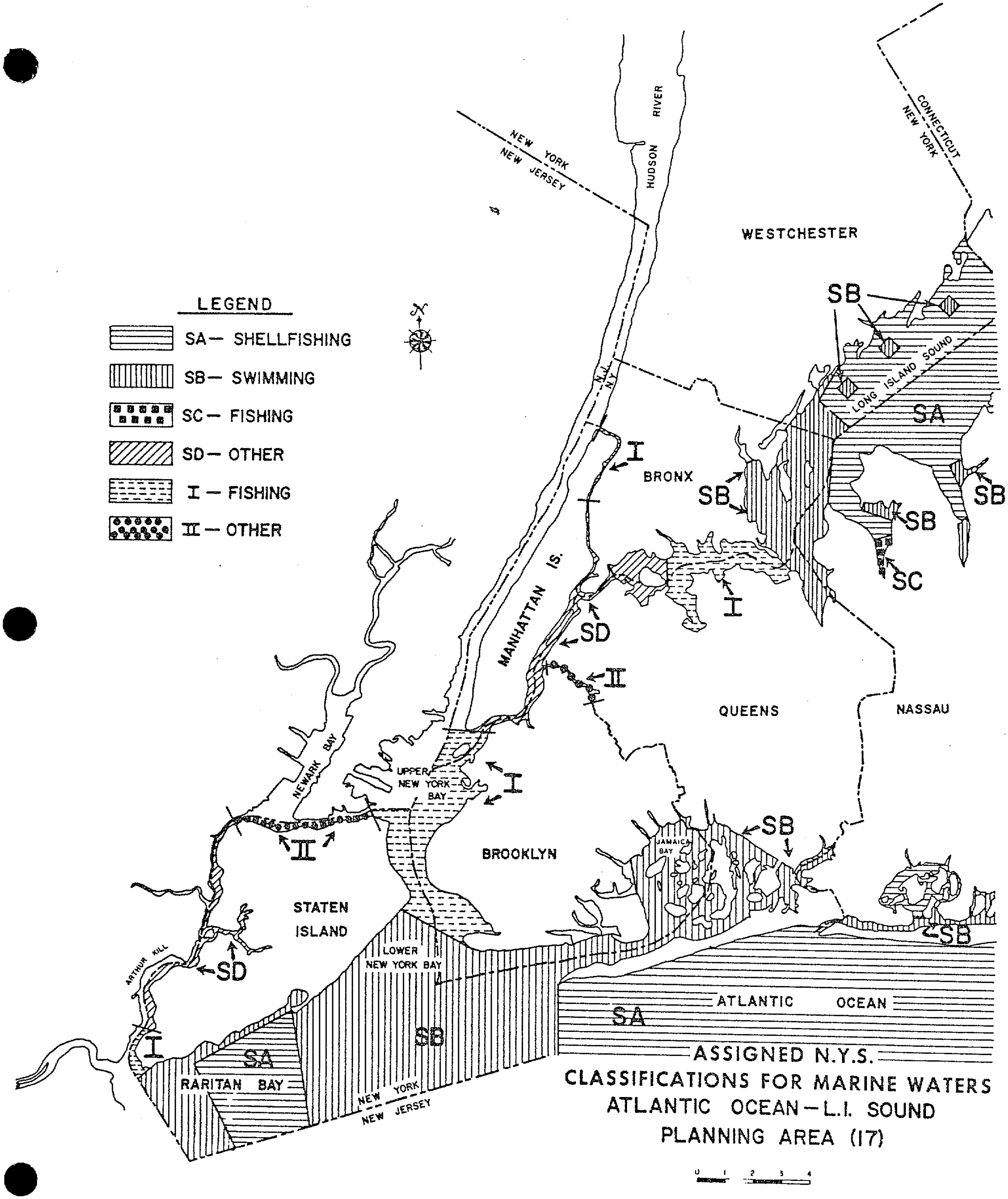
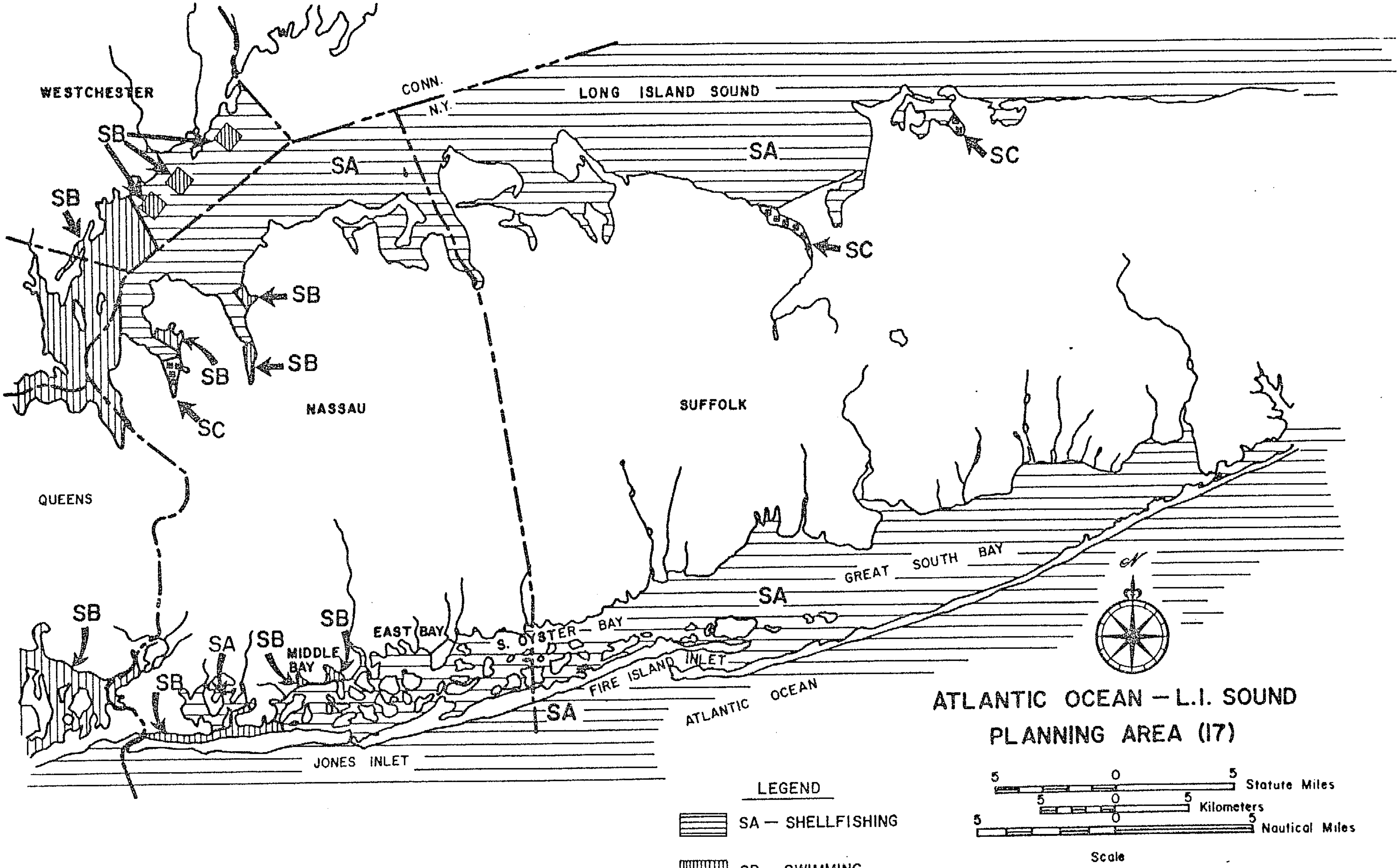
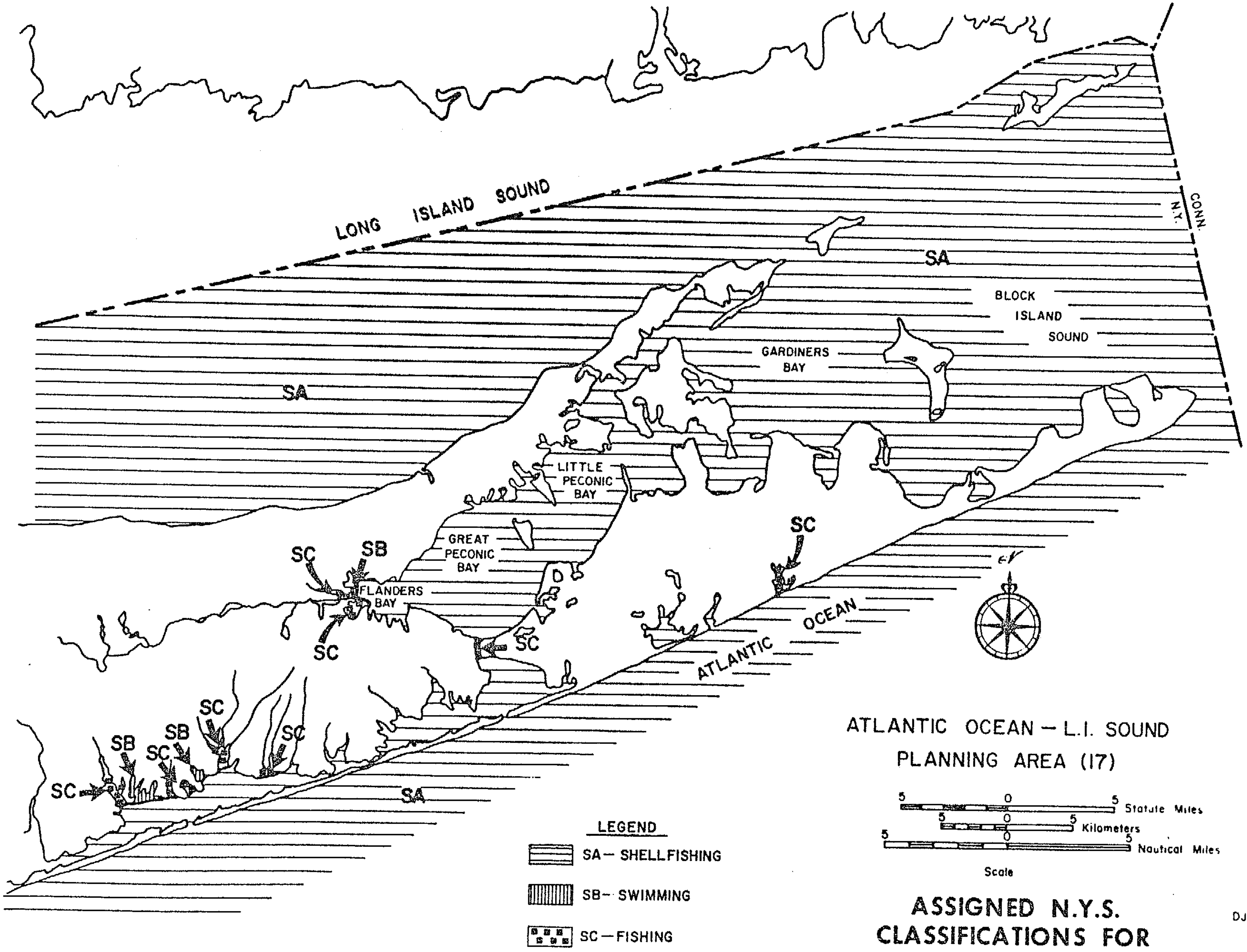

LEGEND
SA— SHELLFISHING
SB— SWIMMING
SC— FISHING
SD— OTHER
I — FISHING
II — OTHER
N
NEW YORK
NEW JERSEY
HUDSON RIVER
CONNECTICUT
NEW YORK
WESTCHESTER
N.J.
N.Y.
LONG ISLAND SOUND
SA
SB
SB
SB
SB
SB
SC
I
BRONX
I
SD
MANHATTAN IS.
II
QUEENS
NASSAU
NEWARK BAY
UPPER NEW YORK BAY
I
II
BROOKLYN
JAMAICA BAY
SB
STATEN ISLAND
ARTHUR KILL
SD
SD
LOWER NEW YORK BAY
SB
I
RARITAN BAY
SA
SB
ATLANTIC OCEAN
SA
NEW YORK
NEW JERSEY
ASSIGNED N.Y.S. CLASSIFICATIONS FOR MARINE WATERS ATLANTIC OCEAN—L.I. SOUND PLANNING AREA (17)
0 1 2 3 4

FIGURE 19



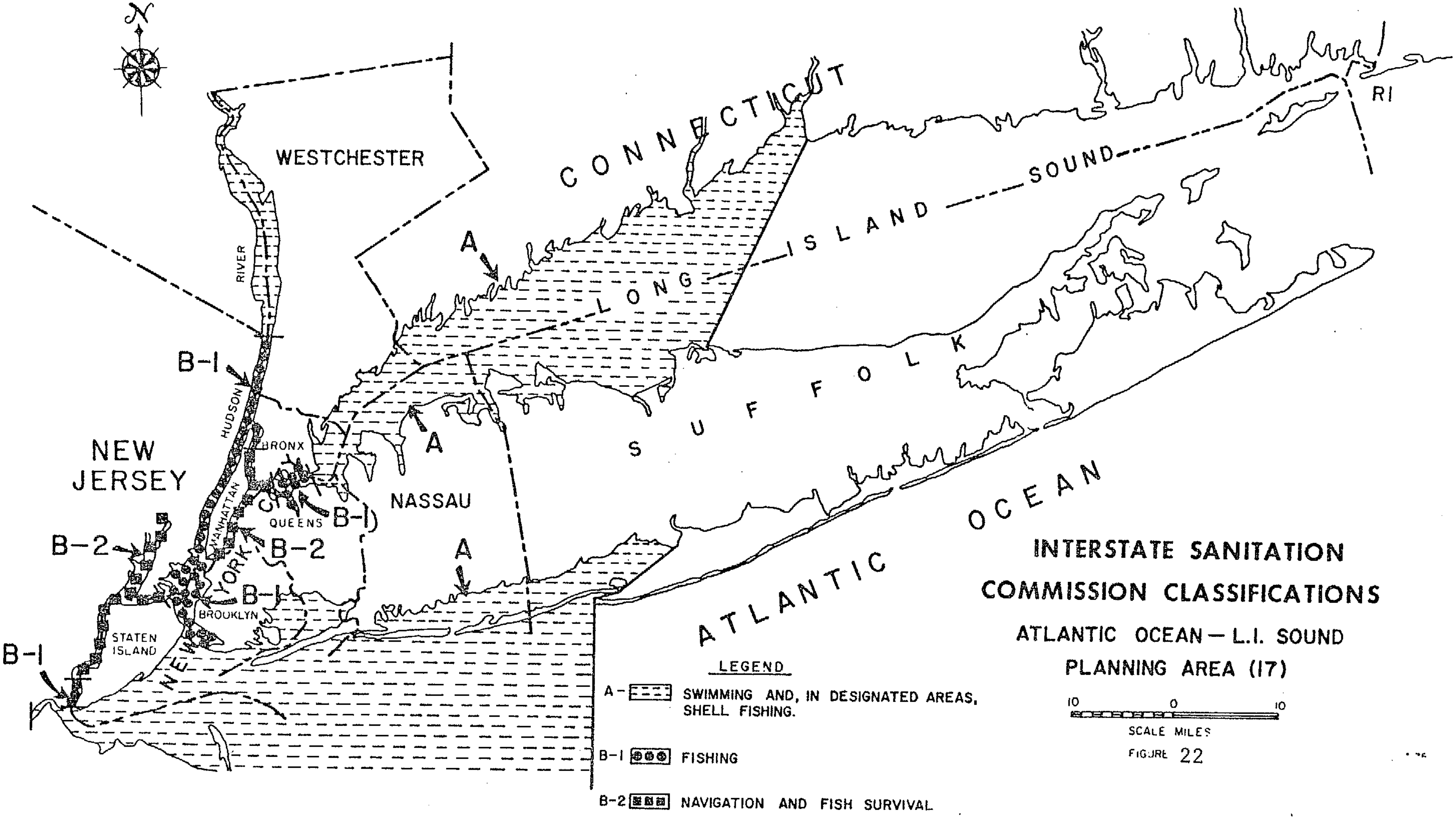
ASSIGNED N.Y.S.
CLASSIFICATIONS FOR
MARINE WATERS
FIGURE 20

DJL 7/75



ASSIGNED N.Y.S. CLASSIFICATIONS FOR MARINE WATERS

FIGURE 21



INTERSTATE SANITATION COMMISSION CLASSIFICATIONS

ATLANTIC OCEAN — L.I. SOUND PLANNING AREA (17)

FIGURE 22

New York City Waters Series; Article 16, Suffolk County Waters Series; and Article 18, Upper East River and Long Island Sound within Queens, Bronx and Westchester counties, of Title 6 of the New York State Official Compilation of Codes, Rules and Regulations. Groundwater classifications are site specific, and depend on salinity and aquifer dimensions. All fresh groundwaters are classified as a source of potable water supply.

The Interstate Sanitation District covers parts of three states. The ISC has established a system of uniform classifications and standards, which are different from, but compatible with the individual State systems. These classifications are shown in Figure 22.

VI.2. Revisions to Standards and Classifications

Water body classifications are periodically reviewed and, if warranted, classifications are changed. The Arthur Kill (from mile point 2.0 to mile point 12.9), the Harlem River (south of the George Washington Bridge), and the East River (from mile point 0.3 to mile point 12.3) have been reclassified from Class II waters to Class SD waters. Area reclassification hearings for fresh waters were held in 1974 and are pending review and adoption. Marine water reclassification hearings are to be held in 1977.

Standards are also periodically reviewed by the Department of Environmental Conservation and, if warranted, modified. The groundwater standards are presently being considered for modification.

Some issues which may be considered in future reclassification hearings include:

1. Reclassification of shellfish waters to be "SB" waters in areas such as those affected by non-point sources, with no prospects of being made safe for the taking of shellfish.

2. Some lakes on Long Island are essentially exposed groundwater, and standards for groundwater, as well as surface water, could be applied.
3. Water could be reclassified to "N". This no-discharge classification has been recently developed.
4. Streams can be considered for trout stream classificiation or upgrading.

Standards are periodically reviewed by the Department of Environmental Conservation and, if warranted, modified. The groundwater standards are presently being considered for modification.

VI.3. Special Designations

VI.3.a. Anti-Degradation Statement

On May 7, 1970, the New York State Water Resources Commission adopted the following anti-degradation statement:

> "It is recognized that certain waters of New York State possess an existing quality which is better than the classification standards assigned thereto. The quality of these waters will be maintained unless and until it has been demonstrated to the satisfaction of the Commissioner of Environmental Conservation that other uses and different standards are justifiable as a result of necessary economic or social development. To accomplish this objective, all proposed new or increased sources of pollution will be required to provide the best practical degree of waste treatment to maintain these waters at this higher quality.
>
> In addition, there will be furnished to the Federal Water Quality Administration, U. S. Department of the Interior, such information as is needed to enable the

Secretary of the Interior to fulfill his responsibilities under the Federal law.

Water which does not meet the assigned classification will be improved to meet the standards."

VI.b. Wild, Scenic and Recreational Rivers

The Wild, Scenic and Recreational Rivers System was established in 1972 by an Act of the Legislature (Chapter 869, Laws of 1972) to provide for the protection of certain selected streams and their immediate environs. Such streams are to possess outstanding natural, scenic, historic, ecological and recreational values. Streams included in the Wild, Scenic and Recreational Rivers System receive strict water qulaity classifications, non-degradation protection, as well as protection from incompatible land uses.

Wild Rivers flow through undeveloped areas. These may be found only in regions such as the Adirondacks. Scenic Rivers flow through areas largely undeveloped or developed for agriculture, forest management or other dispersed human activities. Scenic Rivers should have limited road access and be free of diversion and impoundments except for log dams. Recreational Rivers are easily accessible, may have development in the river area, and may have diversions or impoundments. Generally, corridor widths for Wild Rivers are one-half mile from each bank and for Recreational Rivers, 330 feet. Various management controls may be established within these areas.

A 5-mile section of the Connetquot River within the Connetquot River State Park was designated a Recreational River on May 7, 1973. A 6.25 mile section and a 3.0 mile section of the Carmans River were, respectively, designated Scenic and Recreational Rivers on July 7, 1974.

Study reports have been prepared on a 1-mile headwater section of the Connetquot and a 3-mile section of estuary. A 3/4-mile headwater section is being proposed as an additional section of Recreational River. Sections of Tibbetts Brook, the Bronx River and the Harlem River have also been studied, but no designations are proposed. The Nissequogue and Peconic Rivers have been suggested for study.

VI.c. Coastal Zone

The coastal waters and adjacent land areas of the State are being studied under the Federal Coastal Zone Management Act of 1972. The Great Lakes, the tidal Hudson and the Marine waters are included in the program. This three-year program will result in a management plan for the coastal zone, and will include:

1. An identification of the boundaries of the coastal zone, subject to the management program;
2. A definition of what shall constitute permissible land and water uses within the coastal zone, especially those which have a direct and significant impact on the coastal waters;
3. An inventory and designation of areas of particular concern within the coastal zone;
4. An identification of the means by which the State proposes to exert control over the land and water uses referred to in Item 2., including a listing of relevant constitutional provisions, legislative enactments, regulations and judicial decisions;
5. Broad guidelines on priority of uses in particular areas, including specifically those uses of lowest priority;
6. A description of the organizational structure proposed to implement the management program, including the responsibilities and interrelationships of local, areawide, State, regional and interstate agencies in the management process.

VII. SEGMENT ANALYSIS - WATER QUALITY ASSESSMENTS

VII. 1. WATER QUALITY LIMITING SEGMENTS

Some areas of the Atlantic Ocean/Long Island Sound planning area contain waters that are extremely vulnerable to pollution or waters that are overburdened by discharges. These areas, which require extraordinary abatement measures, require additional technical evaluation, require tailored planning, or require some other atypical measure, are termed "Water Quality Limiting Segments". In more concise terms, a water quality limiting segment is:

> "Any segment where it is known that water quality does not meet applicable water quality standards and/or is not expected to meet applicable water quality standards even after the application of the effluent limitations required by sections 301 (b)(1)(A) and 301 (b)(1)(B) of the Act."

The effluent limitations of sections 301 (b)(1)(A) and 301 (b)(1)(B) of PL 92-500 require that publicly owned treatment works provide at least secondary treatment and that all other point discharges provide at least the best practical treatment currently available (BPT) as defined by USEPA for each of several discharge categories.

An "effluent limiting segment," in contrast to a water quality limiting segment, is:

> "Any segment where it is known that water quality is meeting and will continue to meet applicable water quality standards or where there is adequate demonstration that water quality will meet applicable water quality standards after the application of the effluent limitations required by sections 301(b)(11)(A) and 301 (b)(1)(B) of the Act."

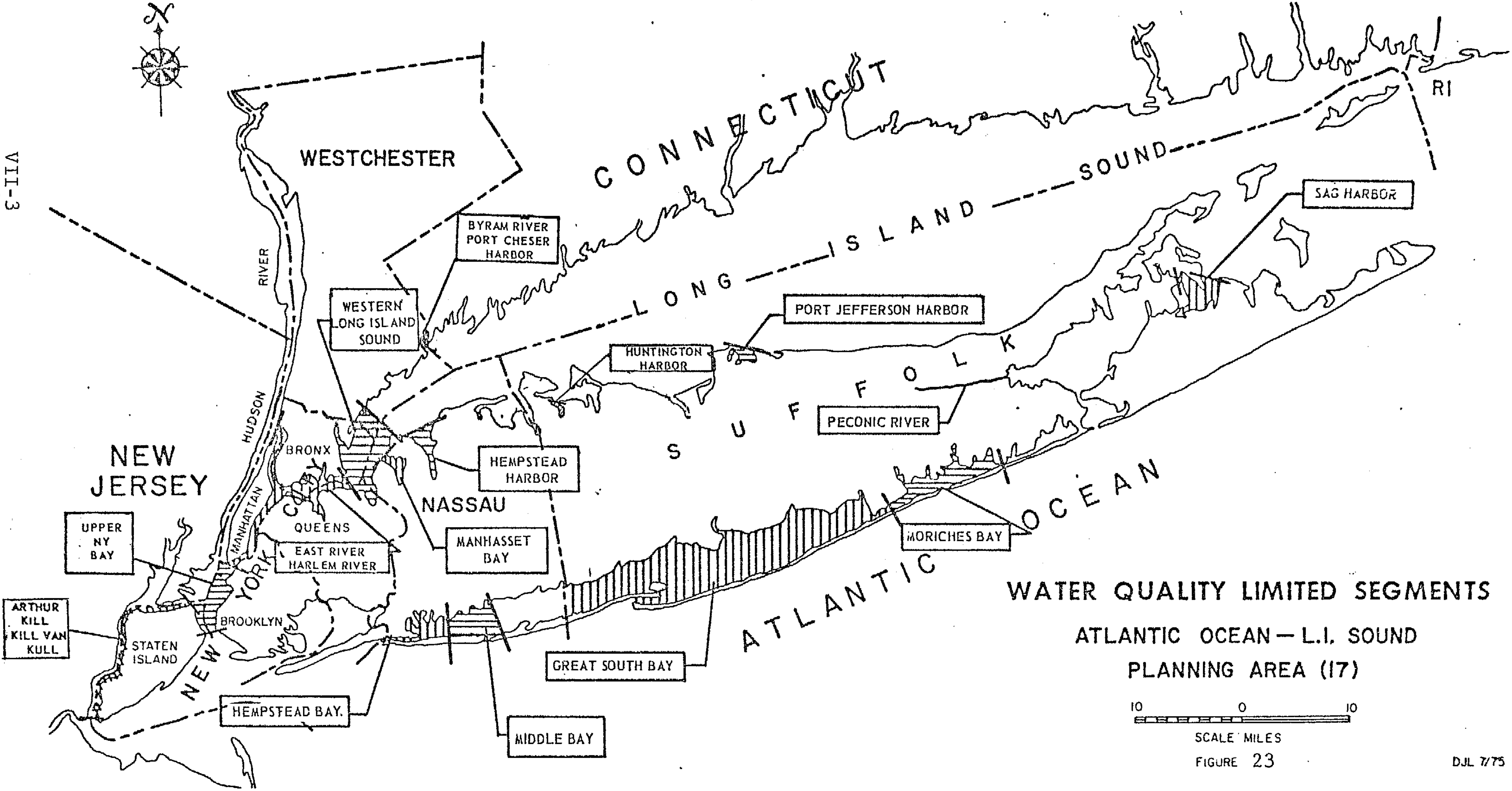
All waters of the Atlantic Ocean/Long Island Sound Planning Area which receive a significant discharge have been classified to be either water quality limiting or effluent limiting. The water quality limited segments,

1. Arthur Kill-Kill Van Kull
2. Upper New York Bay
3. East River-Harlem River
4. Western Long Island Sount
5. Byram River-Port Chester Hbr.
6. Manhasset Bay
7. Hempstead Harbor
8. Huntington Harbor
9. Port Jefferson Hbr.
10. Peconic R.-Flanders Bay
11. Sag Harbor
12. Moriches Bay
13. Great South Bay
14. Middle Bay
15. Hempstead Bay
16. Long Island Ground water

are located on Figure 23 and detailed in Table 28.

Intermittent streams (i.e. streams which periodically go dry, or streams in which the MA7CD/10 yr flow is less than 1.0cfs with a MA7CD/10 yr stream flow to wastewater flow ratio no greater than 8:1) are potentially critical areas of water quality concern, and are also considered water quality limiting. Discharges to intermittent streams must meet the discharge criteria of the NYSDEC policy governing discharges to intermittent waterways (Appendix 0).

Segment classifications will continue to be reconsidered as additional information and data are collected, as permits are issued and as planning continues under Section 201, 208 and 303(e) of PL 92-500. The State's "Continuing Planning Process", submitted to USEPA on February 15, 1973 designated only the Groundwaters of Long Island to be water quality limiting. There are now 16 segments that are considered to be water quality limiting. These designations are based on the results of various water quality studies; sampling programs; water quality predictive models for the East River, Hempstead Harbor, Manhasset Bay and New York Harbor; and a tidal average (advective-dispersive) model for the entire metropolitan area. More complex and realistic models for these and other areas are being developed through the 208 areawide waste treatment management programs (see Sections II 4.f and II.4.g), and will aid in refining segment classifications.



WATER QUALITY LIMITED SEGMENTS

ATLANTIC OCEAN — L.I. SOUND

PLANNING AREA (17)

FIGURE 23

DJL 7/75

TABLE 28

WATER QUALITY LIMITED SEGMENTS

Segment	Problems After BPT	Principal Sources	Reason
Arthur Kill-Kill Van Kull	Chronic dissolved oxygen deficits aggravated by thermal discharges	Municipal Industrial Thermal Combined sewers Upper New York Harbor New Jersey point discharges	The point discharges from Staten Island to this segment are minor compared to inflow from New Jersey streams, the Upper Harbor, and New Jersey point discharges. Treatment beyond secondary will be needed in the general area, but the need for extraordinary treatment of Staten Island discharges is not apparent. Further study and coordination between New York and New Jersey are to be accomplished through 208 and other programs.
	Oil slicks	Tank Farms (primarily New Jersey) Industrial Combined sewers	BPT is expected to ameliorate this condition. Spills and combined sewers may persist in causing occasional problems.
Upper New York Harbor	Coliforms Dissolved oxygen deficits in back water areas Potential for algal blooms	Combined sewers Municipal	Dry weather discharges are to be abated Combined overflows will persist, causing coliform and back water problems. The volumes of municipal discharges to this area provide the potential need for nutrient removal. Industrial discharges to municipal systems in both New York and New Jersey create the need to investigate special treatment and pretreatment requirements.
East River-Harlem River	Coliforms Potential dissolved oxygen deficits Potential for algal blooms	Municipal Thermal Combined sewers Inflow and infiltration	Municipal discharge to the East River are voluminous, but unless nitrification establishes, dissolved oxygen deficits are not expected after BPT. Combined sewers and bypasses are to cause coliform problems in the rivers and the Western Sound. With limited space for expansion, combined sewers, and large discharge volumes, nutrient removal must be thoroughly investigated to evaluate the cost effectiveness of nutrient removal.
Western Long Island Sound	Coliforms Algal bloom Potential dissolved oxygen deficits	Combined sewers Storm sewers East River inflow	East River flows on a tidal and density gradient basis are not well defined, but East River influences and combined discharges have the potential of causing periodic oxygen deficits or algal blooms. The relative contribution of municipal discharges which discharge to the segment are such that thorough investigations must be made to evaluate the cost effectiveness of extraordinary treatment.
Byram River	Dissolved oxygen deficits	Port Chester STP Connecticut sources	Relocation of the Port Chester outfall to the Long Island Sound will allow for reclassification of the segment as effluent limiting. With the present discharge location BPT would be inadequate.
Manhasset Bay	Coliform Algal blooms Oxygen deficits	Western Sound Stormwater Municipal	Shellfishing areas are closed because of high coliform counts following rains. A feasibility study of runoff control is needed. Nutrient levels are elevated by discharge to the segment and by ambient levels of the Sound. Under present conditions the cost effectiveness of nutrient removal for bay discharges is considered marginal; with expanded sewerage extraordinary treatment or out of bay discharge will be needed.
Hempstead Harbor	Coliform Algal blooms Oxygen deficits	Western Sound Stormwater Municipal	Similar to Manhasset Bay, but with the Sound having less relative influence and the existing need for extraordinary treatment at Glen Cove.

TABLE (Cont.)

Segment	Problems After BPT	Principal Sources	Reason
Huntington Harbor	Potential algal blooms	Municipal	Expansion of the Huntington Sewer District would require extraordinary treatment or alternate discharge locations.
Port Jefferson Harbor	Coliform Algal blooms	Municipal Industrial Thermal	Shellfish grounds are closed due primarily to storm runoff and commercial and recreational port activities. Thermal effect has yet to be studied in detail. Occasional algal blooms occur. Expansion of the existing sewer district would be expected to require extraordinary treatment or an alternate discharge location.
Peconic River	Algal blooms Coliform	Municipal Duck farms Non-point Institutional	The series of impoundments along the river provide evidence of eutrophic conditions. Further study of the system is needed.
Sag Harbor	Dissolved oxygen deficits Algal blooms	Sag Harbor (V)	Discharge beyond the Sag Harbor breakwater would result in precautionary closure of a shellfish area. The discharge is therefore to be within the breakwater where AWT for BOD removal and TKN reduction are considered to be cost effective.
Moriches Bay	Algal blooms	Duck farms	Algal blooms occur within the bay affecting swimming and oyster growth. BPT at duck farms is impractical as dry farming will be required as BAT. Flushing of the bay is limited by siltation at the bay inlet. Non-point source control is needed.
Great South Bay	Potential algal blooms	Municipal Non-point sources	This Bay is a unique source providing a large percentage of the nation's marketable shellfish. While the water is now of excellent quality, algal problems in adjacent bays and at shore indicate the potential for nutrient enrichment of this shallow bay with poor circulation.
Long Island Groundwaters	Nitrate contamination Water supply depletion Saltwater intrusion	Non-point sources including: septic tanks/cesspools, farm/lawn fertilizers Depletion through water supply usage	Nassau and Suffolk Counties use groundwater for water supply, and AWT is required to protect these waters from nitrates, trace substances and other contaminations.
Middle Bay	Potential algal blooms	Municipal Non-point	Municipal discharges are considered to be a substantial source of nutrients to this bay. Alternatives of advanced waste treatment and/or ocean disposal are to be considered.
Hempstead Bay	Algal blooms Dissolved oxygen deficits	Municipal Non-point	Occasional dissolved oxygen contravention and algal blooms presently occur.

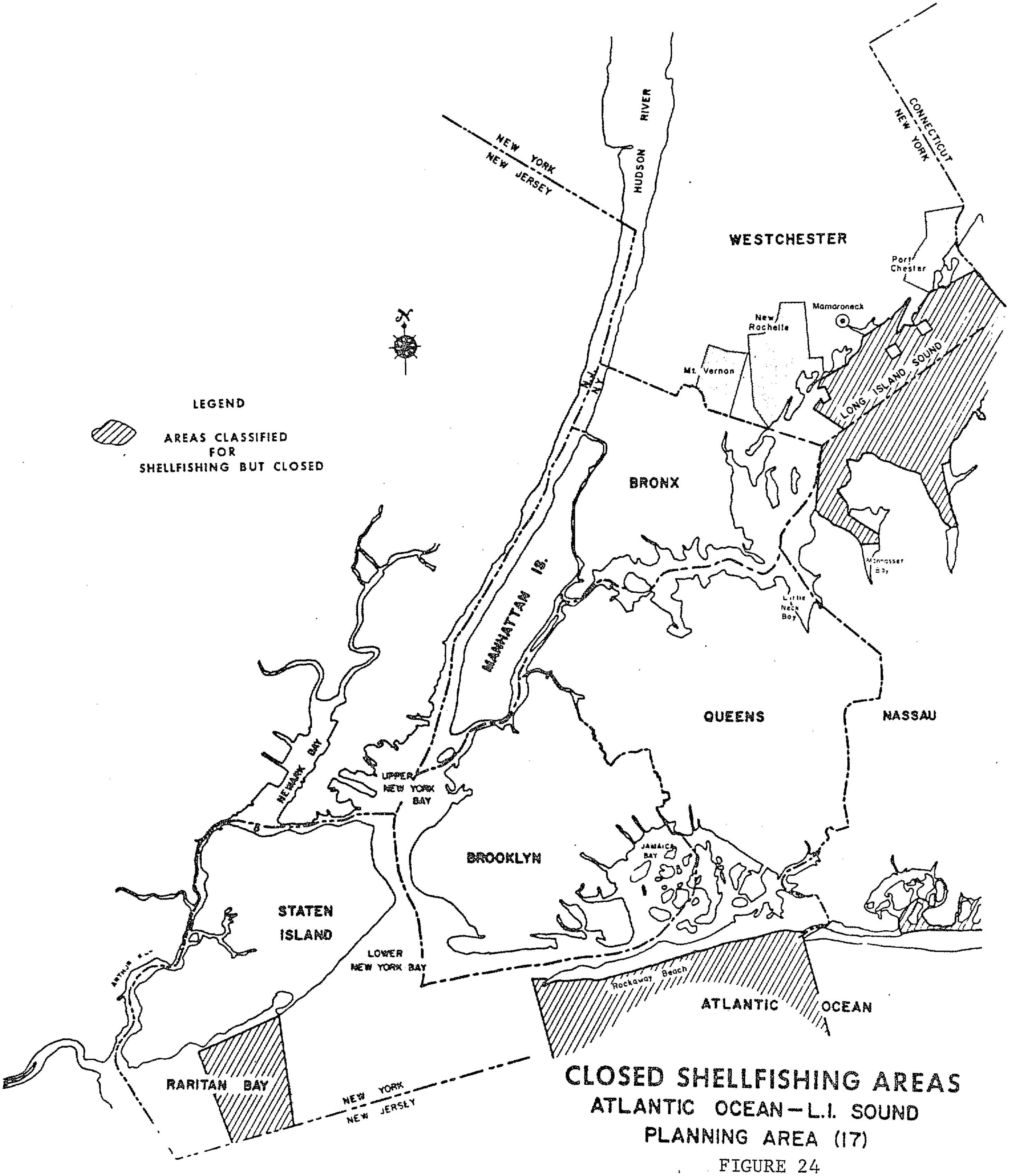
Combined sewer overflows and stormwater discharges, are significant in these water quality limited segments. They cause the closure of shellfishing areas and bathing beaches, and frequently contain oil, debris, sediment, nutrients and organic loadings. These sporadic discharges are extremely difficult to quantify or model, but wet weather sampling dramatically shows the significant effects on water quality.

The opportunity to limit algae growth through nitrogen removal at municipal treatment facilities exists. Algal blooms in water quality limited segments interfere with bathing and boating, can reduce shellfish productivity and, upon decay, cause oxygen depletion. Nitrogen removal, on the other hand, requires extensive treatment facilities, added operational costs, additional chemical and power requirements, and an increased volume of sludge requiring disposal. Ocean disposal is an alternative to nitrogen removal, but this is also costly and disruptive.

Because of the significance of wet weather discharges and the uncertainties in algae growth control, requirements for treatment in excess of BPT have not been definitely established for most discharges to area water quality limited segments. It is expected that advancements in wet weather discharge technologies and algae control technologies, in combination with 208 activities, will eventually provide a practical basis for development of statewide, basin wide or areawide plans or policies for nutrient removal and wet weather pollutant discharge abatement. In the interum, the needs for extraordinary treatment will continue to be primarily established only for new or modified treatment, facilities on a case-by-case basis.

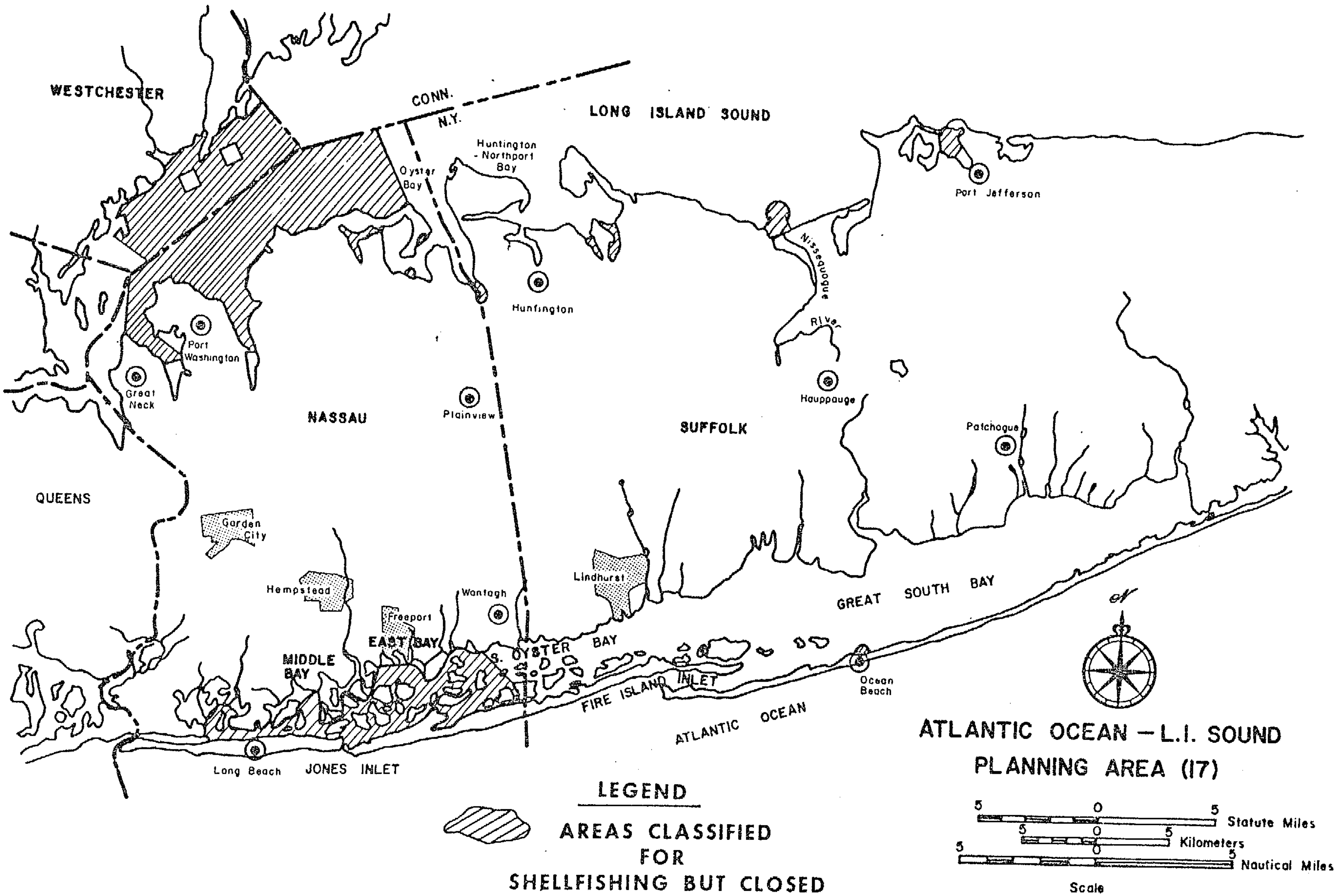
VII.2. CLOSED SHELLFISHING WATERS

A significant portion of the marine resources in this major basin are classified as shellfishing waters. Standards of water quality for shellfishing waters are very stringent, as are the Federal Food and Drug



CLOSED SHELLFISHING AREAS
ATLANTIC OCEAN—L.I. SOUND
PLANNING AREA (17)

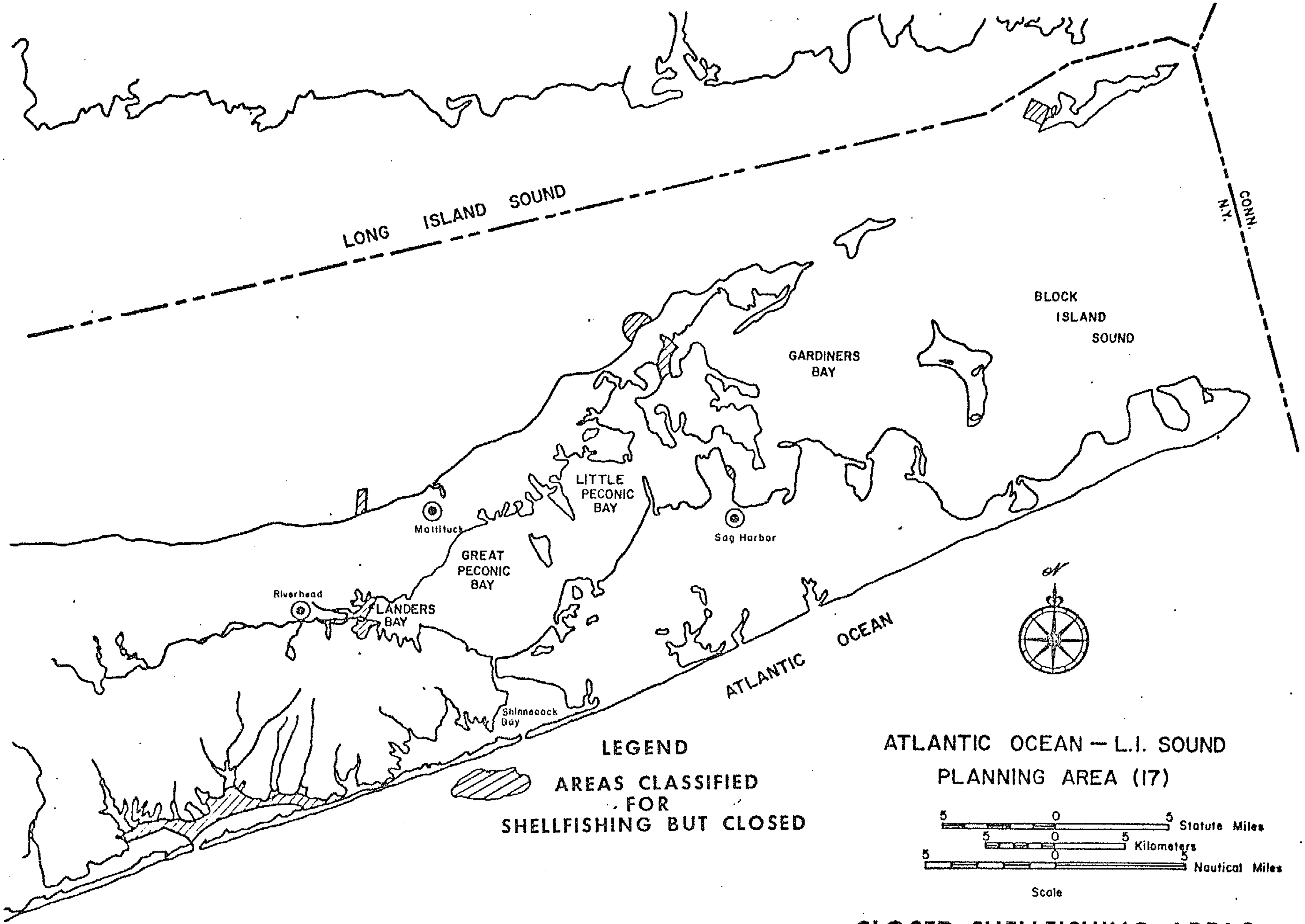
FIGURE 24



CLOSED SHELLFISHING AREAS

DJL 7/75
BRK 3/76

FIGURE 25



CLOSED SHELLFISHING AREAS

FIGURE 27

DJL 7/75
BRK 3/76

Administration's criteria for the taking of shellfish for marketing purposes. Figures 24, 25 and 26 show those areas which are classified for shellfishing, but are closed to shellfishing because of standards violations and/or for potential shellfish contamination.

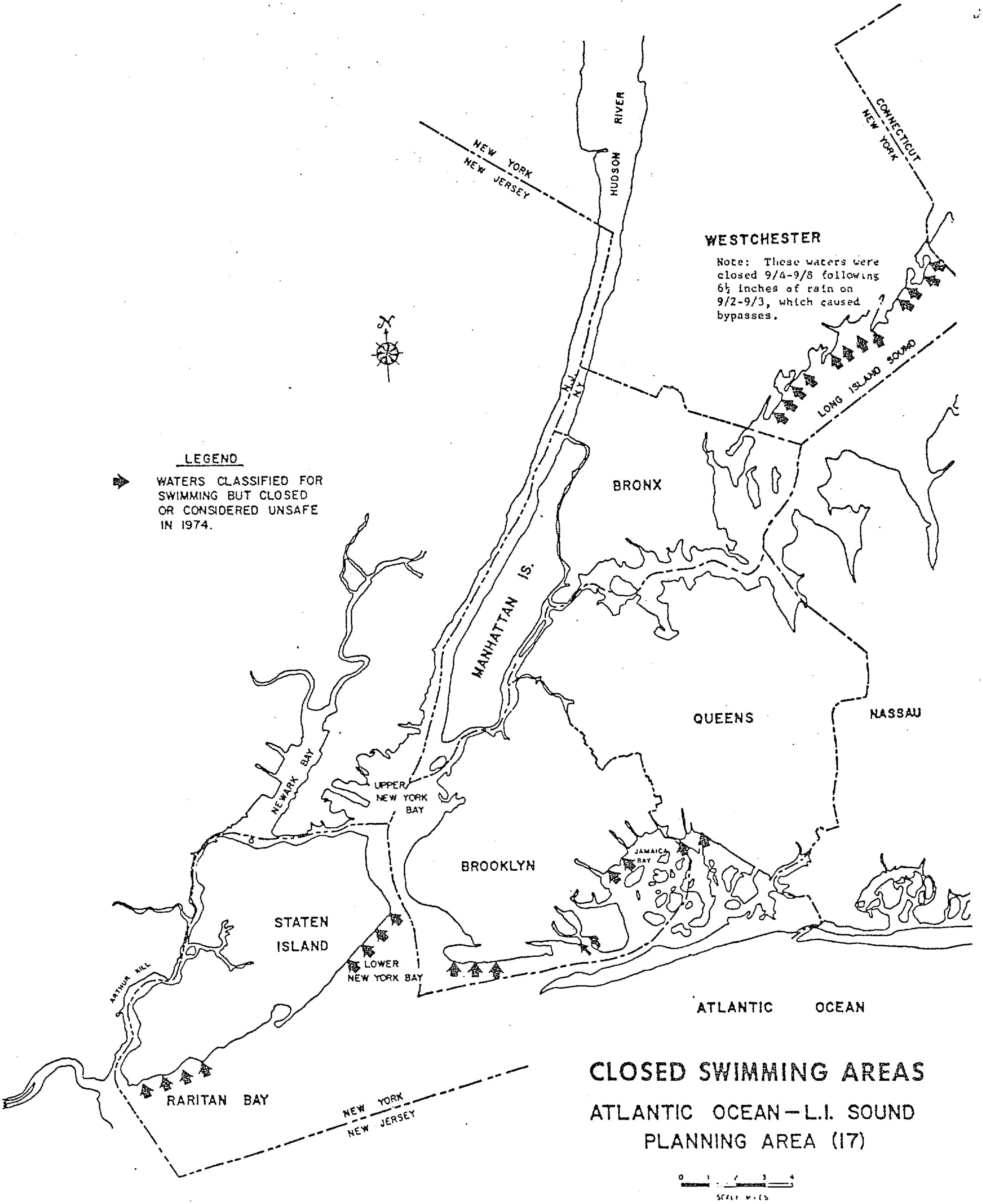
Descriptions of areas closed to shellfishing, which include both areas classified for shellfishing and areas that are not classified for shellfishing, are included in the Appendix.

Shellfishing waters are closed because of combined sewage discharges, inadequate disinfection of treated municipal sewage, stormwater runoff and other non-point sources. Even the proximity of a sewage treatment plant ourfall line or a docking facility are causes for closure to insure safety in the marketing of a raw food product.

VII.3. Closed Bathing Beaches

Swimming waters are tested regularly by city and county health departments during the summer. Bathing beaches are closed and reopened on the basis of these bacteriological tests. Complete chemical analyses are conducted at selected sampling stations.

Combined sewer discharges, sewage treatment plant bypasses, raw discharges, and inadequate disinfection have caused chronic swimming restrictions in some metropolitan waters. In other areas, occasional closures are made after heaby rains. Some temporary closures have been made as the result of sewer breaks, illegal discharges or temporary bypasses during construction. Figures 27, 28 and 29 represent bathing beach conditions in 1974. Some of these closures or poor quality areas have been regularly restricted; other areas were closed for short periods. These figures provide a pictorial overview of typical conditions.



Note: These waters were closed 9/4-9/8 following 6½ inches of rain on 9/2-9/3, which caused bypasses.

LEGEND

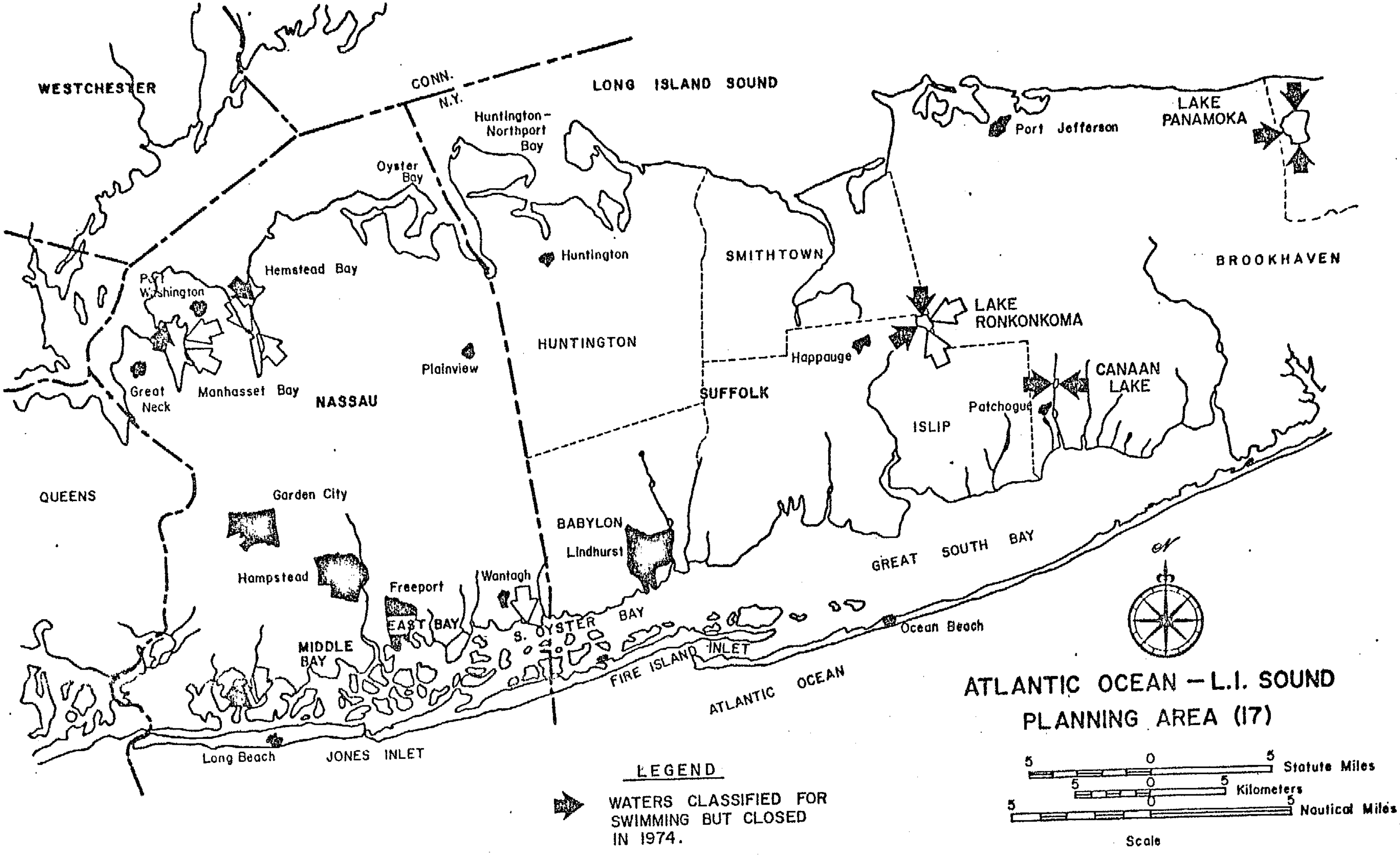
➧ WATERS CLASSIFIED FOR SWIMMING BUT CLOSED OR CONSIDERED UNSAFE IN 1974.

CLOSED SWIMMING AREAS

ATLANTIC OCEAN—L.I. SOUND

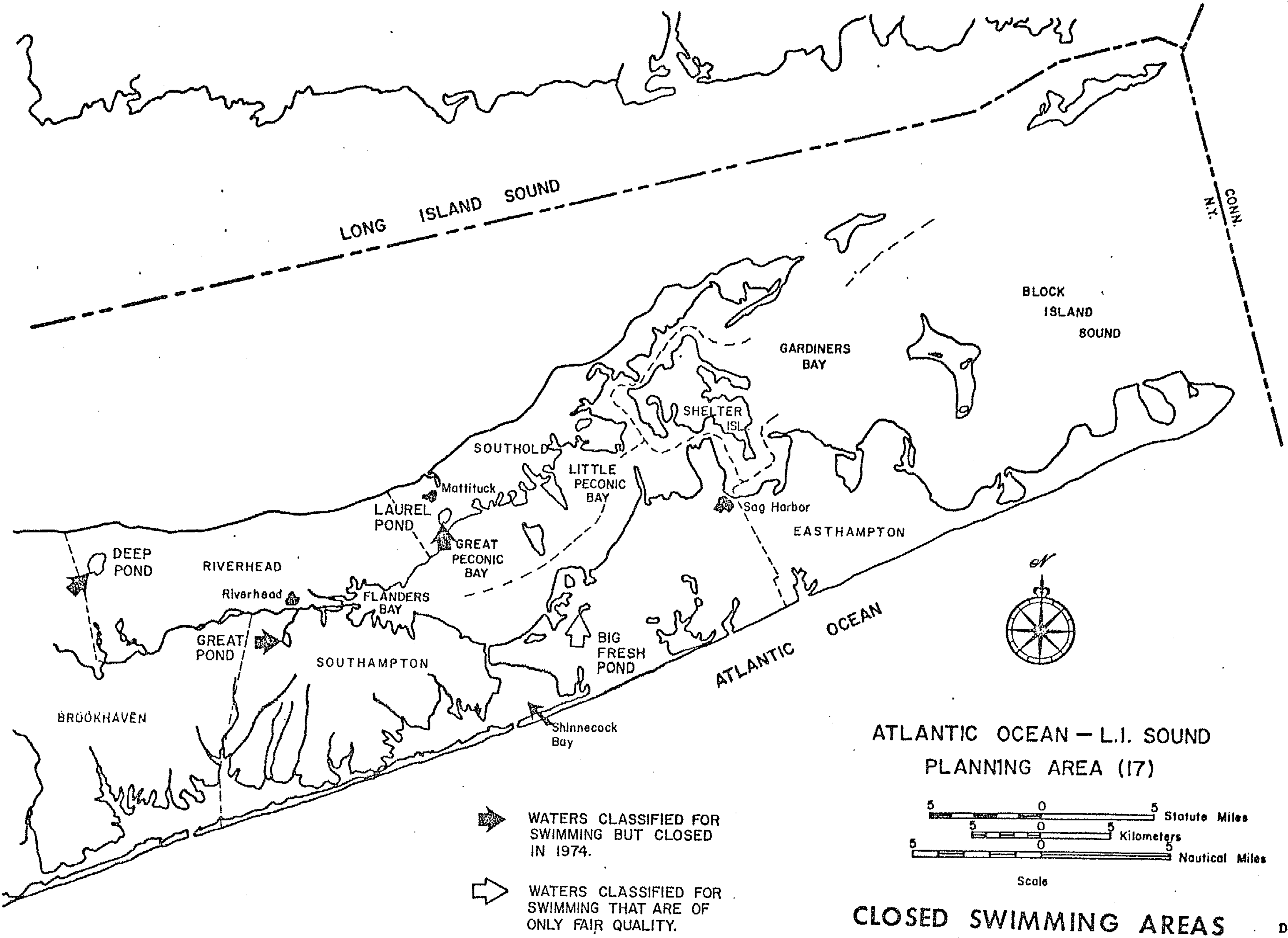
PLANNING AREA (17)

FIGURE 27



CLOSED SWIMMING AREAS

FIGURE 28



CLOSED SWIMMING AREAS DJL 7/75

FIGURE 29

While many bathing areas have been restricted, there are many more areas that are open to bathing. Much of the area water is not merely acceptable, but of excellent quality.

VII.4. Water Quality Assessments

The following water quality assessments are provided for bays, rivers and water areas from Raritan Bay, around Long Island in a clockwise direction, to Jamaica Bay. The assessments are based on various study reports, sampling and monitoring records, and mathematical model results. Assessments are fairly complete for some areas, but for other areas, there is a dearth of information.

VII.4.a. Raritan Bay

Raritan Bay is located between Staten Island, the New Jersey Shore, Sand Hook Bay and Lower New York Bay. The New York-New Jersey State Line divides the Bay. The Raritan River and the Arthur Kill are major tributaries. The Bay is shallow, averaging less than 10 or 15 feet in most areas. A 600-800 foot wide navigation channel, dredged to a depth of about 35 feet, connects the Lower New York Bay with the western tributaries.

The tidal range is 4 feet, but tidal currents are relatively weak, being generally less than 0.5 knots. The system is not well mixed and density currents tend to follow shorelines and bottom contours. The greater body tends to sluggishly rotate with the tides.

Available 1974 data indicate that dissolved oxygen is at fair levels in Raritan Bay, averaging between 4 and 6 mg/1 in summer. Fecal coliform concentrations are more variable, going from less than 100 to 9000 per 100 ml.

The flux of pollutants from New York Harbor has an effect on Raritan Bay, where beaches and shellfishing beds are closed due to high coliform counts. Also, nutrients from New York-New Jersey sources are believed to be the cause of eutrophication problems that are beginning to crop up in Raritan Bay.

VII.4.b. Arthur Kill-Kill Van Kull

The Arthur Kill is a tidal channel between New York and New Jersey on the western shore of Staten Island. The Arthur Kill connects Raritan Bay and the lower West Newark Bay. The Fresh Kills in New York, and the Elizabeth River and Rahway River in New Jersey, are major tributaries.

The Kill Van Kull is a tidal channel between New York and New Jersey, on the northern shore of Staten Island. The Kill Van Kull connects the lower east end of Newark Bay (directly east of the Arthur Kill) with Upper New York Bay. There are no major tributaries.

Dredged navigation channels, 35 feet deep and 500-600 feet wide, follow both waterways. Maximum tidal currents average 1.0-1.5 knots.

Water quality in the Arthur Kill is poor. In the summer of 1975, dissolved oxygen averaged 35 percent of saturation versus 31 percent in 1974. The Kill Van Kull is better, at 41 percent in 1975 and 40 percent in 1974. Fecal coliform concentration averaged 4,284 per 100 ml in 1975 in Arthur Kill, and 5,749 in Kill Van Kull. These are Class II waters; and, therefore, have no coliform standard.

Dissolved oxygen in Arthur Kill often drops to zero in summer, and averages less than 1 mg/1, in places, for several months at a time. Winter values are much higher, reaching 8 mg/1 at times. Fecal coliforms vary widely, from 100 per 100 ml to 15,000 per 100 ml. On occasion algal blooms occur, causing short term dissolved oxygen increases.

The Arthur Kill is heavily loaded with industrial wastes and thermal inputs from power plants and industries along its shore. In summer, the water temperature reaches 85°F, worsening dissolved oxygen conditions by increasing biological activity, and decreasing the solubility of oxygen in the water.

Oil slicks are often visible on the surface of the Arthur Kill, as well as the rest of the harbor. These are attributable to industrial sources, heavy waterway traffic and combined sewer overflows.

This body of water does not have the benefit of vigorous tidal flushing action, so that residence times of pollutants tend to be longer than elsewhere in the harbor, with consequently worse conditions. Although there are several major oil terminals on the New York shore, most pollution there is attributable to New Jersey sources, so that abatement in New York City will not have a profound effect on water quality there.

VII.4.c. New York Harbor

New York Harobr comprises the Upper New York Bay, the Lower New York Bay and the Narrows, which connects the two Bays. The Hudson River (which terminates at the Battery in Manhattan), the East River and Kill Van Kull terminate at the Upper Bay. The Lower Bay joins the Raritan Bay to the east, Rockaway Inlet to the west, and the Atlantic Ocean to the southeast.

Lower New York Bay has substantially better water quality than Upper New York Bay because the Lower Bay has fewer pollutant sources and mixing occurs with ocean water. In summer 1975, the Lower Bay averaged 82.4 percent of saturation versus 50.8 percent for Upper Bay. The corresponding average concentrations are 6.3 mg/l Lower Bay and 4.0 mg/l Upper Bay. A similar difference is apparent in mean fecal coliform concentrations, with Upper Bay averaging 2,738 per 100 ml and Lower Bay 136 per 100 ml.

Fecal coliform concentrations vary from less than 100 per 100 ml to more than 11,000 per 100 ml, mostly due to combined sewer overflows. After a rainfall, there is a marked increase in total coliforms at nearby beaches. These high coliform concentrations are sometimes persistent.

Nuisance problems develop in "back water" areas such as the Gowanus Canal. These waters are not subject to much tidal flushing action. Sludge accumulations from combined sewer overflows or raw discharges decompose, exerting an oxygen demand and causing foul ordors. In some cases, these waters are essentially extensions of the sewer system.

An area contiguous to the Lower Harbor, but outside the planning area, presenting a unique problem is the New York Bight. The New York-New Jersey metropolitan area has disposed of sewage sludge and dredged spoil in the Bight for many years. Until the last ten years, limited information has been available as to the consequences of disposal of sludge and spoils in the Bight.

Studies conducted by the Middle Atlantic Coastal Fisheries Center, Sandy Hook Laboratories, indicate that disposal of dredging spoils and sewage sludges has had a significant effect on the living resources of the Bight. Heavy metals have accumulated in the sediments directly receiving the sludges and spoils and have been measured at 100 times background values of apparently uncontaminated sediments at areas surrounding the designated disposal site. High coliform bacteria concentration levels were also evident throughout the dumping zone. A point of concern regarding this area is that there has apparently been some outward spread of contamination from the designated disposal site.

However, the October 1975 report from NOAA to EPA indicated no evidence of massive migration of sewage sludge toward beaches in New York or New Jersey, and recommended that the present site not be relocated.

The problem of sewage sludge disposal from the New York-New Jersey metropolitan area is complicated by the sheer volumes of sludge produced. Until such time as a more effective way of handling the hugh volumes of sludge are developed, ocean disposal will have to continue. However, this activity should be limited as much as possible, particularly in regard to contaminated dredged material. The responsibility of permitting and enforcing regulations regarding ocean disposal lies with EPA. The February 1976 Draft Environmental Impact Statement on the Ocean Dumping of Sewage Sludge recommended: (1) continued use of the existing sewage sludge dump site in the Bight Apex; (2) designation of an alternate dump site in the northern area of the Bight for future use if necessary; (3) that the existing dump site and nearby sensitive recreational and marine areas (Hudson Shelf Valley) near Long Island and New Jersey be closely monitored for potential hazards to public health or water quality; and (4) that upon confirmation of such hazards, permittees be required to use the alternate dump site.

VII.4.d. East River-Harlem River

The East River connects the Upper New York Bay and the Long Island Sound. Hell Gate and Wards Island are located at the East River-Harlem River confluence about the mid-lenght of the East River. The river is commonly divided, at this area, into the Lower East River (Bay to Hell Gate) and the Upper East River (Hell Gate to the Sound).

The East River is a "hydraulic channel". Unlike most tidal currents, the currents in the East River are caused by the differences in elevation of two reservoirs--the Sound and the Upper Bay. The tidal stage of the

Sound happens to be high when the Bay is low and vice-versa. The result is that water rushes from the Sound to the Bay and then, as the tides reverse, rushes in the other direction. These rapid currents limit the growth of fixed plants, algae and other aquatic life. It is suspected that the biochemical oxidation of nitrogen compounds will continue to be suppressed by the currents.

The Harlem River connects the East River and the Hudson River, and bounds Manhattan Island. Newtown Creek is a relatively short tidal tributary to the Lower East River. The Bronx River and Westchester Creek discharge to the Upper East River, but discharges from the municipal sewers of New York (treated, combined and raw discharges) comprise the major fresh water inflow to the rivers.

Water quality varies from generally poor in the Harlem and Lower East Rivers to fair in the Upper East River. In summer of 1975, dissolved oxygen in the Lower East River averaged 32 percent of saturation as opposed to 34 percent in 1974. The Upper East River also declined from 43 percent in 1974 to 40 percent in 1975, as did the Harlem River from 38 percent to 34 percent. The 1972 five-year moving average for these rivers (which includes up to 1974 data) are 33 percent LER, 45 percent UER and 38 percent HR showing the gradual downward trend. The corresponding dissolved oxygen concentrations are 2.7 mg per liter HR, 2.5 mg/1 LER and 3.2 mg/1 UER.

Fecal coliform mean concentrations (organisms per 100 ml) for the summer of 1975 were 7,982 for the Harlem River, 6,215 for the Lower East River and 2,831 for the Upper East River. The values vary greatly with location and time, particularly with respect to rainfall, varying from less than 100 to much more than 8,000. The lower East River and part of the Harlem River are Class II waters and, therefore, have no coliform standard.

While algal blooms are not a persistent problem in these waters, it is estimated that 170,000 pounds per day of nitrogen compounds are discharged to the East River, possibly having a carry-over eutrophication effect on Western Long Island Sound.

Eight major power plants, having a total capacity of 45 x 10^9 BTU/HR, discharge cooling water to the East River. This waste heat may reduce the waste assimilative capacity of the East River by 10 percent.

One of three beaches in the Upper East River is closed due to high coliform levels, as are potentially productive shellfish beds in Long Island Sound, which are believed to be affected by New York City coliform sources.

Due to the complexities of the problems throughout the New York City metropolitan area and the magnitude of waste loads discharged to these waters, the entire harbor complex and East River-Harlem River systems are classified water quality limiting. Surveys and sophisticated mathematical models will be performed on these waters as part of the New York City 208 areawide waste management study.

VII.4.e. Long Island Sound

Long Island Sound is one of the nation's unique and irreplaceable natural resources. The Sound is almost a fully enclosed arm of the Atlantic Ocean with a surface area of approximately 1300 square miles and nearly a thousand miles of coastline through parts of Rhode Island, Connecticut and Westchester County, New York, and the entire north shore of Long Island, New York. The majority of Long Island Sound waters within New York State, except water between the Queens and the Bronx, New York, which are classified SB, are classified SA for the taking of shellfish and primary and secondary contact recreation. Usages of the Sound are many and varied and include commercial and sport fisheries, recreational boating, bathing, commercial shipping, wastwater disposal, dredge disposal and wildlife habitats.

Movements of water within major estuaries are complex. The Sound displays estuarine characteristics in its western and central parts and embayment characteristics in its eastern third. The minimum tidal range and maximum tidal currents occur at the eastern end and the maximum tidal range and minimum tidal currents at the western end. Circulation is controlled principally by tidal currents modified by fresh water inflow, weather conditions and topography. The circulation pattern of surface and near surface waters if fairly well defined, but relatively little is known about deep circulation. Surface tidal current patterns in the central and western Sound are elliptical and counter-clockwise in direction. At the eastern end, surface water flows out of the Sound into Block Island Sound, while more dense and saline bottom waters flow into Long Island Sound. At the western end, surface water from the East River flows into the Sound and bottom waters move into the East River. Lack of quantified information on inflows and outflows on the western end of the Sound is a major gap in knowledge necessary to understand and manage this portion of the Sound.

The Sound has been classified as a moderately-stratified estuary, in that ocean waters and fresh waters do not mix completely. The well oxygenated, cold, dense marine waters remain unmixed below the surface throughout a large area of the eastern Sound. The less oxygenated, warmer, lighter fresh water enters mostly in the eastern end from the Connecticut and Thames Rivers, remains near the surface, and is flushed out to sea rather rapidly, thus producing minimal salinity dilution. This physical two-layer water movement system influences the Sound's chemical regime. It tends to flush out to sea the lighter suspended pollutants from inland sources and to bring up nutrient-rich waters from the bottom.

The waters of Long Island Sound and its embayments vary greatly in water quality. The Sound proper, within New York State jurisdiction, is generally of high quality, except in the extreme western section of Long Island Sound (particularly the area from the Throgs Neck Bridge to a point between Hempstead Bay and the Oyster Bay complex). Shellfish beds from Oyster Bay westward have been closed due to bacterial contamination. In addition, nutrients have caused nuisance algal blooms which can impact bathing beaches and interfere with other usages of the Sound. Dissolved oxygen levels in this zone are also depressed with summer averages of approximately 5 ppm.

From Hempstead Harbor eastward to the Connecticut River, the water quality of the Sound improves significantly in a fairly uniform manner.

Major sources of pollution affecting Long Island Sound include municipal and industrial wastes, combined sewer overflows, non-point sources, wastes from pleasure craft and commercial shipping, oil spills, thermal inputs and dredged spoils.

The impacted quality of the western Sound is attributed to the carry-over of pollutants from the New York City treatment plants and combined sewers through the East River. An estimated loading of 170,000 lbs/day of nitrogen compounds (as N) is discharged to the East River complex from these plants. While no significant algae blooms are evident in the East River, nuisance blooms of algae do occur upon dilution with western Sound waters. While the net transport is not fully understood, the wide seasonal variation in bacteriological quality coincides with and is partially attributed to the seasonal chlorination practices of the City. In addition to New York City loadings, several major waste inputs occur at Mamaroneck, Blind Brook, New Rochelle and Port Chester in Westchester County.

Pollution abatement efforts to date have focused almost entirely on the control of municipal and industrial point sources. As these programs are completed, the magnitude of the other sources of pollution, particularly combined sewer overflows and separate stormwater discharges, will become more evident. Spills of oil and hazardous materials can be expected to occur despite the strict regulations regarding the handling and transport of these materials. The effects of dredged spoils deposited in the Sound has not been adequately studied. Permits for the deposition of spoils are under the jurisdiction of the Harbormaster, U. S. Army Corps of Engineers. The 18 existing dredged spoil sites in the Sound have been cut back to four active sites and this activity has been drastically reduced.

Due to the apparent problems in the western portion of the Long Island Sound, the Sound from Throgs Neck to Hempstead Harbor is now being classified as a water quality limiting segment. A better understanding of this area of the Sound is expected from the modeling proposals of the New York City 208 study, which should identify in greater detail transport of pollutants through the East River.

VII.4.f. Byram River-Port Chester Harbor

The Byram River at the border of Westchester County and Connecticut presents one of the worst water quality problems in this study area. Sampling by the Westchester County Health Department from 1971 through 1975 shows that dissolved oxygen (D.O.) and coliform bacteria standards were regularly violated near the mouth of the Byram River. These violations occur both above, at and below the Port Chester STP outfall. Noteworthy, however, is the fact that the worst quality samples were consistently taken above the STP outfall on the Byram River. The quality sampling of Port Chester Harbor itself shows that coliform counts are usually above the acceptable standard and better than the Byram River, as a dilution-mixing effect appears to take place. Just outside of Port Chester Harbor in Long Island Sound, there have been no violations of water quality noted. This stream-harbor system drains a predominently commercial-industrial area and oil, grease and floating solids are occasionally noted in these waters.

The Byram River in the lower reaches has a rocky bottom with sludge deposits, mud and debris noted. There is occasional floating scum and the water usually is brown to muddy in color. The streatm current is tidal with depths of from 12 to 19 feet near the mouth.

VII.4.g. Blind Brook-Milton Harbor

Blind Brook at Rye, New York has a total drainage area of approximately 10.8 square miles and an average discharge of 15.4 cfs. Blind Brook is tidal in the lower reaches with some pooling evident. The stream depth varies from 0.25 to 4.0 feet at the mouth. The channel varies from rocky to sand and gravel with some sludge deposits observed.

The bacteriological quality of Blind Brook is marginal. Sampling data taken by the WCHD 1972-74 indicates that the Class I standards are not being violated, but elevated coliform levels were being experienced.

Dissolved oxygen concentrations are in general saturated in the headwaters with low concentrations recorded only occasionally at the mouth.

There are no major point discharges to the waters of Blind Brook-Milton Harbor. A discontinued landfill located near the Blind Brook STP may be a contribution of leachate to Blind Brook, but the magnitude of the impact from the landfill cannot be estimated at this time.

There have been fish kills on two occasions in the area attributable to natural causes.

VLL.4.h. Mamaroneck Harbor-Mamaroneck River (Sheldrake River) Guion Creek (Beaver Swamp Brook)

The drainage basin of the Mamaroneck River is approximately 23.6 square miles. The rectangular shaped basin contains three (3) principal tributaries; the East Branch, the West Branch and the Sheldrake River.

The Mamaroneck River channel is primarily rocky with depth ranging from two to 15 feet at the mouth, with noticeable silt deposits. The lower reaches are tidal with limited flushing. The water color ranges from slightly to distinctly brown and, on occasion, oil slicks and floating debris are observed.

The Sheldrake River is tributary to the Mamaroneck River and is similar to the Mamaroneck River with respect to color, velocity and floating debris observed. The Sheldrake River drains an intensely developed industrial area of Mamaroneck. During periods of heavy rainfall, the Sheldrake River rises quite high and inundates portions of the industrial area and thereby drains much oil and grease to Mamaroneck Harbor by way of the Mamaroneck River.

The Mamaroneck-Sheldrake River system is the prime contributor of high bacteria counts in Mamaroneck Harbor; however, such counts are not great enough to warrant closing of beaches. Guion Creek (Beaver Swamp Brook) outlet has also been known to have high bacteria counts. The fact that it drains a swamp area and is subject to stormwater overflows from sewers are probably causes for these high counts.

Upstream on the Mamaroneck River, there are two (2) reservoir systems, one on the Mamaroneck River (Mamaroneck Reservoir) and the other on the Sheldrake River (Sheldrake Lake or Larchmont Reservoir).

Both have filter plants to treat the water, but neither reservoir is currently used nor has been for the last few years, mainly for economic purposes in that it is cheaper to buy water from New York City. However, both are supposedly on standby status, although personnel from WCHD believe that because of the brown color and turbidity of the reservoirs, it is unlikely either will be put back into operation. Also, the Mamaroneck Reservoir has had periodic high bacteria counts after rains which, in part, may be due to a horse farm operation upstream.

The Mamaroneck Harbor itself has been recorded by the WCHD in 1973-74 as having coliform levels near or above the Class SB standards. These coliform levels, however, were much lower than the high coliform and fecal coliform counts recorded at the mouth of the Mamaroneck River. Such high reading of coliform for the harbor may be due, in part, to the occasional bypass of the Mamaroneck STP outfall (i.e., utilization of short outfall to the east basin of Mamaroneck Harbor during wet weather) and storm sewer discharges, aside from the contributing factor of the Mamaroneck River.

The Mamaroneck STP outfall passes through Mamaroneck Harbor in getting to its offshore discharge in Long Island Sound. On two occasions in the recent past, this outfall has ruptured, resulting in elevated bacteria counts for a slight period. The harbor is tidal and occasionally floating material such as seaweed has been noted in the harbor.

For reasons previously mentioned, the shellfish area located offshore from Mamaroneck has remained closed, although as recently as last summer (1975), clams have been transferred from this area to less polluted waters off Long Island where, after a few weeks, their harvesting would be allowed.

Fish kills have been noted to occur in Mamaroneck Harbor, but investigation determined them to occur from natural causes and not the effects of pollution.

VII.4.1. Larchmont Harbor-East Creek

The Larchmont Harbor area's sewage system comprises a number of pump stations which bypass sewage flow during excessive wet weather. Also, the collection system in this area is old and there are overflow interconnections between the sanitary and storm sewer lines which, likewise, cause discharges of untreated sanitary wastes during wet weather and result in occasional high bacteria counts in the harbor. Otherwise, the bacteria counts in the harbor are low on the average and well within Class SB standards. Larchmont Harbor is tidal and, occasionally, seaweed has been noted floating in the waters.

The East Creek is the major stream entering the harbor and sewage discharges have recently been found to occur to this stream due to a cross-connection in the sanitary and storm sewer systems. Also, as this stream passes through a light industrial-commercial area, waste oil and oil from accidental spills have been known to enter the stream through storm sewers during wet weather. Through the actions of the WCHD, such discharges to the East Creek are being corrected.

VII.4.j. Echo Bay-Premium Mill Pond

Sampling of Echo Bay by the WCHD in 1973-74 has shown coliform levels in the excess of the Class SB standards of these waters. Such results have, on occasion, caused the closing of bathing beaches in the area. The New Rochelle STP overflow, one pump station overflow and sewer line regulators overflow to Echo Bay during the periods of wet weather. The area surrounding Echo Bay is highly urbanized, with many apartment houses which have been the cause of several small oil spills with storm runoff of accumulated spillage.

Similar to the other systems in the Long Island Sound portion of Westchester, oil discharges have been noted in Pine Brook and high coliform counts recorded in Ferris Brook, both of which drain into Echo Bay.

Echo Bay is tidal and occasional seaweed and other floating material have been noted.

VII.4.k. New Rochelle Creek

The New Rochelle Creek in the Town Dock Road area received the sewage discharges from seven (7) private dwellings. Tests by the WCHD in 1975 showed high coliform counts in the Creek, however, investigations are now underway to serve the area with a pump station through Federal and State funding. In addition, this area has been noted to have floating debris and oil in the water, which seems to be the result of individual dumping.

VII.4.1. Lower Harbor-Burling Brook

Burling Brook drains a light industrial-commercial area and, as is typical of such an area, oil has been noted in this stream on occasion. The quench water from the New Rochelle incinerator is discharged to this area and causes a gray discoloration to the water. The City of New Rochelle is currently under orders from DEC to abate air pollution from this incinerator and this water pollution will be handled collectively in that DEC order.

VLL.4.m. Hutchinson River-Bronx River

Although these two streams do not discharge to the Long Island Sound directly from Westchester County, they do drain a significant area of the county and contribute a pollutional load to the Long Island Sound when they discharge from Bronx County (New York City). Similar to the stream systems mentioned previously, the streams drain a heavily developed area and suffer the same types of pollution from oil discharges and untreated sanitary wastes.

The Bronx River has a drainage area of approximately 62 square miles located in both Westchester County and New York City. The Hutchinson River has a drainage area of approximately ten square miles and is also located in both Westchester County and New York City.

VII.4.n. Little Neck Bay

Little Neck Bay is located on the north shore of Long Island on the boundary of Queens and Nassau counties. The Bay is approximately four miles long and one mile wide and has a mean depth of 7.5 feet. The lands contiguous to the shoreline are residential in nature. The southern section of the Bay is occupied by a large boat anchorage.

The waters of the Bay are classified SB, which assigns bathing and any other usages except shellfishing for market as the best usage of waters.

Circulation is dominated by tidal exchange, hence exchange of polluted waters from the East River into the Bay propogates a water quality problem within the Bay. Also, effluents from the Belgrave Sewer District, from septic tank failures and discharges from the unsewered Douglaston area of New York City, and raw and combined overflows from Tallman's Island Sewer District augment the pollutional loadings to the Bay.

As the quality of this Bay is primarily dependent on the quality of the water in western Long Island Sound, this Bay is considered effluent limiting for discharges to the Bays.

VII.4.o. Manhasset Bay

Manhasset Bay is located entirely within Nassau County on the north shore of Long Island. It is an open mouth bay, experiencing good tidal flushing except in the head of the Bay where flushing is restricted. The Bay is approximately four miles long and one mile wide with twelve miles of shoreline. The average depth of the Bay is between ten to 15 feet. Tidal rise in the Bay is seven feet, resulting in a daily tidal exchange with western Long Island Sound approximately equal to the Bay volume. Although there is substantial tidal exchange, the Bay waters are not completed mixed. However, because of the large tidal exchange, the water quality of the Bay is influenced to a major extent by the quality of western Long Island Sound, particularly in the wide open sections of the Bay where more complete tidal mixing and flushing occur.

Manhasset Bay is classified in sectors with the main body and western shore designated SA waters, the Port Washington Cove area SB and the head of the Bay classified SC and I. Manhasset Bay has long been considered one of the best pleasure boat harbors on Long Island Sound due to its favorable physical characteristics and protected waters. Bathing beaches are maintained in the harbor; however, Manorhaven Beach has been found to have excessively high bacterial counts. The shellfish grounds of the Bay have been closed to the taking of shellfish since 1963 due to bacterial contamination. Other pollution problems in the Bay are the periodic nuisance blooms of algae caused by nitrogenous compounds and lowered summer dissolved oxygen levels (3.0 - 5.5 ppm) due to a combination of carry-over in the area from western Long Island Sound waters and existing discharges.

Studies of the Bay by Hydroscience, Inc. and Dr. Hugo Freudenthal of H2M Engineers indicate that the chemical and biological quality of the Bay is primarily that quality of water existing in Long Island Sound. Treated waste effluents are discharged to the Bay from Great Neck (V), Great Neck SD and Port Washington SD. These effluents contribute significant nitrogenous compounds to the Bay. However, without actions in the New York metropolitan area to control nitrogen levels in the western Long Island Sound, periodic algae problems could be expected in Manhasset Bay, even without the existing sewer districts. However, proposed expansion can make this nitrogen contribution more significant in the future. Similarly, bacterial water quality and summer dissolved oxygen levels are not expected to significantly improve without corrective actions on combined sewers and upgrading of the New York City plants on the East River system.

The above does not mean all treatment facilities are adequate in Manhasset Bay. In fact, it is desirable to limit nitrogenous compounds entering the Bay from point discharges to avoid further worsening of the algal problem. Also, extremely high levels of nutrients and local pollution problems, such as depressed dissolved oxygen levels, exist at the head of the harbor, where flushing is limited, as a result of the Great Neck SD and Great Neck (V) discharges.

The overall solution to the problems in this area may involve upgrading of all existing treatment plants, relocation of discharge points and/or recharge based on the results of the Nassau-Suffolk 208 study. As part of this study, a one dimensional link-node (steady state Time Variable Models) will be developed and be used to assess impact of the various alternative abatement measures. Due to the existing water quality problems in Manhasset and expansion of the existing sewer districts, this Bay is now classified water quality limiting.

VII.4.p. Hempstead Harbor

Hempstead Harbor is a north shore harbor in Long Island located in North Hempstead and Oyster Bay townships. The funnel shaped harbor tapers from a width of 0.25 miles at Roslyn to a width of approximately two miles at Long Island Sound.

Bar Beach, a midway bar, divides the harbor into two segments. The southernmost segment ranges in depth from 12 to 25 feet. Tidal induced dispersion provides transport of various constituents discharged within the Harbor to Long Island Sound. Tidal exchange also introduces water quality effects from the Sound into the Harbor.

Commercial and industrial activity predominate along the Hempstead Harbor shoreline with little vacant land remaining for development.

For classification purposes, the waters of the Hampstead Harbor are basically divided into four regions--inner, middle, outer and Glen Cove Creek. The inner and outer regions are classified SB, the middle Harbor is classified SA and Glen Cove Creek is classified I.

Major point source discharges include municipal wastewater treatment facilities at Glen Cove and Roslyn discharging 5.2 MGD and 0.5 MGD of secondary effluent to the Bay waters respectively. Also the North Hempstead Town Incinerator and landfill introduces pollutants to the Bay.

Data collected in August 1973 indicated average dissolved oxygen concentrations in inner Hempstead Harbor are 4.4 mg/l with average diurnal and vertical variations of 1.5 to 2.5 mg/l. The depressed values of dissolved oxygen within the Harbor are primarily the result of background quality levels plus diurnal variations associated with algal photosynthesis and are not attributed solely to the wastewater treatment plant discharges.

Violations of the dissolved oxygen standard of 5.0 mg/l are attributed to the tidal transport of Long Island Sound waters into the

Harbor. Average dissolved oxygen concentrations of 4.8 mg/l occur in Long Island Sound waters during the critical summer periods.

The available nutrients, nitrogen and phosphorus, in combination with proper temperature and sunlight conditions, support the growth of algae in the Harbor. Data indicates the concentration of phosphorus remaining relatively constant on an annual basis with minor decreases evident during the summer months. A background concentration of inorganic nitrogen in the waters of Long Island Sound near Hempstead Harbor is also experienced within Hempstead Harbor with no noticeable change in magnitude. Variations in the concentrations of inorganic nitrogen from 0.5 mg/l during the winter months to 0.1 mg/l during the summer months are observed in both locations. Based on the above, it appears that algal growth in Hampstead Harbor may be limited by the available inorganic nitrogen (ammonia plus nitrate). The problems of algal growth in the future will be alleviated by the control of any future input of inorganic nitrogen sources.

The bacteriological quality of the Harbor waters does not consistently comply with the coliform standard required by the SA classification. The entire harbor as well as the waters of Long Island Sound contiguous to the Harbor are presently closed to shellfishing and coliform standards have been exceeded at the Sea Cliff Village Beach.

The overall solution to water quality problems in this area may involve upgrading of all existing treatment plants, relocation of discharge points and/or recharge. These alternatives will be assessed by the Nassau-Suffolk 208 study. As part of this study, one dimensional link-node (steady state models) will be developed and be used to assess the water quality impact of the various alternative abatement measures. This Bay is now classified water quality limiting.

VII.4.q. Oyster Bay Complex

The Oyster Bay Complex is located on the northern shore of Long Island at the eastern extremity of Nassau County, near the Nassau-Suffolk Line. The complex as defined herein shall included Oyster Bay, as well as Oyster Bay Harbor and Cold Spring Harbor. Oyster Bay Harbor is located in Nassau County; Oyster Bay is divided by the Nassau-Suffolk Line while Cold Spring Harbor is mostly in Suffolk County. Oyster Bay is supplied by marine waters from Long Island Sound. The Bay in turn supplies tidal waters to Oyster Bay Harbor and Cold Spring Harbor.

Oyster Bay Harbor is connected to the remainder of the complex by a one-half mile wide inlet located between Plum Point and Cove Point. Depths of up to 50 feet have been measured in this section, whereas the average depth throughout the major portion of the complex is 12 feet.

Tidal induced currents provide circulation to the waters. However, the circulation pattern is greatly altered during periods of high winds and, at times, the winds are the most dominant cause of water circulation.

In general, the land area is sparsely population with large private homes and estates and much undeveloped land.

The major portion of the waters of the Oyster Bay complex are classified SA, which assigns shellfishing for market purposes as the best usage of the waters. Some remote areas of the Bay where circulation is inhibited, are classified I, SC, D and C in accordance with their best usage.

The waters of Oyster Bay Harbor support a large population of oysters (CRASSOSTREA VIRGINICA) and hard clams (MERCENARIA MERCENARIA) which are of commercial significance to the area.

The major pollutional discharge source to the Oyster Bay Harbor is located in the Village of Oyster Bay. The Oyster Bay Sewer District discharges secondary sewage effluent to the Bay. Additional sources of pollutants include a shipyard, an oil depot, a lumber company, sand and gravel companies, and an oyster processing plant.

There are four areas of the Bay complex closed to shellfishing. These are (1) around the Oyster Bay SD discharge, (2) Mill Neck Creek, (3) cove west of Plum Point, and (4) southern portion of Cold Spring Harbor.

The Oyster Bay Complex is scheduled to be studied and a one dimensional link-node (steady state model) developed and verified as part of the Nassau-Suffolk 208 study. This model will be used to evaluate the impact on water quality of the various alternatives to be addressed under the 208 study.

VII.4.r. Huntington-Northport Bay Complex

The Huntington-Northport Bay Complex is located on the north shore of Long Island and consists of Huntington Bay, Northport Bay, Northport Harbor and Huntington Harbor. The waters of Huntington Bay, Northport Bay and Northport Harbor are classified SA for the taking of shellfish and primary and secondary contact recreation, while Hunting Harbor is classified for secondary contact recreation. The waters of this complex are utilized for shellfishing and is a prime recreational area.

Northport Bay is about three square miles in area, with an average depth of 15 feet. The opening to Huntington Bay is restricted by West Beach to a width of approximately one-half mile. Huntington Bay has a surface area of 3.9 square miles and is the deepest part of the complex, with a mean depth of 25 feet. Northport Harbor is a narrow extension of Northport Bay. It has an average depth of eight feet, a surface area of approximately 0.4 square miles and has no defined channel. Water quality of these areas is generally good.

Huntington Harbor is a small embayment located on the southwest side of Huntington Bay. Yacht clubs, marinas and oil depots are located on the southern side of the Harbor. The Huntington sewage treatment plant discharges to the south end of Huntington Harbor and is a major contributor of nutrients to the area. This part of the complex has a high eutrophication, particularly due to a relatively low flushing rate. Because of this, Hunting Harbor (only) is classified as water quality limiting.

A link-node stead-state model of the Untington-Northport Complex will be verified as part of the Nassau-Suffolk 208 study.

VII.4.s. Smithtown Bay

Smithtown Bay is a relatively large open embayment located along the northern shore of Long Island. It is defined as that area lying southerly of a line extending easterly from Eatons Neck Point on the west to Crane Neck Point on the east and is entirely within Suffolk County.

The depth of the Bay varies directly with the distance from shore. The maximum depth of 60 feet is reaches near its confluence with Long Island Sound. Mean tidal range in the Bay is 6.1 feet.

The Nissequogue River is a fresh water stream and tidal estuary discharging into Smithtown Bay. It is one of the two principal tributaries to Smithtown Bay; the other being Stony Brook Harbor. A mean tidal range of 7.0 feet is experienced at the mouth of the Nissequogue River carrying tidal water as far upstream as five miles. The river is over 6½ miles long and has a drainage area of approximately 27 square miles. The river is generally quite shallow with a narrow channel maintained near its mouth.

Most of the Bay is classified SA for the taking of shellfish and is primarily used for shellfishing and recreation. The major portion of Smithtown Bay is open to the taking of shellfish. As a precautionary measure, it is necessary to close a substantial area (½ mile radius) around the outfall line of the Kings Park State Hospital to the taking of shellfish. In addition, the waters of the Nissequogue area, due to cesspools, are of such condition, that the harvesting of shellfish is also restricted.

Most of the shoreline of Smithtown Bay is covered by either public parks or private country clubs, the largest of these being Sunken Meadow State Park. Most, if not all, of these park areas are equipped with sanitary waste disposal systems with subsurface disposal. The remaining shoreline area is scattered with private homes, ranging from small summer cottages to large estates. All of these homes use some form of subsurface device as a means of waste disposal. However, most of the homes are located a sufficient distance from the Bay so that this type of disposal has had little or no effect on the sanitary or bacteriological quality of the waters of the Bay.

The largest source of pollutants to Smithtown Bay is the discharge from the sewage treatment plant serving Kings Park State Hospital. The hospital operates a secondary treatment plant of the activated sludge variety with its outfall located approximately one mile offshore, north of the mouth of the Nissequogue River. The plant serves an estimated 9500 people and experiences an average flow of 1.0 million gallons per day, which is half of its design capacity. The Nissequogue River is subject to potential contamination from the subsurface systems, particularly in the vicinity of the Jericho Turnpike, where a high water table exists.

The vastness of Smithtown Bay, together with its depth minimizes the effects of boating on the sanitary quality of the Bay water. Very few boats are moored in the open waters of the Bay, most finding shelter within Stony Brook Harbor. There is one small marina located near the south of the Nissequogue River, but again the effects of pleasure craft are negligible, due to vessel discharge restrictions and the extensive dilution provided by the 7.0 foot tidal range in the area.

VII.4.t. Port Jefferson Harbor

Port Jefferson Harbor is located on the north shoreof Suffolk County within the Town of Brookhaven, 14 miles southeast of Bridgeport, Connecticut. The Harbor is approximately 1000 acres. Located to the west are tributary shallow tidal basins of Conscience Bay and Setauket Harbor. A deep channel for the purpose of navigation, 300 feet wide by 26 feet deep, spans the length of the Harbor.

The Harbor is of industrial, commercial and recreational significance with marinas, yacht clubs, docks, oil terminals, sand and gravel facilities, and a power plant located on the southern shoreline.

Approximately 125 acres of the Harbor, located south of a line running between the Long Island Lighting Company bulkhead and the Beach House at the foot of Beach Road in Belle Terre, are classified SC. The remaining 875 acres of the main harbor, along with Conscience Bay and Setauket Harbor are classified SA.

The circulation pattern throughout Port Jefferson Harbor is controlled by the tidal cycle. The shallow depths of Conscience Bay and Setauket Harbor result in a large percent of the volumes being exchanged with Port Jefferson Harbor water each tidal cycle. However, this does not define true flushing of these areas, as the only exchange with Long Island Sound waters is through the Port Jefferson Harbor mouth. This limited flushing results in occasional localized problems observed in these two remote coves.

The Port Jefferson Sewer District discharges approximately 1.8 MGD of primary treatment plant effluent to the waters of the Harbor. Additional factors influencing water quality include storm runoff and commercial and recreational activities such as an oil terminal, ferry service and large marinas. The LILCO facility in Port Jefferson Harbor is a source of thermal loadings, but detailed studies of its effects on the Bay have not been perfo rmed.

Approximately 80 percent (690 acres) of the SA classified waters are presently closed to shellfishing. Over the past several years, the general water quality in the Harbor and adjoining waters has been found to be improving, based on coliform levels found in the SA waters.

Based on surface water data collected by the SCDEC, water quality continues to be generally satisfactory. The Harbor proper experiences good tidal flushing. Data from the 1974 Suffolk County Department of Health Services Report of Bathing Beach Water Quality rated beaches in the Harbor and adjoining waters as excellent.

A proposal to increase the existing sewer discharge to somewhere in the range of 5 to 8 MGD is under consideration. It is not explicitly known what impact an increase discharge would have on the overall quality or biological quality in this area (eutrophication). Alternative collection, treatment and disposal plans are being considered. With expansion, it is likely that advanced waste treatment and/or out of Harbor discharges will be required and, therefore, Port Jefferson Harbor has been classified as water quality limiting.

The Port Jefferson Harbor Complex will be studied as part of the Nassau-Suffolk 208 study. The study shall include the development and verification of a one dimensional link-node model for the entire complex. Development of this model will provide a basis for a better evaluation of treatment/location requirements for any increased discharge to this area.

VII.4.u. Peconic Bay-Block Island Sound

At the east end of Long Island, the Island is separated into two forks. Between these forks is located the complex of waters that contains, among others, Gardiners Bay, Peconic Bay and Little Peconic Bay. Block Island Sound is that body of water between the bays and the open waters of the ocean.

Great Peconic Bay covers an area of 19,700 acres. Little Peconic Bay covers some 14,470 acres. The waters of the complex are relatively deep, with a mean depth of 22 feet for Great Peconic, while much of the central portion of Little Peconic is 30 to 50 feet or more.

The land acres around the Bay generally are not highly developed. A good deal of land around Great Peconic Bay is used for farmland or is wooded land. South Jamesport, a small community on the northern shore is the largest developed area along the shoreline. The population is around 500 people. Deep Hole Creek, a tributary, drains a small area on which are located several summer homes using subsurface sewage disposal systems. The underflow from these systems could cause water quality problems. Great Peconic Bay also has a large transient boat population that could cause problems due to illegal discharges from onboard toilet facilities and from marinas servicing these boats.

The land surrounding Little Peconic Bay is similar in use to that of Great Peconic Bay, mainly farming and woodlands. The Town of New Suffolk (population 500) has a marina. This area has been closed to shellfishing. There are several small summer colonies that are served by cesspools which pose a potential health and water quality hazard.

The waters of the Peconic Bay Complex are classified SA, which assigns shellfishing as the best potential use.

Wind and wave action in combination with tidal induced currents promote good circulation of the top and bottom waters of the Bay.

There are no point source discharges of pollutants into any portion of the Great Peconic Bay Complex or its tributaries.

The bacterial quality of these waters is excellent, therefore, the majority of the waters of the Great Peconic Bay Complex are open to the taking of shellfish.

The overall quality of the waters of the Peconic Bay Complex is high. No immediate threats to the degradation of the water quality exist. Therefore, with continuous monitoring and organized planning, the high quality of the waters will be insured.

The Peconic Eastuary-Peconic Bay system will be studied to some extent as partof the Nassau-Suffolk 208 study.

VII.4.v. Peconic River

The Peconic River is the major tributary to the Peconic Bay-Flanders Bay Complex. It is a tidal estuary for about 2½ miles from the Bay to a dam in the hamlet of Riverhead. Westward, the river winds through the hamlet and then through open farmlands and woodlands for about 11 miles. The headwaters of the river are located to a large extent, in the property controlled by the Brookhaven Laboratories. The Peconic River is one of the largest on Long Island and drains most of the central section of Suffolk County.

Waste sources on the Peconic River include the Brookhaven National Laboratory, Gumman Aerospace, several duck farms and the hamlet of Riverhead. The lower section of the river has several impoundments and profuse growths of rooted aquatics have been a chronic problem.

Due to the complexities of the Peconic River caused by the series of impoundments and the existing stream eutrophication, it is now classified a water quality limiting segment. A water quality survey and mathematical model of this stream are scheduled as part of the Nassau-Suffolk 208 Areawide Wastewater Management Plan.

VII.4.w. Sag Harbor

Sag Harbor is one of many embayments of the Shelter Island Sound and has a surface area of approximately 575 acres. It is a relatively shallow body of water, having an average depth of five feet at mean low water and a maximum depth of up to 12 feet. This Harbor is classified SA for the taking of shellfish and primary and secondary contact recreation.

Because of the relatively shallow nature of the Harbor, tidal variations have a major effect on the pattern of circulation. The mean tidal range for Sag Harbor is 2.5 feet, although this increases to 3.0 feet during spring tides. Tidal waters enter the Sag Harbor-Sag Harbor Cove Complex at the northeastern extremity and flow southwesterly past the breakwater under the North Haven Bridge. A portion of these waters enter the Big Narrows and the Little Narrows. This tidal action affects the circulation pattern of the area in a general in and out pattern.

At present, coliform levels have caused the closure of approximately 30 percent of these shellfish grounds. The major sources of contamination are Sag Harbor (V), which discharges raw wastewater through storm sewers behind the breakwater and the groundwater seepage from subsurface disposal systems. Portions of Sag Harbor (V) are being sewered and a treatment system is being constructed. The exact point of discharge has been disputed because of impact on the shellfish grounds. Presently, the New York State Department of Environmental Conservation favors extended aeration treatment with discharge behind the breakwater of Sag Harbor to minimize impact on open shellfish grounds. Other sources of contamination are the Bullova Watch Company, which presently partially treats its wastes by settling, and the heavy concentration of pleasure craft moored throughout the area. Sag Harbor is now classified as water quality limiting.

VII.4.x. Mecox Bay

Mecox Bay is a south shore bay in Suffolk County. It is located in the Town of Southampton. The Bay is shallow with an average depth of two feet. Surface area of the Bay is approximately 1045 acres. The Bay is separated from the ocean by a barrier beach that restricts flow. Normally the Bay does not have an inlet that is open to the sea. The Town maintains an inlet that is opened as it is needed to maintain salinity levels. Despite the limited tidal flushing, wind and fresh water induced currents produce relatively complete mixing. The Bay is classified SA with Hayground Cove classified SA and SB. Some tributary areas are classified SC.

Some surrounding land is used for agricultural purposes, for truck farming and duck farming. The Bay is a valuable waterfowl area and is valuable as a recreational area for boating and sailing. The Bay is held to be an economic asset with respect to the propagation of oysters and blue claw crabs. The soils surrounding the Bay have limited permeability and, therefore, surface water runoff is relatively high.

Mecox Bay Duck Farm (70,000 ducks) is located at the head of Hayground Cove and has, in the past, been a major source of coliforms and nutrients. This farm did not operate in 1975. The farm's owner is attempting to sell the property, but plans to operate in 1976. The size and type of operation will depend on availability of ducklings. There are no other major point sources of wastewater. The area around the Bay is lightly populated so that septic tank contributions should not pose a problem. The boats that use the Bay are small and do not significantly contribute to pollutional loading.

The waters of the Bay are generally pollution-free to a degree to which shellfish can be taken. Hayground Cove and Calf Creek are closed to the taking of shellfish with the remainder of the shellfish areas open.

VII.4.y. Moriches Bay

Moriches Bay is a south shore bay located in Suffolk County, Long Island. The Bay is about 10 miles long and has a surface area of 15 square miles. The Bay is relatively shallow with an average depth of four feet with some dredged channels being deeper.

The land surrounding the Bay has a rural character. There are several duck farms located around the Bay. There are also a growing number of private homes. The shore of the Bay is used by many boat clubs for their headquarters. The Bay proper is classified SA with tributaries classified SB and SC.

The Bay is used for boating, commercial and sport fishing, as well as shellfishing. It is also a valuable waterfowl area. Uses that have been impacted by degraded water quality are shellfishing and swimming. The Bay was once productive for oysters, but these have declined to the point where they are hard to find and unsuitable to use.

Moriches Bay receives waste inputs from duck farm activities along with groundwater inputs of nitrogen compounds from septic tank and cesspool leaching. Duck wastes are usually high in organics, nutrients and coliform and are difficult to properly treat without stabilization of raw wastewater flow and diligent maintenance effort.

As more housing is added to the area, septic tank leaching will become a more significant source of nutrients and coliforms. The industrial wastes are from poultry processing and contribute over 60 percent of the yearly nitrogen inputs.

Past activities at duck farms have caused sludge deposits throughout various protions of the embayment. The nitrogen contributed by these duck farms and other non-poing sources cause excessive growths of algae and aquatic plants which make portions of the Bay unfit for recreation. In addition, these conditions have caused a decline in the oyster population. The algae cause increased turbidity and clog the gills of clams. The turbidity blocks sunlight that is needed by bottom life for growth. High coliform levels have resulted in closing of many shellfish areas. Enforcement efforts during 1974-1975 have resulted in a decrease in effluent coliform violations and incaeased chlorination reliability at the duck farms.

An important factor in this area is the limited circulation patterns and flushing of the Bay. Studies of the Bay's hydrography indicated that low flushing rates of Moriches Bay and eastern Great South Bay were responsible for holding the pollutants long enough to cause massive proliferation of minute algae which are deleterious to oysters. Dredging of Moriches Inlet served to increase the flushing rates and consequently reduce these pollutional effects until sufficient silting of the inlet served to again lower the flushing rate. Conclusions from these past studies were that low salinity and low flushing rates augment the ill effects caused by the organic nitrogen loadings from duck wastes, septic tank and cesspool leaching and other non-point sources.

Problems are such in this embayment that it is now considered water quality limiting.

VII.4.z. Shinnecock Bay

Shinnecock Bay is located on the south shore of Eastern Long Island in the Town of Southampton.

The Bay and tributaries have a surface area of about 8300 acres. The average depth is about five feet with a mean total range of about 2.9 feet. It is connected by the Shinnecock Canal to the Great Peconic Bay to the north and to the Quantuck Bay on the west via the Quogue Canal. The majority of the Bay's waters have been classified SA, with some tributary areas classified SB and SC.

The Bay has an inlet from the ocean that provides a good exchange with the sea waters that are of high quality. Freshwater inflow entering from the tributaries is also of high qaulity. The land around the Bay is sparsely populated with some development taking place particularly in Pine Neck and around Tiana Bay. All of the houses have cesspools and the depths of soil cover may be inadequate in some areas.

The major uses of the Bay are for recreational purposes and for shellfishing beds. Generally, the waters of the Bay are of high quality. Pollution from boats is not felt to be significant. The only areas closed for shellfishing are for purposes of relaying beds. Sanitary surveys of the Bay indicate the bacterial pollution does not seem to be significant and has not been increasing to any noticeable extent.

The development in the area of Pine Neck could cause some problems and will need additional monitoring. Development in the Tiana Bay area may also become a threat to the water quality of the Bay. Sewers may be needed to minimize any potential problems arising from this area, depending on the ultimate density of development..

VII.4.aa. Great South Bay

Great South Bay is located on the south shore of Long Island near the Towns of Babylon, Islip and Brookhaven. The boundaries of the Bay as defined herein are the Nassau-Suffolk Line on the west and Smith's Point on the east.

The Great South Bay, as described herein, is a part of the Great South Bay Complex which extends from the East Rockaway Inlet in the west to Smith's Point in the east. The western region of the Complex includes Hempstead Bay, East Bay, Middle Bay and South Oyster Bay, and is characterized by many channels, islands and tidal flats which are not common to the eastern portion of the Bay Complex. The Bays contained in the western portion of the Complex are addressed individually under appropriate sections.

Great South Bay proper is approximately 30 miles in length. The average depth of the Bay is six feet with only main navigational channels and dredged areas exceeding depths of ten feet. Twenty percent of the Bay has a depth of less than three feet. This shallow depth allows the bottom of the Bay to be well illuminated, hence promoting the growth of benthic plants. The shallow waters of Great South Bay support a standing crop of eelgrass (ZOSTERA MARINA) and algae.

Great South Bay is presently the most important hard clam (MERCENARIA MERCENARIA) producing area of the world. Approximately 50 percent of the hard clams produced in the United States are produced in the waters of Long Island, of which greater than 80 percent of the above come from Great South Bay. The shoreline area is presently under intense development by recreational and commercial interests.

The waters of the Great South Bay are classified as SA, the highest classification for marine waters which assigns shellfishing as the best potential use.

Great South Bay is a shallow embayment with limited tidal flushing. Hence, wind is the primary mover and inducer of currents and mixing.

Dissolved oxygen concentrations within the Bay have been monitored and available data indicates that concentrations are consistently near or in excess of 100 percent saturation. One would anticipate this in a shallow, wind driven system such as Great South Bay.

The overall bacterial quality of the waters of Great South Bay is very good. The primary sources of coliform organisms are attributed to runoff, with the exception of inputs from several small treatment plants. The only areas seriously impacted are those contiguous to the north shore of the Bay. This may be attributed to the increased development of the north shore which has resulted in an input of nutrients to the waters. Circulation patterns tend to concentrate these nutrients along the north shore, hence, posing a potential water quality prblems.

Duck farming was once a major source of pollutants to Great South Bay. Untreated and inadequately treated wastewater contributed substantial quantities of solids, BOD, coliforms and nutrients to the eastern portion of Great South Bay. There are now only two major duck farms tributary to Great South Bay and both provide biological wastewater treatment and disinfection.

Nitrogen in the form of nitrates enter the Bay from streams which drain the south shore communities. Groundwater underflow quantity and quality is significant, but can only be estimated at this time.

The addition of nutrients, specifically nitrogen, in combination with low tidal flushing rates, allows for the accumulation of nutrients within the Bay system. Since the concentrations of these nutrient materials are in excess of the amounts required to support nearshore plankton growth, the streams are potential sources of eutrophication.

Since nitrogen is the critical factor to algal growth and eutrophication in marine waters, continued enrichment of the Bay can be controlled only by limiting the addition of nitrogen and nitrogen-bearing compounds and maintenance of the limited inlets.

Although eelgrass has been a recurring phenomena, the present degree of eutrophication of Great South Bay is not overly critical and the Bay presently provides one of the best environments in the nation for shellfish. However, as this is not a permanent condition, nutrient and algal concentrations must be monitored closely in the futue to insure maintenance of a healthy marine resource

The open eastern section of Great South Bay Complex is also covered in the modeling studies of the Nassau-Suffolk 208 study. Of great concern in this area is the bacteriological water quality along the north shoreline, which can be addressed by the proposed link-node hydrodynamic water quality model (time variable) proposed for Great South Bay. Steady-state conditions will also be assessed by modeling efforts of the Bay Complex and will help better understand and manage the nutrient inputs into the complex.

Due to the great value of this resource and the potential for serious future eutrophication problems (due to shallow nature), should large wastewater loadings be proposed in the future, Great South Bay is now classified water quality limiting.

VII.4.ab. South Oyster Bay

South Oyster Bay is that body of water on the south shore of Long Island between the Wantagh State Parkway and the Nassau-Suffolk Line. The Bay has a surface area of 12 square miles. The water of the Bay is relatively shallow and is generally less than five feet in depth, with numerous drains and channels winding their way in and among the many small islands.

The land adjacent to the Bay on the north is relatively heavily populated.

However, heavy industrial complexes are not concentrated near the shore areas or along tributaries to the Bay.

South Oyster Bay was once a major producer of hard clams and some soft clams. Excessive growths of eelgrass and algae have reduced the production to the point where few commercial harvesters are presently using the Bay. The Bay is classified SA with some tributaries classified SB and SC. Protions of the Bay are still open to the taking of shellfish. A portion of the Bay was closed due to the break in the Cedar Creek STP outfall. Areas along the mainland shore were closed to the taking of shellfish due to possible bacterial contamination from housing developments. These developments were previously not sewered and used cesspools for sewage disposal. Presently, Nassau County SD #3 encompasses the area tributary to this Bay. The treatment plant is operational and 25 percent of the district hookups have been made, including all of the southern shoreline areas which were shown to be contributing to Bay contamination. Further, the developments have also required the installation of stormwater drains. This stormwater drainage is directed towards the tributaries of the Bay. Thus, non-point sources of pollution, while not quantified, appear to be significant.

The major usage of the Bay is for water oriented recreation, particularly for boating. This has led to demand for more and better boat channels. This leads to dredging which alters the bottom conditions and can radically change the circulation patterns in the Bay.

All in all, the waters of the Bay are of generally good quality. The development of the shores and use of the Bay for recreation requires that surveillance be carried on to insure the water quality does not deteriorate. While the Bay is enriched by nutrients, it is ecologically well balanced. However, control of nutrient inputs are needed to alleviate algae problems which would ultimately improve the shellfish resource.

This Bay will be part of the study area of the Great South Bay Complex to be studied in great detail under the Nassau-Suffolk 208 study. As part of the study, one dimensional, link-note (steady state and time variable) models will be developed and verified for the entire Great South Bay Complex. These models will be used to assess the impact on water quality of the various abatement alternatives to be addressed under the 208 study.

VII.4.ac. East Bay

East Bay is a south shore bay located between Wantagh State Parkway and Meadowbrook State Parkway in the town of Hempstead, Nassau County, New York. The Bay as described herein is bounded on the east by South Oyster Bay, on the west by Middle Bay and includes Merrick Bay. The Bay has a surface area of approximately six square miles which is utilized for recreation and is a good shellfish habitat.

The Waters if East Bay, as common to all four south shore bays, contain large areas of shallow depths (2½ to 3 feet), with only main navigational channels and other dredged areas exceeding depths of 10 feet.

The Bay is defined as a "barrier built" estuary. Due to its shallow depth and limited tidal flushing, wind is the prime mover and inducer of currents and mixing.

The major portion of the Bay has been classified as SA, the highest classification for a given area, which assigns shellfishing as the best potential use. Some northern areas of the Bay have been classified I.

In March 1972, closure of approximately the upper half of the Bay to shellfish harvesting was instituted as a result of a large portion of these waters not being able to consistently comply with the stringent water quality requirements necessary to permit shellfish harvesting. The remainder of the shellfish growing areas were closed in April 1974.

The Bay contains sufficient concentrations of nitrogen and phosphorus which act a nutrients for the support of an active plankton population. The concentrations of these elements are significantly lower than those experienced in Hempstead and Middle Bays, hence the problem of algal blooms has not been overly critical in this Bay.

The overall higher quality of the waters within East Bay as compared to the waters of Hempstead and Middle Bays is attributed primarily to the smaller quantity of pollutants introduced to East Bay.

The major point source discharges to East Bay are from the Jones Beach Wastewater Treatment facility and the Merrick Municipal Incinerator Complex. The incinerator uses cooling water and process water. Extremely high coliform counts in the process waters are due to the transfere of organisms during refuse processing and for a proliferation of the bacteria during the incineration process. Recycling of process water or discharge of process water only after chlorination and other treatment are options which will avoid contrivention of standards.

Associated with the Merrick Incinerator are 50 acres of land set aside for use as landfill. Leachate from this landfill, high in ammonia, organic nitrogen, and BOD, also imposes a pollutional load on the Bay.

The incinerator has significant thermal discharges. However, no ill effects such as fish kills or destruction of aquatic life indigenous to the waters of the Bay has been detected. The overall water quality of the East Bay is good. The bacteriological quality is good, as indicated by median MPN at nine sample points in 1972, being less than 70/100 ml. However, bacterial concentrations experienced in the northern areas of the Bay may exceed average Bay concentrations. This may be attributed to the following: a) many areas along the shoreline and areas tributary to the Bay are presently served by individual sewage disposal systems such as cesspools; b) failure of individual systems contaminates groundwater which introduces pollutants, specifically nitrates, to the Bay as non-point sources; c) stormwater drainage is directed towards the tributaries of the Bay; d) stream and subsurface discharges and discharges from incinerator process waters and landfill leachate and runoff at the Merrick Incinerator; e) intrusion of polluted waters from the northern areas of Middle Bay in Freeport to East Bay; and f) tidal interchange in the northern areas of the Bay tend to concentrate pollutants which enter the area.

The Nassau County SD #3 encompasses much of the shoreline areas tributary to the Bay. This plant is operational and approximately 25 percent of the hookups have been made. This should result in significant reduction in future pollution loadings from individual systems.

Existing dissolved oxygen data indicates that the average dissolved oxygen concentrations at various sample points throughout the Bay are in compliance with the standard.

This Bay will be part of the study area of the Great South Bay Complex, to be studied in great detail under the Nassau-Suffolk 208 study. As part of the study, one dimensional link-node (steady state and time variable) models will be developed and verified by the entire Great South Bay Complex. These models will be used to assess the impact on water quality of the various abatement alternatives to be assessed under the 208 study.

VII.4.ad. Middle Bay

Middle Bay is located on the south shore of Long Island in the town of Hempstead. The Bay as defined herein includes Bay of Fundy and Baldwin Bay and all contiguous waters bounded by Meadowbrook State Parkway on the east, Lido Beach and city of Long Beach on the south, Long Island on the north and the Long Beach Boulevard on the west. The Bay has a surface area of approximately nine square miles, most of which is classified SA -- best usage -- taking of shellfish.

Middle Bay, like all south shore bays is an important recreational area. The Bay is also a prime shellfish habitat and supports a good sport fishery.

Intensive sampling has been performed on Middle Bay by several agencies. In 1966, a biological study was conducted for Nassau County DPW. Bacteriological results of the survey indicated the possibility that some areas within the Bay may not be suitable for the harvesting of shellfish. Follow up surveys of the Bay indicated that many areas of Middle Bay could not meet the rigid bacteriological standards required for shellfishing. In 1972, the New York State Department of Environmental Conservation closed all of Middle Bay to the taking of shellfish.

Major wastewater discharges to Middle Bay are the Freeport (V) STP and Freeport Incinerator, which discharge to Stadium Park Canal, the Oceanside Incinerator, and the E. F. Barrett Lilco Power Station located on Barnums Channel. Other sources of contaminants are stormwater runoff and carry-over from Reynolds Channel and Hempstead Bay.

As expected, the highest bacterial levels have been found in the Freeport area and Oceanside area. Similarly, violations of the dissolved oxygen standard have been recorded in the vicinity of Freeport and in Reynolds Channel, just east of Long Beach Road. This latter area is also being impacted by carry-over from Hempstead Bay.

The concentration of nutrients within Middle Bay are essentially the same as within Hempstead Bay, with the highest levels of nitrogen and phosphorus observed in the vicinity of Freeport. As phosphorus is usually present in sufficient quantities in the marine waters of Long Island to support phytoplankton growth, nitrogen is generally considered the limiting nutrient. It is felt that Middle Bay is experiencing excessive nutrient levels, which, under proper wind and tidal conditions, with sunlight, could trigger nuisance algae blooms. Preliminary mass balances of nitrogen compounds indicate 93 percent of the nitrogen loading to the Bay from the municipal sewage treatment at Freeport. Thus, direct control of this source may have a substantial effect on nutrient levels with the Bay. This has generally been the position of the New York State Department of Environmental Conservation in this area. It is primarily for this reason that Middle Bay is now classified as water quality limiting.

The Nassau-Suffolk 208 study will provide for detailed studies of the south shore embayments within Nassau County. Benefits of abatement alternatives involving advanced treatment, discharge and/or ocean disposal along with stormwater runoff control will be evaluated by complex water quality and groundwater mathematical models.

VII.4.ae. Hempstead Bay (West Bay)

Hempstead Bay is a south shore bay in Long Island, New York. The Bay has a surface area of some five square miles and is the westernmost portion of the Hempstead-South Oyster Bay estuary. Hempstead Bay can be classified as a "bar-built" estuary. Inlets connecting a bar-built estuary with the ocean are relatively small compared to the dimensions of the Sound within the barrier. This reduces tidal influence and makes wind the primary moving force for mixing. This is due to the shallow depth and the barrier island influence. The mean depth of the Bay is four feet, with deeper depths occurring in the main navigational channels.

The majority of the Bay has been classified SA, with some tributary areas classified SB and SC. The Bay is used predominantly for recreation and is also considered to be valuable waterfowl, shellfish and finfish habitat.

Hempstead Bay is beginning to show signs of excessive nutrient enrichment. There are more prolific blooms of blue-green algae in this Bay than in adjacent south shore bays, indicating a possible shift toward less desirable phytoplankton organisms in the Bay. This is attributed to the heavy point source loading of nitrogenous compounds from the major STPs. There has also been a gradual deterioration in a bacteriological quality throughout the Bay. This has resulted in the closure of all shellfish areas throughout the Bay. There is also some concern for the county bathing beaches as bacterial quality has also apparently been deteriorating at these beaches since 1968.

Sewage treatment plant effluents and stormwater runoff are both major sources of pollution. Stormwater runoff and possibly any bypassing by the STPs seem to be significant factors since after rainfalls, the bacterial quality of the Bay is more degraded.

The sewage treatment plants discharging to the Bay include Bay Park STP, Long Beach STP, West Long Beach STP and Lawrence STP. According to preliminary mass balances of nutrients, these treatment plants are responsible for over 95 percent of the total yearly nitrogen load. These plants are also deemed to be responsible for the organic loadings which, coupled with the secondary algal effects, cause occasional contravention of the 5.0 ppm DO standard sor SA waters. Due to the existing problems in this embayment, it is now classified water quality limiting.

Hempstead Bay will be extensively studied under the Nassau-Suffolk 208 Planning Study. A hydrodynamic link-node model of the Bay will be utilized with comprehensive groundwater models to evaluate various alternative means of wastewater disposal in this area. The alternative systems include advanced waste treatment (nitrogen removal), with Bay discharge, secondary treatment with ocean outfalls and/or recharge.

VII.4.af. Jamaica Bay

Jamaica Bay is located on the south shoreof Long Island, almost totally within the bounds of the boroughs of New York City. The Bay is bounded on the north by Queens, the south by Rockaway Peninsula, the east by Nassau County and JFK Airport, and on the west by Brooklyn.

The Bay is approximately six miles long and four miles wide, with a surface area of approximately 20 square miles. Similar to other south shore bay systems, Jamaica Bay is a geographically enclosed area of the ocean. It has a mean depth of only 16 feet, supports an extensive system of tidal marshes and has a limited tidal exchange of waters. The only connection to the ocean is through Rockaway Inlet, located at the southwest corner of the Bay.

The absence of major rivers or streams discharging to the Bay limits the fresh water input to the Bay. The major fresh water inputs result from discharges from water pollution control facilities, combined sewer overflows and storm drainage systems. Circulation within the Bay waters is limited by an extremely small net tidal exchange.

Land areas contiguous to the Bay are heavily urbanized. This leads to a considerable diversity in the uses made of the Bay. Presently, fishing, boating, wildlife management, solid and liquid waste disposal, land reclamation, residence, airport facilities and shipping are the dominant uses of the Jamaica Bay resources.

The major portion of the waters of the Bay are calssified SB, which assigns bathing and any other usages, except shellfishing for market purposes, as the best usage for the waters. Other waters of the Bay area are classified I, C, D and SC.

The contributions to the past and continuing degradation of the waters of Jamaica Bay are manifold. Extensive impact on the water quality parameters of the Bay is attributed to the discharge of wastewater from the Coney Island, Rockaway, 26th Ward, Jamaica, the Spring Creek Auxiliary Plant water pollution control facilities and combined sewer overflows. Other contributing factors to this problem are urban surface runoff, drainage from Kennedy Airport, and raw discharges from the Broad Channel and Hawtree Basin areas. This has led to the restriction, and in many cases, the elimination of the uses of the waters for activities such as swimming, fish propagation and basic esthetic enjoyment.

Combined sewer overflows are responsible for approximately 25 percent of the BOD, 42 percent of the suspended solids and 27 percent of the total coliform discharged to Jamaica Bay on an annual basis. A major portion of the combined sewers discharge to small basins or creeks within the Bay. This condition has led to the contravention of water quality standards in these locations with respect to dissolved oxygen and coliform levels. Periods of significant rainfall result in increased coliform levels throughout the entire North Channel, hence, making evident the significance of combined sewer overflows.

The present water quality of Jamaica Bay is consistently in noncompliance with the coliform standards set forth by the New York City Health Department. Existing coliform levels in the waters contiguous to major beach areas fail to meet the standard and, hence, restrict the recreational activities within the environment of the Bay.

Dissolved oxygen problems within the Bay are minor and contravention of standards occurs infrequently.

The use of the waters of the Bay is further restricted by the high algal population. The algal blooms result in excessively turbid waters, which hampers bathing uses and also reduces sunlight penetration to the Bay floor. This reduction in penetration results in a deficient benthic grass population, which is needed for the feeding of fish. The problem of extensive algal population is attributed to biostimulants discharged by sanitary sewage effluents. The algal concentration increases towards the head of the Bay, indicating that they are being produced in the Bay.

Sediments have been realized as a factor contributing to the water quality degradation of the Bay. High levels of coliforms, organics and nutrients characterize these deposits. In certain segments of the Bay, the oxygen demand of these sediments appears to be a dominant factor on water quality. A significant percentage of the materials appearing in sediments has been attributed to combined sewer overflows.

The City has realized the problems of the Bay. In an effort to alleviate these problems, a program of construction of treatment facilities to eliminate the problem of combined sewer overflow is in effect. It is the desire of the City to achieve the understanding of the problems inherent to the Bay so that improvement to the receiving waters may be planned. A two dimensional hydrodynamic time variable model of Jamaica Bay has been developed and verified by Rand Corporation for NYC EPA.

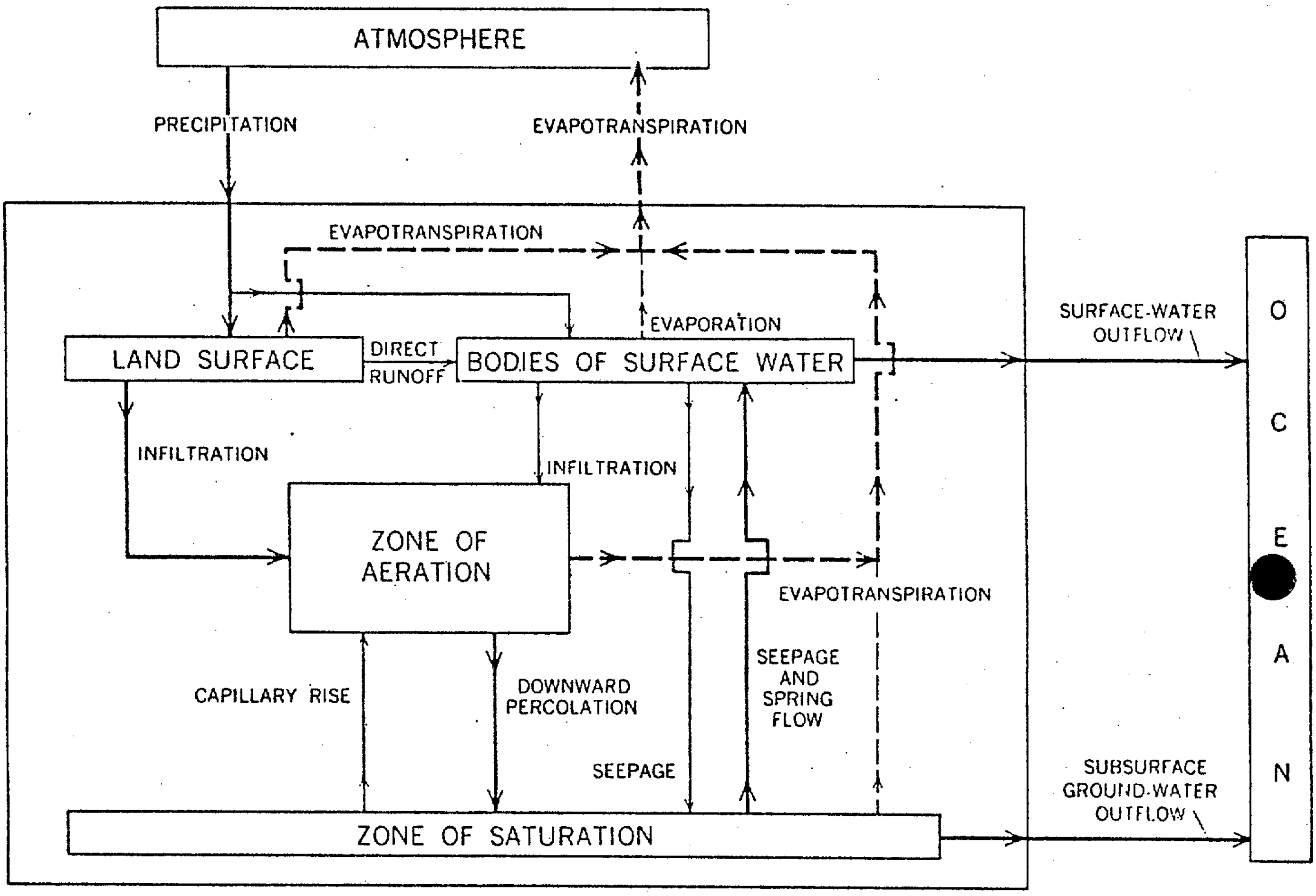
This model can be used to evaluate various abatement alternatives being considered for Jamaica Bay, particularly in regard to coliform contamination.

VIII. GROUNDWATER

The purpose of this section of the Long Island 303(e) Report is to generalize some of the aspects of the groundwater system of Long Island. Included in this section are summaries of the groundwater hydrology, supply, quality, management problems, alternatives and policies. The information for this Chapter has been obtained from various publications pertaining to the groundwater of Long Island and are listed in the bibliography. Because of the critical reliance on groundwater by most of the Island, general information on groundwater hydrology has been developed for over 40 years by such agencies as the United States Geological Survey, the former New York State Water Resources Commission, New York State Department of Environmental Conservation, New York State Health Department and various local agencies. Other reports pertaining to the more specific problems of groundwater availability and pollution problems have also been published. Some of these specific reports are also listed in the bibliography. The most recent studies on groundwater have been aimed at developing management techniques so the quantity and quality of groundwater on Long Island are maintained or improved.

Fundamental to understanding the water resources of any area is the hydrologic cycle. A representation of the cycle is shown on Figure 30. The portion of the hydrologic cycle paramount to the groundwater system is noted as solid lines. The cycle represented by Figure 30 is the natural cycle and does not reflect the influence of man. A modified hydrologic cycle is presented later in the paper to illustrate this effect.

A water budget analysis has been made for about 760 square miles of Long Island as indicated by Figure 31. Excluded from the budget areas are the extreme eastern section commonly known as The Forks and the heavily urbanized areas of Kings and Queens. The water budget analysis is based on a continuous



EXPLANATION

Heavy lines represent major flow paths; thin lines, minor flow paths; solid lines, flow of liquid water; dashed lines, flow of gaseous water

Figure 30

Natural Hydrologic Cycle

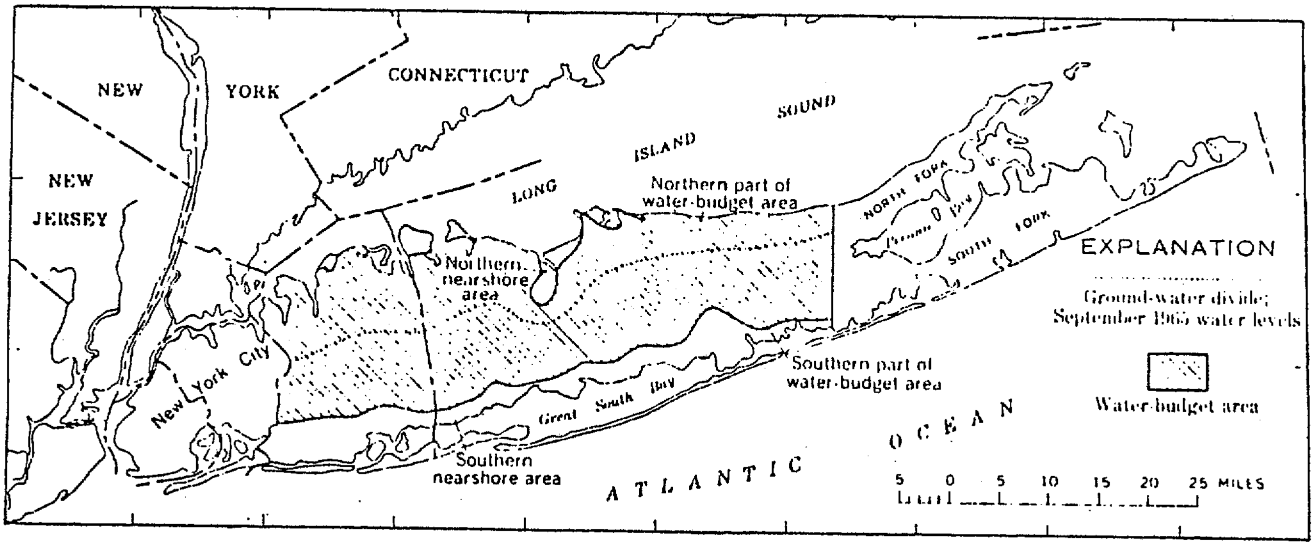


Figure 31

WATER BUDGET AREA
(Reference 1)

record of streamflow, climatological and groundwater data for 26 years, 1940-1965. A summary of the overall water budget versus the groundwater budget is presented as Table 29 below.

Table 29

WATER BUDGET
(Reference 2)

Overall Water Budget	(mgd)
Inflow-Precipitation	1600
Outflow-Evapotranspiration	760
Subsurface outflow	470
Streamflow discharge	340
Evapotranspiration of groundwater	15
Spring flow	15
	1600 mgd

Groundwater Budget	(mgd)
Inflow-GW Recharge	820
Outflow-GW Discharge to streams	320
Subsurface outflow	470
Evapotranspiration of groundwater	15
Spring flow	15
	820 mgd

VIII.1. Physiography

The present day landscape of Long Island was produced by glacial action approximately 11,000 years ago and subsequent erosion. Within Long Island, different physiographic areas can be noted, the most apparent of these are the east-west trending topographic highs known as moraines. The longest, the Harbor Hill Moraine, extends from Kings County the entire length of the Island and forms the North Fork. The Ronkonkoma Moraine eminates from the Harbor Hill Moraine a short distance from the Queens County eastern boundary, extends the length of the Island and forms the South Fork. Sloping gently southward from the moraines is the moderately level surface of the outwash plain. Recent deposits along the south shore have formed the barrier beaches such as Long Beach and Fire Island. By contrast, the northern shore is typified by steep erosional bluffs and deep embayments.

VIII.2. Geology

Several authors have prepared reports that describe the hydrogeology of Long Island with various degrees of detail. One of the more detailed reports covering the Island is one done by Suter, de Laguna and Perlmutter, Mapping of Geologic Formations and Aquifers on Long Island, 1949 GW-18 (Reference 3). Numerous other reports have been written concerning specific areas of Long Island. In general, Long Island is composed of a wedge of unconsolidated materials resting on crystalline bedrock. A portion of the bedrock is exposed in northwest Queens and consists of pre-Cambrian schists and gneisses with local (northwest) occurrences of granodorite and "limestone" (probably the Inwood marble). The bedrock slops at about 65-80 feet per mile to the southeast to a depth of approximately 2,200' in south-central Suffolk County. The water bearing properties of the bedrock makes it unimportant as an aquifer, although a few wells in western Long Island obtain water from wells finished in the rock.

Above the bedrock lies unconsolidated material of Cretaceous age. The basal unit of cretaceous age is the Lloyd-sand member of the Raritan Formation that forms the Lloyd aquifer. The aquifer has a maximum thickness of 500 feet lies 200 feet to 1800 feet below land surface. The material consists of fine to coarse sand and gravel that locally has clayey matrix. Specific capacities, gallons per minute per feet of drawdown range from 1 gpm/ft to 25 gpm/ft and occasionally 50 gpm/ft. Locally, the aquifer has been invaded by salt water.

The Lloyd aquifer is overlain by the Raritan clay which confines the Lloyd and creates an artesian condition. The maximum thickness of the Raritan is approximatel 300 feet and lies 70-1500 feet below land surface. Stringers or lenses of sand produce some water but, in general, the importance of the Raritan clay is its confining nature rather than its water yielding capacity.

Above the Raritan, clay is the Magothy formation of late Cretaceous age. This unit is approximately 1000 feet thick and lies from 0 to 600 feet below the surface. Materials are primarily sands and gravels with clay found as lenses. Specific capacities range from 1-30 gpm/ft and occasionally 80 gpm/ft. Water in the upper portion of the aquifer is unconfined while lower sections are most often confined. This aquifer is a principal source of public water supply for Nassau and Suffolk, and to a lesser extent in Queens County. In some locations, the Magothy has been contaminated by salt water due to overpumping.

The Mannetto gravel rests on the Magothy formation and has a maximum thickness of 300 feet. The Mannetto is found from 0 to 120 feet below the surface but is of limited areal extent being present only near the Suffolk-Nassau County border in the center of the Island. Most often, this unit is associated or confused with the upper glacial aquifer. The aquifer itself is highly permeable but is usually above the water table. The high permeability, however, gives the Mannetto good infiltration characteristics making it important as a recharge unit where it is found above the water table.

The Jameco gravel is the next unit up and the 300-foot thick at maximum unit is fou from 50-500 feet below the surface. The Jameco occurs in Kings, Queens and southern Nassau counties as sand and gravel with few lenses of clay. The materials make the unit moderately to highly permeable with specific capacities ranging from 20 to 50 gpm/ft of drawdown. In some locations, brackish water and high iron content have affected the water quality.

The Jameco is overlain by another Pleistocene age material with a maximum thickness of 300 feet. This unit, the Gardiners clay, is found 50-400 feet below the surface and is of poor permeability making only minor quantities of water available where small, local sand lenses are tapped.

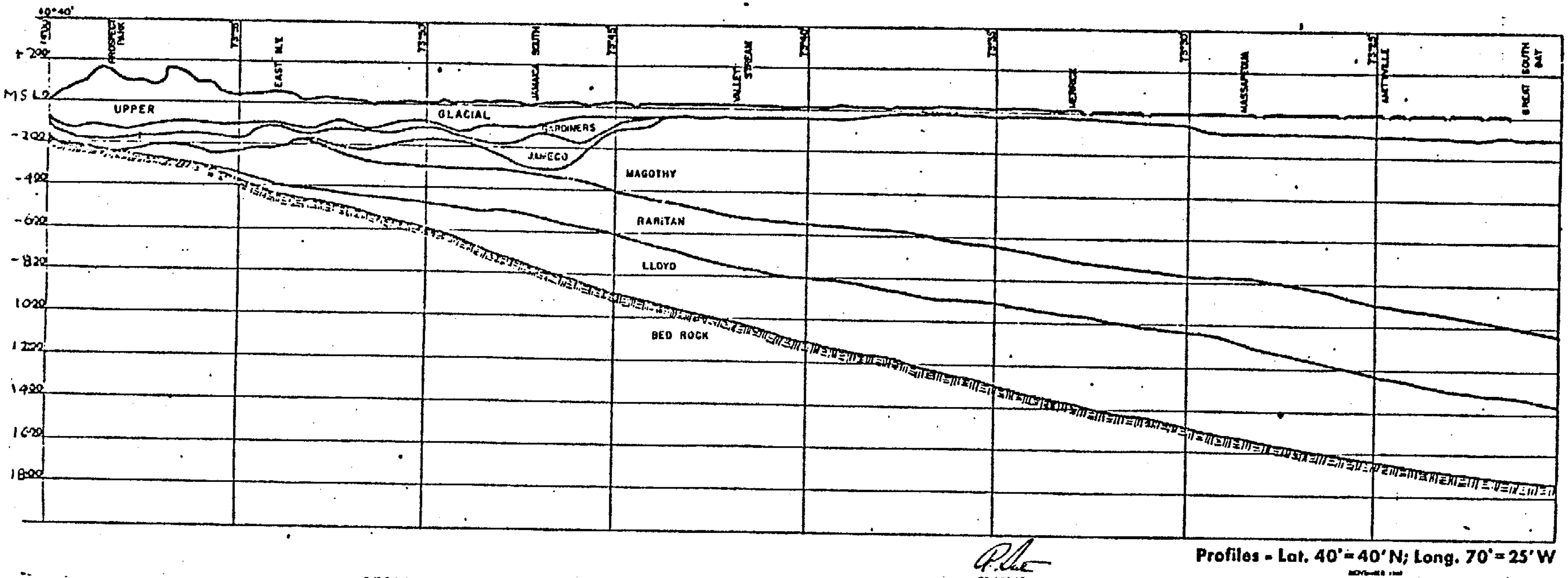
The most widely used aquifer on Long Island is the Upper Pleistocene materials. The depth of this "unit" is from 0' to 50' below surface and has a maximum thickness of approximately 600 feet. The aquifer is actually a mixture of different material ranging from till and clay, both poorly permeable, to coarse sand and gravel of high permeability. Specific capacities of these materials varies from about 10 gpm/ft to 200 gpm/ft of drawdown. Good infiltration characteristics are also important characteristics of the aquifer. The water quality of this unit is good except for areas near the shoreline where salt water has invaded the "unit" and where land development has degraded the water. Quality will be further discussed in a later section.

(References for this Section include number 1 through 5.)

VIII.3. Groundwater Development

As mentioned in various reports, the development of groundwater supplies has followed the evolution of Long Island from the first settlers to the present day urbanization and industrialization of one of the major population centers of the country.

The first inhabitants of Long Island required small water supplies. Shallow dug wells and spring sources provided ample domestic water supplies. Waste



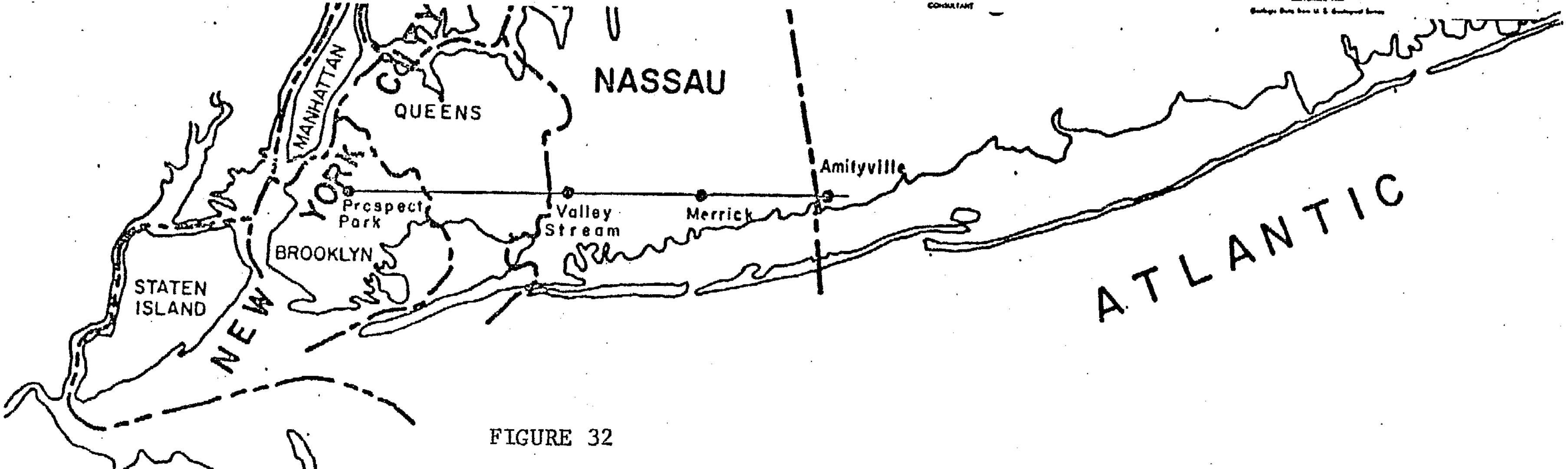


FIGURE 32

APPROXIMATE LOCATION OF
GEOLOGIC CROSS SECTION PROFILES

Lat. 40°= 40' N; Long. 70°= 25' W.

water was returned to the ground through individual disposal systems. The impact of these systems on the groundwater regime was negligible and although contaminants were released to the groundwater, contamination, however, was minimal because of low population density and abundant water for dilution.

Phase II of the evolution came about as the population increased with the subsequent increase in waste disposal. Contamination of the shallow groundwater sources used in early development necessitated the development of deeper supplies. Since the cost of obtaining deeper supplies was much greater, public water systems were developed to distribute costs among users. Individual waste disposal systems, however, were continued and pollution of the shallow groundwater also continued. As population grew, water demand increased and withdrawals from the deeper aquifer systems became larger. Because of increased consumptive use and development of larger supplies, recharge to the deeper aquifers could not keep pace with use resulting in landward movement of the freshwater-saltwater interface and contamination of some wells.

The third phase of development is characterized by the installation of sewers, waste water treatment and direct discharge to offshore waters and bays. The direct loss of water to the sea and increased withdrawals from the groundwater system causing accelerated landward migration of the fresh-salt water interface. Since sewering took place near the major population centers, their effect was drastically felt at the western end of the Island in Kings and Queens Counties. The events in Kings County serve as a prime example of the effect of surface water outfalls and decreased recharge. In 1936, several years after sewer installation, pumpage was at 75 mgd with discharge of waste directly to the sea. Although other factors were involved, this caused the groundwater levels in Brooklyn to decline as much as 35 feet below sea level allowing contamination of the groundwater by salt water intrusion. In 1947, Kings County joined the New York City water supply system and, except for pumping for air conditioning (a relatively non-consumptive use), nearly all groundwater withdrawal ceased.

A new report (1976) by Garber and Sulam (61) of the USGS presents the results of an analysis to assess the decline in water level in sewered areas of Nassau County. The area is about 71 square miles in size and is known as Sewer District 2. In the study, it was determined that the lowering of the water table ranged from 5.1-21 feet due to sewering. Also affected, and mentioned in the report, are the surface streams in the area. Loss of flow in one particular stream amounted to 2.5 cfs.

As part of the 208 study for Long Island, the affects of sewering on the groundwater have been projected to 1995 (62). This report presents water level (head) changes for various aquifers under proposed sewering plans for Nassau and Suffolk Counties, Long Island. The change in stream flow has also been determined using the electric-analog model.

At present, all phases of the evolution are found on Long Island. The eastern most areas typify Phase I and "evolve" to Phase III in the western areas.

VIII.4. Groundwater Use

The majority of groundwater use is presently in the counties of Nassau and Suffolk with lesser withdrawals in Kings and Queens.

The pumpage for Kings, Queens and Richmond Counties from 1905 to 1950 is illustrated in Figure 33 and a breakdown for Queens by aquifer and use for 1950, 66 and 73 is shown in Table 30. As mentioned above, present withdrawals are limited. This is due to the contamination problem and the increased water demand that brought about the importation of water from upstate sources. A comparison of groundwater levels for Kings and Queens is shown on Figure 35 which represents conditions without pumping and conditions in 1937, 1961, and 1974.

Nassau County presently relies solely on groundwater for supply with need net by approximately 46 municipal systems, water districts and companies.

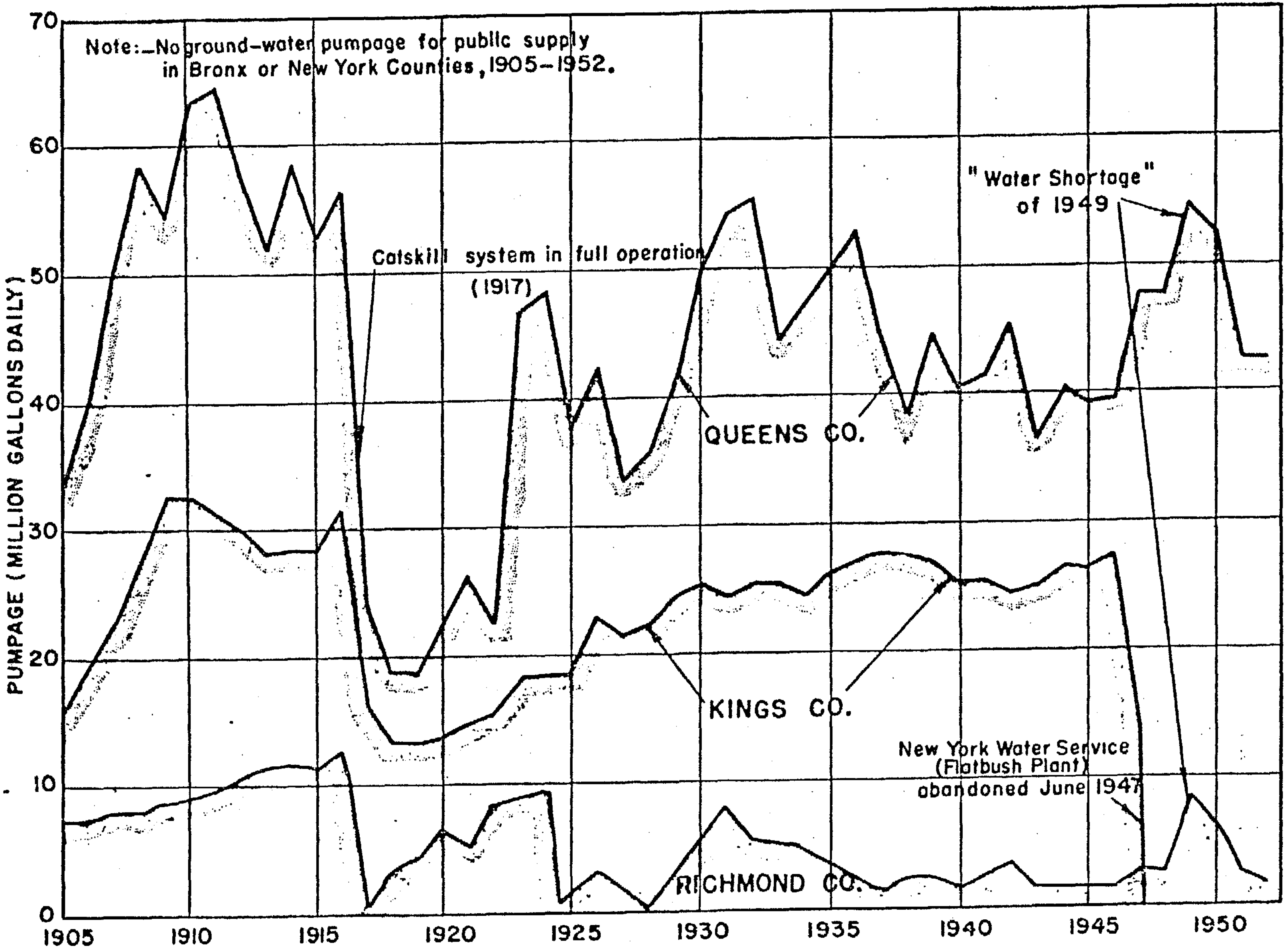
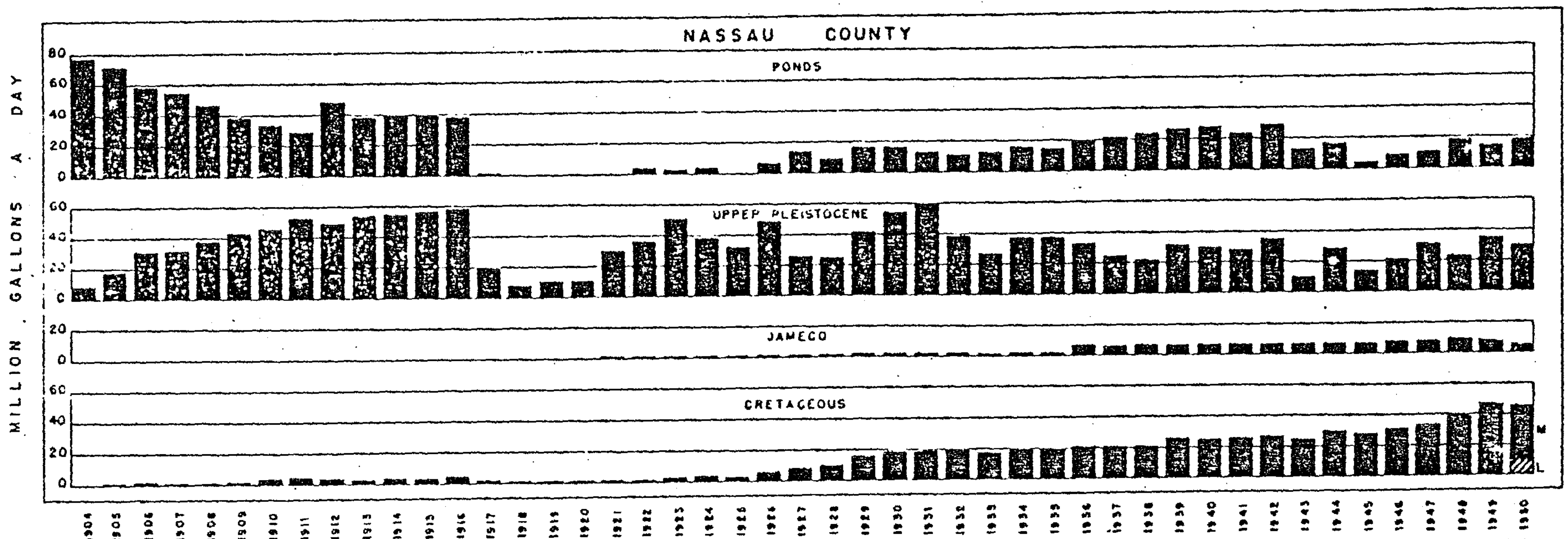


Figure —Comparison of average daily withdrawal of ground water for public supply, by Counties, 1905-52.

FIGURE 33
(Reference 7)

FIGURE 34



GRAPHS SHOWING AVERAGE DAILY WITHDRAWAL OF WATER FOR PUBLIC SUPPLY FROM THE DIFFERENT SOURCE FORMATIONS IN KINGS, QUEENS, AND NASSAU COUNTIES, N.Y.
NOTE AS OF 1950 CRETACEOUS IS DIVIDED INTO MAGOTHY AND LLOYD COMPONENTS.

(Reference 8)

TABLE 30

(References 7,8,9,10 & 11)

Queens Co. Pumpage by Use (mgd)

	Public Supply	Industrial**	Agriculture
1950	51.2	14.5 (9.3)	0
1966	57.6	17.2 (6.5)	0
1973	65.1	39.07* (16.0 estimated)	0

* Includes Kings Co. (24.83)

** Values in parenthesis is the amount of water "wasted." The difference in values is the amount recharged.

Queens Co. Pumpage by Aquifer (Public Supply Only)*

	Upper Pleistocene	Jameco	Magothy	Lloyd	Total
1950	29.94	5.49	8.78	6.74	50.94
1964	32.10	2.30	19.8	4.1	58.4
1973**	32.46	3.14	31.95	6.6	65.15

* Woodhaven and Jamaica Plants

** Does not include 1973 Kings Co. Use (24.83)

Nassau Co. Pumpage by Use (mgd)

	Public Supply	Industrial**	Agriculture
1950	100 mgd	8.8 (2.7)	0.9
1966	185 mgd	29.7 (22.4)	0.2
1973	178.48	35.63 (28.5)	0.8 mgd (estimate

**Values in parenthesis is the amount of water "wasted." The difference in values is the amount recharged.

Nassau Co. Pumpage by Aquifer (Public Supply)

	Upper Pleistocene	Jameco	Magothy	Lloyd	Total Use
1950	52.9	6.3	32.20	9.4	100.6
1966	21.24	5.46	143.75	14.80	185.25
1973	7.60	4.95	153.06	12.84	178.45

TABLE 30 (Cont'd)

Nassau Co. Projected Water Use
(Major Suppliers)

1990	226.44 mgd
2000	251.00 mgd
2020	304.77 mgd

Suffolk Co. Pumpage by Use (mgd)

	Public Supply	Industrial**	Agriculture	Private Domestic
1950	24.3	12.4 (7.3)	5.6	--
1966	75.1	36.3 (27.4)	18.7	--
1973	102.36	39.24 (31.0 estimated)	8.56	27.5 estimate

**Values in parenthesis is the amount of water "wasted." The difference in the values is the amount recharged.

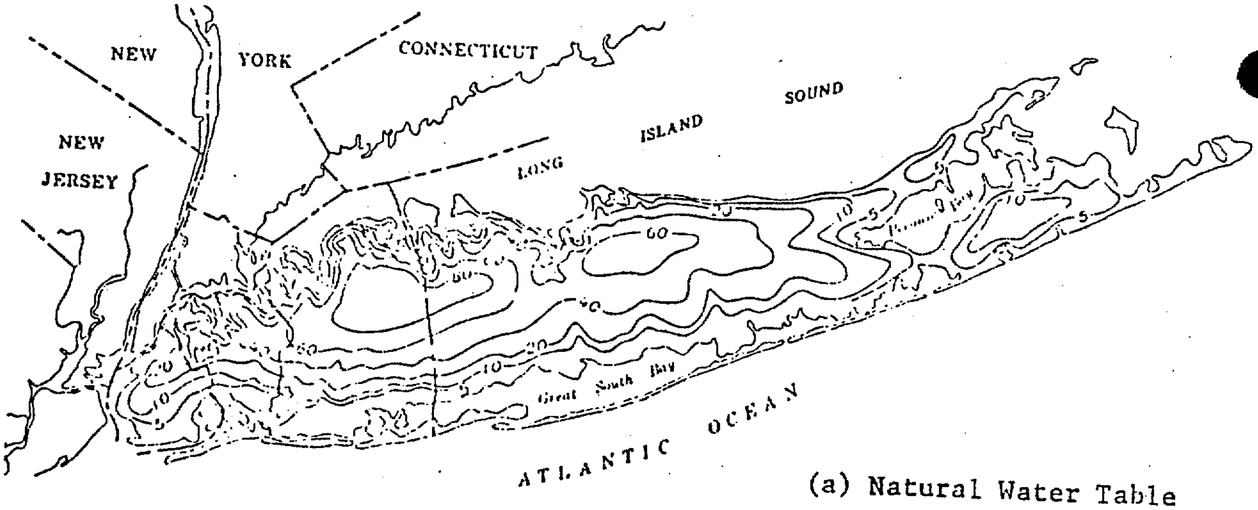
Suffolk Co. Pumpage by Aquifer (Public Supply)

	Upper Pleistocene	Magothy	Lloyd	Total Use
1950	22.1	1.3	.30	23.7
1966	41.5	33.4	.43	75.33
1973	72.3	57.3	.3	129.9

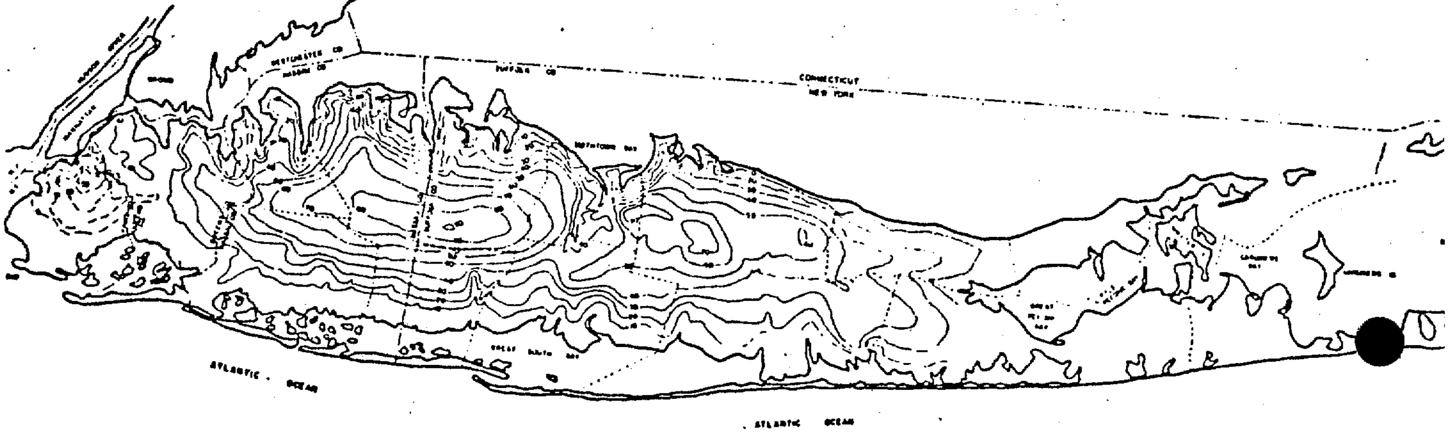
Suffolk Co. Projected Water Usage
(Major Suppliers)

1980	465.45 mgd
2000	885.64 mgd
2020	1229.91 mgd

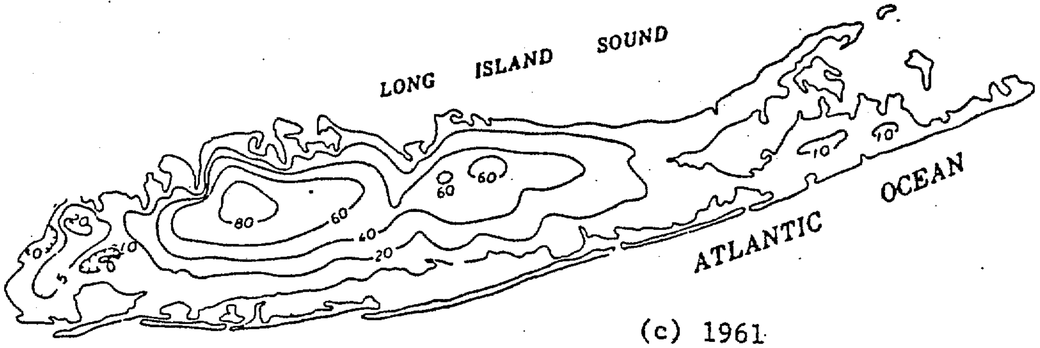
Figure 35
Long Island Water Table Elevation, MSL



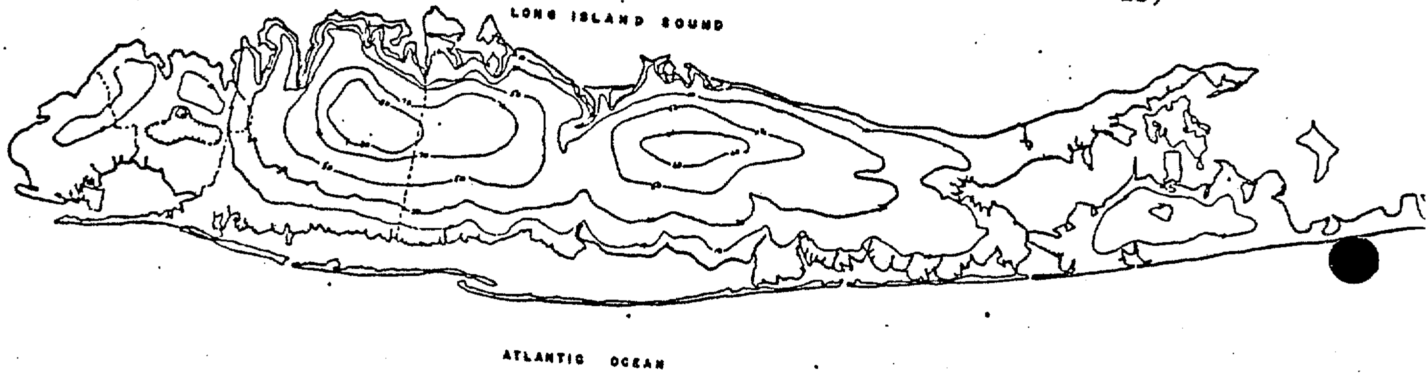
(a) Natural Water Table
(Reference 11)



(b) 1936 Water Table
(Reference 12)



(c) 1961
(Reference 13)



(d) 1974
(Reference 14)

Water withdrawals from various sources, including use of surface water, for public supply from 1904-1950, are illustrated as Figure 34. Pumpage by use and aquifer for 1950, 66 and 73 are shown in Table 30. General pumping trends indicate decreased pumpage of the Pleistocene aquifer, a large increase in the Magothy pumpage, and moderate increases in both the Jameco and Lloyd. Reduction in withdrawals from the Pleistocene is due to contamination by sewerage waste and resultant high nitrate, synthetic detergent and ammonia levels. Average daily pumpage from 1940 projected to 2020 are shown on Table 30.

Water table maps indicate a slow-gradual decline in water levels from 1903 to 1956, no change from 1956 to 1959 and the maximum lowering (partly due to drought conditions) 15 feet in Hicksville from 1959 to 1967. The rapid lowering of the water table is accounted for by drought conditions and the effects of sewering. Increased pumping in Queens also contributed to lowering the water table levels in southwestern Nassau Co. Water Table contours are also illustrated in Figure 35.

Suffolk County (except for Fisher Island) like Nassau, relies solely on groundwater. Pumpage in the county occurred primarily in the glacial materials. Except for parts of western Suffolk County, the quantity of withdrawals of water from from the glacial materials were 23.9 mgd in 1950 and rose to 62.7 mgd in 1967. The drought years saw pumpting up to 78.9 mgd in 1964. Magothy pumping ranged from 4.2 mgd in 1950 to 38.0 mgd in 1967 with a high of 44.7 mgd in 1967. The lowest pumpage has been from the Lloyd and ranges from 0.13 mgd in 1960 to 0.16 mgd in 1967. In 1963, the withdrawal from the Lloyd went to 0.57 mgd due to drought conditions. Table 30 illustrates pumpage by use, and from the aquifers used in Suffolk County, also included are projected water needs for 1980, 2000, 2020.

VIII.5. Groundwater Exploration

Subsurface exploration to determine the extent of aquifers, their characteristics (hydraulic conductivity, head relationships and flow direction) and quality of groundwater was undertaken in the mid-island area of Suffolk County in 1963. The area of study extended from the Nassau County Line 20 miles into Suffolk County to the unincorporated hamlet of Lake Ronkonkoma. The area is approximately 7 miles wide and occupies the center portion of the island. The results of this exploration are summarized in a report by Julian Soren 1971 (L.I. WR Bull. I). Pumpage in the mid-island area could provide an average yield of 100-200 mgd for several decades as reported by Soren. Net withdrawals, and consumptive use, would cause a decline in water levels and salt water intrusion.

In addition to the above mentioned type of exploration, investigations have been undertaken to determine aquifer characteristics. These investigations are an important step in the determination of proper management of the aquifer systems. The studies involve subsurface mapping of geologic units as well as determination of head relationships, hydraulic conductivity, transmissivity, storage coefficients and location of the fresh-salt water interface. The USGS has been the primary investigator and has published reports on their findings as Hydrologic Investigation Atlas' (5, 15, 16).

The Atlas' mentioned above are usually done on a county size basis, specific site investigations or studies are found in the USGS Water Supply Papers. These reports detail various aspects such as geology, geohydrology, hydrology, recharge basins, etc. (References 10, 13, 18, 19, 20, 21 and 22).

VIII.6. Effect of Urbanization

The effects of urbanization have been mentioned previously but will be reiterated here because of their profound impact to the natural hydrologic system. (Figure 30 vs. Figure 36.) The most apparent result of urbanization is the increased demand for water accompanied by increased waste water for disposal. Urbanization has increased to the point in some places that the groundwater

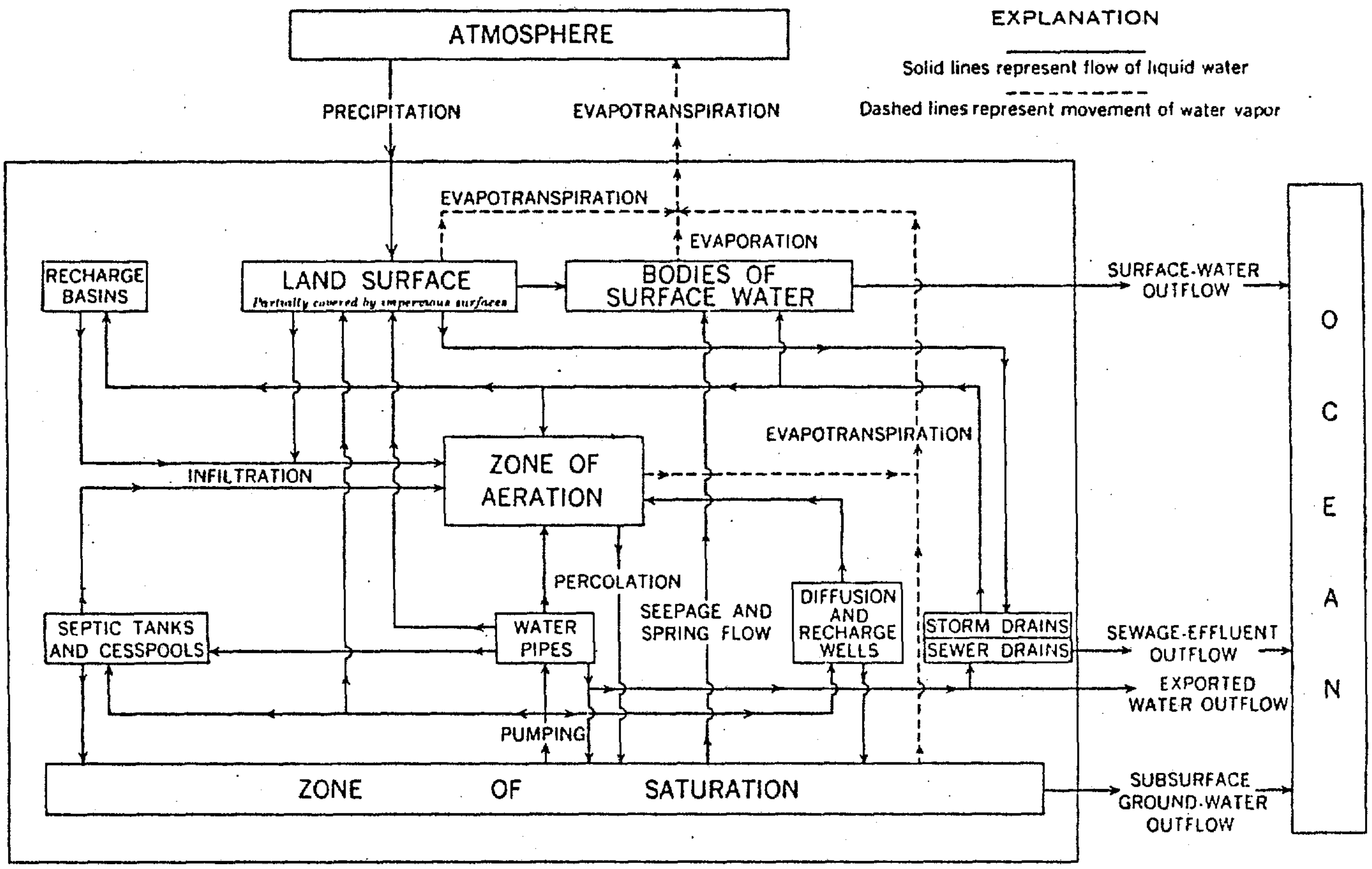


FIGURE 36

Hydrologic Cycle As Influenced By Man

system has not been replenished at a sufficient rate to keep pace with pumpage. Where this groundwater mining occurs, primarily western Long Island, the water table has dropped allowing an advancement of the fresh-salt water interface landward.

To dispose of the waste water, sewers have been installed in the heavily urbanized areas of the island. The primary effect of the sewers has been mentioned but the secondary problem of seepage from groundwater into the sewer systems has not. In areas where the water table is close to the surface, storm and sanitary sewer lines intersect the water table and act as drains to the groundwater. Estimates of this loss are as high as 20 mgd (Reference 1, 2). In areas where the water table is not intersected, recharge to the aquifer (Reference 1) takes place but figures on the amount of compensation are not available.

Another feature of urbanization, loss of permeable ground materials also changes the groundwater conditions. The loss is due to paving of streets, parking lots and highways and the building of housing development, shopping centers and industrial complexes. The amount of loss was determined by Sawyer (Effect of Urbanization on Storm Discharge and Ground Water Recharge in Nassau Co., New York, 1963, USGS Prof. Paper 475-C) by studying changes in flow in two streams, one in an urbanized area, the other rural. Both streams have long coincident periods of flow record (1938-1960) so "before and after" urbanization comparisons can be made. According to Sawyer, the loss of groundwater recharge amounted to 63,000 gallons per day in the developed area of 10 square miles. This loss of recharge is nearly totally offset by collection systems and recharge basins and will be discussed in Section VIII.7.

Another result of urbanization is the loss of groundwater due to lawn sprinkling. This consumptive use is most apparent during long hot spells and drought conditions. The loss, which ranges from 25-50% of total sprinkling is due to evapotranspiration. In 1965, public supply loss due to evapotranspiration was figured to be about 20 mgd. This amount does not include loss from private, "backyard," wells that are used for lawn sprinkling.

VIII.7. Recharge Basins

Recharge basins to replenish groundwater have been used on Long Island for over 40 years. In 1950, the number of recharge basins was 14 (Reference 23). Due to urbanization and increases in area covered by impervious surfaces the number rose to over 2,000 in 1969 and is projected to reach 5,000 (Reference 23) as development moves eastward.

The basic recharge basin is an open pit excavated 10-15 feet below land surface and averaging between 1 to 2 acres in size. A few reach 30 acres in size and some 40 feet deep. Construction is usually in sandy or gravelly material although some have natural bottoms of less pervious materials. The latter often contains water. Storm water is delivered to the basins by storm sewers and inlet structures. More elaborate basins have terraced interiors, stilling basins for sediment accumulation, overflow structures, and diffusion wells. Depth of construction is dependent on the distance to the water table.

The amount of inflow to the basins varies but is roughly equivalent to the percentage of impervious areas served by the basins. In 1969, the area drained by basins was approximately 73,000 acres with a total of 148 mgd being recharged. This amount includes recharge through open areas and lawns that amount to 87 mgd. The remaining 61 mgd of recharge through basins compares favorably with natural areas, i.e., lawns and open areas in their effectiveness.

VIII.8. Groundwater Quality

Groundwater quality under natural conditions, before the influence of man, was of excellent quality. The only constituent that "degraded" the original quality was iron with the original iron content of waters in the Magothy and

Lloyd aquifers being about 0.61 ppm and 1.5 ppm, respectively. The glacial aquifer iron content was about 0.01 ppm. Since water in Phase I type development was pumped from the glacial aquifer, a supply of excellent quality water was available in most places. Those wells located near bodies of salt water may have encountered naturally occurring, not induced by pumping, salty water.

Under the influence of man, the quality of groundwater has deteriorated to such an extent that in some places it is unuseable. The deterioration has followed the pattern of development from west to east. Groundwater in many places in the eastern portion of the island is still of near pristine quality. Increased demand for water resulted in public supplies but the disposal of waste was still through individual septic systems. Deeper wells were installed to stratigraphically lower aquifers and pumpage increased causing the lowering of the water table by downward migration of water in the glacial materials. These increases caused the contamination of groundwater in two ways:

(1) The landward movement of the salt water boundary on the south shore, and;

(2) The downward migration of inferior quality water from the glacial materials that had received enormous volumes of waste water.

Recently, 1960's to date, studies to assess the nature of groundwater contaminants and their effects, have been undertaken. The studies were begun because of the severe contamination of groundwaters and the threat to public health in Nassau and western most Suffolk Co. The USGS is soon to publish a groundwater quality map as part of the 208 study.

The relative order of importance of contamination has been estimated by Holzmacher (CPWS-24) for Suffolk County. The only difference found in Nassau County is that the extent of nitrate contamination has probably increased. A brief description of these contaminants follows:

1. Synthetic Detergents. This contaminant, detected by methylene blue active substance (MBAS), is more of an indicator of contamination by sewerage rather than a threat to health. The MBAS indicates linear alkyl-benzene sulfonate (LAS), the prime ingredient of synthetic detergents. The LAS reaches groundwater primarily through septic systems. The standard of 0.5 ppm for drinking supplies is due to the odor, taste and foam caused by LAS at or above this concentration. Although there are numerous interferences, the 0.5 ppm indicates that at least 5% (Reference 10) of the water has been derived from sewerage.
2. Nitrates. Nitrates are also derived from sewerage andare included in the standards specifically for health reasons. Two standards exist, the United States Public Health Service recommendation of 45 ppm as nitrates and the N.Y.S. Health Department Standard of 10 ppm, measured as nitrogen. Concentrations of nitrates can cause poisoning in some infants called methomoglobenimia. Susceptibility to this sickness varies among people. Nitrate studies in Nassau County indicate over 24% of wells show increasing nitrate levels and that one well per year will become unuseable due to nitrate contamination for the next 50 years, 16% of the public supplies. A USGS report by Koch and Perlmutter presents an analysis of nitrate contamination and provides short and long-term nitrate trends in the glacial and Magothy aquifer.

   Other sources of nitrate pollution include fertilizers, surface runoff and landfills. Treatment of waters high in nitrates is primarily by blending with acceptable quality water. In agricultural areas of Long Island, primarily eastern Suffolk County, fertilizers containing nitrogen compounds have been used extensively to increase crop yields. The affect of these nitrogen compounds has not been completely investigated but in one instance, the nitrogen concentration reached 12ppm. (References 10, 24 and 25).

Contributions of nitrogen to groundwater from various sources are as follows:

Source	Contribution
No-fertilized agricultural area	3 #/acre/yr.
Fertilized agricultural areas	55 #/acre/yr.
Surface runoff (residential light commercial area)	21 lbs.
Unsewered developed Suffolk Co. (cesspools)	50.5 #/yr./family
Nassau County	185 #/acre/yr.
Sewage plants discharging to groundwater (References 24, 26)	1560 #/day

The 208 study is presently investigating the non-point sources of nitrates and their effect on groundwater quality.

3. Iron and Magnesium. The "contaminants" occur naturally but when concentrations are 0.3 ppm or greater, the water becomes excessively corrosive and iron bacterial growths may cause clogging of pipes and discolorations of laundered materials.

4. Total Dissolved Solids (TDS). The standard for TDS is 500 ppm based on taste. Eastern Suffolk County groundwater may contain high TDS due to salinity. Groundwater affected by landfills may also be high in TDS.

5. Chlorides and Sulfates. High chlorides occur as a result of salt water contamination but may also indicate sewerage contamination. The chloride limit of 250 ppm is based on health effects.

   Sulfates occur naturally as a result of decay of organic material. The standard of 250 ppm is based on the laxative effect on some people. Sulfates may also be contributed to the groundwater by leaching of waste in landfills and air pollution (Reference 23).

6. Toxic Materials. These materials include arsenic, barium, cadmium, hexavalent chromium, copper, lead, cyanide, silver, phenols, zinc, selenium, floride carbon chloroform extract and others. The occurrence of these materials is primarily the result of industrial waste discharges and landfills. The standards vary from item to item. Under the ongoing 208 study, the occurrence and effect of nitrates and toxic materials on the groundwater are being investigated.

VIII.9. Long Island Groundwater Management

One of the first sections of this Chapter pertained to the hydrologic cycle and the basic elements thereof (see Figure 30.) Subsequent to that Section, it may seem that the hydrologic cycle was disregarded. To tie all elements of the groundwater section together, we must again return our attention to the hydrologic cycle, for the basis of any management policies or practices lies in an understanding of the formula: Inflow = Outflow ± change in storage. Modification to any element in the formula obviously will have a direct effect on the other elements; whether the modification is tolerable or not depends on society.

At present, the hydrologic cycle formula is not in balance due to a negative (decreasing) change in storage. This change has led to declining groundwater levels, decreasing stream flow and deterioration of groundwater quality. Technically, to achieve a balance in the equation may or may not be socially acceptable, depending on various factors such as cost and aesthetic values. It is beyond the scope of this paper to discuss the social aspects of groundwater management, but it will be these factors that will guide policy decisions.

To change the inflow portion of the equation, it is necessary to find additional sources of water. It is apparent that within the Island there is little possibility to find additional water. In fact, Nassau County is projected to have a water shortage by 1980, the Suffolk County supply is projected to be sufficient into the next century.

One additional "outside" source is the present New York City supply system. New York City, however, has no obligation to furnish water to locations to Nassau or Suffolk Counties and, in light of the fact that under drought conditions (as in 1965-66), there was a shortage in the New York City system, it seems unlikely supply arrangements could be made to Nassau and/or Suffolk Counties.

Another scheme of water importation, derived additional supply from Connecticut or northeast New Jersey. Like the New York City system, the drought indicated that additional water was unavailable.

The establishment of a Long Island Sound Reservoir has also been suggested. Under this scheme, a dam structure located toward the eastern end of the Island would control (prevent) the inflow of salt water. The fresh water following into the Sound would replace the salt water and, thus, be available as a water supply.

The legal implications of the above proposals are staggering, but the concepts are mentioned here for discussion purposes.

Recent advances in technology are making the desalination of salt water more and more feasible. Presently, the Office of Saline Waters of the U. S. Department of Interior, lists 13 methods of desalination. The 13 methods fall under the headings of (1) distillation, (2) membranes, (3) freezing, (4) humidification, and (5) chemical processes. Cost, however, is still the major drawback to this proposal although the Riverhead Water District has considered buying desalted water from a proposed nuclear plant. A further drawback is the 95^{o} temperature of the desalted water, compared with the 55^{o} temperature of the present supply. The high temperature and possible change in flow direction within some of the mains, may cause high turbidity, color and unacceptable taste of the delivered water.

Water reuse is presently being used on Long Island, more as a secondary result than a planned program. The discharge of septic tanks and cesspools to the Upper Glacial Aquifer helps to maintain water levels but has the obvious effect of degrading water quality. The use of recharge basins is a more planned water reuse system. A discussion of recharge basins was made previously.

The use of recharge wells to return water to the groundwater system has been practiced since the passage of regulations on groundwater withdrawal around 1933. In most cases, the water recharged was air conditioning water. At Bay Park (Reference 27), a study has been undertaken to recharge "reclaimed" water (tertiary treated sewage) to the Magothy aquifers. The results of the study, as mentioned in Reference 27, show the method to be impractical under present technology.

Another scheme, using highly treated waste water, would be to recharge the water along the coast with closely spaced injection wells. The effect of this recharge plan would be to form a pressure ridge parallel to the coast. The ridge would have a gradient landward and seaward and, thus, reduce subsurface outflow and salt water intrusion. One of the drawbacks to this scheme is that eventually the injected waste water would reach supply wells. The time factor and resultant water quality aspects of this plan are being evaluated (Reference 13).

As indicated in an earlier section of this report (Table 29), it was shown that about 320 mgd of groundwater discharges to streams which, in turn flow into salty surface water bodies. This outflow of water could be salvaged using shallow skimming wells and pumping galleries adjacent to streams. Large volumes of water could be removed without lowering groundwater levels significantly. Stream flow, however, would reduce significantly and thus upset the ecological balance in the bays and estuaries. Since the water salvaged is derived in part by discharges from cesspools and septic tanks, the quality of water may be questionable and require treatment.

Another management technique would be to reduce water use. As living conditions improve, water consumptions increase, to counter balance this a metering system would be used to limit water use by economic measures. Additional water might be saved by lowering water pressures. Both of these techniques would have the net effect of increasing water supply by lowering demand.

An additional large quantity of groundwater could be realized if the fresh water-salt water interface were allowed to move landward. The planned over-development would lower the hydraulic gradient (head) and thus decrease outflow from the system. Salt water contamination of some wells would occur under this plan.

VIII.10. Groundwater Classification and Standards

Groundwater classifications, and standards, are based upon the best usage of such resources. Since Long Island relies almost entirely on the groundwater resources for potable water supply, the classification GA has been adopted to reflect this best usage. No discharges which may impair the quality of water are accepted. Discharges must meet standards at the point of discharge. Two other classifications have been adopted and reflect the quality of groundwater prior to use. Class GSA are natural saline water whose best use is conversion to potable waters or the manufacture of sodium chloride or related products. Class GSB groundwater is water having an excess of 1,000 ppm of chloride or a total dissolved solids content of 2,000 ppm. These waters are best used as receiving waters for the disposal of waste. The GSB class can only be assigned following a hearing. The classifications are set forth in Part 703 under the authority of Section 1208, Article 12 of the Public Health Law.

In order to preserve the best usage classification, it is necessary to establish standards. The standards adopted to date represent the maximum allowable concentration at the point of discharge. Under existing regulations, two sets of standards apply: (1) discharge to unconsolidated materials, and

(2) discharge to consolidated rock. An excerpt from Part 703 of Public Law 1205 gives a comparison of these standards and is presented in Table 27. The above rules and regulations have been adopted by New York State agencies (DEC and the Health Department). Presently, the New York State standards are undergoing review and revision.

On the Federal level, two other agencies are involved with groundwater quality. The U. S. Public Health Service has recommended a set of standards and the Environmental Protection Agency adopted regulations under the 1974 Safe Drinking Water Act that rescinds Federal funds to projects that may contaminate groundwaters where that resource is judged by EPA upon petition or on their own to be the sole source of drinking water supply. Such a petition has been made to the EPA to protect Long Island's groundwater supply.

VIII.11. Groundwater Monitoring Programs Quality

The Nassau County Health Department presently monitors 559 wells for chemical quality that includes iron, manganese, carbon dioxide, ammonia, albuminoid, nitrate, nitrate, oxygen consumed, chloride, hardness, alkalinity, pH, total solids, specific conductance, MBAS, dissolved oxygen, hexavalent chromium, temperature, phosphate, sodium and sulphate. Special analysis includes copper, zinc, lead, cadmium, nickel, phenals, barium, floride, cyanide and aluminum. The wells sampled are major public suppliers, quasi-public wells, private wells and observation wells. Of the 559, 409 are Magothy, 97 glacial, 48 Lloyd and 5 Jameco.

In Suffolk County, 285 wells are sampled on a yearly basis for full chemical analysis by Suffolk County Department of Environmental Control. These include 195 observation wells, 40 wells at various STP's and from 50-75 fire wells. In addition to chemical analysis, water levels are recorded for 235, 195 observation wells and 40 STP wells, quarterly. The Suffolk County Department of Health Services and the Suffolk County Water Authority conjunctively sample

195 public wells, nearly all of which are in the Magothy, and 118 quasi-public wells, 100 of which are in the glacial aquifer.

VIII.12. United States Geological Survey Groundwater Program

The USGS Cooperative Program began in 1931 to provide data on groundwater development in western Long Island to the New York State Water Power and Control Commission. Over the years, the program has grown considerably to more than one million dollars. On Long Island, the cooperative agreement is between the Geological Survey, New York State Department of Environmental Conservation, Suffolk County Department of Environmental Control, Suffolk County Water Authority and the Nassau County Department of Public Works. The majority of the funding dor the cooperative (50-50) program on Long Island presently comes from Nassau and Suffolk Counties.

Three basic phases of study are recognizable under the present program:

1. Data Acquisition: This phase involves studies to refine the information on Long Island hydrogeology, obtain basic data on geology, hydrogeology and water quality for application to computer analysis techniques.
2. Water Quality Appraisal: Under this plan, the effects of man, urbanization, etc. are related to changes in water quality. This phase includes studies on salt water encroachment, nitrate pollution and leachate from sanitary landfills.
3. Compilation: Ultimately, the above phases will be integrated with various conservation and management techniques to develop mathematical models of the groundwater system which will aid policy and decision making for the best management of the groundwater of Long Island.

A list of publications of the USGS Cooperative Program up to 1967 is included in "Bibliography of the Ground-Water Resources of New York Through 1967." An update of USGS publications is found in "Water Resources Investigation in New York, 1973."

VIII.13. Groundwater Legislation and Policy

Groundwater legislation began in New York around 1933 with the passage of Section 521-a, Chapter 563 of the Conservation Law. This Law was adopted because of the severe lowering of the water table on Long Island due to uncontrolled withdrawal. The severe conditions were brought to light when a water table map was published in 1933, the first map since 1903. It was very evident from these maps that controls on groundwater withdrawal must be enacted. The Water Power and Control Commission was given the authority to regulate the installation of new large wells by a review and permit system due to the emergency condition of the water table on Long Island. This Law, however, did nothing to control rehabilitation and pumping of existing wells. Another feature of this Law required the groundwater used for air conditioning and refrigeration to be returned to the aquifer it was withdrawn from. Additional legislation came in the form of well driller licensing under Section 521-b, Chapter 338 effective 1935. This Law facilitated the administration of Section 521-a by requiring well drillers on Long Island to be licensed.

Today's laws concerning groundwater on Long Island are much the same as those mentioned above. The size of the wells that require permits is now 45 gpm instead of the 69.44 gpm rate (100,000 gpd) of the original bill, Section 521-a.

In recent years, the Department of Environmental Conservation has attempted to formulate a policy regarding the groundwater of Long Island. Several draft policy statements were written, none of which were satisfactory to all parties involved, i.e. Federal, State and County governments. Any new attempts at writing the policy statement have been postponed until the ongoing Areawide Waste Treatment Management Plan, Section 208 of the Federal Water Pollution Control Act (1972) is complete.

REFERENCES

1. "Summary of the Hydrologic Situation on Long Island, N.Y. as a Guide to Water-Management Alternatives," O. L. Franke and N. E. McClymonds, USGS, 1972.

2. "An Atlas of Long Island's Water Resources," NYS Water Resources Commission, 1968, Bulletin 62.

3. "Mapping of Geologic Formations and Aquifers of Long Island, N.Y." R. Suter, USGS, GW-18, 1949.

4. "Hydrogeologic Data From Selected Wells and Test Holes in Suffolk County, Long Island, N.Y.," H. M. Jensen and Julian Soren, USGS, Long Island Water Resources 1971.

5. "Water Transmitting Properties of Aquifers on Long Island, N.Y.," N. E. McClymonds and O. L. Franke, USGS, 1972.

6. "Engineering Report on the Water Supplies of Long Island," R. Suter, New York Water Power and Control Comm. Bull GW-2, 1937.

7. "Groundwater in Bronx, New York, and Richmond Counties with Summary Data on Kings and Queens Counties, New York City, New York," N. M. Perlmutter and T. Arnow, USGS, GW-32, 1953.

8. "Withdrawal of Ground Water on L.I., 1952" GW-28.

9. "Comprehensive Public Water Supply Study, CPWS-60 for Nassau Co.," Greeley and Hansen, 1971.

10. "Comprehensive Public Water Supply Study for Suffolk County, N.Y.," CPWS-24, Holzmacher, McLendon & Murrell Consulting Engineers, 1970.

11. "Long Island Water Resources," NYS Office of Planning Coordination, 1970.

12. "The Changing Pattern of Ground-Water Development on Long Island, N.Y." R. C. Heath, R. L. Foxworthy and P. Cohen, USGS, 1966.

13. "The Water Table on Long Island, New York in March 1974," Edward J. Koszalka, USGS Long Island Water Resources, 1975.

14. "Hydrogeology of Suffolk County, Long Island, N.Y.," H. M. Jensen, Julian Soren, USGS, 1974.

15. "Hydrogeology Along the Proposed Barrier-Recharge-Well Alinement in Southern Nassau County, Long Island, New York," Ku, Vecchioli, Cerrillo, 1975.

16. "Regional Rates of Ground-Water Movement on Long Island, N.Y.," O. L. Franke and P. Cohen, USGS, 1972.

17. "Design and Construction of a Unique Injection Well on Long Island, N.Y.," P. Cohen and C. N. Dufor, USGS, 1966.

18. "Geology and Hydrology of Northeast Nassau County, Long Island," J. Isbister, USGS, 1966.

19. "Salt-Water Encroachment in Southern Nassau and Southeastern Queens Counties, Long Island, N.Y." N. J. Lusczynski and W. V. Swarzenski, USGS, 1966.

20. "Hydrologic Interpretations Based on Infrared Imagery of Long Island, N.Y.," E. J. Pluhowski, USGS, 1972.

21. "Hydrologic Effects of the 1962-66 Drought on Long Island, N.Y.," P. Cohen, O. L. Franke and N. E. McClymonds, USGS, 1969.

22. "Influence of Recharge Basins on the Hydrology of Nassau and Suffolk Co., L.I., N.Y.," G. Seaburn and D. Aronson, USGS WSP-2031.

23. "Nitrate Summary" Suffolk Co. Department of Environmental Control, 1973.

24. "Preliminary Hydrogeologic Appraisal of Nitrate in Ground-Water and Streams, Southern Nassau County, Long Island, N.Y.," N. M. Perlmutter and E. Koch, USGS, 1972.

25. "Report on Nitrate Pollution of Groundwater," Nassau Co. Department of Health, 1969.

26. "Report on Untreated Water Quality for Public Water Supply Wells in Nassau Co.," Nassau Co. Department of Health, 1973.

27. "Integrated Water Supply and Waste Water Disposal on Long Island," prepared by the Center for the Environment and Man, Inc. 1972.

28. "The Long Island Ground Water Pollution Study," NYS Health Dept., 1969.

29. "Ground Water Recharge on Long Island," Arthur H. Johnson, 1948.

30. "The Water Table in L.I., N.Y., in Jan. 1951," GW-27.

31. "The Water Table on Long Island, New York in March 1970," Grant E. Kimmel, USGS, Long Island Water Resources 1971.

32. "Summary of Studies and Research Related to Artificial Recharge of Treated Waste Water in Suffolk Co., N.Y., Suffolk Co. Department of Environmental Control, 1972.

33. "Preliminary Feasibility Study on the Recharge of Treated Waste Water," Suffolk Co. Department of Environmental Control, 1972.

34. "Effect of Urbanization on Storm Discharge and Ground-Water Recharge in Nassau Co., N.Y." R. M. Sawyer, USGS, 1963.

35. "Effect of Synthetic Detergents on the Ground Waters of Long Island, New York," N.Y.S. Department of Health, 1957,

36. "Proceedings of the Seminar on Advanced Wastewater Treatment and Disposal," Regional Marine Resources Council of Nassau-Suffolk Regional Planning Board, USEPA, USGS, 1971.

37. "Hydrogeochemical Data From Investigations of Water Quality in Sewered and Unsewered Areas, Southern Nassau County, L.I., N.Y.," N. M. Perlmutter and E. Koch, USGS, 1975.

38. "Environmental and Planning Aspects of Waste Water Treatment Practices on Long Island, New York," Suffolk Co. Department of Environmental Control, 1972.

39. "Underground Waters of Nassau Co., " NYS Department of Health, 1964.

40. "Chloride Concentration and Temperature of the Waters of Nassau Co., Long Island, N.Y.," F. A. DeLuca, J. F. Hoffman and E. R. Lublee, USGS, GW-55, 1965.

41. "The Precipitation Regime of Long Island, N.Y.," J. F. Miller and R. H. Frederick, USGS, 1969.

42. "Geohydrology of the Artificial-Recharge Site at Bay Park, L.I., N.Y.," Vecchioli, Bennett, Pearson and Cerrillo, USGS, 1974.

43. "The Water Table in the Western and Central Parts of L.I., N.Y. 1945" GW-12.

44. "Configuration of the Rock Flood in Western L.I., N.Y., 1948" - GW-13.

45. "Water-Level Surface in the Aquifers of Western Long Island, N.Y. in 1959 and 1970," G. E. Kimmel, USGS, 1971.

46. "Appraisal of Operating Efficiency of Recharge Basin on Long Island, New York in 1969," D. A. Aronson and G. E. Seaburn, USGS, 1974.

47. "An Assessment of the Viral Hazard Associated with Various Long Island Aquatic Resources," J. M. Vaughn, 1975, Brookhaven National Laboratory.

48. "Feasibility of a Hele-Shaw Model Study of Contaminant Motion in the Long Island Aquifer System," Holzmacher, McLendon & Murrel Consulting Engineers, 1970.

49. "Model Study Relating Recharge, Distribution of Hydraulic Conductivity and Ground-Water Level Elevations for Selected Cross-Sections of the Ground-Water Reservoir in Western Suffolk Co., N.Y." O. L. Franke, Consulting Hydrogeologist.

50. "Preliminary Evaluation of the Hydrologic Effects of Sewering Planned for Southwest Suffolk Co., N.Y. - Phase I," O. L. Franke, Consulting Hydrogeologist, 1973.

51. "Wastewater Reclamation and Recharge, Bay Park, N.Y." J. Vecchioli, J. Oliva, S. Ragone and H. F. Ku, USGS, 1975.

52. "Water Recharge Considerations Confronting Suffolk County," Suffolk County Department of Environmental Control, 1971.

53. "Summary of Studies and Research Related to Artificial Recharge of Treated Water in Suffolk County, N.Y." Suffolk County Department of Environmental Control, 1972.

54. "Pollution and Water Supply of the Town of Southampton" Flynn & Mahoney Consulting Engineers, 1967.

55. "The Flow of Contaminants in the Saturated Zone," Ellis Koch, 1974.

56. "Record of Wells in Suffolk Co., N.Y." GW-31, 1952.

57. "Saline Waters in N.Y.S. Long Island, Staten Island & Manhattan 1956" GW-36.

58. "Ground-Water Levels and Related Hydrologic Data from Selected Observation Wells in Nassau County, Long Island, New York," John Isbister, USGS, 1959 GW-41.

59. "Urbanization and Its Effect on the Temperature of the Streams on Long Island, N.Y.," Edward J. Pluhowski, USGS, 1970.

Analog - Model Analysis of the Effect of Waste Water Management on the Groundwater Reservoir in Nassau and Suffolk Counties, L.I., N.Y. Report 1: Proposed and Current Sewerage, G. E. Kimmel, A. W. Harbaugh, USGS, Open File Report 76-441.

APPENDICES

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J. Status of Inactive Grants Projects, D.E.C.

K. Program Guidance Memorandum, Construction Grants No. 66, Water Quality Management SAM-1, EPA

L. Drinking Water Supplies, Part 5, Chapter 1, NYS Sanitary Code

M. Drinking Water Standards, Part 72, Chapter 11, NYS Administrative Rules and Regulations

N. Stanford Water Company Watershed Restrictions

O. Intermittent Stream Policy

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
1505 Kellum Place
Mineola, New York

Water Resources Summary
Long Island, New York
March 1975

Prepared in cooperation with the
NASSAU COUNTY DEPARTMENT OF PUBLIC WORKS
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SUFFOLK COUNTY DEPARTMENT OF ENVIRONMENTAL CONTROL
and
SUFFOLK COUNTY WATER AUTHORITY

GLOSSARY

BAT, BATEA -	Best Available Technology Ecomonically Achievable; under this terminology, effluent limits for certain categories and classes of point sources shall be implemented by July 1, 1983. This may be a more stringent level of treatment than the BPCTCA level.
Batch Process -	A treatment process in which a tank or reactor is filled, the water is treated and the tank contents are released.
BPT, BPCTCA -	Best Practicable Control Technology Currently Available; under this terminology, effluent limits are defined by the EPA administrator and must be met by July 1, 1977.
BOD -	Biochemical Oxygen Demand; a measure of the amount of oxygen consumed in biochemical decomposition of organic matter in water; a measure of the organic pollutant load.
BOD_5 -	The amount of oxygen utilized in five days by biochemical decomposition processes.
BOD_u -	The amount of oxygen utilized in the complete biochemical stabilization of the carbonaceous portion of a waste. For municipal waste, typically 1.46 x BOD_5.
cfs -	Flow in cubic feet per second.
COD -	Chemical Oxygen Demand; indicates the quantity of chemically oxidizable organic compounds present in sewage or a water sample; COD will vary with water composition, concentration of reagent, temperature and other factors; a rough correlation between BOD and COD can be established.
Coliform -	The coliform group of bacterial organisms; a bacterial indicator of contamination; this group is always present in the intestinal tract of human beings and other animals but is also widely distributed in nature (in soil, on vegetation, etc.).
DO -	Dissolved Oxygen; oxygen dissolved in sewage, water or other liquid usually expressed in parts per million, milligrams per liter or per cent saturation.
Effluent -	Sewage or other liquid, partially or completely treated or in its untreated or natural state, as the case may be, flowing out of a treatment plant or pipe.
Effluent Limitation -	Any restriction limiting the quantity, rate or concentration of discharge from a point source.
Effluent Limiting Segment -	A stream segment which receives a waste discharge and either currently meets applicable stream standards or is expected to meet such standards after the application of BPT limitations. A segment is bounded by; 1) the location of all waste discharges which mutually contribute to water quality degradation and, 2) by the downstream point of stream recovery to background conditions.
EIS, EAS -	Environmental Impact Statement, Environmental Assessment Statements - Under the National Environmental Policy Act of 1969 (NEPA), environmental assessment (impact) statements are prepared for every federally funded project. These statements are reviewed by EPA and recommendations of the project are submitted to the President's Council on Environmental Quality. New York State may also require an environmental statement in reviewing permits under Part 615, Title 6 of the Environmental Conservation Law.
EPA -	(United States) Environmental Protection Agency; the Federal organization charged with implementing the provisions of the Federal Water Pollution Control Act of 1972.
Eutrophic -	Condition of a lake characterized by small depths, high primary productivity, abundance of littoral plants, high plankton density, presence of plankton blooms, depletion of oxygen and absence of cold water fishes.
Fecal Coliform -	A tribe of bacterial organisms in the coliform group which originate in the intestines of warm blooded animals.
FM -	Force main.
gpd -	Flow in gallons per day.
Infiltration -	The entrance of groundwater into a pipe through joints, porous walls or breaks.

Influent -	Raw or partially treated sewage or other liquid flowing into a treatment plant.
INT -	Interceptor.
Interceptor Sewer -	A sewer which receives sewage flows from a system of lateral and trunk sewers and conveys such waters to a point for treatment or disposal.
Kjeldahl N -	Total oxidizable nitrogen as measured by organic and ammonia nitrogen.
LUNR -	Land Use and Natural Resource Inventory (of New York State).
MA7CD/10 year -	The minimum average seven day consecutive stream flow that occurs once in a ten year period. This or the minimum regulated flow, whichever is applicable, is used by the State in waste assimilation analyses and in determining effluent limitations for maintaining stream standards.
Mesotrophic -	Condition of a lake which exhibits characteristics which fall between the two extremes of lake primary productivity (see eutrophic and oligotrophic).
mgd -	Flow in millions of gallons per day.
mg/l -	Concentration in milligrams per liter; equivalent to ppm or parts per million for aqueous solutions.
MOD -	Modification in waste treatment strategy.
MP -	Mile point, normally measured upstream from the mouth.
MSL -	Mean Sea Level.
MRF -	Minimum Regulated Flow.
Nitrification -	The biochemical conversion of unoxidized nitrogenous matter (ammonia, nitrite and organic nitrogen) to oxidized nitrogen (nitrates). BOD is normally exerted in two distinct stages; the first is called the carbonaceous sta[illegible] and the second is called the nitrogenous stage.
NOD -	Nitrogenous Oxygen Demand; the amount of oxygen required for nitrification to take place. Each unit of organic and ammonia nitrogen requires 4.57 units of oxygen for bio-oxidation to nitrate nitrogen.
Non-Point Source -	Any discreet source from which possible pollutants enter a waterway. Non-point sources include air-borne precipitates, stormwater runoff from rural and urban areas, sediment, benthic deposits and seepage from contaminated groundwater.
NPDES -	National Pollutant Discharge Elimination System; the Federal permitting system authorized under Section 402 of the Federal Water Pollution Control Act of 1972, applying to surface water discharges.
Nutrients -	Substances which are required to support living plants and organisms. Major nutrients are carbon, hydrogen, oxygen, sulfur, nitrogen and phosphorus. These nutrients especially nitrogen and phosphorus, when present in excess, can stimulate noxious levels of weed and algal growth.
Oligotrophic -	Condition of a lake characterized by large depths, low primary productivity, scarcity of littoral plants, low plankton density, absence of plankton blooms, little if any oxygen depletion in the hypolimnion, and presence of cold water fishes.
Organic Pollutants -	Harmful or objectionable matter whose source is of plant or animal origin.
OS -	Outfall sewer.
Oxidation -	The addition of oxygen, removal of hydrogen, or the removal or electrons from an element or compound. In wastewater treatment or in stream self-purification, organic matter is oxidized to more stable substances.
Permit -	A legally binding document issued by a State or Federal agency to the owner or manager of a point source discharge. The permit document contains a schedule of compliance requiring the permit holder to achieve a specified effluent limitation by a specified date. Permit documents also specify monitoring and reporting requirements to be conducted by the applicant.
Phosphorus -	A chemical element which acts as a nutrient for aquatic plant growth an[illegible] is often the limiting nutrient which determines whether rapid aquatic growth will occur.

pH -	A measure of the hydrogen ion concentration in water on an inverse logarithmic scale ranging from 0 to 14. A pH of under 7 indicates more hydrogen ions and therefore more acidic solutions. A pH greater than 7 indicates a more alkaline solution. A pH of 7.0 is considered neutral, neither acidic nor alkaline.
Point Source -	Any discerible, confined and discreet conveyance from which pollutants are or may be discharged.
ppm -	Concentration in parts per million; equivalent to mg/l or milligrams per liter.
PS -	Pumping station.
PST -	Permit Summary Table. Worksheet used to certify allowable effluent limits.
Reach -	A section of surface waters which has common hydrologic characteristics; common natural, physical, chemical and biological processes and has common reactions to external stresses, i.e. discharge of pollutants.
S.D. -	Sewer District.
Secondary Treatment -	Sewage treatment to produce 85% removal of BOD_5 and suspended solids or an average (30 day arithmetic mean) effluent concentration of 30 mg/l for BOD_5 and suspended solids, whichever is less.
Segment -	See water quality or effluent limiting segment.
Sewage Treatment -	This is a process in which solids in sewage are partially removed and partially changed by decomposition from complex highly putrescible organic solids to mineral or relatively stable organic solids. The extent of this change is dependent on the treatment processes involved.
SMSA -	Standard Metropolitan Statistical Area; an area composed of a county or group of contiguous counties which are socially and economically integrated and which contain at least one city with a minimum of 50,000 inhabitants.
SPDES -	State Pollutant Discharge Elimination System; the State permitting system established to provide a permitting structure compatible with the NPDES system in order that the eligibility for eventual State take-over of the entire permitting system be assured. This system applies to surface and groundwater discharges and recognizes NPDES permits where they have been issued.
Species Diversity Index -	Mathematical expressions for categorizing and describing the composition of biological organisms in a stream. Species diversity values of less than 1 indicate areas of heavy pollution, values from 1 to 3 indicate areas of moderate pollution and values greater than 3 indicate clean water conditions.
SS -	Sewerage system. Also used as abbreviation for suspended solids.
STP -	Sewage Treatment Plant.
STP Add -	Sewage Treatment Plant Addition.
STP UP -	Upgrading existing treatment plant.
TOD -	Total Oxygen Demand; TOD = Ultimate carbonaeeous BOD + Ultimate Nitrogenous BOD.
UOD -	Ultimate Oxygen Demand; The upper limit of biochemical oxidation. Used interchangeably with TOD.
WAC -	Waste assimilation capacity.
Water Quality Limiting Segment -	A stream segment which receives a waste discharge and which is not expected to meet applicable stream standards even after the application of BPT effluent limitations required by New York State or under the Federal Water Pollution Control Act of 1972. The segment is bounded by; 1) the location of all waste discharges which mutually contribute to water quality degradation and; 2) by the downstream point of stream recovery to background conditions.
WWFR -	Wastewater Facility Report, engineering report.

STREAMFLOW

Streamflow in March was in the normal range at the index station on Massapequa Creek at Massapequa. Average monthly discharge at the station was 12 cubic feet per second, compared with the normal for the month of 14.8 cubic feet per second.

GROUND-WATER LEVELS

Ground-water levels in most wells rose.

The wells listed in Table 1 are reasonably representative of the areas in which the wells are found, and the average change in levels in these wells is assumed to be an index of the overall water-level change in shallow aquifers on Long Island. Table 2 shows change in water levels in wells in other areas and in all aquifers.

PRECIPITATION

Precipitation at Mineola was scattered throughout the month.

Preliminary precipitation figures for March 1975, for calendar year 1975, and departures from long-term averages for selected stations are given below (all figures in inches).

Station	Precipitation	Departure from Average	Cumulative 1975 Precipitation	Departure from Average
Bridgehampton	3.63	-0.85	15.94	+3.71
Kings Park	3.71	- .92	13.06	+2.04
Mineola	3.36	- .69	12.08	+1.64
Oakdale	3.19	- .45	12.17	+2.95
Riverhead	3.34	- .80	14.27	+3.04
Selden	3.87		13.30	

Table 1.--Water levels measured in 14 selected wells in Nassau and Suffolk Counties at the end of March 1975

Water levels are in feet above or below (-) mean sea level.
All wells are screened in the upper glacial aquifer (water table).

Well	Location	Depth of well (feet)	Water Level	Net change since Last month (feet)	Net change since Last year (feet)
N1255	Garden City	35	50.60	-0.11	-1.48
N8269	Old Westbury	51	66.46	+ .67	- .69
N1259	Plainedge	40	52.53	+ .50	- .16
N1263	Levittown	29	51.78	+ .53	- .44
N1614	Garden City Park	53	51.26	+ .25	-1.40
N1615	East Meadow	33	42.12	+ .42	+ .09
N1616	Westbury	68	75.78	+ .34	- .18
S1803	Babylon	19	17.21	+ .03	+1.66
S1805	Maywood	29	41.75	+ .60	- .32
S1806	Pinelawn	44	55.00	+ .74	- .04
S1807	West Islip	8	20.75	- .44	- .68
S1808	West Islip	15	10.60	+ .01	- .31
S1809	Brightwaters	29	29.33	+ .50	- .70
S1810	Brentwood	57	51.63	+1.42	- .21
Average water level, 14 wells			44.06	+ .39	- .34

Highest average water level, 50.99 (April 1939); lowest average water level, 39.45 (August 1966). Extremes are based on records from 1912 to 1918 and 1932 to present.

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*Water level affected by tide
LD Lowest daily reading
HD Highest daily reading
MD Daily mean reading
R Water-stage recorder
HT Measured near high tide
1/ Screened in Magothy aquifer
2/ Hydraulically connected with Lloyd
3/ Water level unobtainable

Table 2.--Water levels in water-table and artesian wells at the end of March 1975

Water levels are in feet above or below (-) mean sea level (see page 2 for explanation of symbols).

Well	Location	Depth of well (feet)	Water Level	Net change since	
				Last month (feet)	Last year (feet)
		Upper glacial aquifer (water-table)			
01254	Richmond Hill	65	2.2	+0.5	+3.2
02346	Flushing	17	16.3	- .3	+ .9
N1109	Elmont	37	10.7	+ .5	-1.0
N1129	West Hempstead	43	24.2	+ .4	-1.0
N1243	Cold Spring	22	56.8	.0	- .8
N1479	Great Neck	62	20.0	+ .1	-1.4
N8309	Munsey Park	199	39.7	+ .2	- .7
S1812	East Hauppauge	39	47.6	+ .6	- .9
S1813	Ronkonkoma	39	39.4	+ .3	- .6
S3513	Selden	65	64.7	+ .3	- .9
S3514	Commack	95	71.8	.0	+1.3
S3521	Medford	50	37.9	+ .3	+ .3
S3543	Westhampton	58	18.0	+ .4	- .4
S4271	Riverhead	105	10.9	+ .2	- .9
S5517	Upton	91	40.9	+ .3	- .5
S6411	Shoreham	149	32.0	+ .7	- .2
S6439	Moriches	42	24.6	+ .4	- .8
S8839	Amagansett	37	8.0	+ .5	.0
S16874	Melville	82	73.2	+ .2	-1.0
S24771	Brentwood	220	55.8	+ .8	- .1
S40849	South Setauket	61	42.9	+ .3	-3.7

Table 2.—Water levels in water-table and artesian wells at the end of March 1975—continued

Water levels are in feet above or below (-) mean sea level (see page 2 for explanation of symbols).

Well	Location	Symbol	Depth of well (feet)	Water Level	Net change since	
					Last month (feet)	Last year (feet)
			Jameco aquifer (artesian)			
N35	2/Port Washington	R-HD*	387	6.7	-0.1	+0.5
		R-LD		6.6	.0	+ .6
			Magothy aquifer (artesian)			
N2790	Bay Park	R-MD*	560	3.3	- .1	- .4
N3861	Cedarhurst (salty)	R-HT*	533	-4.3	+ .1	+ .5
N3867	Green Acres	R-HT*	517	-2.5	+ .3	- .2
N7161	Rockville Centre	R-MD*	673	5.5	+ .4	+ .3
N7493	Elmont	R	353	6.7	+ .2	-1.0
S21311	Fire Island	R-HT*	723	11.5	- .8	+ .4
S33380	Lake Ronkonkoma	R-MD	850	49.5	+ .5	-1.0
			Lloyd aquifer (artesian)			
N7152	Bayville	R-HT*	367	11.2	- .6	+1.3
N8046	Kings Point	R-HT*	186	4.9	+ .6	+1.0
S21091	Fire Island	R-HT*	1920	20.7	+ .3	.0
S33379	Lake Ronkonkoma	R-MD	1300	38.4	+ .5	- .4

Table 2.--Water levels in water-table and artesian wells at the end of March 1975--continued

Well	Location	Symbol	Depth of well (feet)	Water Level	Net change since Dec. 1974 (feet)	Net change since Last year (feet)
Upper glacial aquifer (water-table)						
K30	Brooklyn		56	4.0	-0.8	-0.2
Q1252	Jamaica		60	.1	+ .4	+1.2
Q1663	3/Glendale		133	--	--	--
Q2324	Aqueduct		32	2.0	+ .2	+ .8
N1110	Valley Stream		27	8.6	+1.2	-1.2
N1212	1/Locust Grove		185	86.6	+ .5	- .6
N1461	1/South Hicksville		86	77.0	+ .6	-1.1
N1478	Great Neck		55	20.1	- .1	--
N1622	Elmont		85	7.4	+ .1	-1.1
N1623	Elmont		71	6.3	- .3	-1.7
S1811	Lake Ronkonkoma		23	54.6	+ .3	- .6
S3737	Centereach		64	57.7	.0	-1.7
S6431	Upton		125	45.1	+1.8	-1.0
S8836	Southampton		37	7.0	+1.1	+ .1
S16777	Peconic		66	4.7	+1.0	- .7
S34742	Speonk		92	21.8	+1.1	- .1
S36141	Smithtown		113	51.6	- .2	-1.6
Jameco aquifer (artesian)						
K19	Brooklyn		186	7.8	.0	- .4
Q1237	Baisley		220	-3.2	- .5	-2.5
N1382	Woodmere	HT*	200	6.2	+ .4	+1.5
N3932	Cedarhurst	HT*	176	6.5	+ .3	+ .6
N4026	Woodsburg Dock	HT*	153	4.6	- .1	+ .9
N4213	Green Acres	HT*	134	6.3	+ .7	+1.1

Table 2.--Water levels in water-table and artesian wells at the end of March 1975--continued

Well	Location	Symbol	Depth of well (feet)	Water Level	Net change since Dec. 1974 (feet)	Net change since Last year (feet)
			Magothy aquifer (artesian)			
N9	Valley Stream		137	12.3	+2.3	-0.2
N85	Garden City		396	58.4	- .2	- .9
N180	Seaford		768	17.7	+2.5	+ .3
N2528	Brookville		282	69.6	-1.1	—
N2635	Port Washington		154	25.4	+ .5	- .9
N3862	Lawrence(salty)	HT*	306	3.7	+ .3	+ .6
N3864	Woodmere	HT*	469	4.4	+ .1	+ .8
N3865	Oceanside	HT*	565	4.0	+ .2	- .7
N4150	Freeport	HT*	745	10.5	- .4	+1.3
S6455	Upton		962	39.2	+1.2	- .5
			Lloyd aquifer (artesian)			
Q64	Elmhurst		560	- 5.8	+ .8	+3.5
Q273	Forest Hills		438	- .6	+ .5	+1.5
Q283	Flushing		409	- 3.6	.0	+ .6
Q470	Bayside		375	2.1	- .8	-1.1
Q543	Rockaway	HT*	840	1.9	- .1	+ .2
N7	Valley Stream		911	- 3.4	+ .7	-8.0
N511	Mill Neck	HT*	330	22.6	- .8	+2.0
N3355	Plainview		1090	31.5	+ .9	+1.0
S6434	Upton		1392	33.0	+ .6	- .5

—CURRENT DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		TIME DIFFERENCES		VELOCITY RATIOS		MAXIMUM CURRENTS			
								Flood		Ebb	
		Lat.	Long.	Slack water	Maximum current	Maximum flood	Maximum ebb	Direction (true)	Average velocity	Direction (true)	Average velocity
		° ′	° ′	*h. m.*	*h. m.*			*deg.*	*knots*	*deg.*	*knots*
	BLOCK ISLAND SOUND	N.	W.	on	THE RACE, p.34						
	Point Judith										
1370	Harbor of Refuge, south entrance---	41 22	71 30	-2 25	(4)	0.2	(4)	330	0.6	140	----
1375	Harbor of Refuge, west entrance----	41 22	71 31		See table 5.						
1380	Pond entrance----------------------	41 23	71 31	-3 20	-3 25	0.6	0.4	350	1.8	185	1.5
1385	2.4 miles SW. of-------------------	41 20	71 31	(5)	-0 10	0.2	0.2	260	0.7	090	0.6
1390	4.5 miles SW. of-------------------	41 18	71 33		See table 5.						
	Block Island										
1395	four miles north of----------------	41 18	71 32	0 00	+0 10	0.2	0.2	285	0.8	075	0.8
1400	Sandy Pt., 2.1 miles NNE. of-------	41 16	71 34	-0 10	-0 50	0.4	0.5	235	1.0	065	1.7
1405	Sandy Pt., 1.5 miles north of------	41 15	71 34	-0 40	-0 40	0.6	0.5	315	1.9	065	2.1
1410	Clay Head, 1.2 miles ENE. of-------	41 13	71 32	(6)	-1 15	0.2	0.1	300	0.7	165	0.5
1415	Old Harbor Pt., 0.5 mile SE. of----	41 09	71 32	-0 20	-0 10	0.1	0.1	335	0.2	175	0.6
1420	Lewis Pt., 1.0 mile SW. of---------	41 08	71 37	(7)	-1 10	0.7	0.5	300	1.9	135	1.8
1425	Lewis Pt., 1.5 miles west of-------	41 09	71 38	-1 10	-1 05	0.4	0.4	320	1.4	170	1.7
1430	Great Salt Pond entrance-----------	41 12	71 36	-3 55	-4 00	0.1	0.1	165	0.3	325	0.3
1435	Great Salt Pond ent.,1 mile NW. of-	41 12	71 36	-1 20	-0 45	0.1	0.1	160	0.4	035	0.4
1440	Sandy Pt., 0.4 mile west of--------	41 14	71 35	-----	[8]-1 30	(8)	0.2	----	----	010	0.7

....†Current too weak and variable to be predicted.

[4] A double ebb occurs at this station (see note [b]). Time differences: first ebb, -4^h 00^m; minimum ebb, -2^h 40^m; second ebb, -1^h 55^m; maximum flood, -2^h 50^m. Velocity ratio for first ebb is 0.2; minimum ebb, 0.1; second ebb, 0.2.

[5] Flood begins, -0^h 50^m; ebb begins, +0^h 20^m.

[6] Ebb begins, -0^h 35^m; minimum between ebb and flood, -2^h 20^m with velocity of approximately 0.5 knots at 220° true.

[7] Flood begins, -1^h 35^m; ebb begins, -0^h 35^m.

[8] Flood velocity is too weak to be predicted. Time difference gives mid-point of four hour stand of weak and variable current and time of maximum ebb.

[a] A double flood occurs at this station; the ebb is regular. After flood begins the velocity increases to a maximum (called "first flood"); it then decreases, reaching a minimum (called "minimum flood") near the middle of the flood period and at some places may actually run in an ebb direction for a short period at this time; it then again floods with a stronger velocity (called "second flood") after which it decreases to the slack before ebb. Differences and ratios given for first, minimum, and second floods should be applied to the time and velocity of maximum flood at the reference station. Other values should be applied to the corresponding phases at the reference station.

[b] A double ebb occurs at this station. A similar slackening occurs during the ebb period as is described for the flood period in "footnote [a]". Differences and ratios given for first, minimum, and second ebbs should be applied to the time and velocity of maximum ebb at the reference station. Other values should be applied to the corresponding phases at the reference station.

—CURRENT DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		TIME DIFFERENCES		VELOCITY RATIOS		MAXIMUM CURRENTS			
								Flood		Ebb	
		Lat.	Long.	Slack water	Maximum current	Maximum flood	Maximum ebb	Direction (true)	Average velocity	Direction (true)	Average velocity
		° ′	° ′	*h. m.*	*h. m.*			*deg.*	*knots*	*deg.*	*knots*
	BLOCK ISLAND SOUND—Continued *Time meridian, 75°W.*	N.	W.	on THE RACE, p.34							
1445	Green Hill Pt., 1.1 miles S. of-------	41 21	71 36	-0 50	-0 50	0.2	0.1	260	0.6	070	0.4
1450	Sandy Pt., 4.1 miles NW. of-----------	41 17	71 38	+0 10	+0 10	0.2	0.2	270	0.7	085	0.6
1455	Grace Pt., 2.0 miles NW. of-----------	41 12	71 38		See table 5.						
1460	Quonochontaug Beach, 1.1 miles S. of--	41 19	71 43	(1)	-0 05	0.4	0.1	250	1.1	080	0.4
1465	Quonochontaug Beach, 3.8 miles S. of--	41 16	71 43	+0 10	0 00	0.2	0.2	245	0.7	060	0.6
1470	Lewis Point, 6.0 miles WNW. of--------	41 12	71 44	(2)	+0 40	0.2	0.3	285	0.6	095	1.2
1475	Southwest Ledge----------------------	41 07	71 42	-0 20	-0 20	0.5	0.5	320	1.5	140	2.1
1480	Southwest Ledge, 2.0 miles W. of------	41 07	71 43	0 00	-0 15	0.5	0.5	355	1.5	170	1.9
1485	Watch Hill Pt., 2.2 miles E. of-------	41 18	71 49	(3)	-0 15	0.4	0.2	260	1.2	085	0.7
1490	Watch Hill Pt., 5.2 miles SSE. of-----	41 13	71 49	+0 30	+0 15	0.4	0.3	265	1.2	065	1.2
1495	Montauk Pt., 5.4 miles NNE. of--------	41 10	71 50	(4)	0 00	0.4	0.5	280	1.1	080	1.6
1500	Montauk Pt., 1.2 miles E. of----------	41 04	71 50	-1 10	-1 30	1.0	0.8	345	2.8	160	2.8
1505	Montauk Pt., 1 mile NE. of------------	41 05	71 51	-1 35	-1 35	0.7	0.4	355	2.4	145	1.9
1510	Wicopesset Island, 1.1 miles SSE. of--	41 16	71 55	(5)	-0 10	0.5	0.2	250	1.5	075	0.8
1515	East Pt., Fishers I., 4.1 miles S. of-	41 13	71 56	+0 25	+0 20	0.3	0.5	235	0.9	075	1.8
1520	Cerberus Shoal, 1.5 miles East of-----	41 10	71 55	-0 30	-0 35	0.4	0.5	255	1.1	090	1.8
1525	Between Shagwong Reef & Cerberus Shoal	41 08	71 56	-0 35	-0 50	0.6	0.5	240	1.9	055	1.8
1530	Montauk Harbor entrance---------------	41 05	71 56	-2 50	(6)	0.4	(6)	225	1.2	015	----
1535	Mt. Prospect, 0.6 mile SSE. of--------	41 15	72 00	-0 20	(7)	0.6	0.5	275	1.7	055	1.6
1540	Between Cerberus Shoal and Fishers I--	41 13	71 58	-0 25	-0 05	0.4	0.3	265	1.3	095	1.3
1545	Little Gull Island, 3.7 miles ESE. of-	41 11	72 02		See table 5.						
1550	Gardiners Island, 3 miles NE. of------	41 08	72 02	-0 35	-0 40	0.3	0.2	305	0.9	140	1.0
1553	Eastern Plain Pt., 1.2 miles N. of----	41 07	72 05	(8)	-2 05	0.3	0.2	290	1.0	110	0.8
1555	Eastern Plain Pt., 3.9 miles ENE. of--	41 07	72 00	-0 50	-1 15	0.3	0.3	245	1.0	095	1.0
1560	Little Gull Island, 0.8 mile SSE. of--	41 12	72 06	(9)	(9)	0.4	(9)	330	1.3	----	----
1563	Rocky Point, 1.8 miles NW. of---------	41 03	72 02	-1 45	-1 20	0.1	0.1	265	0.2	065	0.2
	GARDINERS BAY, etc.										
1565	Goff Point, 0.4 mile NW. of-----------	41 01	72 04	-1 45	-2 30	0.4	0.5	225	1.2	010	1.6
1566	Acabonack Hbr. ent., 0.6 mile ESE. of-	41 01	72 07	-1 30	-2 20	0.5	0.3	345	1.4	140	1.2
1570	Hog Creek Point, north of-------------	41 04	72 10	-1 20	-1 20	0.1	0.1	280	0.3	065	0.3
1571	Ram Island, 2.2 miles E. of-----------	41 05	72 14	-0 25	-0 20	0.1	0.1	250	0.2	090	0.3
1573	Orient Point, 2.4 miles SSE. of-------	41 08	72 12	(10)	-0 30	0.1	0.1	250	0.4	025	0.3
1575	Gardiners Pt. Ruins, 1.1 miles N. of--	41 10	72 09	-0 20	-0 10	0.4	0.5	270	1.2	065	1.8
1580	Between Gardiners Point & Plum Island-	41 10	72 10	-0 30	0 00	0.4	0.2	265	1.4	080	0.9
1583	Ram Island, 1.4 mile NNE. of----------	41 06	72 16	-0 05	+0 10	0.1	0.2	240	0.4	075	0.6
1585	Hay Beach Point, 0.3 mile NW. of------	41 07	72 20	+0 30	(11)	0.5	(11)	210	1.5	025	(11)

[1] Flood begins, -0^{h} 50^{m}; ebb begins, $+0^{h}$ 35^{m}.

[2] Flood begins, $+0^{h}$ 50^{m}; ebb begins, $+0^{h}$ 05^{m}.

[3] Flood begins, -0^{h} 35^{m}; ebb begins, $+0^{h}$ 35^{m}.

[4] Flood begins, $+0^{h}$ 25^{m}; ebb begins, -0^{h} 45^{m}.

[5] Flood begins, -1^{h} 00^{m}; ebb begins, $+0^{h}$ 40^{m}.

[6] A double ebb occurs at this station (see note *). Time differences: first ebb -4^{h} 50^{m}; minimum ebb, -2^{h} 30^{m}; second ebb, -0^{h} 45^{m}; maximum flood, -2^{h} 45^{m}. Velocity ratio for first ebb is 0.2; minimum ebb, 0.1; second ebb, 0.2.

[7] Maximum flood, -0^{h} 05^{m}; maximum ebb, -1^{h} 00^{m}.

[8] Flood begins, -2^{h} 55^{m}; ebb begins, -1^{h} 20^{m}.

[9] Flood begins, -2^{h} 20^{m}; ebb begins, -0^{h} 35^{m}. A double ebb occurs at this station (see note *). Time differences: first ebb, -3^{h} 00^{m}; minimum ebb, -1^{h} 55^{m}; second ebb, -0^{h} 30^{m}; maximum flood, -0^{h} 50^{m}. Velocity ratio for first ebb is 0.2; second ebb, 0.2. Minimum ebb is extremely weak, possibly flooding for a short period.

[10] Flood begins, $+0^{h}$ 10^{m}; ebb begins, $+1^{h}$ 00^{m}.

[11] Every other ebb phase exhibits a double ebb pattern (see note *). Time differences: first ebb, -0^{h} 50^{m}; minimum ebb, $+0^{h}$ 40^{m}; second ebb, $+1^{h}$ 35^{m}; maximum flood, $+0^{h}$ 20^{m}. For single ebb phases use time differences and velocity ratios of the first ebb. Velocity ratios: first ebb, 0.3; minimum ebb, 0.1; second ebb, 0.2.

[*] A double ebb occurs at this station. A similar slackening occurs during the ebb period as is described for the flood period in "footnote *, page 140". Differences and ratios given for first, minimum, and second ebbs should be applied to the time and velocity of maximum ebb at the reference station. Other values should be applied to the corresponding phases at the reference station.

CURRENT DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		TIME DIFFERENCES		VELOCITY RATIOS		MAXIMUM CURRENTS			
								Flood		Ebb	
		Lat.	Long.	Slack water	Maximum current	Maximum flood	Maximum ebb	Direction (true)	Average velocity	Direction (true)	Average velocity
		° ′	° ′	h. m.	h. m.			deg.	knots	deg.	knots
	GARDINERS BAY, etc.—Continued *Time meridian, 75°W.*	N.	W.	on THE RACE, p.34							
1587	Jennings Point, 0.2 mile NNW. of------	41 04	72 22	+0 25	+0 05	0.6	0.4	290	1.6	055	1.5
1590	Cedar Point, 0.2 mile west of---------	41 02	72 16	0 00	-0 30	0.6	0.5	195	1.8	005	1.6
1592	North Haven Peninsula, north of-------	41 02	72 19	+0 15	-0 30	0.8	0.6	230	2.4	035	2.1
1593	Paradise Point, 0.4 mile east of------	41 03	72 23	+0 25	+0 05	0.5	0.4	145	1.5	345	1.5
1595	Little Peconic Bay entrance-----------	41 02	72 23	+0 35	+0 10	0.6	0.4	240	1.6	015	1.5
1600	Robins Island, 0.5 mile south of------	40 57	72 27	+0 35	+0 10	0.6	0.2	245	1.7	065	0.6
	FISHERS ISLAND SOUND										
1605	Edwards Pt.-Sandy Pt. (between)-------	41 20	71 54	-2 30	(1)	0.4	(1)	035	1.1	235	----
1610	Napatree Point, 0.7 mile SW. of-------	41 18	71 54	-0 55	-1 10	0.6	0.6	285	1.7	115	2.2
1620	Little Narragansett Bay entrance------	41 20	71 53	-2 00	-2 15	0.4	0.3	090	1.3	270	1.3
1625	Avondale, Pawcatuck River-------------	41 20	71 51	-2 05	(2)	0.2	(2)	060	0.6	255	----
1630	Ram Island Reef, south of-------------	41 18	71 58	-0 45	-0 50	0.4	0.4	255	1.3	090	1.6
1635	Noank---------------------------------	41 19	71 59	(3)	(3)	0.2	(3)	340	0.5	----	----
1640	Mystic, Highway Bridge, Mystic River--	41 21	71 58	-2 05	(4)	0.2	(4)	040	0.5	230	----
1645	Clay Point, 1.3 miles NNE. of---------	41 18	71 58	-0 40	-1 00	0.5	0.5	265	1.4	035	1.9
1650	North Hill Pt., 1.1 miles NNW. of-----	41 18	72 02	(5)	(5)	0.5	0.4	260	1.5	080	1.2
	LONG ISLAND SOUND										
	The Race										
1655	Race Point, 0.4 mile SW. of--------	41 15	72 03	-0 35	-0 40	0.9	1.0	290	2.6	135	3.5
1660	THE RACE, near Valiant Rock--------	41 14	72 04	Daily predictions				295	2.9	100	3.5
1665	0.5 mile NE. of Little Gull Island-	41 13	72 06	-0 20	-0 20	1.0	0.7	000	3.3	105	3.1
1670	Little Gull I., 1.1 mi. ENE. of----	41 13	72 05	-0 05	-0 30	1.4	1.3	300	4.0	130	4.7
1675	Great Gull Island, 0.7 mile WSW. of---	41 12	72 08	-0 40	(6)	0.9	0.9	300	2.6	135	3.2
1680	Plum Gut------------------------------	41 10	72 13	-1 10	-1 50	1.2	1.2	325	3.5	125	4.3
1685	Eastern Point, 1.5 miles south of-----	41 18	72 05	-1 30	-1 50	0.1	0.1	250	0.4	055	0.4
1690	New London Harbor entrance------------	41 19	72 05	-1 45	-1 35	0.1	0.1	350	0.1	210	0.2
	Thames River										
1695	Winthrop Point--------------------	41 22	72 05	-1 05	(7)	0.1	(7)	010	0.4	185	----
1700	Off Smith Cove--------------------	41 24	72 05	-1 25	(8)	0.2	(8)	020	0.7	200	----
1705	Off Stoddard Hill-----------------	41 28	72 04	-1 00	(9)	0.2	(9)	330	0.7	165	----
1710	Lower Coal Dock-------------------	41 31	72 05	*Current too weak and variable to be predicted.*							

[1] A double ebb occurs at this station (see note [10]). Time differences: first ebb, $-3^h\ 40^m$; minimum ebb, $-1^h\ 30^m$; second ebb, $-0^h\ 05^m$; maximum flood, $-3^h\ 15^m$. Velocity ratio for first ebb is 0.3; minimum ebb, 0.1; second ebb, 0.2.

[2] A double ebb occurs at this station (see note [10]). Time differences: first ebb, $-3^h\ 40^m$; minimum ebb, $-1^h\ 10^m$; second ebb, $+0^h\ 05^m$; maximum flood, $-2^h\ 40^m$. Velocity ratio for first ebb is 0.2; second ebb, 0.1. Minimum ebb is extremely weak, possibly flooding for a short period.

[3] Flood begins, $-1^h\ 35^m$; ebb begins, $-4^h\ 10^m$. A double ebb occurs at this station (see note [10]). Time differences: first ebb, $-4^h\ 30^m$; minimum ebb, $-1^h\ 25^m$; second ebb, $+0^h\ 20^m$; maximum flood, $-3^h\ 15^m$ Velocity ratio for first ebb is 0.1; second ebb, 0.1. Minimum ebb is extremely weak, possibly flooding for a short period.

[4] A double ebb occurs at this station (see note [10]). Time differences: first ebb, $-3^h\ 40^m$; minimum ebb, $-1^h\ 40^m$; second ebb, $-0^h\ 20^m$; maximum flood, $-2^h\ 50^m$. Velocity ratio for first ebb is 0.1; second ebb, 0.1. Minimum ebb is weak.

[5] Flood begins, $-1^h\ 05^m$; maximum flood, $-0^h\ 25^m$; ebb begins, $-0^h\ 20^m$; maximum ebb, $-1^h\ 35^m$.

[6] Maximum flood, $-0^h\ 35^m$; maximum ebb, $-1^h\ 40^m$.

[7] A double ebb occurs at this station (see note [10]). Time differences: first ebb, $-2^h\ 35^m$; minimum ebb, $-1^h\ 10^m$; second ebb, $+0^h\ 05^m$; maximum flood, $-2^h\ 00^m$. Velocity ratio for first ebb is 0.1; second ebb, 0.1. Minimum ebb is weak.

[8] A double ebb occurs at this station (see note [10]). Time differences: first ebb, $-1^h\ 55^m$; minimum ebb, $-1^h\ 30^m$; second ebb, $+0^h\ 15^m$; maximum flood, $-2^h\ 20^m$. Velocity ratio for first ebb is 0.2; minimum ebb, 0.1; second ebb, 0.2.

[9] A double ebb occurs at this station (see note [10]). Time differences: first ebb, $-2^h\ 30^m$; minimum ebb, $-1^h\ 10^m$; second ebb, $+0^h\ 25^m$; maximum flood, $-2^h\ 25^m$. Velocity ratio for first ebb is 0.1; second ebb, 0.2. Minimum ebb is weak.

[10] A double ebb occurs at this station. A similar slackening occurs during the ebb period as is described for the flood period in "footnote *, page 140". Differences and ratios given for first, minimum, and second ebbs should be applied to the time and velocity of maximum ebb at the reference station. Other values should be applied to the corresponding phases at the reference station.

—CURRENT DIFFERENCES AND OTHER CONSTANTS

	PLACE	POSITION		TIME DIFFERENCES		VELOCITY RATIOS		MAXIMUM CURRENTS			
								Flood		Ebb	
		Lat.	Long.	Slack water	Maximum current	Maximum flood	Maximum ebb	Direction (true)	Average velocity	Direction (true)	Average velocity
		° ′	° ′	h. m.	h. m.			deg.	knots	deg.	knots
	LONG ISLAND SOUND—Continued *Time meridian, 75°W.*	N.	W.	on THE RACE, p.34							
1715	Goshen Point, 1.9 miles SSE. of	41 16	72 06	-1 05	-1 25	0.4	0.5	285	1.2	060	1.6
1720	Little Gull Island, 0.8 mile NNW. of	41 13	72 07	(1)	-1 00	0.7	0.8	260	1.9	045	2.9
1725	Bartlett Reef, 0.2 mile south of	41 16	72 08	-1 30	-1 10	0.3	0.3	255	1.4	090	1.3
1730	Twotree Island Channel	41 18	72 08	-0 55	-1 35	0.4	0.4	265	1.2	100	1.6
1735	Niantic (Railroad Bridge)	41 20	72 11	-0 55	-0 50	0.6	0.2	350	1.6	180	0.8
1740	Black Point, 0.8 mile south of	41 17	72 12	-1 25	-1 40	0.5	0.4	265	1.4	080	1.3
1745	Black Point-Plum Island (between)	41 14	72 12	+0 25	+0 15	0.7	0.7	235	2.1	075	2.4
1750	Plum Island, 0.8 mile NNW. of	41 12	72 12	(2)	-0 30	0.6	0.7	245	1.7	065	2.4
1753	Hatchett Point, 1.1 miles WSW. of	41 16	72 17	(3)	(3)	0.4	0.3	240	1.3	045	1.2
	Connecticut River										
1755	Lynde Point, channel east of	41 16	72 20	+0 30	+0 40	0.3	0.2	345	0.9	160	0.7
1757	Saybrook Point, 0.2 mile NE. of	41 17	72 21	+0 40	+0 40	0.5	0.4	355	1.5	160	1.5
1760	Railroad drawbridge	41 19	72 21	+0 50	+1 00	0.5	0.5	000	1.6	180	2.1
1765	Eustasia Island, 0.6 mile ESE. of	41 23	72 24	+1 40	+1 30	0.4	0.4	290	1.1	070	1.4
1767	Eddy Rock Shoal, west of	41 27	72 28	+1 50	+1 50	0.3	0.2	350	0.8	155	0.6
1769	Higganum Creek, 0.5 mile ESE. of	41 30	72 33	+2 50	+2 55	0.3	0.3	270	0.8	080	1.0
1770	Wilcox Island Park, east of	41 34	72 39	(4)	+3 35	0.3	0.3	355	0.9	160	1.0
1773	Rocky Hill	41 40	72 38	(5)	+3 35	0.2	0.2	335	0.6	135	0.8
1775	Hartford Jetty	41 45	72 39	(6)	+4 35	(6)	0.2	290	0.1	095	0.7
1777	Saybrook Breakwater, 1.5 miles SE. of	41 14	72 19	-1 10	-1 35	0.7	0.6	260	1.9	070	2.0
1730	Mulford Point, 3.1 miles NW. of	41 12	72 19	-0 05	(7)	0.7	0.6	270	1.9	065	2.3
1733	Orient Point, 1.0 mile WNW. of	41 10	72 15	-0 50	(8)	(8)	0.9	250	----	055	3.1
1785	Terry Point, 1 mile north of	41 10	72 19	-0 05	-0 10	0.8	0.7	255	2.7	070	3.2
1787	Cornfield Point, 3 miles south of	41 13	72 22	-0 30	-0 20	0.6	0.4	255	2.0	095	1.7
1790	Cornfield Point, 1 mile south of	41 15	72 23	-1 25	-1 50	0.5	0.4	270	1.6	100	1.8
1793	Kelsey Point, 2.1 miles SE. of	41 14	72 28	-0 45	-1 00	0.5	0.5	260	1.5	070	1.8
1795	Six Mile Reef, 1.5 miles north of	41 13	72 29	-0 20	-0 25	0.3	0.4	290	1.0	095	1.3
1797	Six Mile Reef, 2 miles east of	41 11	72 27	-0 20	-0 25	0.6	0.6	235	1.6	040	2.1
1799	Horton Point, 1.4 miles NNW. of	41 06	72 27	0 00	-0 05	0.5	0.6	260	1.4	040	2.0
1800	Kelsey Point, 1 mile south of	41 14	72 30	-1 15	-1 25	0.6	0.3	250	2.0	120	1.5
1805	Sachem Head, 1.0 mile SSE. of	41 14	72 42	-0 35	-0 50	0.4	0.3	255	1.1	065	1.0
1810	Sachem Head, 6.2 miles south of	41 09	72 42	+0 10	+0 10	0.2	0.3	260	0.6	065	0.9
1812	Roanoke Point, 5.6 miles north of	41 04	72 43	-0 10	-0 15	0.2	0.3	255	0.7	050	0.9
1814	Roanoke Point, 2.3 miles NNW. of	41 01	72 43	(9)	-0 25	0.3	0.2	270	0.9	070	0.7
1815	Sachem Head, 1 mile south of	41 14	72 43	-0 40	-0 15	0.3	0.3	280	0.9	085	1.2
1820	New Haven Harbor entrance[10]	41 14	72 55	-0 55	-1 25	0.4	0.2	320	1.4	150	0.9
1822	City Point, 1.3 miles NE. of	41 18	72 54	+0 20	+0 20	0.1	0.1	015	0.3	215	0.4
1823	Oyster River Pt., 1.3 miles SSE. of	41 13	72 58	(11)	-0 30	0.1	0.1	255	0.3	060	0.3
1825	Pond Point, 4.2 miles SSE. of	41 09	72 58	-0 10	-0 05	0.2	0.2	265	0.6	065	0.6
1826	Stratford Shoal, 6.0 miles east of	41 05	72 58	-0 05	-0 05	0.2	0.2	265	0.6	060	0.6
1827	Sound Beach, 2.2 miles north of	41 00	72 58	-0 10	-0 15	0.3	0.3	270	0.9	075	0.9
1828	Charles Island, 0.8 mile SSE. of	41 11	73 03	-0 40	-0 45	0.1	0.1	250	0.4	070	0.4

[1] Flood begins, +0^h 15^m; ebb begins, -2^h 30^m.

[2] Flood begins, +0^h 05^m; ebb begins, -1^h 15^m.

[3] Flood begins, -2^h 35^m; maximum flood, -1^h 10^m; ebb begins, -0^h 50^m; maximum ebb, -2^h 35^m.

[4] Flood begins, +4^h 05^m; ebb begins, +3^h 05^m.

[5] Flood begins, +4^h 40^m; ebb begins, +3^h 20^m.

[6] Flood begins, +5^h 45^m; ebb begins, +3^h 20^m; maximum flood current is weak and variable.

[7] Maximum flood, -1^h 05^m; maximum ebb, -0^h 25^m.

[8] A double flood occurs at this station (see note 6 on page 139). Time differences: first flood, -2^h 00^m; minimum flood, -1^h 00^m; second flood, -0^h 10^m; maximum ebb, -1^h 15^m. Velocity ratios: first flood, 0.5; minimum flood, 0.3; second flood, 0.7.

[9] Flood begins, -1^h 20^m; ebb begins, -0^h 10^m.

[10] Inside breakwaters, in channel, the current is only 0.4 knot.

[11] Slacks are indefinite.

—CURRENT DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		TIME DIFFERENCES		VELOCITY RATIOS		MAXIMUM CURRENTS			
								Flood		Ebb	
		Lat.	Long.	Slack water	Maximum current	Maximum flood	Maximum ebb	Direction (true)	Average velocity	Direction (true)	Average velocity
		° ′	° ′	h. m.	h. m.			deg.	knots	deg.	knots
	LONG ISLAND SOUND—Continued *Time meridian, 75°W.*	N.	W.	on THE RACE, p.34							
	Housatonic River										
1830	Milford Point, 0.2 mile west of----	41 10	73 07	+0 05	(1)	0.4	0.3	330	1.2	135	1.2
1835	Railroad drawbridge, above---------	41 13	73 07	+0 30	(2)	0.4	0.4	350	1.1	185	1.3
1837	Fowler Island, 0.1 mile NNW. of----	41 14	73 06	+0 40	+0 30	0.4	0.3	040	1.1	270	1.1
1840	Wooster Island, 0.1 mile SW. of----	41 17	73 05	(3)	+0 30	0.2	0.2	020	0.6	220	0.7
1845	Derby-Shelton Bridge, below---------	41 19	73 05	-----	-----	----	0.1	(4)	(4)	095	0.4
1850	Point No Point, 1.2 miles south of----	41 08	73 08	-0 10	-0 20	0.4	0.3	255	1.3	095	1.3
1855	Old Field Point, 2 miles NE. of-------	41 00	73 06	+0 05	+0 10	0.2	0.2	250	0.8	100	0.9
1860	Port Jefferson Harbor entrance--------	40 58	73 06	+0 20	+0 25	0.8	0.4	150	2.6	325	1.9
1865	Crane Neck Point, 0.5 mile NW. of-----	40 58	73 10	-1 10	-1 30	0.4	0.3	255	1.3	015	1.5
1870	Bridgeport Hbr.ent., between jetties[5]	41 09	73 11	0 00	-0 10	0.2	0.1	340	0.7	175	0.6
1875	Pine Creek Pt., 2.3 miles SE. of------	41 05	73 14	(6)	-0 15	0.3	0.1	265	0.8	060	0.5
1880	Saugatuck R., 0.5 mile above Bluff Pt-	41 06	73 23	*Current weak and variable.*							
1885	Sheffield I. Tower, 1.1 miles SE. of--	41 02	73 24	+0 45	+0 15	0.3	0.2	265	1.0	075	0.6
1890	Sheffield Island Harbor---------------	41 03	73 26	*Current weak and variable.*							
1895	Norwalk River, off Gregory Point------	41 05	73 24	-0 10	-0 15	0.2	0.1	320	0.7	145	0.6
1900	Eatons Neck Pt., 0.5 mile north of----	40 58	73 24	-1 10	-0 30	0.2	0.3	310	0.6	070	1.4
1905	Eatons Neck Pt., 1.8 miles west of----	40 57	73 26	-0 50	-0 45	0.2	0.1	200	0.5	070	0.6
1910	Huntington Bay, off East Fort Point---	40 56	73 25	+0 30	+0 35	0.1	0.1	180	0.4	020	0.6
1915	Northport Bay entrance (in channel)---	40 55	73 24	-0 05	+0 10	0.3	0.4	080	1.1	250	1.8
1920	Northport Bay, south of Duck I. Bluff-	40 55	73 23	+0 20	+0 25	0.1	0.1	005	0.4	285	0.3
1925	Long Neck Point, 0.6 mile south of----	41 02	73 29	(7)	-0 10	0.3	0.2	245	0.8	050	0.6
1930	Lloyd Point, 0.8 mile north of--------	40 58	73 29	-0 10	-0 15	0.4	0.3	280	1.3	065	1.4
1935	Shippan Point, 1.3 miles SSE. of------	41 00	73 31	+0 40	-0 15	0.3	0.3	245	1.0	085	0.9
	Oyster Bay										
1940	Channel off West Fort--------------	40 55	73 30	+0 05	+0 15	0.2	0.1	120	0.5	320	0.6
1945	Harbor ent., S. of Plum Point------	40 54	73 31	0 00	+0 05	0.2	0.2	245	0.7	055	0.7
1950	Harbor, west of Soper Point--------	40 53	73 32	+0 15	+0 25	0.2	0.1	335	0.6	140	0.4
1955	Cold Spring Harbor-----------------	40 53	73 29	*Current weak and variable.*							
1960	Stamford Harbor-----------------------	41 02	73 32	*Current weak and variable.*							
1965	Captain Harbor entrance---------------	41 00	73 36	+0 05	-0 35	0.2	0.2	305	0.7	105	0.8
1970	Cos Cob Harbor, off Goose Island------	41 01	73 36	+0 10	-0 25	0.2	0.1	015	0.5	190	0.4
1975	Peningo Neck, 0.2 mi. off Parsonage Pt	40 57	73 41	+0 35	+0 20	0.2	0.1	210	0.5	050	0.5
1980	Matinecock Point (midsound)-----------	40 56	73 39	+0 55	+0 50	0.2	0.2	255	0.5	050	0.7
1985	Matinecock Point, 0.5 mile north of---	40 55	73 38	+0 30	+0 20	0.2	0.2	260	0.7	055	0.9
1990	Hempstead Harbor, off Mott Point------	40 52	73 40	*Current weak and variable.*							
1995	Hempstead Harbor, east of Bar Beach---	40 50	73 39	0 00	-0 10	0.5	0.4	170	1.5	350	1.9
2000	Mamaroneck Harbor, off Shootfly I-----	40 56	73 43	*Current weak and variable.*							
2005	Echo Bay entrance---------------------	40 54	73 46	*Current weak and variable.*							
2010	Davids Island, channel north of-------	40 53	73 46	+1 05	+0 40	0.1	0.1	230	0.4	050	0.6
2015	Davids Island, channel 0.1 mi. E. of--	40 53	73 46	*Current weak and variable.*							
2020	Execution Rocks, southeast of---------	40 52	73 44	+1 20	+0 55	0.2	0.2	225	0.5	025	0.7
2025	Manhasset Bay entrance----------------	40 51	73 44	-0 05	-0 15	0.2	0.1	140	0.5	335	0.4
2030	Hart Island, southeast of-------------	40 51	73 46	+2 30	+3 25	0.1	0.2	200	0.4	020	0.8
2035	Between Hart Island and City Island---	40 51	73 47	+3 10	+3 10	0.2	0.2	180	0.5	355	0.7
2040	City Island Bridge--------------------	40 51	73 48	*Current variable, see footnote 8.*							
2045	Eastchester Bay, near Big Tom---------	40 50	73 48	+0 30	-0 10	0.2	0.1	305	0.6	120	0.4
2050	Hutchinson R., Pelham Highway Bridge--	40 52	73 49	-0 30	-0 50	0.5	0.3	315	1.7	135	1.1
2055	Little Neck Bay entrance--------------	40 48	73 46	-0 15	+0 15	0.1	.0.1	135	0.3	335	0.3

[1] Maximum flood, $0^h\ 00^m$; maximum ebb, $-0^h\ 55^m$.

[2] Maximum flood, $+0^h\ 15^m$; maximum ebb, $-0^h\ 55^m$.

[3] Flood begins, $+1^h\ 20^m$; ebb begins, $+0^h\ 20^m$.

[4] Current seldom floods.

[5] Near Tongue Point, Bridgeport Harbor, the current is weak and irregular.

[6] Flood begins, $-0^h\ 30^m$; ebb begins, $+0^h\ 45^m$.

[7] Flood begins, $-0^h\ 55^m$; ebb begins, $+0^h\ 55^m$.

[8] Current variable, running over 1½ knots at times. Maximum north and south currents occur about ½ hour before maximum flood and ebb, respectively, at The Race.

CURRENT DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		TIME DIFFERENCES		VELOCITY RATIOS		MAXIMUM CURRENTS			
								Flood		Ebb	
		Lat.	Long.	Slack water	Maximum current	Maximum flood	Maximum ebb	Direction (true)	Average velocity	Direction (true)	Average velocity
		° ′	° ′	h. m.	h. m.			deg.	knots	deg.	knots
	EAST RIVER	N.	W.	on HELL GATE, p.40							
	Time meridian, 75°W.										
2060	Between Willets Point and Throgs Neck-	40 48	73 47	-0 50	-1 15	0.3	0.1	050	1.0	250	0.6
2065	Cryders Point, 0.4 mile NNW. of-------	40 48	73 48	-0 30	-0 50	0.4	0.2	110	1.3	285	1.1
2070	Old Ferry Point----------------------	40 48	73 50	-0 40	-0 35	0.5	0.3	075	1.7	240	1.5
2075	Clason Point, 0.2 mile SSW. of--------	40 48	73 51	-0 10	-0 40	0.5	0.3	070	1.8	250	1.5
2080	Flushing Creek entrance---------------	40 46	73 51	*Current weak and variable*							
2085	Rikers I. chan., off La Guardia Field-	40 47	73 53	+0 05	-0 05	0.3	0.3	090	1.1	260	1.3
2090	Bronx River (1 mile N. of Hunts Pt)---	40 49	73 52	*Current weak and variable.*							
2095	Hunts Point, southwest of-------------	40 48	73 53	0 00	-0 05	0.5	0.3	110	1.7	280	1.3
2100	Between N. Brother I. and S. Brother I	40 48	73 54	+0 15	0 00	0.7	0.4	065	2.5	255	1.8
2105	Port Morris, channel off of-----------	40 48	73 54	+0 05	-0 15	0.4	0.4	045	1.5	220	1.7
2110	Off Winthrop Ave., Astoria------------	40 47	73 55	0 00	-0 05	1.0	0.5	040	3.4	220	2.5
2115	Mill Rock, northeast of---------------	40 47	73 56	-0 25	-0 15	0.7	0.1	105	2.3	290	0.6
2120	Mill Rock, west of--------------------	40 47	73 56	-0 15	-0 05	0.4	0.2	000	1.2	180	1.0
2125	HELL GATE (off Mill Rock)-------------	40 47	73 56	Daily predictions				050	3.4	230	4.6
2130	Welfare Island, west of, off 75th St--	40 46	73 57	-0 05	0 00	1.1	1.0	035	3.8	215	4.7
2135	Welfare Island, east of, off 36th Ave-	40 46	73 57	-0 10	-0 05	1.0	0.7	030	3.5	210	3.4
2136	Welfare Island, west of, off 67th St--	40 46	73 57	+0 10	0 00	1.1	0.9	010	3.6	230	4.0
2137	Welfare Island, west of, off 63rd St--	40 46	73 57	-0 05	0 00	0.8	0.6	035	2.8	225	2.9
2138	Welfare Island, east of---------------	40 45	73 57	0 00	0 00	0.8	0.6	030	2.8	200	2.6
2140	Off 31st Street, Manhattan------------	40 44	73 58	+0 05	+0 10	0.4	0.5	000	1.5	175	2.1
2145	Newtown Creek entrance----------------	40 44	73 57	*Current weak and variable.*							
2150	Off 19th Street (Pier 67)-------------	40 44	73 58	-0 10	+0 05	0.5	0.4	355	1.8	180	1.9
2155	Williamsburg Bridge, 0.3 mile N. of---	40 43	73 58	-0 05	+0 10	0.8	0.6	020	2.7	220	2.9
2160	Corlears Hook, south of, midstream‡---	40 43	73 59	-0 10	0 00	0.9	0.7	060	3.0	235	3.0
2165	Brooklyn Bridge, 0.1 mile SW. of------	40 42	74 00	-0 10	0 00	0.9	0.8	045	2.9	220	3.5
2170	Governors I., N. of (*SEE CAUTION NOTE*)---	40 42	74 01	-0 20	+0 15	0.4	0.4	095	1.2	270	1.7
2175	Buttermilk Channel--------------------	40 41	74 01	-0 10	0 00	0.5	0.5	050	1.8	220	2.4
	HARLEM RIVER										
2180	Little Hell Gate, western end---------	40 47	73 56	-0 25	+0 05	0.9	0.6	100	2.9	300	2.7
2185	East 105th Street---------------------	40 47	73 56	-0 10	-0 05	0.4	0.2	035	1.2	215	1.0
2190	East 117th Street (midchannel)--------	40 48	73 56	-0 30	+0 10	0.4	----	195	1.3	----	----
2195	Willis Ave. Bridge, 0.1 mile NW. of---	40 48	73 56	-0 20	-0 05	0.4	0.3	140	1.2	330	1.3
2200	Madison Ave. Bridge-------------------	40 49	73 56	-0 20	0 00	0.5	0.4	180	1.8	000	1.7
2205	Macombs Dam Bridge--------------------	40 50	73 56	-0 20	0 00	0.5	0.3	180	1.7	000	1.4
2210	High Bridge---------------------------	40 51	73 56	-0 20	0 00	0.6	0.4	190	2.0	015	2.0
2215	West 207th Street Bridge--------------	40 52	73 55	-0 20	0 00	0.6	0.4	215	2.0	035	2.0
2220	Broadway Bridge-----------------------	40 52	73 55	-0 20	+0 05	0.6	0.5	115	2.1	300	2.3
2225	Spuyten Duyvil Creek entrance---------	40 53	73 56	-0 10	+0 15	0.4	0.3	100	1.4	285	1.5
	LONG ISLAND, South Coast			on THE NARROWS, p.46							
2230	Fire Island Lighted Whistle Buoy 2FI--	40 29	73 11	See table 5.							
2235	Fire Island Inlet, 22 miles south of[2]-	40 16	73 16	-----	-----	----	----	----	(2)	----	(2)
2240	Shinnecock Canal, railroad bridge-----	40 53	72 30	-----	[3]-0 40	----	[3]0.8	----	----	[3]180	[3]1.5

‡The current on the Manhattan side of the channel is about ½ knot stronger and on the Brooklyn side about ½ knot weaker than at this station.

[1] Maximum flood only. The ebb or northerly current is weak and variable. East of the channel the current flows southward practically all the time, but with changing velocity, the maximum velocity being about the same as in midchannel and occuring about the same time. On the Manhattan side, just off the piers, the flood or southerly current is weak and variable but the ebb or northerly current has an average maximum velocity of about 2 knots which occurs about the time of maximum ebb at Hell Gate.

[2] Tidal current is weak, averaging about 0.1 knot at maximum.

[3] For maximum southward current only, the gates of the lock being closed to prevent northward flow. Apply difference and ratio to maximum ebb at The Narrows.

CAUTION--During the first 2 hours of flood in channel north of Governors Island the current in Hudson River is still ebbing while during first 1½ hours of ebb in this channel the current in Hudson River is still flooding. (See Tidal Current Charts, New York Harbor.) At such times special care must be taken by large ships in navigating this channel.

CURRENT DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		TIME DIFFERENCES		VELOCITY RATIOS		MAXIMUM CURRENTS			
								Flood		Ebb	
		Lat.	Long.	Slack water	Maximum current	Maximum flood	Maximum ebb	Direction (true)	Average velocity	Direction (true)	Average velocity
		° ′	° ′	h. m.	h. m.			deg.	knots	deg.	knots
	LONG ISLAND, South Coast—Continued *Time meridian, 75°W.*	N.	W.	on THE NARROWS, p.46							
2245	Ponquogue bridge, Shinnecock Bay------	40 51	72 30	+0 40	+0 35	0.5	0.3	250	0.8	090	0.6
2250	Shinnecock Inlet----------------------	40 51	72 29	-0 20	-0 40	1.5	1.2	350	2.5	170	2.3
2255	Fire I. Inlet, 0.5 mi. S. of Oak Beach	40 38	73 18	+0 15	0 00	1.4	1.2	080	2.4	245	2.4
2260	Jones Inlet---------------------------	40 35	73 34	-1 00	-0 55	1.8	1.3	035	3.1	215	2.6
2265	Long Beach, inside, between bridges---	40 36	73 40	-0 10	+0 10	0.3	0.3	075	0.5	275	0.6
2270	East Rockaway Inlet-------------------	40 35	73 45	-1 25	-1 35	1.3	1.2	040	2.2	225	2.3
2275	Ambrose Light-------------------------	40 27	73 49	See table 5.							
228	Sandy Hook App. Lighted Horn Buoy 2A--	40 27	73 55	See table 5.							
	JAMAICA BAY										
2285	Rockaway Inlet------------------------	40 34	73 56	-1 45	-2 15	1.1	1.3	085	1.8	245	2.7
2290	Barren Island, east of----------------	40 35	73 53	-2 00	-2 25	0.7	0.9	005	1.2	190	1.7
2295	Canarsie (midchannel, off pier)-------	40 38	73 53	-1 35	-1 50	0.3	0.3	045	0.5	220	0.7
2300	Beach Channel (bridge)----------------	40 35	73 49	-1 20	-1 20	1.1	1.0	060	1.9	225	2.0
2305	Grass Hassock Channel-----------------	40 37	73 47	-1 10	-1 00	0.6	0.5	050	1.0	230	1.0
	NEW YORK HARBOR ENTRANCE										
2310	Ambrose Channel entrance--------------	40 30	73 58	-1 10	-1 05	1.0	1.2	310	1.7	110	2.3
2315	Ambrose Channel, SE. of West Bank Lt--	40 32	74 01	(1)	-0 25	0.8	0.9	310	1.3	170	1.8
2320	Coney Island Lt., 1.6 miles SSW. of---	40 33	74 01	-0 10	(2)	0.5	0.8	330	0.8	145	1.5
2325	Ambrose Channel, north end------------	40 34	74 02	+0 05	+0 15	0.8	0.9	330	1.3	175	1.9
2330	Coney Island, 0.2 mile west of--------	40 35	74 01	-0 55	-0 55	0.9	1.0	330	1.5	170	2.0
2335	Ft. Lafayette, channel east of--------	40 36	74 02	(3)	(3)	0.6	0.5	345	1.1	195	0.9
2340	THE NARROWS, midchannel---------------	40 37	74 03	Daily predictions				340	1.7	160	2.0
	NEW YORK HARBOR, Upper Bay										
2345	Tompkinsville-------------------------	40 38	74 04	-0 10	+0 20	0.9	1.0	005	1.6	170	2.0
2350	Bay Ridge Channel---------------------	40 39	74 02	-0 35	-0 45	0.6	0.6	040	1.0	220	1.1
2355	Red Hook Channel----------------------	40 40	74 01	-0 35	-0 35	0.6	0.4	355	1.0	170	0.7
2360	Robbins Reef Light, east of-----------	40 39	74 03	+0 10	+0 20	0.8	0.8	015	1.3	205	1.6
2365	Red Hook, 1 mile west of--------------	40 41	74 02	+0 45	+1 00	0.8	1.2	025	1.3	205	2.3
2370	Statue of Liberty, east of------------	40 42	74 02	+0 55	+1 00	0.8	1.0	030	1.4	205	1.9
	HUDSON RIVER, Midchannel[4]										
2375	The Battery, northwest of-------------	40 43	74 02	+1 30	+1 35	0.9	1.2	015	1.5	195	2.3
2380	Desbrosses Street---------------------	40 43	74 01	+1 35	+1 40	0.9	1.2	010	1.5	----	2.3
2385	Chelsea Docks-------------------------	40 45	74 01	+1 30	+1 40	1.0	1.0	020	1.7	185	2.0
2390	Forty-second Street-------------------	40 46	74 00	+1 35	+1 45	1.0	1.2	030	1.7	----	2.3
2395	Ninety-sixth Street-------------------	40 48	73 59	+1 40	+1 50	1.0	1.2	030	1.7	----	2.3
2400	Grants Tomb, 123d Street--------------	40 49	73 58	+1 45	+1 55	0.9	1.2	025	1.6	----	2.3
2405	George Washington Bridge--------------	40 51	73 57	+1 45	+2 00	0.9	1.1	020	1.6	200	2.2
2410	Spuyten Duyvil------------------------	40 53	73 56	+2 00	+2 10	0.9	1.1	020	1.6	----	2.1

[1] Current is rotary, turning clockwise. Minimum current of 0.9 knot sets SW. about time of "Slack, flood begins" at The Narrows. Minimum current of 0.5 knot sets NE. about 1 hour before "Slack, ebb begins" at The Narrows.

[2] Maximum flood, $-0^h\ 50^m$; maximum ebb, $+0^h\ 55^m$.

[3] Flood begins, $-2^h\ 15^m$; maximum flood, $-0^h\ 05^m$; ebb begins, $+0^h\ 05^m$; maximum ebb, $-1^h\ 50^m$.

[4] The values for the Hudson River are for the summer months, when the fresh-water discharge is a minimum.

CURRENT DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		TIME DIFFERENCES		VELOCITY RATIOS		MAXIMUM CURRENTS			
								Flood		Ebb	
		Lat.	Long.	Slack water	Maximum current	Maximum flood	Maximum ebb	Direction (true)	Average velocity	Direction (true)	Average velocity
		° ′	° ′	h. m.	h. m.			deg.	knots		knots
	NEW YORK HARBOR, Lower Bay	N.	W.	on THE NARROWS, p.46							
2535	False Hook Channel	40 28	74 00	-1 45	-1 30	1.1	0.7	320	1.8	135	1.4
2540	Sandy Hook, 1.7 miles ENE. of N. Tip	40 30	73 59	-1 25	-1 45	0.9	0.8	295	3	100	1.7
2545	Sandy Hook and South Chans. (junction)	40 29	73 59	-1 20	-1 20	0.8	0.8	300	1.3	115	1.7
2550	Sandy Hook Chan., 0.4 mi. W. of N. Tip	40 29	74 01	-1 40	-1 50	1.2	0.8	235	2.0	050	1.6
2555	Sandy Hook Pt., 2 mi. W. of (channel)	40 29	74 04	-1 45	-1 50	0.4	0.3	265	0.6	085	0.6
2560	Chapel Hill South Channel	40 30	74 03	-1 55	-2 20	0.4	0.3	255	0.7	075	0.6
2565	New Dorp Beach, 1.2 miles south of	40 32	74 06	-4 25	-3 55	0.2	0.2	225	0.4	030	0.5
2570	Old Orchard Shoal Lt., 1.2 mi. ENE. of	40 31	74 04	-1 50	-2 05	0.4	0.2	270	0.7	085	0.4
2575	New Dorp Beach, 1.8 miles SE. of	40 33	74 04	(4)	(4)	0.3	0.3	----	0.5	----	0.5
2580	Midland Beach, 2.6 miles SE. of	40 33	74 02	(5)	+0 05	0.5	0.6	335	0.8	160	1.3
2585	Coney Island Lt., 1.5 miles SSE. of	40 33	74 00	-1 10	(6)	0.6	0.6	310	1.1	125	1.3
2590	Hoffman Island, 0.2 mile west of	40 35	74 04	(7)	(7)	0.5	0.4	020	0.9	210	0.8
2595	Rockaway Inlet Jetty, 1 mile SW. of	40 32	73 57	-1 50	-1 55	0.7	0.7	285	1.2	140	1.4
2600	Coney Island Channel, west end	40 34	74 00	-0 50	-0 45	0.6	0.6	295	1.1	100	1.2
	SANDY HOOK BAY[8]										
2605	Highlands Bridge, Shrewsbury River	40 24	73 59	+0 25	+0 25	1.5	1.3	170	2.6	----	2.5
2610	Seabright Bridge, Shrewsbury River	40 22	73 58	+0 55	+1 00	0.8	0.9	185	1.4	----	1.7
	RARITAN BAY										
2615	Point Comfort, 1.5 miles north of	40 29	74 08	-1 50	-2 05	0.4	0.3	270	0.6	070	0.6
2620	Keyport Channel entrance	40 27	74 12	Current weak and variable.							
2625	Red Bank, 1.4 miles south of	40 29	74 13	-1 35	-2 00	0.4	0.3	280	0.6	060	0.5
2630	Seguine Point (in channel)	40 31	74 12	-1 30	-1 55	0.5	0.3	275	0.8	080	0.6
2635	Great Beds Light	40 29	74 15	-1 25	-1 55	0.5	0.5	280	0.8	100	0.9

[1] The values for the Hudson River are for the summer months, when the fresh-water discharge is a minimum.

[2] In Roundout Creek entrance between lights, eddies on the flood make navigation difficult. Little difficulty will be experienced on the ebb.

[3] Current does not flood.

[4] Current is rotary, turning clockwise. It flows NW. at time of "Slack, flood begins" at The Narrows; NE. 1 hour after maximum flood; SE. 1½ hours after "Slack, ebb begins"; and SW. 2 hours after maximum ebb.

[5] Current is rotary, turning clockwise. Minimum current of 0.2 knot sets W. about the time of "Slack, flood begins" at The Narrows. Minimum current of 0.2 knot sets ENE. about time of "Slack, ebb begins" at The Narrows.

[6] Maximum flood, -1^{h} 55^{m}; maximum ebb, -0^{h} 55^{m}.

[7] Flood begins, -1^{h} 45^{m}; maximum flood, -1^{h} 50^{m}; ebb begins, -0^{h} 15^{m}; maximum ebb, -0^{h} 50^{m}.

[8] In Sandy Hook Bay (except in southern extremity) the current is weak.

TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time		Height		Mean	Spring	
				High water	Low water	High water	Low water			
		° ′	° ′	on WILLETS POINT, p.52						
	Long Island Sound, North Side									
1253	Port Chester	41 00	73 40	-0 09	-0 12	+0.1	0.0	7.2	8.5	3.6
1254	Rye Beach	40 58	73 40	-0 28	-0 29	+0.1	0.0	7.2	8.4	3.6
1255	Mamaroneck	40 56	73 44	-0 08	-0 11	+0.2	0.0	7.3	8.6	3.6
1257	New Rochelle	40 54	73 47	-0 24	-0 17	+0.1	0.0	7.2	8.6	3.6
1259	Davids Island	40 53	73 46	-0 02	-0 07	+0.1	0.0	7.2	8.5	3.6
1261	City Island	40 51	73 47	-0 03	-0 03	+0.1	0.0	7.2	8.5	3.6
1263	Throgs Neck	40 48	73 48	+0 02	+0 14	-0.1	0.0	7.0	8.2	3.5
	East River									
1265	Whitestone	40 48	73 49	+0 02	+0 14	0.0	0.0	7.1	8.3	3.5
1267	Old Ferry Point	40 48	73 50	+0 04	+0 16	0.0	0.0	7.1	8.3	3.5
1269	College Point, Flushing Bay	40 47	73 51	+0 20	+0 28	-0.6	0.0	6.5	7.6	3.2
1271	Northern Blvd. Bridge, Flushing Cr	40 45	73 50	+0 23	+0 37	-0.3	0.0	6.8	8.0	3.4
1273	Westchester, Westchester Creek	40 50	73 50	+0 10	+0 16	-0.1	0.0	7.0	8.3	3.5
1275	Hunts Point	40 48	73 52	+0 08	+0 15	-0.2	0.0	6.9	8.1	3.4
1277	Westchester Ave. Bridge, Bronx R	40 50	73 53	+0 10	+0 17	-0.2	0.0	6.9	8.1	3.4
1279	North Brother Island	40 48	73 54	+0 09	+0 17	-0.5	0.0	6.6	7.8	3.3
1281	Port Morris (Stony Point)	40 48	73 54	+0 13	+0 16	-0.8	0.0	6.3	7.4	3.1
1283	Lawrence Point	40 47	73 55	-0 03	+0 13	-0.7	0.0	6.4	7.6	3.2
1285	Wolcott Avenue	40 47	73 55	-0 03	+0 13	-1.0	0.0	6.1	7.2	3.0
				on NEW YORK, p.56						
1287	Pot Cove, Astoria	40 47	73 56	+2 20	+2 29	+0.8	0.0	5.3	6.3	2.6
1289	Hell Gate, Hallets Point	40 47	73 56	+2 00	+2 04	+0.6	0.0	5.1	6.1	2.5
1291	Horns Hook, E. 90th Street	40 47	73 57	+1 50	+1 30	+0.3	0.0	4.8	5.8	2.4
1293	Welfare Island, north end	40 46	73 56	+1 45	+1 25	+0.3	0.0	4.8	5.8	2.4
1295	37th Avenue, Long Island City	40 46	73 57	+1 30	+1 10	0.0	0.0	4.5	5.5	2.2
1297	East 41st Street, New York City	40 45	73 58	+1 20	+0 56	-0.2	0.0	4.3	5.2	2.1
1299	Hunters Point, Newtown Creek	40 44	73 57	+1 18	+0 53	-0.4	0.0	4.1	4.9	2.0
1301	English Kills ent., Newtown Creek	40 43	73 55	+1 30	+1 04	-0.3	0.0	4.2	5.0	2.1
1303	East 27th Street, Bellevue Hospital	40 44	73 58	+1 08	+1 03	-0.3	0.0	4.2	5.0	2.1
1305	East 19th Street, New York City	40 44	73 58	+1 02	+0 58	-0.4	0.0	4.1	4.9	2.0
1307	North 3d Street, Brooklyn	40 43	73 58	+0 55	+0 42	-0.4	0.0	4.1	4.9	2.0
1309	Williamsburg Bridge	40 43	73 58	+0 52	+0 38	-0.4	0.0	4.1	4.9	2.0
1311	Wallabout Bay	40 42	73 59	+0 50	+0 35	-0.4	0.0	4.1	4.9	2.0
1313	Brooklyn Bridge	40 42	74 00	+0 13	+0 07	-0.2	0.0	4.3	5.2	2.1
	Harlem River									
1315	E. 110th Street, New York City	40 47	73 56	+1 52	+1 35	+0.6	0.0	5.1	6.1	2.6
1317	Willis Avenue Bridge	40 48	73 56	+1 47	+1 30	+0.5	0.0	5.0	6.0	2.5
1319	Madison Avenue Bridge	40 49	73 56	+1 52	+1 35	+0.4	0.0	4.9	5.9	2.4
1321	Central Bridge	40 50	73 56	+1 52	+1 35	+0.2	0.0	4.7	5.7	2.3
1323	Washington Bridge	40 51	73 56	+1 52	+1 35	-0.1	0.0	4.4	5.2	2.2
1325	207th Street Bridge	40 52	73 55	+1 40	+1 30	-0.5	0.0	4.0	4.8	2.0
1327	Broadway Bridge	40 52	73 55	+1 20	+1 20	-0.7	0.0	3.8	4.6	1.9
1329	Spuyten Duyvil Bridge	40 53	73 56	+1 01	+1 03	-0.9	0.0	3.6	4.3	1.8

TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time		Height		Mean	Spring	
				High water	Low water	High water	Low water			
		° ′ N.	° ′ W.	h. m.	h. m.	feet	feet	feet	feet	feet
	Long Island Sound, South Side *Time meridian, 75°W.*			on WILLETS POINT, p.52						
1331	WILLETS POINT----------------------	40 48	73 47	Daily predictions				7.1	8.3	3.5
1333	Hewlett Point----------------------	40 50	73 45	-0 03	-0 03	0.0	0.0	7.1	8.3	3.5
1335	Port Washington, Manhasset Bay------	40 50	73 42	-0 01	+0 11	+0.2	0.0	7.3	8.6	3.6
1337	Execution Rocks--------------------	40 53	73 44	-0 06	-0 08	+0.2	0.0	7.3	8.6	3.6
1339	Glen Cove, Hempstead Harbor---------	40 52	73 39	-0 11	-0 06	+0.2	0.0	7.3	8.6	3.6
				on BRIDGEPORT, p.48						
	Oyster Bay									
1341	Oyster Bay Harbor---------------	40 53	73 32	+0 08	+0 11	+0.6	0.0	7.3	8.4	3.6
1343	Bayville Bridge-----------------	40 54	73 33	+0 13	+0 18	+0.7	0.0	7.4	8.5	3.7
1345	Cold Spring Harbor--------------	40 52	73 28	+0 08	+0 06	+0.7	0.0	7.4	8.5	3.7
1347	Eatons Neck Point------------------	40 57	73 24	+0 03	+0 06	+0.4	0.0	7.1	8.2	3.6
1349	Lloyd Harbor ent., Huntington Bay---	40 55	73 26	+0 03	+0 01	+0.7	0.0	7.4	8.5	3.7
1351	Northport, Northport Bay------------	40 54	73 21	+0 03	+0 06	+0.6	0.0	7.3	8.4	3.6
1353	Nissequogue River entrance----------	40 54	73 14	-0 03	-0 06	+0.3	0.0	7.0	8.0	3.5
1355	Stony Brook, Smithtown Bay----------	40 55	73 09	+0 08	+0 08	-0.6	0.0	6.1	7.0	3.0
1357	Stratford Shoal---------------------	41 04	73 06	-0 05	-0 09	-0.1	0.0	6.6	7.6	3.3
1359	Port Jefferson Harbor entrance------	40 58	73 05	+0 03	-0 01	-0.1	0.0	6.6	7.6	3.3
1361	Port Jefferson----------------------	40 57	73 05	+0 06	+0 03	-0.1	0.0	6.6	7.6	3.3
1363	Setauket Harbor---------------------	40 57	73 06	+0 04	+0 09	0.0	0.0	6.7	7.7	3.3
1365	Conscience Bay ent. (Narrows)-------	40 58	73 07	+0 02	+0 02	0.0	0.0	6.7	7.7	3.3
1367	Mount Sinai Harbor------------------	40 58	73 02	+0 05	+0 16	-0.7	0.0	6.0	6.9	3.0
1369	Herod Point-------------------------	40 58	72 50	-0 07	-0 16	-0.8	0.0	5.9	6.8	2.9
1370	Northville--------------------------	40 59	72 39	-0 02	-0 05	-1.3	0.0	5.4	6.2	2.7
1371	Mattituck Inlet---------------------	41 01	72 34	+0 05	-0 06	-1.5	0.0	5.2	6.0	2.6
1373	Horton Point------------------------	41 05	72 27	-0 20	-0 35	*0.60	*0.60	4.0	4.6	2.0
1374	Hashamomuck Beach-------------------	41 06	72 24	+0 04	-0 15	*0.63	*0.63	4.2	4.8	2.1
1375	Truman Beach------------------------	41 08	72 19	-0 42	-0 52	*0.51	*0.51	3.4	3.9	1.7
				on NEW LONDON, p.44						
1377	Plum Gut Harbor, Plum Island--------	41 10	72 12	+0 27	+0 16	0.0	0.0	2.6	3.1	1.3
1379	Little Gull Island------------------	41 12	72 06	+0 12	-0 22	-0.4	0.0	2.2	2.6	1.1
	Shelter Island Sound									
1381	Orient--------------------------	41 08	72 18	+0 36	+0 36	-0.1	0.0	2.5	3.0	1.2
1383	Greenport-----------------------	41 06	72 22	+1 04	+0 49	-0.2	0.0	2.4	2.9	1.2
1385	Southold------------------------	41 04	72 25	+1 43	+1 33	-0.3	0.0	2.3	2.7	1.1
1387	Noyack Bay----------------------	41 00	72 20	+2 05	+1 44	-0.3	0.0	2.3	2.7	1.1
1389	Sag Harbor----------------------	41 00	72 18	+0 59	+0 48	-0.1	0.0	2.5	3.0	1.2
1391	Cedar Point---------------------	41 02	72 16	+0 44	+0 27	-0.1	0.0	2.5	3.0	1.2
	Peconic Bays									
1393	New Suffolk---------------------	41 00	72 28	+2 26	+2 11	0.0	0.0	2.6	3.1	1.3
1395	South Jamesport-----------------	40 56	72 35	+2 32	+2 40	+0.1	0.0	2.7	3.2	1.3
1397	Shinnecock Canal----------------	40 54	72 30	+2 33	+2 31	-0.2	0.0	2.4	2.9	1.2
1399	Threemile Hbr. ent., Gardiners Bay--	41 02	72 11	+0 21	+0 02	-0.2	0.0	2.4	2.9	1.2
1401	Promised Land, Napeague Bay---------	41 00	72 05	-0 14	-0 08	-0.3	0.0	2.3	2.7	1.1
1403	Montauk Harbor entrance-------------	41 04	71 56	-0 25	-0 16	-0.7	0.0	1.9	2.3	0.9
1405	Montauk, Fort Pond Bay--------------	41 03	71 58	-0 29	-0 24	-0.5	0.0	2.1	2.5	1.1
1407	Montauk Point, north side-----------	41 04	71 52	-1 13	-1 31	-0.6	0.0	2.0	2.4	1.0
	Long Island, South Side			on SANDY HOOK, p.64						
1409	Shinnecock Inlet (ocean)------------	40 50	72 28	-0 50	-1 08	*0.63	*0.63	2.9	3.5	1.4
1411	Ponquogue Bridge, Shinnecock Bay----	40 51	72 30	+0 29	+0 14	-2.3	0.0	2.3	2.8	1.2
1413	Potunk Point, Moriches Bay----------	40 48	72 39	+3 35	+3 45	*0.11	*0.11	0.5	0.6	0.2
1415	Moriches Inlet----------------------	40 46	72 45	-0 56	-1 11	*0.63	*0.63	2.9	3.5	1.4
1417	Mastic Beach, Moriches Bay----------	40 45	72 50	+3 28	+3 39	*0.11	*0.11	0.5	0.6	0.2
1419	Fire Island Breakwater--------------	40 37	73 18	-0 39	-0 51	-0.5	0.0	4.1	5.0	2.0
1421	Democrat Point, Fire Island Inlet---	40 38	73 18	-0 38	-0 29	*0.57	*0.57	2.6	3.2	1.3

*Ratio.

-TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
				Time		Height				
		Lat.	Long.	High water	Low water	High water	Low water	Mean	Spring	
		° ′	° ′	h. m.	h. m.	feet	feet	feet	feet	feet
	Long Island, South Side — Continued *Time meridian, 75°W.*	N.	W.	on SANDY HOOK, p.64						
	Great South Bay									
422	Fire Island Coast Guard Station-	40 38	73 16	-0 19	-0 17	*0.41	*0.41	1.9	2.3	0.9
423	Fire Island Light---------------	40 38	73 13	+0 47	+1 20	*0.15	*0.15	0.7	0.8	0.3
425	West Fire Island----------------	40 39	73 12	+2 11	+2 16	*0.13	*0.13	0.6	0.7	0.3
427	Point o' Woods------------------	40 39	73 08	+2 28	+2 33	*0.15	*0.15	0.7	0.8	0.3
429	Bellport, Bellport Bay----------	40 45	72 56	+3 44	+4 14	*0.17	*0.17	0.8	1.0	0.4
431	Patchogue-----------------------	40 45	73 01	+3 23	+3 47	*0.15	*0.15	0.7	0.8	0.3
433	Sayville (Brown Creek)----------	40 44	73 04	+3 39	+3 44	*0.13	*0.13	0.6	0.7	0.3
435	Great River, Connetquot River---	40 43	73 09	+3 20	+3 30	*0.15	*0.15	0.7	0.8	0.3
437	Bay Shore-----------------------	40 43	73 14	+2 23	+2 39	*0.13	*0.13	0.6	0.7	0.3
439	Oakbeach------------------------	40 38	73 17	+2 24	+2 56	*0.15	*0.15	0.7	0.8	0.3
441	Babylon-------------------------	40 41	73 19	+2 12	+2 39	*0.13	*0.13	0.6	0.7	0.3
443	Gilgo Heading-------------------	40 37	73 24	+2 23	+2 56	*0.24	*0.24	1.1	1.3	0.5
445	Amityville----------------------	40 39	73 25	+2 21	+3 03	*0.26	*0.26	1.2	1.4	0.6
447	Biltmore Shores, South Oyster Bay---	40 40	73 28	+2 05	+2 30	*0.30	*0.30	1.4	1.7	0.7
449	Jones Inlet (Point Lookout)---------	40 35	73 35	-0 19	-0 27	*0.78	*0.78	3.6	4.3	1.8
	Hempstead Bay									
451	Deep Creek Meadow---------------	40 36	73 32	+1 02	+1 09	*0.52	*0.52	2.4	2.9	1.2
453	Green Island--------------------	40 37	73 30	+1 22	+1 29	*0.41	*0.41	1.9	2.3	0.9
455	Cuba Island---------------------	40 37	73 31	+1 08	+1 20	*0.50	*0.50	2.3	2.8	1.1
457	Bellmore, Bellmore Creek--------	40 40	73 31	+1 29	+1 56	*0.43	*0.43	2.0	2.4	1.0
459	Neds Creek----------------------	40 37	73 33	+0 50	+0 52	-1.9	0.0	2.7	3.3	1.3
461	Freeport Creek------------------	40 38	73 34	+0 34	+0 27	-1.5	0.0	3.1	3.8	1.5
463	Freeport, Baldwin Bay-----------	40 38	73 35	+0 38	+0 53	-1.6	0.0	3.0	3.6	1.5
465	Long Beach----------------------	40 36	73 39	+0 19	0 00	-0.7	0.0	3.9	4.7	1.9
467	Long Beach, outer coast---------	40 35	73 39	-0 29	-0 35	-0.1	0.0	4.5	5.4	2.2
	Hempstead Bay—Continued									
469	East Rockaway-------------------	40 38	73 40	+0 42	+0 45	-0.7	0.0	3.9	4.7	1.9
471	Woodmere, Brosewere Bay---------	40 37	73 42	+0 35	+0 48	-0.7	0.0	3.9	4.7	1.9
473	East Rockaway Inlet-------------	40 36	73 44	-0 06	-0 16	-0.5	0.0	4.1	5.0	2.0
	Jamaica Bay									
475	Plumb Beach Channel-------------	40 35	73 55	+0 03	-0 05	+0.3	0.0	4.9	5.9	2.4
477	Barren Island, Rockaway Inlet---	40 35	73 53	0.00	-0 06	+0.4	0.0	5.0	6.0	2.5
479	Beach Channel (bridge)----------	40 35	73 49	+0 38	+0 22	+0.5	0.0	5.1	6.2	2.5
481	Motts Basin---------------------	40 37	73 46	+0 40	+0 46	+0.8	0.0	5.4	6.5	2.7
483	Norton Point, Head of Bay-------	40 38	73 45	+0 39	+0 43	+0.8	0.0	5.4	6.5	2.7
485	J. F. K. International Airport--	40 37	73 47	+0 26	+0 43	+0.7	0.0	5.3	6.4	2.6
487	Grassy Bay (bridge)-------------	40 39	73 50	+0 44	+0 45	+0.6	0.0	5.2	6.3	2.6
489	Canarsie------------------------	40 38	73 53	+0 28	+0 06	+0.6	0.0	5.2	6.3	2.6
491	Mill Basin----------------------	40 37	73 55	+0 29	+0 02	+0.6	0.0	5.2	6.3	2.6
	NEW YORK and NEW JERSEY **New York Harbor**									
493	Coney Island--------------------	40 34	73 59	-0 03	-0 19	+0.1	0.0	4.7	5.7	2.3
495	Norton Point, Gravesend Bay-----	40 35	74 00	-0 03	+0 01	+0.1	0.0	4.7	5.7	2.3
497	Fort Wadsworth, The Narrows-----	40 36	74 03	+0 02	+0 12	-0.3	0.0	4.3	5.2	2.1
499	Fort Hamilton, The Narrows------	40 37	74 02	+0 03	+0 05	+0.1	0.0	4.7	5.7	2.3
				on NEW YORK, p.56						
501	Bay Ridge-----------------------	40 38	74 02	-0 24	-0 24	+0.1	0.0	4.6	5.5	2.3
503	St. George, Staten Island-------	40 39	74 04	-0 21	-0 18	0.0	0.0	4.5	5.4	2.2
505	Bayonne, New Jersey-------------	40 41	74 06	-0 19	-0 08	0.0	0.0	4.5	5.4	2.2
507	Gowanus Bay---------------------	40 40	74 01	-0 19	-0 15	-0.1	0.0	4.4	5.3	2.2
509	Governors Island----------------	40 42	74 01	-0 11	-0 06	-0.1	0.0	4.4	5.3	2.2
511	NEW YORK (The Battery)----------	40 42	74 01	- Daily predictions				4.5	5.4	2.2

*Ratio.

—TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mea Tide Leve
		Lat.	Long.	Time		Height		Mean	Spring	
				High water	Low water	High water	Low water			
		° ′	° ′	h. m.	h. m.	feet	feet	feet	feet	feet
	nudson River	N.	W.	on NEW YORK, p.56						
	Time meridian, 75°W.									
1513	Jersey City, Pa. RR. Ferry, N. J	40 43	74 02	+0 07	+0 07	-0.1	0.0	4.4	5.3	2.2
1515	New York, Desbrosses Street	40 43	74 01	+0 10	+0 10	-0.1	0.0	4.4	5.3	2.2
1517	New York, Chelsea Docks	40 45	74 01	+0 17	+0 16	-0.2	0.0	4.3	5.2	2.1
1519	Hoboken, Castle Point, N. J	40 45	74 01	+0 17	+0 16	-0.2	0.0	4.3	5.2	2.1
1521	Weehawken, Days Point, N. J	40 46	74 01	+0 24	+0 23	-0.3	0.0	4.2	5.0	2.1
1523	New York, Union Stock Yards	40 47	74 00	+0 27	+0 26	-0.3	0.0	4.2	5.0	2.1
1525	New York, 130th Street	40 49	73 58	+0 37	+0 35	-0.5	0.0	4.0	4.8	2.0
1527	George Washington Bridge	40 51	73 57	+0 46	+0 43	-0.6	0.0	3.9	4.6	1.9
1529	Spuyten Duyvil, West of RR. bridge	40 53	73 56	+0 58	+0 53	-0.7	0.0	3.8	4.5	1.[illegible]
	The Kills and Newark Bay			on NEW YORK, p.56						
	Kill Van Kull									
1541	Constable Hook	40 39	74 05	-0 34	-0 21	0.0	0.0	4.5	5.4	2.2
1573	New Brighton	40 39	74 05	-0 12	-0 18	0.0	0.0	4.5	5.4	2.2
1575	Port Richmond	40 38	74 08	-0 03	+0 05	0.0	0.0	4.5	5.4	2.2
1577	Bergen Point	40 39	74 08	+0 03	+0 03	+0.1	0.0	4.6	5.5	2.3
1579	Shooters Island	40 39	74 10	+0 06	+0 18	+0.1	0.0	4.6	5.5	2.3
1581	Port Newark Terminal	40 41	74 08	-0 01	+0 18	+0.6	0.0	5.1	6.1	2.5
1583	Newark, Passaic River	40 44	74 10	+0 22	+0 52	+0.6	0.0	5.1	6.1	2.5
1585	Passaic, Gregory Ave. bridge	40 51	74 07	+0 49	+1 57	+0.6	0.0	5.1	6.1	2.5
	Hackensack River									
1586	Kearny Point	40 44	74 06	+0 09	+0 33	+0.5	0.0	5.0	6.0	2.5
1587	Secaucus	40 48	74 04	+1 13	+1 09	+0.6	0.0	5.1	6.1	2.6
1588	Little Ferry	40 51	74 02	+1 22	+1 14	+0.8	0.0	5.3	6.4	2.7
1589	Hackensack	40 53	74 02	+1 33	+1 58	+0.8	0.0	5.3	6.4	2.6
				on SANDY HOOK, p.64						
	Arthur Kill									
1591	Elizabethport	40 39	74 11	+0 25	+0 39	+0.3	0.0	4.9	5.9	2.4
1593	Chelsea	40 36	74 12	+0 24	+0 35	+0.4	0.0	5.0	6.0	2.5
1595	Carteret	40 35	74 13	+0 23	+0 31	+0.5	0.0	5.1	6.2	2.6
1597	Rossville	40 33	74 13	+0 17	+0 25	+0.7	0.0	5.3	6.4	2.6
1599	Tottenville	40 31	74 15	+0 03	+0 13	+0.7	0.0	5.3	6.4	2.6
1601	Perth Amboy	40 30	74 16	+0 13	+0 19	+0.6	0.0	5.2	6.3	2.6
	Lower New York Bay, Raritan Bay, etc.									
	Time meridian, 75°W.									
:503	New Dorp Beach	40 34	74 06	-0 04	+0 04	+0.3	0.0	4.9	5.9	2.4
:505	Great Kills Harbor	40 33	74 08	+0 07	+0 19	+0.1	0.0	4.7	5.7	2.4
1:07	Princes Bay	40 31	74 12	+0 01	+0 04	+0.3	0.0	4.9	5.9	2.4
	Raritan River									
:509	South Amboy	40 29	74 17	+0 05	+0 15	+0.4	0.0	5.0	6.0	2.5
:611	Washington Canal	40 28	74 22	+0 34	+0 50	+1.0	0.0	5.6	6.8	2.8
:613	South River highway bridge	40 27	74 22	+0 55	+1 02	+0.9	0.0	5.5	6.7	2.8
:615	New Brunswick	40 29	74 26	+0 46	+1 26	+1.2	0.0	5.8	7.0	2.9
:617	Keyport	40 26	74 12	+0 08	+0 19	+0.4	0.0	5.0	6.0	2.5
:519	Keansburg	40 27	74 09	-0 03	-0 01	+0.3	0.0	4.9	5.9	2.4
:621	Port Monmouth	40 26	74 05	-0 02	-0 02	+0.2	0.0	4.8	5.8	2.4
:623	Atlantic Highlands	40 25	74 02	-0 01	0 00	+0.1	0.0	4.7	5.7	2.3
:625	SANDY HOOK	40 28	74 01	Daily predictions				4.6	5.6	2.3

BASIN 17

NYS DEPARTMENT OF EN[illegible]NMENTAL CONSERVATION
DIVISION [illegible]URE WATERS
SURFACE WASTE SOURCE DISCHARGE INVENTORY

REPORT BY BASIN, PLANNING AREA AND NAME

D-1

PERMIT NO.	PLNG AREA	REG	CNTY	T C	T B	NAME & LOCATION	DESIGN FLOW	ACTUAL FLOW	PER CAT	RPTG CYCL	STR CAT	EPA RPT	SMP INF	SEQ. NO.
0007811	01	1	28	2	0	AFCO PLASTICS CORP FREEPORT V	000.000	000.022	N	S2	Q			00127
0075582	01	1	47	2	0	AIRBORNE INSTRUMENTS LAB DEER PARK	000.069	000.000	M	M0			P	00104
0088447	01	1	47	3	0	ALLSTATE REGIONAL HQ BROOKHAVEN T	000.128	000.000	M	Q3		X		04103
	01	1	47	2	0	AMERICAN METAL FINISHERS INC	000.000	000.000						00143
	01	2	61	2	0	AMERICAN SUGAR BROOKLYN	000.000	000.000						00315
0084905	01	1	47	2	0	ANTENNA & RADOME RESRCH BAYSHORE V	000.000	000.000					P	03778
0033189	01	2	64	4	0	ARTHUR KILL REHAB CT TRT PLANT	000.100	000.000	N	Q2				04048
0079502	01	1	47	6	0	ARTIST LAKE CONDO MIDDLE ISLAND V	000.097	000.000	M	Q2				03793
0079464	01	1	47	6	0	ARTIST LAKE V HOMEOWNERS MID IS V	000.118	000.000	M	Q2				03830
0074764	01	1	47	2	0	ASTRO ELECTROPLATING INC BABYLON T	000.000	000.000	M	M0			P	00106
0008095	01	2	61	2	0	ATLANTIC PASTE & GLUE BROOKLYN	000.000	000.000	D					00317
0084841	01	1	47	2	0	AUTH ELEC CO INC DEER PARK V	000.005	000.000	M	M0			P	03771
0084549	01	1	47	2	0	B H AIRCRAFT CO INC FARMINGDALE V	000.011	000.000	M	M0			P	00136
0028398	01	1	28	2	0	B P OIL CORP OCEAN SIDE	000.000	000.000						03065
0074284	01	1	47	1	0	BABYLON T SCAVENGER TRT PLT	000.266	000.000	M	Q3				03541
0082481	01	1	47	6	0	BALMORAL AT SPRING LAKE CORAM V	000.065	000.000	M	S3				03860
0026450	01	1	28	1	0	BAY PARK SD EAST ROCKAWAY V	060.000	000.000	N	Q1	Q		P	00084
0077437	01	1	47	1	0	BAY SHORE SCAV PLT BAY SHORE V	000.120	000.000	M	Q1				03731
	01	2	64	4	0	BETHLEHEM STEEL CO RICHMOND	000.059	000.000			E			00093
0065463	01	1	47	6	0	BIRCHWOOD GLEN GARDEN APTS BROOKHAV	000.100	000.000	S	Q1				02536
0079511	01	1	47	6	0	BIRCHWOOD NORTH SHORE BROOKHAVEN T	000.200	000.000	M	Q2				03794
0077283	01	1	47	6	0	BIRCHWOOD ON THE GREEN OAKDALE V	000.009	000.000	M	S1				03719
0065455	01	1	47	6	0	BIRCHWOOD SAGAMORE HILL CONDOMINIUM	000.080	000.000	M	S5				02535
0085499	01	1	47	2	0	BIX SERVICE CORAM V	000.001	000.000	M	S4				03891

REPORT BY BASIN, PLANNING AREA AND NAME

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PERMIT NO.	PLNG AREA	REG	CNTY	T C	T B	NAME & LOCATION	DESIGN FLOW	ACTUAL FLOW	PER CAT	RPTG CYCL	STR CAT	EPA RPT	SMP INF	SEQ. NO.
0025518	01	1	47	2	0	BLUE POINT CO W SAYVILLE	000.000	000.017	N	M0	Q		O	00133
0079448	01	1	47	6	0	BLUE RIDGE HOME ASSOC MEDFORD V	000.200	000.000	M	Q2				03877
0075728	01	1	47	2	0	BOLAR PHARMACEUTICAL CO COPIAGUE T	000.001	000.000	M	M0				00201
0077348	01	1	47	6	0	BRENTWOOD GARDEN APTS BRENTWOOD V	000.036	000.000	M	A7				03792
0065366	01	1	47	6	0	BRETTON WOODS CONDOMINIUM BROOKHAVE	000.275	000.000	M	Q3				02534
	01	2	64	2	0	BREWER DRY DOCK STATEN ISLAND	000.000	000.000						00293
0028266	01	1	47	2	9	BRIDGEVIEW DUCK FARM RIVERHEAD T	000.120	000.000	X				P	00154
	01	1	47	2	9	BRIDGEVIEW DUCK FARM RIVERHEAD T	000.120						P	03612
0026930	01	1	47	2	9	BROAD COVE DUCK FARM RIVERHEAD T	000.600	000.000	X				P	00155
	01	1	47	2	9	BROAD COVE DUCK FARM RIVERHEAD T	000.600						P	03622
0087807	01	1	47	1	0	BROMPTON RECHARGE BASIN BROMPTON V	000.300	000.000	M	S5				03898
0084671	01	2	61	4	0	BROOKDALE HOSPITAL MED CT BROOKLYN	000.001	000.000	M	M0				03826
0074730	01	1	47	4	0	BROOKHAVEN MEMOR HOSP E PATCHOGUE V	000.150	000.000	M	Q3				03540
0005835	01	1	47	4	0	BROOKHAVEN NATL LABORATORY UPTON	002.300	000.000	N	Q2			O	00094
0079332	01	1	47	1	0	BROOKHAVEN SCAV PLANT BROOKHAVEN T	000.050	000.000	M	A1				04117
0074756	01	1	47	6	0	BROOKWOOD COMMUNITIES STP CORAM V	000.044	000.000	M	A5				03464
0008362	01	1	47	2	0	BULOVA WATCH CO INC SAG HARBOR V	000.009	000.000	N	M0				03712
0005223	01	2	61	2	0	BUSH TERMINAL ASSOC BROOKLYN	000.000	000.000	N	M0	E		P	00306
0027812	01	1	47	2	9	C & R DUCK FARM RIVERHEAD T	000.075	000.000	X				P	00118
	01	1	47	2	9	C & R DUCK FARM RIVERHEAD T	000.075						P	03631
0027821	01	1	47	2	9	C & R DUCK FARM SOUTHAMPTON	000.100	000.000	X				P	00145
	01	1	47	2	9	C & R DUCK FARM SOUTHAMPTON	000.100						P	03632
0080616	01	1	47	6	0	CALVERTON HILLS CALVERTON V	000.060	000.000	M	S5				03896
0074713	01	1	47	2	0	CAROWELL CONDENSER LINDENHURST V	000.008	000.000	M	M0			P	00158

REPORT BY BASIN, PLANNING AREA AND NAME

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PERMIT NO.	PLNG AREA	REG	CNTY	T C	T B	NAME & LOCATION	DESIGN FLOW	ACTUAL FLOW	PER CAT	RPTG CYCL	STR CAT	EPA RPT	SHP INF	SEQ. NO.
0027928	01	1	47	5	0	CARMEN RIVER DUCK FARM BROOKHAVEN T	000.144	000.000					P	00140
0079341	01	1	47	6	0	CAVALIER ASSOCIATES HOLTSVILLE V	000.034	000.000	M	A6				03550
0080586	01	1	47	4	0	CEDAR LODGE NSG HOME CT MORICHES V	000.030	000.000	M	A8				03825
0022462	01	1	28	1	0	CEDARHURST V	001.000	000.860	N	Q2	E		P	00153
0077291	01	1	47	4	0	CENTRAL ISLIP PSYCH CT ISLIP T	001.500	000.000	M	Q3				03558
0076171	01	1	28	2	0	CERRO WIRE & CABLE CO SYOSSET V	000.254	000.000	M	M0			P	00202
0027791	01	1	47	2	9	CERTIFIED DUCK FARM BROOKHAVEN T	000.050	000.000	X				P	00119
	01	1	47	2	9	CERTIFIED DUCK FARM BROOKHAVEN T							P	03633
0084573	01	1	47	2	0	CHARLES SOHWENK DAIRY E HAMPTON T	000.050	000.000	M	M0		X		00029
0081604	01	1	47	2	0	CHASAN METAL PRODUCT FARMINGDALE V	000.001	000.000	M	A6				03702
0075655	01	1	47	2	0	CIRCUITRON CORP E FARMINGDALE V	000.001	000.000	M	M0			P	00144
0023299	01	1	28	2	0	CITIES SERVICE OIL INWOOD V	001.090	000.000	N	Q1			O	00146
0065447	01	1	47	6	0	COLLEGE PARK SUBDIVISION BROOKHAVEN	000.084	000.000	M	S4				02575
0004715	01	2	61	2	0	COLONIAL SAND & STONE BROOKLYN	000.000	000.000	N	Q2	E			00305
0004723	01	1	28	2	0	COLONIAL SAND & STONE CEDARHURST V	000.000	000.000	N	S2				00147
0004758	01	2	62	2	0	COLONIAL SAND & STONE NEW YORK	000.000	000.000	N	Q2				00248
0004740	01	2	62	2	0	COLONIAL SAND & STONE NEW YORK	000.000	000.000	N	Q2				00249
0004766	01	2	62	2	0	COLONIAL SAND & STONE NEW YORK	000.000	000.000	N	Q1				00251
0004791	01	2	64	2	0	COLONIAL SAND & STONE STATEN ISL	000.000	000.000	N	Q2	E			00304
	01	1	28	4	0	COLUMBIA AIR CRAFT VALLEY STREAM V	000.065	000.000						00100
0081574	01	1	47	2	0	COMCO PLASTICS INC E FARMINGDALE V	000.000	000.000	M	S6				03823
0077402	01	1	47	6	0	CONCORD VILLAGE CENTRAL ISLIP V	000.150	000.000	M	Q1				04137
0026182	01	2	61	1	0	CONEY ISLAND WWTP NYC DWR	110.000	091.900	N	Q2	E		P	00298
0008222	01	1	47	2	0	CONNETQUOT RIVER CLUB OAKDALE								04015

NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF PURE WATERS
SURFACE WASTE SOURCE DISCHARGE INVENTORY

REPORT BY BASIN, PLANNING AREA AND NAME

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PERMIT NO.	PLNG AREA	REG	CNTY	T C	T B	NAME & LOCATION	DESIGN FLOW	ACTUAL FLOW	PER CAT	RPTG CYCL	STR CAT	EPA RPT	SMP INF	SEQ. NO.
0089648	01	1	47	2	0	CONTROL CHEMICAL CORP BABYLON T	000.001	000.000	S	S3				04176
0081639	01	1	47	2	0	CONVECTRON INC FARMINGDALE V	000.002	000.000	M	S6				03759
	01	1	47	2	0	CORAM WASHBUCKET BROOKHAVEN T	000.000	000.000						00123
0081621	01	1	47	2	0	CORONA INSULATED WIRE FARMINGDALE	000.001	000.000	M	S4				00156
0080667	01	1	47	6	0	COVENTRY TOWN HOUSE MIDDLE IS V	000.060	000.000	M	S3				03867
0075809	01	1	47	2	0	DAYTON T BROWN INC BOHEMIA V	000.006	000.000	M	M0			P	02991
0065391	01	1	47	6	0	DEER PARK AIRPORT CONDOMINIUM BABYL	000.082	000.000	S	S1				02590
0086045	01	1	47	2	0	DEL LABORATORIES INC FARMINGDALE V	000.010	000.000	M	S3				03862
0075761	01	1	47	2	0	DELTOWN FOODS INC COPIAGUE V	000.037	000.000	M	M0				03503
0005088	01	2	61	2	0	DIAMOND PRINT WORKS BROOKLYN	000.000	000.000						00295
0086053	01	1	47	2	0	DONORA MFG CO INC HOLTSVILLE V	000.001	000.000	M	M0				03904
0077356	01	1	47	4	0	DOWLING COLLEGE OAKDALE V	000.043	000.000	M	A6				03551
0007501	01	1	28	2	0	DPW OCEANSIDE INCIN OCEANSIDE V								04002
0080705	01	1	47	3	0	DUTCH INNS MOTEL RONKONKOMA V	000.058	000.000	M	S4				03888
0085863	01	1	47	2	0	DYNA CORP MEDFORD V	000.001	000.000	M	S3				03863
	01	1	47	2	0	DZUS FASTENER CO INC W ISLIP T	000.000	000.000						00110
0075884	01	1	47	2	0	E B STIMPSON CO INC BAYPORT V	000.000	000.000	M	M0			P	00157
0086487	01	1	47	3	0	E HAMPTON LAUNDRY E HAMPTON V	000.006	000.000	M	M0				00129
	01	1	47	2	0	ELECTRICAL FITTNGS CO FARMINGDALE	000.000	000.000						00115
	01	1	47	2	0	ELMONT ANALYTICAL LAB BABYLON T	000.000	000.000						00114
0030333	01	2	64	6	0	ELMWOOD PARK INC STATEN ISLAND PROP							P	04064
0077453	01	1	47	6	0	EMERALD GREEN ASSOC HOLBROOK V	000.027	000.000	M	A6				03556
0028118	01	1	47	2	9	EMERY TUTTLE DUCK FARM SOUTHAMPTON	000.100	000.000	X				P	00125
	01	1	47	2	9	EMERY TUTTLE DUCK FARM SOUTHAMPTON							P	03662

NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION : PURE WATERS
SURFACE WASTE SOURCE DISCHARGE INVENTORY

REPORT BY BASIN, PLANNING AREA AND NAME

17

PERMIT NO.	PLNG AREA	REG	CNTY	T C	T B	NAME & LOCATION	DESIGN FLOW	ACTUAL FLOW	PER CAT	RPTG CYCL	STR CAT	EPA RPT	SMP INF	SEQ. NO.
0075493	01	1	47	2	0	ENTENMANS BAKERY BAY SHORE T	000.250	000.000	M	M0				00109
0081591	01	1	47	2	0	EXTRUDYNE INC AMITYVILLE V	000.001	000.000	M	M0				03747
0005339	01	2	61	2	0	EXXON CO BROOKLYN	000.000	000.000	N	Q1	E			00301
0025577	01	1	28	2	0	EXXON CORR OCEANSIDE V	000.000	000.000	N	Q1	E			00135
0074276	01	1	47	2	0	FAIRCHILD REPUBLIC CO FARMINGDALE	000.500	000.000	M	S5				03465
0074314	01	1	47	6	0	FAIRFIELD APARTMENTS	000.035	000.000	M	A5				03506
0075698	01	1	47	2	0	FAIRFIELD NOBLE CORP BABYLON T	000.200	000.000	M	M0			P	02990
0074322	01	1	47	6	0	FAIRHAVEN APARTMENTS NESCONSET V	000.050	000.000	M	A5				03508
0080918	01	1	47	2	0	FARMINGDALE GRANITE SALES BABYLON T	000.006	000.000	M	M0				03761
0080942	01	1	47	2	0	FARMINGDALE MATERIAL HANDLING CORP	000.000	000.000	M	M0				03746
0073563	01	2	64	3	0	FIRST FEDERAL SAV & LOAN NEW YORK	000.005	000.000	S	A3				03013
0075680	01	1	47	2	0	FRANK TOOLE & SON INC FARMINGDALE V	000.002	000.000	M	M0			P	03743
0030481	01	1	28	1	0	FREEPORT V	004.000	004.060	N	Q3	A		P	00138
	01	1	28	2	0	GALAXY LITHO INC FARMINGDALE V	000.000	000.000						00091
0027839	01	1	47	2	9	GALLO BROS DUCK FARM BROOKHAVEN T	000.300	000.000	X				P	00078
	01	1	47	2	9	GALLO BROS DUCK FARM BROOKHAVEN T	000.300						P	03636
0075558	01	1	47	2	0	GERMAINE MONTEIL COSMET BABYLON T	000.002	000.000	M	M0				03059
0079545	01	1	47	2	0	GLOBAL STEEL PROD BABYLON T	000.000	000.000	M	M0			P	00089
0075850	01	1	47	2	0	GOLDISC RECORDINGS INC HOLBROOK V	000.000	000.000	M	S6			P	00059
0077313	01	1	47	4	0	GOOD SAMARITAN HOSPITAL W ISLIP V	000.165	000.000	M	Q1				03720
	01	2	61	2	0	GOYA FOODS BROOKLYN	000.000	000.000						00310
	01	1	47	2	0	GRAPHIC COMPONENTS INC COPIAGUE V	000.000	000.000						00074
0075604	01	1	47	2	0	GRAPHIC ELECTRO CRCTS DEER PARK V	000.000	000.000	M	M0				00073
0074349	01	1	47	6	0	GREENTREE CONDOMINIUMS MIDDLE IS V	000.076	000.000	M	A5				03510

DIVISION OF PURE WATERS
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REPORT BY BASIN, PLANNING AREA AND NAME

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PERMIT NO.	PLNG AREA	REG	CNTY	T C	T B	NAME & LOCATION	DESIGN FLOW	ACTUAL FLOW	PER CAT	RPTG CYCL	STR CAT	EPA RPT	SMP INF	SEQ. NO.
0065421	01	1	47	6	0	GREENTREE COUNTRY CONDOMINIUM BROOK	000.075	000.000	M	S5				02629
0075701	01	1	47	2	0	GRINNELL LITHOGRAPHING CO ISLIP T	000.005	000.000	M	S6				00072
0007838	01	2	61	3	0	GROSSEN PROPERTIES INC BROOKLYN								04005
	01	1	28	2	0	GRUMMAN AEROSPACE CORP BETHPAGE V	000.000	000.000						03700
0081663	01	1	47	2	0	GRUMMAN AEROSPACE CORP ISLIP T	000.000	000.000						00066
0081663	01	1	47	2	0	GRUMMAN AEROSPACE GREAT RIVER V	000.000	000.000	M	M0				03749
0085529	01	1	47	2	0	GRUMMAN AEROSPACE WYANDANCH V	000.000	000.000	M	S4				03881
0025453	01	1	47	2	0	GRUMMAN AIRCRAFT SAG HARBOR V	000.088	000.000	N	Q3	E			00071
0004871	01	2	61	4	0	GSA FEDERAL BLDG BROOKLYN	000.000	000.000	N	XX				03769
0004502	01	2	64	2	0	GULF OIL CORP STATEN ISLAND	000.000	000.000	N	Q1	E			00316
0005797	01	1	28	2	0	GULF OIL OCEAN SIDE	000.000	000.000	N	Q1	E			00092
0005304	01	1	47	2	0	H F CORWIN & SON INC AQUEBOGUE	001.440	001.350	N	Q1			P	00082
0084565	01	1	47	2	0	HALLMARK NAMEPLATE FARMINGDALE V	000.008	000.000	M	M0			P	03777
0076449	01	1	47	4	0	HAMPTON HOSP & MED CT SOUTHAMPTON	000.100	000.000	M	A5				03469
0023116	01	1	47	6	0	HARBOUR APTS BABYLON T	000.090	000.000						00079
0079375	01	1	47	6	0	HEATHERWOOD HOUSE RONKONKOMA	000.030	000.000	M	A7				03745
0077321	01	1	47	6	0	HEATHERWOOD HOUSE RONKONKOMA V	000.090	000.000	M	S1				03730
0007498	01	1	28	1	0	HEMPSTEAD T TOWN INCINERATOR	000.090	000.010					P	03929
0078123	01	1	47	6	0	HIGHVIEW ASSOCIATES SELDEN V	000.088	000.000	M	S4				03436
0077372	01	1	47	6	0	HILLCREST VILLAGE HOLBROOK V	000.075	000.000	M	S6				03553
0075795	01	1	47	2	0	HISTACOUNT CORP BABYLON T	000.000	000.000	M	M0			P	00081
0081671	01	1	47	2	0	HOUSE OF PLASTICS FARMINGDALE V	000.051	000.000	M	M0				03760
0076210	01	1	28	2	0	HUGHS-TREITLER HEMPSTEAD T	000.000	000.010	D	IP			P	00080
	01	2	64	2	0	HYMAN MUSS SONS STATEN ISLAND	000.000	000.000						00313

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REPORT BY BASIN, PLANNING AREA AND NAME

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PERMIT NO.	PLNG AREA	REG	CNTY	T C	T B	NAME & LOCATION	DESIGN FLOW	ACTUAL FLOW	PER CAT	RPTG CYCL	STR CAT	EPA RPT	SHP INF	SEQ. NO.
0026441	01	1	28	1	0	INWOOD SD HEMSTEAD T	000.900	000.000	N	Q1	E		P	00086
0079413	01	1	47	4	0	IRS/ADP CENTER HOLTSVILLE V	000.165	000.000	M	Q1				03754
0075647	01	1	47	2	0	IVERSON CYCLE CORP MEDFORD V	000.000	000.000					P	03775
0026115	01	2	63	1	0	JAMACIA WWTP NYC DWR	100.000	092.000	N	Q2	E		P	00312
0081540	01	1	47	2	0	JAMECO INDUSTRIES BABYLON T	000.036	000.000	M	M0			P	00067
	01	2	61	2	0	JAYEM MFG CORP BROOKLYN	000.000	000.000	D					00266
0027782	01	1	47	2	9	JOHN ROMANOWSKI DUCK FM BROOKHAVEN	000.030	000.000	X				P	00139
	01	1	47	2	9	JOHN ROMANOWSKI DUCK FM BROOKHAVEN							P	03652
0077429	01	1	47	3	0	JOHN SMYTHE FOOD SERV HAUPPAUGE V	000.100	000.000	M	S6				03703
0030104	01	1	28	4	0	JONES BEACH WWTP WANTAGH V	002.500	000.000	N	Q3			P	00099
0008125	01	1	47	5	0	JURGIELEWICZ DUCK FARM MORICHES V	000.360	000.370	N	Q3			P	00137
0028134	01	1	47	2	9	KANAS DUCK FARM BROOKHAVEN T	000.030	000.000	X				P	00049
	01	1	47	2	9	KANAS DUCK FARM BROOKHAVEN T							P	03630
0026760	01	2	64	6	0	KAUFMAN & BROAD HOMES INC RICHMOND	001.000	000.000	N	Q1	E		P	00275
0084859	01	1	47	2	0	KEEL MFG CORP HAUPPAUGE V	000.506	000.000	M	M0				03878
0085871	01	1	47	2	0	KENSOL-OLSENMARK INC MELVILLE V	000.002	000.000	M	S4				03890
0008184	01	2	61	2	0	KENTILE FLOORS INC BROOKLYN	000.000	000.000	N	S4				00292
0085502	01	1	47	2	0	KETCHUM LABS INC AMITYVILLE V	000.002	000.000	M	M0				03874
0089065	01	1	47	2	0	KINEMOTIVE CORPORATION BABYLON T	000.002	000.000	S	M0				04175
0080527	01	1	47	6	0	KINGS CREEK STP YAPHANK V	000.335	000.000	M	Q3				03859
0075957	01	1	47	2	0	KOLLMORGEN CORP RIVERHEAD T	000.525	000.000	M	M0				00128
0075892	01	1	47	2	0	KOSTER KEUNEN INC SAYVILLE V	000.001	000.000	M	M0				00032
0004898	01	1	47	2	0	L I DUCK FARMERS COOP INC E PORT	000.250	000.000	N	Q3			P	00034
0007552	01	1	47	2	0	L I ICE & FUEL RIVERHEAD V	000.050	000.000	N	S5				00013

REPORT BY BASIN, PLANNING AREA AND NAME

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PERMIT NO.	PLNG AREA	REG	CNTY	T C	T B	NAME & LOCATION	DESIGN FLOW	ACTUAL FLOW	PER CAT	RPTG CYCL.	STR CAT	EPA RPT	SMP INF	SEQ. NO.
0036641	01	1	47	2	0	L I LIGHTING CO JAMESPORT V							P	03933
0005924	01	2	63	2	0	L I LIGHTING FAR ROCKAWAY	000.446	000.000	N	M0			P	00261
0005908	01	1	28	2	0	L I LIGHTING ISLAND PK V	293.800	000.000	N	M0			P	00035
0079537	01	1	47	6	0	LA BONNE VIE APTS CORAM V	000.060	000.000	M	S2				03820
0079472	01	1	47	3	0	LAKE GROVE SHOP CT LAKE GROVE V	000.050	000.000	M	A7				03795
0073385	01	1	28	2	0	LAWRENCE J BENNETT INC GARDEN CITY	000.000	000.000	M	M0				03015
0020354	01	1	28	1	0	LAWRENCE V	001.500	000.750	N	Q3	Q		P	00030
0079359	01	1	47	6	0	LEISURE VILLAGE RIDGE V	000.495	000.000	M	Q1				03758
	01	1	47	2	0	LERNER MFG CO MELVILLE V	000.000	000.000						00058
0080683	01	1	47	6	0	LEVITT HOUSE STP 3 MEDFORD V	001.000	000.000	M	Q3				03868
0077399	01	1	47	6	0	LEXINGTON VIL AT BAY SHORE ISLIP T	000.021	000.000	S	A1				04126
0081558	01	1	47	2	0	LINCOLN GRAPHIC ARTS FARMINGDALE V	000.056	000.000	M	M0			P	00041
0020567	01	1	28	1	0	LONG BEACH C DPW	006.360	006.870	N	Q3	A		P	00033
0005819	01	1	28	2	0	LONG ISL SEA CLAM CORP PT LOOKOUT V	000.000	000.000			A			00020
0080926	01	1	47	2	0	LONG ISLAND BAKING LINDENHURST T	000.005	000.000	M	M0				00009
	01	1	47	2	0	MACKENZIE CHEMICAL WORKS ISLIP T	000.000	000.000						00019
0084875	01	1	47	2	0	MAGNUS MFG LTD CENTRAL ISLIP V	000.001	000.000	M	S6				03831
0075949	01	1	47	2	0	MAJESTIC MOLDED PROD INC ISLIP T	000.003	000.000	M	S6				03055
0008079	01	2	61	2	0	MANHATTAN ADHESIVES CORP BROOKLYN								04014
0027944	01	1	47	2	0	MASSEY DUCK FARM BROOKHAVEN T	000.025	000.000					P	00070
0084557	01	1	47	2	0	MASTER CRAFT FINISHERS DEER PARK V	000.001	000.000	M	M0			P	03776
0075868	01	1	47	2	0	MEADOWBROOK DISTRIB CO PATCHOGUE V	000.045	000.000	S	M0				03543
	01	1	47	2	0	MECOX BAY POULTRY FM SOUTHAMPTON T	000.130	000.000					O	00039
0004669	01	2	62	2	0	MERCHANTS REFRIGERATION NEW YORK	004.020	000.000	N	Q2	E		O	00271

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PERMIT NO.	PLNG AREA	REG	CNTY	T C	T B	NAME & LOCATION	DESIGN FLOW	ACTUAL FLOW	PER CAT	RPTG CYCL	STR CAT	EPA RPT	SMP INF	SEQ. NO.
0028282	01	2	61	2	0	METROPOLITAN PETROLEUM CO BROOKLYN	000.000	000.000						03063
0028291	01	2	61	2	0	METROPOLITAN PETROLEUM CO BROOKLYN	000.000	000.000						03064
0007714	01	2	61	2	0	METROPOLITAN PETROLEUM MADISON TERM	000.000	000.000	N	Q1	E			00289
0080632	01	1	47	6	0	MIDDLE IS GARDEN APTS BROOKHAVEN T	000.030	000.000	M	AN				03902
0085839	01	1	47	2	0	MIDLAND PHOTO SERVICE PATCHOGUE V	000.000	000.000	M	MO			P	03779
	01	1	28	2	0	MOBIL OIL CO INWOOD V	000.000	000.000						00069
0004961	01	2	64	2	0	MOBIL OIL STATEN ISLAND	000.000	000.000	N	Q1				00273
0021041	01	2	64	2	0	MOBIL OIL STATEN ISLAND	000.000	000.000	N	Q1				00288
0021644	01	1	47	4	0	MONTAUK AF STATION MONTAUK	000.142	000.000	N	S6	E			00098
0008036	01	1	47	2	0	MORICHES DUCK FARM MORICHES V	000.214	000.000	N	Q3			P	00022
0020460	01	1	28	4	0	N Y INST OF TECHNOLOGY OLD WESTBURY	000.000	000.000	D					00060
0005517	01	2	64	2	0	NASSAU SMELTING & REFINING RICHMOND	000.331	000.072	N	MO	E		P	00285
0085847	01	1	47	2	0	NATIONAL FABRICATING COPIAGUE V	000.002	000.000	M	S4				03892
0008397	01	1	47	2	0	NATL METALS COATING CORP DEER PK T	000.000	000.003						00031
0027995	01	2	61	2	0	NEPCO TERMINAL CORP BROOKLYN	000.000	000.000						03067
0079430	01	1	47	6	0	NORTH ISLE GARDEN APTS CORAM V	000.115	000.000	M	Q1				03748
0076544	01	2	64	3	0	NY TELEPHONE CO STATEN ISLAND	000.001	000.000	S	A5				03470
0075990	01	2	64	3	0	NY TELEPHONE CO STATEN ISLAND	000.001	000.000	S	A8				03832
	01	2	64	2	0	NYC MARINE & AVIA RICHMOND	000.000	000.000						00284
0079456	01	1	47	4	0	OAK HOLLOW NSG CT MIDDLE ISLAND V	000.052	000.000	M	S2				03814
0065439	01	1	47	6	0	OAKDALE SHORES SUBDIVISION ISLIP T	000.200	000.000						02716
0026174	01	2	64	1	0	OAKWOOD BEACH NYC DWR	015.000	016.000	N	Q3	E		P	00057
0020168	01	1	47	1	0	OCEAN BEACH V	000.500	000.324	N	Q1	Q			00005
0027936	01	1	47	2	0	OLIN WARNER DUCK FARM CLAVERTON V	000.000	000.000					P	03785

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0026166	01	2	61	1	0	OWLS HEAD NYC DWR	160.000	000.000	N	Q3	Q		P	00255
0075671	01	1	47	2	0	P R B METAL PRODUCTS INC BABYLON V	000.001	000.000	M	M0			P	00111
0022209	01	1	47	6	0	PARK AVE APTS BABYLON T	000.035	000.000	N	A4	Q			00149
0065358	01	1	47	6	0	PARKLAND STP ISLIP T	000.265	000.000	S	Q3				02724
0080543	01	1	47	6	0	PARR VILLAGE SHIRLEY V	000.450	000.000	M	Q3				03872
0080454	01	1	47	4	0	PATCHOGUE NSG CENTER PATCHOGUE V	000.030	000.000	M	A8				03871
0023922	01	1	47	1	0	PATCHOGUE V SD	000.350	000.275	N	Q2	Q			00108
0075663	01	1	47	2	0	PEERLESS PHOTO PRODDS SHOREHAM V	000.002	000.000	M	M0			P	03509
0075922	01	1	47	2	0	PERFECT LINE MFG LINDENHURST V	000.000	000.000	M	M0			P	00122
0077305	01	1	47	4	0	PILGRIM PSYCH CT WEST BRENTWOOD V	002.400	000.000	M	Q1				03733
0079405	01	1	47	6	0	PINE HILLS COMM STP BROOKHAVEN T	000.181	000.000	M	Q3				03557
0081612	01	1	47	2	0	PIPER PLASTICS CORP COPIAGUE V	000.002	000.000	M	M0				03742
0074691	01	1	47	2	0	PLESSY INCORPORATED MELVILLE V	000.004	000.000	M	M0			P	03079
0008117	01	1	47	4	0	PLUM ISLAND LAB GREENPORT V	002.600	000.000	N	Q1			O	02898
0008109	01	2	63	2	0	PONYA JFK INTERNATL AIRPORT QUEENS	000.381	000.000	N	X4	Q		P	00250
0026107	01	2	64	1	0	PORT RICHMOND NYC DWR	060.000	000.000	N	Q3	Q		P	00297
0075531	01	1	47	2	0	PRECISION GRAPHICS INC FARMINGDALE	000.000	000.000	M	M0			P	00124
0078255	01	1	47	2	0	PREFERRED PLATING INC FARMINGDALE	000.000	000.000	M	M0				03555
0075540	01	1	47	2	0	PRINTEX ELECTRONICS INC BABYLON T	000.000	000.000	M	M0			P	00132
0005771	01	2	64	2	0	PROCTOR & GAMBLE STATEN ISLAND	000.199	000.000	N	M0	E		P	00309
0075841	01	1	47	2	0	PRODUCTN SPRAYING MFG CO DEER PK T	000.004	000.000	M	M0				00134
0072958	01	2	64	4	0	PUBLIC SCHOOL 3 PLEASANT PLAINS T	000.001	000.000	S	A3				02877
	01	2	61	2	0	PUERTO RICO STEEL BROOKLYN	000.000	000.000						00303
0075566	01	1	47	2	0	Q C CIRCUITS BAY SHORE V	000.050	000.000	M	M0			P	00036

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PERMIT NO.	PLNG AREA	REG	CNTY	T C	T B	NAME & LOCATION	DESIGN FLOW	ACTUAL FLOW	PER CAT	RPTG CYCL	STR CAT	EPA RPT	SMP INF	SEQ. NO.
0085537	01	1	47	2	0	R F INTERONICS INC BAYSHORE V	000.008	000.000	M	M0				03873
0075710	01	1	47	2	0	RANGER MFG CORP FARMINGDALE V	000.001	000.000	M	S6				03519
0027952	01	1	47	2	0	RAYMOND POWLL DUCK FM SOUTHAMPTON V	000.050	000.000					P	00021
	01	1	47	2	0	REPUBLIC AVIATION CORP BABYLON T	000.000	000.000					P	00103
0080497	01	1	47	6	0	RIDGE HAVEN ESTATES STP RIDGE V	000.200	000.000	M	Q1				03911
0079391	01	1	47	6	0	RIDGE V STP	000.050	000.000	M	S2				03822
0084522	01	1	47	2	0	RINGLER-DORIN INC FARMINGDALE V	000.001	000.000	M	S4				03915
0020061	01	1	47	1	0	RIVERHEAD SD RIVERHEAD T	001.200	000.600	N	Q1	E		P	00028
0007145	01	2	64	2	0	ROAD MATERIALS CORP STATEN ISLAND	000.053	000.000	N	M0	E			00280
0026221	01	2	63	1	0	ROCKAWAY WWTP NYC DWR	045.000	000.000	N	Q2	E		P	00283
0065382	01	1	47	6	0	ROCKY POINT GARDEN APTS BROOKHAVEN	000.030	000.000	S	A8				02747
0004928	01	1	47	2	0	ROE INTERNATIONAL INC PATCHOGUE V	000.010	000.000	N	Q2	E			00141
0077461	01	1	47	6	0	ROLLING HILLS APTS HAUPPAUGE V	000.163	000.000	M	Q2				03791
0077275	01	1	47	4	0	ROSS NURSING HOME BRENTWOOD V	000.018	000.000	M	A7				03716
0078221	01	1	47	2	0	RSM ELECTRON POWER INC DEER PARK V	000.000	000.000	M	M0			P	03502
	01	2	64	2	0	S I R T RICHMOND	000.000	000.000						00287
0075914	01	1	47	2	0	S M FRANK & CO INC BROOKHAVEN T	000.071	000.000	M	M0				03053
0028908	01	1	47	1	0	SAG HARBOR V	000.100	000.000	N	XX	A		P	00050
0079324	01	1	47	6	0	SELDEN SANITARY CORP CORAM V	001.300	000.000	M	Q3				03861
0074705	01	1	47	2	0	SEN-DURE PRODUCTS INC ISLIP T	000.000	000.000	M	M0			P	02983
0076252	01	1	28	6	0	SERVO CORR OF AMERICA HICKSVILLE V	000.000	000.000	M	M0			P	00063
0006131	01	2	61	2	0	SHELL OIL CO BROOKLYN	000.000	000.000	N	Q1				00278
0006190	01	1	28	2	0	SHELL OIL CO INWOOD V	000.000	000.000	N	Q1				00018
0021814	01	1	47	1	0	SHELTER ISLAND HGTS SHELTER ISLAND	000.030	000.000	N	S6	E			00244

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PERMIT NO.	PLNG AREA	REG	CNTY	T C	T B	NAME & LOCATION	DESIGN FLOW	ACTUAL FLOW	PER CAT	RPTG CYCL	STR CAT	EPA RPT	SMP INF	SEQ. NO.
0005975	01	1	47	2	0	SHELTER ISLAND OYSTER GREENPORT V								03985
	01	1	47	2	0	SHOREWOOD PACKAGING CORP BABYLON T	000.000	000.000						00010
0085804	01	1	47	2	0	SHOREWOOD PACKAGING CORP BABYLON T	000.000	000.000	S	M0		X		04169
0028070	01	1	47	2	9	SHUBERT DUCK FARM RIVERHEAD			X				P	03618
	01	1	47	2	9	SHUBERT DUCK FARM RIVERHEAD							P	03619
0080446	01	1	47	6	0	SMITH HAVEN MALL LAKE GROVE V	000.120	000.000	M	Q3				03864
0075779	01	1	47	2	0	SOLID POWER CORP FARMINGDALE V	000.001	000.000	M	M0			P	03437
0074250	01	1	47	6	0	SOMERSET WOODS ASSOC N BABYLON V	000.071	000.000	M	A5				03461
0077267	01	1	47	6	0	SOUTH SHORE MALL INC BAY SHORE V	000.240	000.000	M	Q1				03718
0065374	01	1	47	4	0	SOUTHAMPTON HOSPITAL SOUTHAMPTON T	000.105	000.000	S	Q1				02762
0077445	01	1	47	1	0	SOUTHAMPTON T SCAVENGER WWTP	000.050	000.000	M	A7				03763
0075736	01	1	47	2	0	SOUTHERN CONTAINER CORP DEER PK V	000.002	000.000	M	M0				03524
0026140	01	2	61	1	0	SPRING CREEK WWTP NYC DWR	010.000	000.000	N	Q2	E		P	00256
0027804	01	1	47	2	9	SPRINGWATER DUCK FARM SOUTHAMPTON T	000.030	000.000	X				P	00061
	01	1	47	2	0	SPRUNG MONUMENTS BABYLON T	000.000	000.000						00065
0007234	01	2	64	2	0	STANDARD T CHEMICAL RICHMOND	000.000	000.002	N	#2	E			00286
0074306	01	1	47	4	0	STATE U AB & TEC COL FARMINGDALE V	000.300	000.000	M	A5				03525
0086061	01	1	47	2	0	STAVER CO INC BAY SHORE V	000.003	000.000	M	S5				00175
0086029	01	1	47	3	0	STREBEL'S LAUNDRY SOUTHAMPTON T	000.000	000.000	M	M0				03909
0007404	01	2	61	2	0	SUCREST CORP BROOKLYN	000.000	010..10	N	M0	Q		P	00257
	01	1	47	2	0	SUFF CO MICROFILMG CTR RIVERHEAD T	000.000	000.000						00016
0078131	01	1	47	4	0	SUFFOLK CO COM COLLEGE RIVERHEAD V	000.035	000.000	M	A9				03842
0079481	01	1	47	4	0	SUFFOLK CO COMM COLLEGE SELDON V	000.151	000.000	M	Q2				02936
0068071	01	1	47	6	0	SUFFOLK DEVELOPMENT CT HUNTINGTON T	000.220	000.000	M	Q2				02764

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REPORT BY BASIN, PLANNING AREA AND NAME

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PERMIT NO.	PLNG AREA	REG	CNTY	T C	T B	NAME & LOCATION	DESIGN FLOW	ACTUAL FLOW	PER CAT	RPTG CYCL	STR CAT	EPA RPT	SMP INF	SEQ. NO.
0081647	01	1	47	2	0	SUFFOLK METAL FINISHING HOLBROOK V	000.001	000.000	M	XX				00015
0006726	01	1	47	2	0	SUFFOLK MILK PROC LINDENHURST V	000.025	000.000	N	S4	A		P	00027
0084506	01	1	47	2	0	SUFFOLK PROCESSING LINDENHURST V	000.127	000.000	S	S6				03882
0078247	01	1	47	6	0	SUFFOLK SANITARY CORP BROOKHAVEN T	000.360	000.000	M	Q2				03796
0028169	01	2	61	2	0	SUN OIL 00 BROOKLYN	000.000	000.000						00270
0008273	01	1	28	2	0	SUN OIL 00 OCEANSIDE V	000.003	000.000	N	Q1				00025
0027871	01	1	47	2	9	SUNRISE DUCK FARM RIVERHEAD T	000.150	000.000	X				P	00052
	01	1	47	2	9	SUNRISE DUCK FARM RIVERHEAD T							P	03609
0077259	01	1	47	6	0	SUNRISE GARDEN APTS BOHEMIA V	000.120	000.000	M	Q3				03701
0027880	01	1	47	2	9	SWIFT STREAM DUCK FARM BROOKHAVEN T	000.100	000.000	X				P	00051
	01	1	47	2	9	SWIFT STREAM DUCK FARM BROOKHAVEN T	000.100						P	03634
0075612	01	1	47	2	0	T & S METAL FINISHING DEER PARK V	000.002	000.000	M	M0			P	03774
0079367	01	1	47	6	0	TALL OAKS GARDEN APTS SELDEN V	000.060	000.000	M	S2				03815
	01	1	47	3	0	TAURUS LAUNDERETTE ISLIP T	000.000	000.000						00085
	01	1	47	2	0	TELKA METAL PROD INC W ISLIP V	000.000	000.000						00168
	01	2	61	2	0	TERMINAL ASSOCIATES BROOKLYN	000.000	000.000						00258
0006327	01	2	60	2	0	TEXACO INO BRONX	000.000	000.000	N	Q1	E			00176
0006301	01	2	61	2	0	TEXACO INO BROOKLYN	000.000	000.000	N	Q1	E			00264
0006823	01	1	28	2	0	TEXACO INO INWOOD V	000.000	000.000	N	Q1	E			00173
0075965	01	2	64	2	0	TEXAS EASTERN CRYOGENICS INC NYC	000.001	000.000	S	A5				03518
0085791	01	1	47	2	0	THOMPSON AIRCRAFT TIRE BRENTWOOD V	000.002	000.000	M	S4				03889
	01	2	61	2	0	THRIFTY PAPER BROOKLYN	000.000	000.000						00272
0077241	01	1	47	6	0	TOWNE HOUSE VILLAGE HAUPPAUGE V	000.040	000.000	M	A7				03717
0075574	01	1	47	2	0	TRONIC PLATING CO FARMINGDALE V	000.005	000.000	M	M0			P	00177

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NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION [illegible] PURE WATERS
SURFACE WASTE SOURCE DISCHARGE INVENTORY

REPORT BY BASIN, PLANNING AREA AND NAME

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PERMIT NO.	PLNG AREA	REG	CNTY	T C	T B	NAME & LOCATION	DESIGN FLOW	ACTUAL FLOW	PER CAT	RPTG CYCL	STR CAT	EPA RPT	SMP INF	SEQ. NO.
0078239	01	1	47	2	0	TRYG PHOTOGRAPHERS LTD BABYLON T	000.008	000.000	M	MO			P	03528
0026212	01	2	61	1	0	TWENTY-SIXTH WARD WWTP NYC DWR	085.000	070.100	N	Q2	E		P	00290
0006599	01	2	64	2	0	U S GYPSUM STATEN ISLAND	001 000	000.000	N	MO	E		O	00320
0081582	01	1	47	2	0	UNEXCELLED CASTINGS CO HAUPPAUGE V	000.012	000.000	M	S1				03762
0079529	01	1	47	6	0	UNIVERSITY GARDEN APT BROOKHAVEN T	000.100	000.000	M	S2				03797
0024023	01	2	63	4	0	US COAST GUARD AMBROSE	000.001	000.000	N	XX	E			02783
0024546	01	2	64	4	0	US COAST GUARD NEW YORK HARBOR	000.001	000.000	N	XX	E			02782
0024376	01	2	64	4	0	US COAST GUARD ST GEORGE	000.000	000.000	N	XX				02945
0024911	01	2	61	4	0	US NAVY FLOYD BENNETT FIELD BROOKLY	000.400	000.000	N	Q3	E			02789
0065331	01	1	47	6	0	VALLEY FORGE MOBILE HOME PK ISLIP	000.053	000.000	M	S5				02801
0008435	01	1	28	2	0	VALLEY FORGE PROD INWOOD V	000.000	000.000	N	S5				00624
0085821	01	1	47	2	0	VAN BUREN AUTO PRODUCTS MEDFORD V	000.001	000.000	M	S5				03895
0084883	01	1	47	2	0	VANGUARD EXTRUDERS FARMINGDALE V	000.000	000.000	M	S6				03821
0028215	01	1	47	2	9	VICTOR KOSTUK DUCK FARM EASTPORT			X				P	03616
	01	1	47	2	9	VICTOR KOSTUK DUCK FARM EASTPORT							P	03617
0036927	01	1	47	5	9	VIGLIOTTA DUCK FARM BRKHAVN T NORTH	000.176	000.000	X				P	00112
0027260	01	1	47	2	9	VIGLIOTTA DUCK FM E MORICHES EAST	000.060	000.000	X				P	00180
	01	1	47	2	9	VIGLIOTTA DUCK FM E MORICHES EAST		000.060					P	03613
0027278	01	1	47	2	9	VIGLIOTTA DUCK FM E MORICHES WEST			X				P	03614
	01	1	47	2	9	VIGLIOTTA DUCK FM E MORICHES WEST							P	03615
0075639	01	1	47	2	0	VINYL MASTERS INC BABYLON T	000.003	000.000	M	S6				03056
0085481	01	1	47	2	0	WALL-MATE VINYLS INC CORAM V	000.002	000.000	M	S4				03893
0026859	01	1	28	1	0	WANTAGH SD HEMSTEAD T	045.000	000.000	N	Q1			P	02844
0075931	01	1	47	2	0	WASH BUCKET INC CORAM V	000.000	000.000	M	MO				03069

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NYS DEPARTMENT OF ENV[illegible]NMENTAL CONSERVATION
DIVISION [illegible] PURE WATERS
SURFACE WASTE SOURCE DISCHARGE INVENTORY

REPORT BY BASIN, PLANNING AREA AND NAME

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PERMIT NO.	PLNG AREA	REG	CNTY	T C	T B	NAME & LOCATION	DESIGN FLOW	ACTUAL FLOW	PER CAT	RPTG CYCL	STR CAT	EPA RPT	SMP INF	SEQ. NO.
0080730	01	1	47	6	0	WATERGATE APARTMENTS PATCHOGUE V	000.023	000.000	M	A9				03866
0077381	01	1	47	6	0	WAVERLY PK HOMES HOLTSVILLE V	000.025	000.000	M	S1				03744
0023523	01	1	28	1	0	WEST LONG BEACH SD ATLANTIC BEACH	001.500	000.000	N	Q2	Q		P	00174
0077411	01	1	47	6	0	WINDBROOKE HOMES CENTRAL ISLIP V	000.095	000.000	M	S6				03705
0077364	01	1	47	6	0	WOLF HILL ASSOCIATES BAYPORT V	000.118	000.000	M	Q3				03704
0075817	01	1	47	2	0	WOODBINE PRODUCTS INC DEER PARK V	000.000	000.000	M	M0			P	00160
0068144	01	1	47	4	0	WOODHAVEN MANOR NURSING HOME BROOKH	000.070	000.000	M	S1				02810
0076988	01	1	47	6	0	WOODSIDE SITES STP BELLPORT V	000.303	000.000	M	Q3				03554
0085693	01	1	47	1	0	YAPHANK CNTY CT WWTP YAPHANK V	000.250	000.000	M	Q3				04039
0074365	01	1	47	3	0	YARDARM CLUB HOTEL SOUTHAMPTON T	000.046	000.000	M	A5				03468
0077232	01	1	47	6	0	100 TOWNE HOUSE VIL HAUPPAUGUE V	000.043	000.000	M	A9				03910
	02	2	63	2	0	ABRASIVE BLAST QUEENS	000.000	000.000						00325
0005681	02	2	60	2	0	AMERADA HESS CORP BRONX	000.000	000.000	N	Q1				00327
0030872	02	1	28	2	0	AMERICAN OIL CO INWOOD V	000.000	000.000						00207
0004634	02	3	55	2	0	AMERICAN OIL CO MOUNT VERNON	000.003	000.000	N	Q1				00818
[illegible]	02	3	66	2	0	AMERICAN OIL CO MT VERNON C	002.000	000.000	N	Q1			O	00812
0004596	02	2	61	2	0	AMERICAN OIL CORP BROOKLYN	000.000	000.000	N	Q1				00326
0076261	02	1	28	2	0	AMPEREX ELECTRONIC CORP HICKSVILLE	000.000	000.000	M	MD			P	03018
0008443	02	2	61	2	0	AMSTAR CORP BROOKLYN	000.000	009.270	N	M0	Q		P	00324
0081698	02	1	47	2	0	ARKAY PACKAGING CORP HAUPPAUGE V	000.003	000.000	M	M0			P	00205
0032255	02	3	55	3	0	ARMONK POLLUTION CONTROL ARMONK V	000.081	000.000	N	S2				03736
	02	1	47	2	0	AUSTIN INSTRUMENT INC HUNTINGTON T	000.000	000.000						00210
0081566	02	1	47	2	0	AUTOMATIC CONNECTOR INC COMMACK V	000.008	000.000	M	M0				03729
0005045	02	1	28	2	0	B P OIL CORP GREAT NECK V	000.000	000.000	N	Q1				00186

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PERMIT NO.	PLNG AREA	REG	CNTY	T C	T B	NAME & LOCATION	DESIGN FLOW	ACTUAL FLOW	PER CAT	RPTG CYCL	STR CAT	EPA RPT	SMP INF	SEQ. NO.
0005274	02	3	55	2	0	B P OIL CORP MOUNT VERNON	000.001	000.000	D	Q1				00820
0026841	02	1	28	1	0	BELGRAVE SD N HEMPSTEAD T	002.000	001.340	N	Q1	E		P	00192
	02	1	47	2	0	BIELER NATIONAL IND INC ISLIP T	000.000	000.000						00189
0070297	02	1	47	4	0	BIRCHWOOD NSG HOME HUNTINGTON T	000.039	000.000	M	AN				02906
0026719	02	3	55	1	0	BLIND BROOK WWTP RYE C	005.000	000.000	N	Q2			P	00815
	02	2	61	2	0	BOHACK CORP BROOKLYN	000.000	000.000						00369
0026158	02	2	63	1	0	BOWERY BAY NYC DWR	150.000	103.900	N	Q3	Q		P	00368
0068411	02	1	47	4	0	CARILLON NURSING HOME HUNTINGTON T	000.030	000.000	S	AN				02543
0022675	02	2	62	2	0	CERTIFIED IND NEW YORK	000.000	000.000						00372
0022667	02	2	61	2	0	CERTIFIED INDUSTRIES BROOKLYN	000.000	000.000						00379
0007650	02	2	60	2	0	CIRILLO BROS BRONX	000.000	000.000	N	Q1				00365
0076163	02	1	28	2	0	CLAREMONT POLYCHEM OLD BETHPAGE V	000.000	000.000	M	MO			P	03076
0076279	02	1	28	2	0	COCA COLA BOTTLNG CO JERICHO V	000.032	000.000	M	MO				03897
0021687	02	1	47	4	0	COLD SPRING HARBOR LAB HUNTINGTON T	000.000	000.007	N	Q3	E			02544
0004782	02	2	60	2	0	COLONIAL SAND & STONE BRONX	000.000	000.000	N	Q2				00375
0004774	02	2	60	2	0	COLONIAL SAND & STONE BRONX	000.000	000.000	D	IP				00383
0004707	02	2	61	2	0	COLONIAL SAND & STONE BROOKLYN	000.000	000.000	N	S6				02576
0004812	02	1	28	2	0	COLONIAL SAND & STONE PT WASH V								03975
0004731	02	1	28	2	0	COLONIAL SAND&STONE PRT WASHINGTON	000.000	000.000	N	S1				00190
0007854	02	2	63	2	0	COLONNA & CO INC LONG ISLAND C								04006
0081680	02	1	47	2	0	COLORPAK MINEOLA MFG CO HAUPPAUGE V	000.001	000.000	M	S1				03757
0076180	02	1	28	2	0	COLUMBIA CONTAINER CORP SYOSSET V	000.008	000.000	M	MO				03505
0005878	02	1	28	2	0	COMMANDER TERMINALS CO OYSTER BAY T	000.000	000.000	N	Q1				00194
0075825	02	1	47	2	0	COMMUNICATION ASSOC INC HUNTINGTON	000.000	000.000	M	MO			P	02994

REPORT BY BASIN, PLANNING AREA AND NAME

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PERMIT NO.	PLNG AREA	REG	CNTY	T C	T B	NAME & LOCATION	DESIGN FLOW	ACTUAL FLOW	PER CAT	RPTG CYCL	STR CAT	EPA RPT	SHP INF	SEQ. NO.
0075485	02	1	47	2	0	COMPUTER CIRCUITS INC SMITHTOWN T	000.000	000.000	M	M0			P	00197
0075876	02	1	47	2	0	COMTECH LABORATORIES SMITHTOWN T	000.000	000.000	M	M0			P	03058
0007340	02	2	63	2	0	CON EDISON ASTORIA GEN STATION	641.000	000.000	N	M0			P	00342
0005118	02	2	63	2	0	CON EDISON ASTORIA GEN STATION	000.000	000.000	N	M0			P	00382
0005142	02	2	60	2	0	CON EDISON BRONX	000.000	000.000	D					00353
0005126	02	2	62	2	0	CON EDISON EAST RIVER NEW YORK	000.000	000.000	N	M0			P	00347
0005151	02	2	61	2	0	CON EDISON HUDSON AVE BROOKLYN	000.000	000.000	N	M0			P	00384
0005215	02	2	62	2	0	CON EDISON KIPS BAY NEW YORK	000.120	000.000	N	M0			P	00380
0005193	02	2	63	2	0	CON EDISON RAVENSWOOD	000.000	000.000	N	M0			P	00381
0005100	02	2	62	2	0	CON EDISON STATEN ISLAND	000.000	654.100	N	M0			P	00373
0005207	02	2	62	2	0	CON EDISON WATERSIDE NEW YORK	000.000	000.000	N	M0			P	00351
0005134	02	2	62	2	0	CON EDISON 59 ST MANHATTAN	000.000	000.000	N	M0			P	00366
0005177	02	2	62	2	0	CON EDISON 74 ST MANHATTAN	000.000	000.000	N	M0			P	00374
0028495	02	1	28	2	0	CONCORD OIL INC INWOOD V	000.000	000.000						00199
0075591	02	1	47	2	0	DEUTCH RELAYS INC EAST NORTHPORT V	000.000	000.000	M	M0			P	03078
0006335	02	1	28	2	0	DIAGNOSTIC RESEARCH INC ROSLYN V								03927
0006980	02	2	61	2	0	DIAMOND SHAMROCK CORP BROOKLYN	000.000	000.001	N	S2				00350
0007480	02	2	61	2	0	DUVEEN SOAP CORP BROOKLYN	000.000	000.000	N	Q2	E			00294
0075906	02	1	47	2	0	DYNELL ELECTRONICS CO HUNTINGTON T	000.008	000.000	M	M0			P	00204
0076937	02	1	47	2	0	E C SUMEREAU & SONS HUNTINGTON T	000.000	000.000	M	M0			P	03515
0078701	02	3	55	3	0	ECHO BAY YACHT CLUB NEW ROCHELLE C	000.006	000.000	S	A8				03755
0075469	02	1	47	2	0	ELMONT MFG CORP SMITHTOWN T	000.000	000.000	M	M0			P	00200
0076996	02	1	47	2	0	ESTEE LAUDER INC MELVILLE V	000.020	000.000	M	S6				03471
0005452	02	2	63	2	0	EXXON CO QUEENS	000.000	000.000	N	Q1				00359

NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
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REPORT BY BASIN, PLANNING AREA AND NAME

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PERMIT NO.	PLNG AREA	REG	CNTY	T C	T B	NAME & LOCATION	DESIGN FLOW	ACTUAL FLOW	PER CAT	RPTG CYCL	STR CAT	EPA RPT	SHP INF	SEQ. NO.
0025682	02	3	55	2	0	EXXON CORP PELHAM MANOR V	000.000	000.000	N	Q1				00829
0025828	02	1	47	2	0	EXXON CORP PRT JEFFERSON V	000.000	000.000	N	Q1				00188
0005631	02	2	61	2	0	F & M SCHAEFER BREWING BROOKLYN	000.000	000.000	N	Q3				00341
0076155	02	1	28	2	0	FAIRCHILD INSTRUMENT SYOSSET V	000.000	000.000	M	M0			P	03077
0087874	02	2	60	2	0	FERRIS PLACE CORP NEW YORK C	000.000	000.000	S	M0		X		04045
0007641	02	2	61	2	0	FILTERED PETROLEUM CORP BROOKLYN	000.000	000.000	N	Q1				00345
0075787	02	1	47	2	0	FLAIR MANUFACTING CORP SMITHTOWN T	000.000	000.000	M	S6			P	03057
0006505	02	3	55	2	0	FLINTKOTE CO WHITE PLAINS C								03990
0025321	02	2	62	2	9	FRUEHAUF CORP MASPETH V			X					03667
0084361	02	2	63	2	9	FRUEHAUF CORP MASPETH V	000.001	000.000	S	M0				03668
	02	2	62	3	0	FULTON FISH MKT MANHATTAN	000.000	000.000						00358
0076198	02	1	28	2	0	GENERAL INSTRUMENT HICKSVILLE V	000.000	000.000	M	M0			P	03440
0028452	02	2	63	2	0	GETTY OIL CO L I CITY QUEENS	000.000	000.000						02618
0026620	02	1	28	1	0	GLEN COVE C DPW STP	004.000	005.060	N	Q1	A		P	00330
	02	1	28	2	0	GOLDSTEIN M&P BAYVILLE V	000.000	000.000						00217
0006246	02	2	63	2	0	GOOD HUMOR CORP QUEENS	000.000	000.000	D	Q1	E			00332
0083313	02	3	55	2	0	GOTHAM CHEMICAL CO PORT CHESTER V	000.000	000.000	M	M0				03903
0026999	02	1	28	1	0	GREAT NECK SD GREAT NECK	002.700	002.560	N	Q2	Q		P	00216
0022128	02	1	28	1	0	GREAT NECK V	001.500	000.991	N	Q1	Q		P	00331
0028002	02	2	63	2	0	GREATER NEW YORK TERMINAL ASTORIA	000.000	000.000						03068
0020079	02	1	47	1	0	GREENPORT V	000.500	000.323	N	Q1	E			00215
0005789	02	2	61	2	0	GULF OIL CO BROOKLYN	000.000	000.000	N	Q1				00311
	02	2	60	2	0	GULF OIL CORP BRONX	000.000	000.000						00338
0007463	02	1	28	2	0	HARBOR FUEL CO GLENWOOD V	000.000	000.000	N	Q1				00213

REPORT BY BASIN, PLANNING AREA AND NAME

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PERMIT NO.	PLNG AREA	REG	CNTY	T C	T B	NAME & LOCATION	DESIGN FLOW	ACTUAL FLOW	PER CAT	RPTG CYCL	STR CAT	EPA RPT	SMP INF	SEQ. NO.
0026654	02	2	60	1	0	HART'S ISLAND WWTP NYC DWR	001.500	000.000	N	Q1	E		P	03401
0066028	02	1	47	4	0	HAUPPAUGE COUNTY CENTER SMITHTOWN T	000.288	000.000	S	Q2				02653
0075752	02	1	47	2	0	HAZELTINE CORP GREENLAWN V	000.038	000.000	M	M0			P	00212
0075744	02	1	47	2	0	HAZELTINE CORP GREENLAWN V	000.006	000.000	M	M0			P	03444
0084514	02	1	47	6	0	HEARTLAND IND PK STP HAUPPAUGE V	000.100	000.000	M	S3				03870
0006343	02	2	63	2	0	HOROWITZ B MRGT QUEENS	000.000	000.000						00339
0021342	02	1	47	1	0	HUNTINGTON T	002.000	001.200	N	Q3	E		P	00211
0026191	02	2	60	1	0	HUNTS POINT WPCP NYC DWR	200.000	145.400	N	Q1	E		P	00335
0021237	02	3	55	2	0	IBM ARMONK	000.000	000.000	N	S5	E			02657
0006106	02	3	55	2	0	IBM WHITE PLAINS C	000.000	000.001						00816
0006114	02	3	55	2	0	IBM WHITE PLAINS C	000.000	000.000	N	S5				02901
0007544	02	2	61	2	0	INTERBORO SURFACE CO BROOKLYN	000.200	000.000	D		Q			00333
0008214	02	2	61	2	0	J R ELKINS INC BROOKLYN	000.000	000.007	N	S4				00337
0026611	02	3	55	6	0	JEFFERSON VALLEY CORP SHRUB OAK	000.150	000.000	N	Q2				00813
0076287	02	1	28	2	0	JOHN HASSALL INC WESTBURY V	000.000	000.000	M	M0			P	03014
0086711	02	1	28	2	0	KOLLSMAN INSTRUMENT CO SYOSETT V	000.000	000.000	M	M0			P	03780
0007315	02	3	55	2	0	KRYSTINEL CORP PORT CHESTER T	000.000	000.000	N	S6	Q			00805
0005941	02	1	47	2	0	L I LIGHTING CO NORTHPORT V	681.843	000.000	N	M0			P	00220
0026344	02	1	47	2	0	L I LIGHTING CO SHOREHAM	000.000	000.000	N	M0			P	03066
0005894	02	1	28	2	0	L I LIGHTING GAS PLT GLENWD LANDNG	000.000	000.000	N	M0			P	02957
0005916	02	1	28	2	0	L I LIGHTING GLENWOOD LANDING	176.200	000.000	N	M0	Q		P	00243
0005932	02	1	47	2	0	L I LIGHTING PORT JEFFERSON V	375.400	000.000	N	M0	Q		P	00232
0075477	02	1	47	2	0	LAMBDA ELECTRONICS CORP MELVILLE V	000.000	000.000	M	M0			P	03507
0089656	02	1	47	2	0	LAWRENCE AVIAT IND PT JEFFERSON V	000.014	000.000	S	S3				00226

NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
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SURFACE WASTE SOURCE DISCHARGE INVENTORY

REPORT BY BASIN, PLANNING AREA AND NAME

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PERMIT NO.	PLNG AREA	REG	CNTY	T C	T B	NAME & LOCATION	DESIGN FLOW	ACTUAL FLOW	PER CAT	RPTG CYCL	STR CAT	EPA RPT	SMP INF	SEQ. NO.
0008249	02	1	28	2	0	LI TUNGSTEN CORP GLEN COVE C	000.317	000.000	N	MO	Q		P	02670
0076228	02	1	28	2	0	LIBERTY IND FINISHING OYSTER BAY T	000.010	000.000	M	MO			P	00042
0006165	02	2	60	2	0	LORAL CORP BRONX	000.095	000.000	N	A1	E			02669
	02	1	47	2	0	M & T CHEMICAL INC HUNTINGTON T	000.000	000.000						00223
0026701	02	3	55	1	0	MAMARONECK V SD	018.000	016.900	N	Q1	E		P	00809
	02	2	63	2	0	MARLYN CORP LONG ISLAND CITY	000.000	000.000						00391
0075621	02	1	47	2	0	MCPHILBEN LIGHTING MELVILLE V	000.008	000.000	M	MO			P	03074
0076244	02	1	28	2	0	METALLURGICAL PROCESSING SYOSSET V	000.000	000.000	M	MO			P	03504
0076236	02	1	28	2	0	METATRONIO MFG CORP HICKSVILLE V	000.000	000.000	M	MO			P	03439
0007668	02	2	60	2	0	METROPOLITAN PETROLEUM BRONX	000.000	000.000	N	Q1				00392
0028312	02	2	60	2	0	METROPOLITAN PETROLEUM BRONX								03490
0007676	02	2	61	2	0	METROPOLITAN PETROLEUM CO BROOKLYN	000.000	000.000	N	Q1				00406
0007684	02	2	63	2	0	METROPOLITAN PETROLEUM CO FLUSHING	000.000	000.000	N	Q1				00403
0007706	02	1	28	2	0	METROPOLITAN PETROLEUM GREAT NECK V	000.000	000.000	N	Q1				00222
0007692	02	3	55	2	0	METROPOLITAN PETROLM CO MT VERNON C	000.001	000.000	N	Q1				00811
0028304	02	3	55	2	0	METROPOLITAN PETROLM MT VERNON C								03491
	02	1	28	2	0	MOBIL OIL CO GLENWOOD LANDING	000.000	000.000						00231
0004995	02	2	61	2	0	MOBIL OIL CORP BROOKLYN	000.000	000.000	N	Q1				00405
0004944	02	3	55	2	0	MOBIL OIL CORP MT VERNON C	000.001	000.000	N	Q1				00810
0076147	02	1	28	2	0	NARDA MICROWAVE CORP PLAINVIEW V	000.007	000.000	M	MO				03829
0076147	02	1	28	2	0	NARDA MICROWAVE INC PLAINVIEW V	000.000	000.000					P	03772
	02	1	28	2	0	NET REALTY GREAT NECK V	000.000	000.000						00230
0072281	02	2	62	3	0	NEW YORK PLAZA BLDG CO N Y C	052.000	000.000	S	MO			P	00400
0075515	02	1	47	2	0	NEW YORK TWIST DRILL MELVILLE V	000.000	000.000	M	MO			P	03075

PERMIT NO.	PLNG AREA	REG	CNTY	T C	T B	NAME & LOCATION	DESIGN FLOW	ACTUAL FLOW	PER CAT	RPTG CYCL	STR CAT	EPA RPT	SMP INF	SEQ. NO.
0026204	02	2	61	1	0	NEWTOWN CK NYC DWR	310.000	169.200	N	Q3	Q		P	00003
	02	2	63	2	0	NEWTOWN REFINING CORP LONG ISLAND C	000.000	000.000					P	00263
0007421	02	1	28	2	0	NORTH HEMPSTEAD T ROSLYN HARBOUR V								04000
0024881	02	1	47	1	0	NORTHPORT V	000.000	000.150	N	Q3	E			00242
	02	2	63	2	0	NYC POULTRY M QUEENS	000.000	000.000						00395
0070106	02	1	47	2	0	OAK TREE DAIRY INC E NORTHPORT V	000.080	000.000	M	M0				03544
	02	2	60	3	0	OCEANA TERMINALS BRONX	000.000	000.000						00401
0026662	02	2	60	1	0	ORCHARD BEACH WWTP NYC DWR	000.250	000.000	N	Q1	E		P	03402
0086037	02	1	47	2	0	OWENS ILLINOIS INC COMMACK V	000.004	000.000	M	S4				03883
0021822	02	1	28	1	0	OYSTER BAY SD OYSTER BAY T	001.200	001.230	N	Q1	Q		P	00045
0005479	02	2	63	2	0	PEARL WICK CORP LONG ISL C	000.000	000.041	N	M0				00300
0007323	02	3	55	2	0	PELHAM OIL CORP PELHAM MANOR V	000.000	000.000	N	Q1				00828
0034754	02	2	62	2	0	PENN CENTRAL TRANS CO NEW YORK C	000.000	000.000	S	M0				00348
0004910	02	2	63	2	0	PEPSI COLA CO LONG ISLAND CITY	000.000	005.010	D	IP			O	00371
0022799	02	2	63	2	0	PHELPS DODGE REFINING MASPETH	000.000	000.000	N	M0				00377
0005258	02	2	63	2	0	PHELPS DODGE REFINING MASPETH	000.000	000.500	N	M0			P	00378
0022781	02	2	63	2	0	PHELPS DODGE REFINING NEW YORK	000.000	000.000	D					02894
0008133	02	2	63	2	0	PONYA LAGUARDIA AIRPORT QUEENS	001.185	000.000	N	X4			P	00356
0026786	02	3	55	1	0	PORT CHESTER V	006.000	000.000	N	Q3	E		P	00830
0026778	02	1	28	1	0	PORT WASHINGTON SD N HEMPSTEAD T	003.000	002.629	N	Q3	Q		P	00185
0006955	02	1	28	2	0	POWERS CHEM CO INC GLEN COVE T	000.215	000.000	N	Q1			P	00187
0007455	02	2	61	2	0	PREMIUM COAL & OIL CO BROOKLYN	000.000	000.000	N	Q1				00361
0007447	02	2	63	2	0	PREMIUM COAL & OIL CO INC FLUSHING	000.000	000.000	N	Q1				00344
0083216	02	3	55	3	0	RAMADA INN ARMONK V	000.001	000.000	M	M0				03884

NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF PURE WATERS
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REPORT BY BASIN, PLANNING AREA AND NAME

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PERMIT NO.	PLNG AREA	REG	CNTY	T C	T B	NAME & LOCATION	DESIGN FLOW	ACTUAL FLOW	PER CAT	RPTG CYCL	STR CAT	EPA RPT	SMP INF	SEQ. NO.
0085545	02	1	47	2	0	RAMBLER PUBLISHING SMITHTOWN T	000.000	000.000	M	M0				03875
0027073	02	2	61	1	0	RED HOOK NYCDWR	000.000	000.000	N	XX	Q		P	00279
0076295	02	1	28	2	0	RONZONI FOODS CO INC HICKSVILLE V	000.026	000.000	M	M0				03865
0085553	02	1	47	2	0	ROSCO TOOLS INC SMITHTOWN T	000.006	000.000	M	S3				03869
0022349	02	1	28	1	0	ROSLYN V	000.520	000.426	N	Q2	Q		O	00235
0007625	02	2	63	2	0	ROYAL PETROLEUM CO LONG ISLAND CITY	000.000	000.000	N	Q1				00346
0007633	02	3	55	2	0	ROYAL PETROLEUM CORP MOUNT VERNON C	000.000	000.000	N	Q1				00822
0087360	02	3	55	2	0	SENTINEL OIL CO INC NEW ROCHELLE V	000.000	000.000	S	M0				04037
0081655	02	1	47	2	0	SEVEN-UP BKLYN BTTLNG MELVILLE V	000.008	000.000	M	M0				00240
0006211	02	3	55	2	0	SHELL OIL MOUNT VERNON C	000.000	000.000	D					00825
0075833	02	1	47	2	0	SMC MICROSYSTEMS	000.000	000.000	M	M0			P	03438
0065340	02	1	47	4	0	SMITHTOWN GEN HOSPITAL SMITHTOWN T	000.093	000.000	S	A8				02761
0074331	02	1	47	4	0	SMITHTOWN NSG HOME SMITHTOWN V	000.060	000.000	M	S6				00229
0023311	02	1	47	1	0	SMITHTOWN T	001.000	000.600	N	Q1	E		P	00238
0074292	02	1	47	4	0	ST JAMES NURSING HOME ST JAMES V	000.750	000.000	M	Q3				03542
0074683	02	1	47	4	0	ST JOHN'S SMITHTOWN HOSP SMITHTOWN	000.043	000.000	M	A5				03462
0021750	02	1	47	1	0	SUFFOLK CO SD 1 PORT JEFFERSON V	001.500	001.240	N	Q1	E		P	00196
0070033	02	1	47	6	0	SUFFOLK CO SD 5 HUNTINGTON T	000.150	000.000	M	Q3				02638
0007200	02	2	63	2	0	SUN OIL CO LONG ISLAND CITY	000.000	000.000	D					00397
0006891	02	3	55	2	0	SUN OIL CO PELHAM MANOR V	000.000	000.000	N	Q1				00824
0026239	02	2	63	1	0	TALLMANS ISLAND NYC DWR	080.000	058.000	N	Q3	E		P	00394
0006297	02	2	61	2	0	TEXACO INC BROOKLYN	000.000	000.000	N	Q1				00389
0006319	02	1	28	2	0	TEXACO INC ROSLYN V	000.000	000.000	N	Q1				00233
0076309	02	1	28	2	0	TOD MANUFACTURING CO HICKSVILLE	000.000	000.000	M	M0			P	03016

NYS DEPARTMENT OF [illegible]ONMENTAL CONSERVATION
DIVISION PURE WATERS
SURFACE WASTE SOURCE DISCHARGE INVENTORY

REPORT BY BASIN, PLANNING AREA AND NAME

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PERMIT NO.	PLNG AREA	REG	CNTY	T C	T B	NAME & LOCATION	DESIGN FLOW	ACTUAL FLOW	PER CAT	RPTG CYCL	STR CAT	EPA RPT	SMP INF	SEQ. NO.
0008028	02	3	55	2	0	U S V PHARMACEUTICAL TUCKAHOE V								04012
0032638	02	1	28	2	0	UNIVERSAL OIL GREAT NECK V	000.000	000.000						00182
0023388	02	2	63	4	0	US COAST GUARD EXECUTION ROCKS	000.001	000.000	N	XX				02779
0024457	02	1	47	4	0	US COAST GUARD LITTLE GULL	000.001	000.000	N	XX	E			02780
0024031	02	1	47	4	0	US COAST GUARD RACE ROCK	000.001	000.000	N	XX	E			02781
0022276	02	2	60	4	0	US COAST GUARD THROGS NECK	000.001	000.000	N	XX	E			00323
0069159	02	1	47	4	0	VA HOSPITAL HUNTINGTON T	000.320	000.000	M	Q2				02795
0006068	02	2	63	2	0	VAN IDERSTINE CO L I CITY QUEENS	000.000	000.000	D					02893
0076317	02	1	28	2	0	VEECO INSTRUMENT CO PLAINVIEW V	000.000	000.000	M	M0			P	00162
0026131	02	2	62	1	0	WARDS ISLAND WPCP NYC DWR	265.000	258.000	N	Q1	E		P	00322
0020052	02	2	62	6	0	WATERSIDE HOUSING DEVEL NEW YORK	000.000	000.000	N	A8	Q			02806
0075132	02	3	55	4	0	WESTCHESTER CNTY AIRPORT	000.000	000.000	S	M0				03887
0026697	02	3	55	1	0	WESTCHESTER EFC NEW ROCHELLE WWTP	015.000	011.500	N	Q1	E		P	00808
0006416	02	2	63	2	0	WESTERN ELEC CO JAMAICA								03988
0006360	02	3	55	2	0	WESTERN ELECTRIC CO YONKERS C	000.000	000.000	N	S1				00806
0068080	02	1	47	3	0	WHITE DEPT STORE HUNTINGTON T	000.040	000.000	M	AN				02811
	02	1	28	2	0	WINDSOR OIL GLEN COVE C	000.000	000.000						00183

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                    1972 (FEB) MUNICIPAL S.T.W. INVENTORY

          1.  NAME OF LOCALITY                     NEW YORK C
          2.  COUNTY                               N Y CITY  58
          3.  NAME OF PLANT                        PORT RICHMOND
          4.  PLANT NO.                             11
          5.  TYPE OF PLANT                        CITY
          6.  DRAINAGE BASIN                       ATLANTIC OCEAN - LONG ISLAND SOUND
          7.  ENVIRONMENTAL REGION                 N.Y. CITY-2
          8.  LOCAL HEALTH UNIT
          9.  COLLECTION SYSTEM TYPE               COMBINED
         10.  SIGNIFICANT INDUSTRIAL WASTES        YES
         11.  PLANT GRADE
         12.  CHIEF OPERATOR GRADE
         13.  ASSISTANT OPERATOR
         14.  YEAR PLANT CONSTRUCTED               1953
         15.  YEAR LATEST MAJOR IMPROVEMENTS       1964
         16.  TRIBUTARY POPULATION                  131000
         17.  DESIGN FLOW (100S OF GAL.)            100000
         18.  TREATMENT UNITS
                   PRELIMINARY                     PRE-AERATION, BAR SCREEN, GRIT CHAMBER
                   PRIMARY                         SETTLING TANK - MECH. SLUDGE COLL.
                   INTERMEDIATE
                   SECONDARY
                   TERTIARY
                   CHLORINATION                    POST CHLORINATION
                   DISPOSAL OF LIQUIDS             SHORE DISCHARGE TO SURFACE  ATERS
         19.  SLUDGE HANDLING UNITS
                   PRELIMINARY                     HOLDING
                   DIGESTION                       ANAEROBIC DIGESTION(SEPARATE DIGESTERS
                   DEWATERING
                   DISPOSAL OF SLUDGE              BARGE TO SEA
         20.  STREAM TYPE                          TIDAL
         21.  STREAM CLASS                         SPECIAL-A
         22.  RECEIVING WATER & MILE PT.**         KILL VAN KULL
         23.  PERIOD OF CHLORINATION               SEASONAL
         24.  ADDITIONAL EFFLUENT LIMITS
         25.  OPERATING PERMIT ISSUED ON            6/ 5/50
         26.  OPERATING PERMIT EXPIRES ON
         27.  ACTUAL FLOW (MGD)                     14.300
         28.  BASES FOR FLOW                       METERED
         29.  ADEQUACY OF CHLORINATION             INADEQUATE
         30.  HYDRAULIC OVERLOAD                   YES
         31.  METERING - SEWAGE FLOW

                     EFFLUENT      ------------- OPERATIONAL RESULTS -------------
                   PERMIT LIMITS      INF.      EFFLUENT     PERCENT  VIOLA-  SAMPLES
                   MG/L  LB/DAY       MG/L    MG/L  LB/DAY   REMOVAL   TION     BY

         B.O.D.                       237.    189.   22540    20.3            PLANT RECORD
         S.S.                         192.    126.0  15027    34.4            PLANT RECORD
         SET. S.*                     106.3    50.8           52.4            OTHER AGENCY
         P- TOTAL                       9.0     8.2    977     8.0            PLANT RECORD
         N- TOTAL                      19.10   20.30   2421     0.0            PLANT RECORD

         *  GIVEN IN ML/L
         ** MILE POINTS TO NEAREST TENTH
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                    1972  (FEB) MUNICIPAL S.T.W. INVENTORY

      1.  NAME OF LOCALITY                          NEW YORK C
      2.  COUNTY                                    N Y CITY  58
      3.  NAME OF PLANT                             OAKWOOD BEACH
      4.  PLANT NO.                                  12
      5.  TYPE OF PLANT                             CITY
      6.  DRAINAGE BASIN                            ATLANTIC OCEAN - LONG ISLAND SOUND
      7.  ENVIRONMENTAL REGION                      N.Y. CITY-2
      8.  LOCAL HEALTH UNIT
      9.  COLLECTION SYSTEM TYPE                    SEPARATE
     10.  SIGNIFICANT INDUSTRIAL WASTES             YES
     11.  PLANT GRADE                               A
     12.  CHIEF OPERATOR GRADE                      1
     13.  ASSISTANT OPERATOR                        2
     14.  YEAR PLANT CONSTRUCTED                    1956
     15.  YEAR LATEST MAJOR IMPROVEMENTS
     16.  TRIBUTARY POPULATION                         60000
     17.  DESIGN FLOW (100S OF GAL.)                 150000
     18.  TREATMENT UNITS
              PRELIMINARY                           PRE-AERATION, BAR SCREEN, GRIT CHAMBER
              PRIMARY
              INTERMEDIATE                          MODIFIED AERATION
              SECONDARY
              TERTIARY
              CHLORINATION                          POST CHLORINATION
              DISPOSAL OF LIQUIDS                   SHORE DISCHARGE TO SURFACE WATERS
     19.  SLUDGE HANDLING UNITS
              PRELIMINARY                           THICKENING
              DIGESTION                             ANAEROBIC DIGESTION(SEPARATE DIGESTERS
              DEWATERING                            DRYING BED
              DISPOSAL OF SLUDGE                    BURIAL- INCL. SANITARY LANDFILL
     20.  STREAM TYPE                               TIDAL
     21.  STREAM CLASS                              SPECIAL-A
     22.  RECEIVING WATER & MILE PT.**              LOWER NEW YORK BAY
     23.  PERIOD OF CHLORINATION                    CONTINUOUS
     24.  ADDITIONAL EFFLUENT LIMITS
     25.  OPERATING PERMIT ISSUED ON                10/ 1/54
     26.  OPERATING PERMIT EXPIRES ON
     27.  ACTUAL FLOW (MGD)                          16.000
     28.  BASES FOR FLOW                            METERED
     29.  ADEQUACY OF CHLORINATION                  ADEQUATE
     30.  HYDRAULIC OVERLOAD                        YES
     31.  METERING - SEWAGE FLOW

                 EFFLUENT        ------------- OPERATIONAL RESULTS -------------
              PERMIT LIMITS      INF.       EFFLUENT      PERCENT  VIOLA-  SAMPLES
              MG/L  LB/DAY       MG/L    MG/L   LB/DAY    REMOVAL   TION     BY

     B.O.D.                      108.     45.     6004     58.3             PLANT RECORD
     S.S.                        123.     43.0    5737     65.1             PLANT RECORD
     SET. S.*                    107.5    20.0             81.4             OTHER AGENCY
     P- TOTAL                      6.6     4.4     587     33.0             PLANT RECORD
     N- TOTAL                     19.40   15.30   2041     21.0             PLANT RECORD

     *  GIVEN IN ML/L
     ** MILE POINTS TO NEAREST TENTH
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                    1972 (FEB) MUNICIPAL S.T.W. INVENTORY

     1.  NAME OF LOCALITY                         NEW YORK C
     2.  COUNTY                                   N Y CITY  58
     3.  NAME OF PLANT                            OWLS HEAD
     4.  PLANT NO.                                 8
     5.  TYPE OF PLANT                            CITY
     6.  DRAINAGE BASIN                           ATLANTIC OCEAN - LONG ISLAND SOUND
     7.  ENVIRONMENTAL REGION                     N.Y. CITY-2
     8.  LOCAL HEALTH UNIT
     9.  COLLECTION SYSTEM TYPE                   COMBINED
    10.  SIGNIFICANT INDUSTRIAL WASTES            YES
    11.  PLANT GRADE                              4
    12.  CHIEF OPERATOR GRADE                     1
    13.  ASSISTANT OPERATOR                       2
    14.  YEAR PLANT CONSTRUCTED                   1952
    15.  YEAR LATEST MAJOR IMPROVEMENTS
    16.  TRIBUTARY POPULATION                      800000
    17.  DESIGN FLOW (100S OF GAL.)               1600000
    18.  TREATMENT UNITS
              PRELIMINARY                         PRE-AERATION, BAR SCREEN, GRIT CHAMBER
              PRIMARY
              INTERMEDIATE                        MODIFIED AERATION
              SECONDARY
              TERTIARY
              CHLORINATION                        POST CHLORINATION
              DISPOSAL OF LIQUIDS                 SHORE DISCHARGE TO SURFACE WATERS
    19.  SLUDGE HANDLING UNITS
              PRELIMINARY                         HOLDING
              DIGESTION                           ANAEROBIC DIGESTION(SEPARATE DIGESTERS
              DEWATERING
              DISPOSAL OF SLUDGE                  BARGE TO SEA
    20.  STREAM TYPE                              TIDAL
    21.  STREAM CLASS                             SPECIAL-A
    22.  RECEIVING WATER & MILE PT.**             UPPER NEW YORK BAY
    23.  PERIOD OF CHLORINATION                   SEASONAL
    24.  ADDITIONAL EFFLUENT LIMITS
    25.  OPERATING PERMIT ISSUED ON               10/ 6/48
    26.  OPERATING PERMIT EXPIRES ON
    27.  ACTUAL FLOW (MGD)                         96.300
    28.  BASES FOR FLOW                           METERED
    29.  ADEQUACY OF CHLORINATION                 INADEQUATE
    30.  HYDRAULIC OVERLOAD                       NO
    31.  METERING - SEWAGE FLOW

              EFFLUENT        ------------- OPERATIONAL RESULTS -------------
            PERMIT LIMITS    INF.      EFFLUENT     PERCENT  VIOLA-   SAMPLES
            MG/L  LB/DAY     MG/L    MG/L   LB/DAY  REMOVAL   TION      BY

    B.O.D.                   137.     62.    49794   54.7            PLANT RECORD
    S.S.                     132.     41.0   32928   69.0            PLANT RECORD
    SET. S.*                  83.     12.4           85.1            OTHER AGENCY
    P- TOTAL                  5.8     5.5     4417    5.0            PLANT RECORD
    N- TOTAL                 24.00   17.40   13974   27.0            PLANT RECORD

    *  GIVEN IN ML/L
    ** MILE POINTS TO NEAREST TENTH
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                 1972 (FEB) MUNICIPAL S.T.W. INVENTORY

  1. NAME OF LOCALITY                          NEW YORK C
  2. COUNTY                                    N Y CITY  58
  3. NAME OF PLANT                             NEWTOWN CREEK
  4. PLANT NO.                                  13
  5. TYPE OF PLANT                             CITY
  6. DRAINAGE BASIN                            ATLANTIC OC AN - LONG ISLAND SOUND
  7. ENVIRONMENTAL REGION                      N.Y. CITY-2
  8. LOCAL HEALTH UNIT
  9. COLLECTION SYSTEM TYPE                    COMBINED
 10. SIGNIFICANT INDUSTRIAL WASTES             YES
 11. PLANT GRADE                               A
 12. CHIEF OPERATOR GRADE                      1
 13. ASSISTANT OPERATOR                        2
 14. YEAR PLANT CONSTRUCTED                    1967
 15. YEAR LATEST MAJOR IMPROVEMENTS
 16. TRIBUTARY POPULATION                      1475000
 17. DESIGN FLOW (100S OF GAL.)                3100000
 18. TREATMENT UNITS
         PRELIMINARY                           BAR SCREEN   GRIT CHAMBER
         PRIMARY
         INTERMEDIATE                          MODIFIED AERATION
         SECONDARY
         TERTIARY
         CHLORINATION                          POST CHLORINATION
         DISPOSAL OF LIQUIDS                   SHORE DISCHARGE TO SURFACE WATERS
 19. SLUDGE HANDLING UNITS
         PRELIMINARY                           THICKENING & HOLDING
         DIGESTION                             ANAEROBIC DIGESTION(SEPARATE DIGESTERS
         DEWATERING
         DISPOSAL OF SLUDGE                    BARGE TO SEA
 20. STREAM TYPE                               TIDAL
 21. STREAM CLASS                              SPECIAL-A
 22. RECEIVING WATER & MILE PT.**              EAST RIVER
 23. PERIOD OF CHLORINATION                    SEASONAL
 24. ADDITIONAL EFFLUENT LIMITS
 25. OPERATING PERMIT ISSUED ON                 4/28/58
 26. OPERATING PERMIT EXPIRES ON
 27. ACTUAL FLOW (MGD)                         169.200
 28. BASES FOR FLOW                            PUMP OPERATION  TIME
 29. ADEQUACY OF CHLORINATION                  ADEQUATE
 30. HYDRAULIC OVERLOAD                        NO
 31. METERING - SEWAGE FLOW

               EFFLUENT       ------------- OPERATIONAL RESULTS -------------
             PERMIT LIMITS     INF.     EFFLUENT      PERCENT  VIOLA-   SAMPLES
             MG/L  LB/DAY      MG/L    MG/L  LB/DAY   REMOVAL   TION       BY

 B.O.D.                        201.    88.   124179   56.3            PLANT RECORD
 S.S.                          165.    66.0   93134   60.5            PLANT RECORD
 SET. S.*                       98.3   44.7           54.5            OTHER AGENCY
 P- TOTAL                        5.6    3.3    4656   41.3            PLANT RECORD
 N- TOTAL                       36.50  16.00  22578   56.3            PLANT RECORD

 *  GIVEN IN ML/L
 ** MILE POINTS TO NEAREST TENTH
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                       1972 (FEB) MUNICIPAL S.T.W. INVENTORY
      1.  NAME OF LOCALITY                          NEW YORK C
      2.  COUNTY                                    N Y CITY  58
      3.  NAME OF PLANT                             WARDS ISLAND
      4.  PLANT NO.                                   2
      5.  TYPE OF PLANT                             CITY
      6.  DRAINAGE BASIN                            ATLANTIC OCEAN - LONG ISLAND SOUND
      7.  ENVIRONMENTAL REGION                      N.Y. CITY-2
      8.  LOCAL HEALTH UNIT
      9.  COLLECTION SYSTEM TYPE                    COMBINED
     10.  SIGNIFICANT INDUSTRIAL WASTES             YES
     11.  PLANT GRADE                               A
     12.  CHIEF OPERATOR GRADE                      1
     13.  ASSISTANT OPERATOR                        2
     14.  YEAR PLANT CONSTRUCTED                    1937
     15.  YEAR LATEST MAJOR IMPROVEMENTS            1948
     16.  TRIBUTARY POPULATION                      1250000
     17.  DESIGN FLOW (100S OF GAL.)                1800000
     18.  TREATMENT UNITS
                PRELIMINARY                         PRE-AERATION, BAR SCREEN, GRIT CHAMBER
                PRIMARY                             SETTLING TANK- MECH. SLUDGE COLL.
                INTERMEDIATE
                SECONDARY                           ACTIVATED SLUDGE
                TERTIARY
                CHLORINATION
                DISPOSAL OF LIQUIDS                 SHORE DISCHARGE TO SURFACE  ATERS
     19.  SLUDGE HANDLING UNITS
                PRELIMINARY
                DIGESTION
                DEWATERING
                DISPOSAL OF SLUDGE                  BARGE TO SEA
     20.  STREAM TYPE                               TIDAL
     21.  STREAM CLASS                              SPECIAL-A
     22.  RECEIVING WATER & MILE PT.**              EAST RIVER
     23.  PERIOD OF CHLORINATION                    SEASONAL
     24.  ADDITIONAL EFFLUENT LIMITS
     25.  OPERATING PERMIT ISSUED ON                 5/ 5/37
     26.  OPERATING PERMIT EXPIRES ON
     27.  ACTUAL FLOW (MGD)                         258.000
     28.  BASES FOR FLOW                            PUMP OPERATION  TIME
     29.  ADEQUACY OF CHLORINATION
     30.  HYDRAULIC OVERLOAD                        YES
     31.  METERING - SEWAGE FLOW

                   EFFLUENT       ------------- OPERATIONAL RESULTS ------------
                 PERMIT LIMITS     INF.       EFFLUENT      PERCENT  VIOLA-  SAMPLES
                 MG/L  LB/DAY      MG/L    MG/L   LB/DAY   REMOVAL   TION      BY

    B.O.D.                         140.     31.    66703    77.9              PLANT RECORD
    S.S.                           153.     32.0   68855    79.0              PLANT RECORD
    SET. S.*                       116.3    15.0            87.1              OTHER AGENCY
    P- TOTAL                         4.0     3.0    6455    25.0              PLANT RECORD
    N- TOTAL                        16.70   11.40   24529   31.0              PLANT RECORD

    *  GIVEN IN ML/L
    ** MILE POINTS TO NEAREST TENTH
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                    1972 (FEB) MUNICIPAL S.T.M. INVENTORY
       1.  NAME OF LOCALITY                      NEW YORK C
       2.  COUNTY                                N Y CITY  58
       3.  NAME OF PLANT                         BOWERY BAY
       4.  PLANT NO.                              4
       5.  TYPE OF PLANT                         CITY
       6.  DRAINAGE BASIN                        ATLANTIC OCEAN - LONG ISLAND SOUND
       7.  ENVIRONMENTAL REGION                  N.Y. CITY-2
       8.  LOCAL HEALTH UNIT
       9.  COLLECTION SYSTEM TYPE                COMBINED
      10.  SIGNIFICANT INDUSTRIAL WASTES         YES
      11.  PLANT GRADE                           A
      12.  CHIEF OPERATOR GRADE                  1
      13.  ASSISTANT OPERATOR                    2
      14.  YEAR PLANT CONSTRUCTED                1939
      15.  YEAR LATEST MAJOR IMPROVEMENTS        1958
      16.  TRIBUTARY POPULATION                   637000
      17.  DESIGN FLOW (100S OF GAL.)            1200000
      18.  TREATMENT UNITS
               PRELIMINARY                       PRE-AERATION, BAR SCREEN, GRIT CHAMBER
               PRIMARY                           SETTLING TANK- MECH. SLUDGE COLL.
               INTERMEDIATE
               SECONDARY                         ACTIVATED SLUDGE
               TERTIARY
               CHLORINATION
               DISPOSAL OF LIQUIDS               SHORE DISCHARGE TO SURFACE  ATERS
      19.  SLUDGE HANDLING UNITS
               PRELIMINARY                       THICKENING : HOLDING
               DIGESTION                         ANAEROBIC DIGESTION(SEPARATE DIGESTERS
               DEWATERING
               DISPOSAL OF SLUDGE                BARGE TO SEA
      20.  STREAM TYPE                           TIDAL
      21.  STREAM CLASS                          SPECIAL-A
      22.  RECEIVING WATER & MILE PT.**          EAST RIVER
      23.  PERIOD OF CHLORINATION                SEASONAL
      24.  ADDITIONAL EFFLUENT LIMITS
      25.  OPERATING PERMIT ISSUED ON
      26.  OPERATING PERMIT EXPIRES ON
      27.  ACTUAL FLOW (MGD)                     103.900
      28.  BASES FOR FLOW                        PUMP OPERATION  TIME
      29.  ADEQUACY OF CHLORINATION              INADEQUATE
      30.  HYDRAULIC OVERLOAD                    NO
      31.  METERING - SEWAGE FLOW

                EFFLUENT      ------------- OPERATIONAL RESULTS -------------
              PERMIT LIMITS    INF.      EFFLUENT     PERCENT  VIOLA-   SAMPLES
              MG/L  LB/DAY     MG/L    MG/L  LB/DAY   REMOVAL   TION       BY

      B.O.D.                   148.     34.   46792    63.5             PLANT RECORD.
      S.S.                     187.     65.0  56324    65.3             PLANT RECORD
      SET. S.*                  81.     22.3           72.5             OTHER AGENCY
      P- TOTAL                  6.3      5.8   5025     7.0             PLANT RECORD
      N- TOTAL                 24.30    22.10  19150    9.0             PLANT RECORD

      *  GIVEN IN ML/L
      ** MILE POINTS TO NEAREST TENTH
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                    1972 (FEB) MUNICIPAL S.T.W. INVENTORY

        1.  NAME OF LOCALITY                          NEW YORK C
        2.  COUNTY                                    N Y CITY  58
        3.  NAME OF PLANT                             HUNTS POINT
        4.  PLANT NO.                                   9
        5.  TYPE OF PLANT                             CITY
        6.  DRAINAGE BASIN                            ATLANTIC OCEAN - LONG ISLAND SOUND
        7.  ENVIRONMENTAL REGION                      N.Y. CITY-2
        8.  LOCAL HEALTH UNIT
        9.  COLLECTION SYSTEM TYPE                    COMBINED
       10.  SIGNIFICANT INDUSTRIAL WASTES             YES
       11.  PLANT GRADE                               A
       12.  CHIEF OPERATOR GRADE                      1
       13.  ASSISTANT OPERATOR                        2
       14.  YEAR PLANT CONSTRUCTED                    1952
       15.  YEAR LATEST MAJOR IMPROVEMENTS            1964
       16.  TRIBUTARY POPULATION                      703000
       17.  DESIGN FLOW (100S OF GAL.)                1500000
       18.  TREATMENT UNITS
                PRELIMINARY                           PRE-AERATION, BAR SCREEN, GRIT CHAMBER
                PRIMARY                               SETTLING TANK- MECH. SLUDGE COLL.
                INTERMEDIATE
                SECONDARY                             ACTIVATED SLUDGE
                TERTIARY
                CHLORINATION
                DISPOSAL OF LIQUIDS                   SHORE DISCHARGE TO SURFACE  ATERS
       19.  SLUDGE HANDLING UNITS
                PRELIMINARY                           THICKENING , HOLDING
                DIGESTION                             ANAEROBIC DIGESTION(IMHOFF
                DEWATERING
                DISPOSAL OF SLUDGE                    BARGE TO SEA
       20.  STREAM TYPE                               TIDAL
       21.  STREAM CLASS                              SPECIAL-A
       22.  RECEIVING WATER & MILE PT.**              EAST RIVER
       23.  PERIOD OF CHLORINATION                    SEASONAL
       24.  ADDITIONAL EFFLUENT LIMITS
       25.  OPERATING PERMIT ISSUED ON                10/24/60
       26.  OPERATING PERMIT EXPIRES ON
       27.  ACTUAL FLOW (MGD)                         145.400
       28.  BASES FOR FLOW                            METERED
       29.  ADEQUACY OF CHLORINATION                  INADEQUATE
       30.  HYDRAULIC OVERLOAD                        NO
       31.  METERING - SEWAGE FLOW

                  EFFLUENT        ------------- OPERATIONAL RESULTS -------------
                PERMIT LIMITS     INF.     EFFLUENT      PERCENT  VIOLA-  SAMPLES
                MG/L  LB/DAY      MG/L   MG/L  LB/DAY    REMOVAL   TION      BY

       B.O.D.                     127.    29.    35166    77.2            PLANT RECORD
       S.S.                       137.    41.0   49718    70.1            PLANT RECORD
       SET. S.*                    70.    10.5            85.0            OTHER AGENCY
       P- TOTAL                    4.6     3.7    4486    19.0            PLANT RECORD
       N- TOTAL                   16.60   13.10   15885   21.0            PLANT RECORD

       *  GIVEN IN ML/L
       ** MILE POINTS TO NEAREST TENTH
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                    1972 (FEB) MUNICIPAL S.T.W. INVENTORY

      1.  NAME OF LOCALITY                           NEW YORK C
      2.  COUNTY                                     N Y CITY  58
      3.  NAME OF PLANT                              TALLMANS ISL
      4.  PLANT NO.                                    3
      5.  TYPE OF PLANT                              CITY
      6.  DRAINAGE BASIN                             ATLANTIC OCEAN - LONG ISLAND SOUND
      7.  ENVIRONMENTAL REGION                       N.Y. CITY-2
      8.  LOCAL HEALTH UNIT
      9.  COLLECTION SYSTEM TYPE                     COMBINED
     10.  SIGNIFICANT INDUSTRIAL WASTES              YES
     11.  PLANT GRADE                                A
     12.  CHIEF OPERATOR GRADE                       1
     13.  ASSISTANT OPERATOR                         2
     14.  YEAR PLANT CONSTRUCTED                     1939
     15.  YEAR LATEST MAJOR IMPROVEMENTS             1965
     16.  TRIBUTARY POPULATION                        390000
     17.  DESIGN FLOW (100S OF GAL.)                  600000
     18.  TREATMENT UNITS
              PRELIMINARY                            BAR SCREEN, COMMINUTOR, & GRIT CHAMBER
              PRIMARY                                SETTLING TANK- MECH. SLUDGE COLL.
              INTERMEDIATE
              SECONDARY                              ACTIVATED SLUDGE
              TERTIARY
              CHLORINATION                           POST CHLORINATION
              DISPOSAL OF LIQUIDS                    SHORE DISCHARGE TO SURFACE WATERS
     19.  SLUDGE HANDLING UNITS
              PRELIMINARY
              DIGESTION                              ANAEROBIC DIGESTION/SEPARATE DIGESTERS
              DEWATERING
              DISPOSAL OF SLUDGE                     BARGE TO SEA
     20.  STREAM TYPE                                TIDAL
     21.  STREAM CLASS                               SPECIAL-A
     22.  RECEIVING WATER & MILE PT.**               EAST RIVER
     23.  PERIOD OF CHLORINATION                     SEASONAL
     24.  ADDITIONAL EFFLUENT LIMITS
     25.  OPERATING PERMIT ISSUED ON
     26.  OPERATING PERMIT EXPIRES ON
     27.  ACTUAL FLOW (MGD)                           58.000
     28.  BASES FOR FLOW                             PUMP OPERATION  TIME
     29.  ADEQUACY OF CHLORINATION                   ADEQUATE
     30.  HYDRAULIC OVERLOAD                         NO
     31.  METERING - SEWAGE FLOW

              EFFLUENT        -------------- OPERATIONAL RESULTS --------------
            PERMIT LIMITS     INF.      EFFLUENT     PERCENT  VIOLA-  SAMPLES
            MG/L  LB/DAY      MG/L    MG/L  LB/DAY   REMOVAL   TION     BY

     B.O.D.                   138.     18.    8706    87.0             PLANT RECORD
     S.S.                     164.     23.0  11125    86.0             PLANT RECORD
     SET. S.*                  69.8     3.8           94.6             OTHER AGENCY
     P- TOTAL                   6.7     5.8   2805    13.0             PLANT RECORD
     N- TOTAL                  24.70   19.70  9529    20.0             PLANT RECORD

     *  GIVEN IN ML/L
     ** MILE POINTS TO NEAREST TENTH
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                    1972  (FEB) MUNICIPAL S.T.W. INVENTORY

     1.  NAME OF LOCALITY                          P CHESTR V
     2.  COUNTY                                    WESTCHSTR 55
     3.  NAME OF PLANT                             PORT CHESTER
     4.  PLANT NO.                                  15
     5.  TYPE OF PLANT                             VILLAGE
     6.  DRAINAGE BASIN                            ATLANTIC OCEAN - LONG ISLAND SOUND
     7.  ENVIRONMENTAL REGION                      NEW PALTZ-3
     8.  LOCAL HEALTH UNIT                         WESTCHESTER COUNTY
     9.  COLLECTION SYSTEM TYPE                    SEPARATE & COMBINED
    10.  SIGNIFICANT INDUSTRIAL WASTES             YES
    11.  PLANT GRADE                               B
    12.  CHIEF OPERATOR GRADE                      2
    13.  ASSISTANT OPERATOR                        3
    14.  YEAR PLANT CONSTRUCTED                    1964
    15.  YEAR LATEST MAJOR IMPROVEMENTS
    16.  TRIBUTARY POPULATION                        23000
    17.  DESIGN FLOW (100S OF GAL.)                  50000
    18.  TREATMENT UNITS
             PRELIMINARY                           BAR SCREEN, COMMINUTOR, & GRIT CHAMBER
             PRIMARY                               SETTLING TANK - MECH. SLUDGE COLL.
             INTERMEDIATE
             SECONDARY
             TERTIARY
             CHLORINATION                          BOTH PRE & POST CHLORINATION
             DISPOSAL OF LIQUIDS                   SHORE DISCHARGE TO SURFACE WATERS
    19.  SLUDGE HANDLING UNITS
             PRELIMINARY                           THICKENING
             DIGESTION
             DEWATERING
             DISPOSAL OF SLUDGE                    TO ANOTHER S.T.W.
    20.  STREAM TYPE                               TIDAL
    21.  STREAM CLASS                              C
    22.  RECEIVING WATER & MILE PT.**              BYRAM RIVER            04
    23.  PERIOD OF CHLORINATION                    SEASONAL
    24.  ADDITIONAL EFFLUENT LIMITS
    25.  OPERATING PERMIT ISSUED ON                 9/29/59
    26.  OPERATING PERMIT EXPIRES ON
    27.  ACTUAL FLOW (MGD)                           4.400
    28.  BASES FOR FLOW                            METERED
    29.  ADEQUACY OF CHLORINATION                  ADEQUATE
    30.  HYDRAULIC OVERLOAD                        NO
    31.  METERING - SEWAGE FLOW

                EFFLUENT        ------------- OPERATIONAL RESULTS -------------
              PERMIT LIMITS     INF.      EFFLUENT      PERCENT   VIOLA-   SAMPLES
              MG/L  LB/DAY      MG/L    MG/L   LB/DAY   REMOVAL   TION       BY

    B.O.D.                      725.    176.     6458    75.7              PLANT RECORD
    S.S.                        230.    100.     3669    56.5              PLANT RECORD
    SET. S.*                     10.0     0.2            98.0              PLANT RECORD
    P- TOTAL
    N- TOTAL

    *  GIVEN IN ML/L
    ** MILE POINTS TO NEAREST TENTH
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                    1972 (FEB) MUNICIPAL S.T.W. INVENTORY

      1.  NAME OF LOCALITY                              RYE      C
      2.  COUNTY                                        WESTCHSTR 55
      3.  NAME OF PLANT                                 BLIND BRK STW
      4.  PLANT NO.                                      21
      5.  TYPE OF PLANT                                 COUNTY DISTRICT OR OWNERSHIP
      6.  DRAINAGE BASIN                                ATLANTIC OCEAN - LONG ISLAND SOUND
      7.  ENVIRONMENTAL REGION                          NEW PALTZ-3
      8.  LOCAL HEALTH UNIT                             WESTCHESTER COUNTY
      9.  COLLECTION SYSTEM TYPE                        SEPARATE & COMBINED
     10.  SIGNIFICANT INDUSTRIAL WASTES                 NO
     11.  PLANT GRADE                                   B
     12.  CHIEF OPERATOR GRADE                          2
     13.  ASSISTANT OPERATOR                            3
     14.  YEAR PLANT CONSTRUCTED                        1963
     15.  YEAR LATEST MAJOR IMPROVEMENTS
     16.  TRIBUTARY POPULATION                            10000
     17.  DESIGN FLOW (100S OF GAL.)                      50000
     18.  TREATMENT UNITS
              PRELIMINARY                               BAR SCREEN, COMMINUTOR, & GRIT CHAMBER
              PRIMARY                                   SETTLING TANK- MECH. SLUDGE COLL.
              INTERMEDIATE
              SECONDARY
              TERTIARY
              CHLORINATION                              BOTH PRE & POST CHLORINATION
              DISPOSAL OF LIQUIDS                       SHORE DISCHARGE TO SURFACE WATERS
     19.  SLUDGE HANDLING UNITS
              PRELIMINARY                               HOLDING
              DIGESTION                                 WET OXIDATION(ZIMMERMAN, ETC.
              DEWATERING                                MECH. DEWATERING- VAC. FILTRATION
              DISPOSAL OF SLUDGE                        BURIAL/TO PUBLIC AS SOIL CONDITIONER
     20.  STREAM TYPE                                   TIDAL
     21.  STREAM CLASS                                  B
     22.  RECEIVING WATER & MILE PT.**                  LONG ISLAND SOUND
     23.  PERIOD OF CHLORINATION                        SEASONAL
     24.  ADDITIONAL EFFLUENT LIMITS
     25.  OPERATING PERMIT ISSUED ON
     26.  OPERATING PERMIT EXPIRES ON
     27.  ACTUAL FLOW (MGD)                               1.900
     28.  BASES FOR FLOW                                METERED
     29.  ADEQUACY OF CHLORINATION                      ADEQUATE
     30.  HYDRAULIC OVERLOAD                            NO
     31.  METERING - SEWAGE FLOW

              EFFLUENT      ------------- OPERATIONAL RESULTS -------------
           PERMIT LIMITS    INF.      EFFLUENT      PERCENT  VIOLA-   SAMPLES
           MG/L  LB/DAY     MG/L    MG/L  LB/DAY    REMOVAL   TION       BY

     B.O.D.                  86.     70.    1109     18.6             PLANT RECORD
     S.S.                   136.     46.0    728     66.2             PLANT RECORD
     SET. S.*                                        89.6             OTHER AGENCY
     P- TOTAL
     N- TOTAL

     *  GIVEN IN ML/L
     ** MILE POINTS TO NEAREST TENTH
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1972 (FEB) MUNICIPAL S.T.W. INVENTORY

1. NAME OF LOCALITY	MANRONCK V
2. COUNTY	WESTCHSTR 55
3. NAME OF PLANT	MAMARONECK ST
4. PLANT NO.	20
5. TYPE OF PLANT	COUNTY DISTRICT OR OWNERSHIP
6. DRAINAGE BASIN	ATLANTIC OCEAN - LONG ISLAND SOUND
7. ENVIRONMENTAL REGION	NEW PALTZ-3
8. LOCAL HEALTH UNIT	WESTCHESTER COUNTY
9. COLLECTION SYSTEM TYPE	SEPARATE & COMBINED
10. SIGNIFICANT INDUSTRIAL WASTES	NO
11. PLANT GRADE	C
12. CHIEF OPERATOR GRADE	1
13. ASSISTANT OPERATOR	2
14. YEAR PLANT CONSTRUCTED	1965
15. YEAR LATEST MAJOR IMPROVEMENTS	
16. TRIBUTARY POPULATION	80000
17. DESIGN FLOW (100S OF GAL.)	180000
18. TREATMENT UNITS	
PRELIMINARY	BAR SCREEN, COMMINUTOR, & GRIT CHAMBER
PRIMARY	SETTLING TANK- MECH, SLUDGE COLL.
INTERMEDIATE	
SECONDARY	
TERTIARY	
CHLORINATION	BOTH PRE & POST CHLORINATION
DISPOSAL OF LIQUIDS	SHORE DISCHARGE TO SURFACE WATERS
19. SLUDGE HANDLING UNITS	
PRELIMINARY	
DIGESTION	
DEWATERING	
DISPOSAL OF SLUDGE	TO ANOTHER S.T.W.
20. STREAM TYPE	TIDAL
21. STREAM CLASS	B
22. RECEIVING WATER & MILE PT.**	LONG ISLAND SOUND
23. PERIOD OF CHLORINATION	CONTINUOUS
24. ADDITIONAL EFFLUENT LIMITS	
25. OPERATING PERMIT ISSUED ON	6/27/63
26. OPERATING PERMIT EXPIRES ON	
27. ACTUAL FLOW (MGD)	16.900
28. BASES FOR FLOW	METERED
29. ADEQUACY OF CHLORINATION	ADEQUATE
30. HYDRAULIC OVERLOAD	NO
31. METERING - SEWAGE FLOW	

	EFFLUENT PERMIT LIMITS MG/L	EFFLUENT PERMIT LIMITS LB/DAY	OPERATIONAL RESULTS INF. MG/L	EFFLUENT MG/L	EFFLUENT LB/DAY	PERCENT REMOVAL	VIOLATION	SAMPLES BY
B.O.D.			133.	87.	12262	34.6		PLANT RECORD
S.S.			135.	44.0	6201	67.5		PLANT RECORD
SET. S.*								
P- TOTAL								
N- TOTAL			15.12	13.88	1956	8.2		ENVIR. CONS.

* GIVEN IN ML/L

** MILE POINTS TO NEAREST TENTH

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                    1972 (FEB) MUNICIPAL S.T.W. INVENTORY

 1. NAME OF LOCALITY                        N ROCHEL C
 2. COUNTY                                  WESTCHSTR 55
 3. NAME OF PLANT                           N ROCHELE ST.
 4. PLANT NO.                                1
 5. TYPE OF PLANT                           COUNTY DISTRICT OR OWNERSHIP
 6. DRAINAGE BASIN                          ATLANTIC OCEAN - LONG ISLAND SOUND
 7. ENVIRONMENTAL REGION                    NEW PALTZ-3
 8. LOCAL HEALTH UNIT                       NEW ROCHELLE CITY
 9. COLLECTION SYSTEM TYPE                  SEPARATE
10. SIGNIFICANT INDUSTRIAL WASTES           NO
11. PLANT GRADE                             B
12. CHIEF OPERATOR GRADE                    1
13. ASSISTANT OPERATOR                      2
14. YEAR PLANT CONSTRUCTED                  1955
15. YEAR LATEST MAJOR IMPROVEMENTS          1964
16. TRIBUTARY POPULATION                     64500
17. DESIGN FLOW (100S OF GAL.)               150000
18. TREATMENT UNITS
        PRELIMINARY                         BAR SCREEN, COMMINUTOR, & GRIT CHAMBER
        PRIMARY                             SETTLING TANK- MECH. SLUDGE COLL.
        INTERMEDIATE
        SECONDARY
        TERTIARY
        CHLORINATION                        BOTH PRE & POST CHLORINATION
        DISPOSAL OF LIQUIDS                 SHORE DISCHARGE TO SURFACE WATERS
19. SLUDGE HANDLING UNITS
        PRELIMINARY
        DIGESTION                           ANAEROBIC DIGESTION-SEPARATE DIGESTERS
        DEWATERING                          MECH. DEWATERING- VAC. FILTRATION
        DISPOSAL OF SLUDGE                  INCINERATION
20. STREAM TYPE                             TIDAL
21. STREAM CLASS                            B
22. RECEIVING WATER & MILE PT.**            LONG ISLAND SOUND
23. PERIOD OF CHLORINATION                  SEASONAL
24. ADDITIONAL EFFLUENT LIMITS
25. OPERATING PERMIT ISSUED ON               2/17/64
26. OPERATING PERMIT EXPIRES ON
27. ACTUAL FLOW (MGD)                        11.500
28. BASES FOR FLOW                          METERED
29. ADEQUACY OF CHLORINATION                ADEQUATE
30. HYDRAULIC OVERLOAD                      NO
31. METERING - SEWAGE FLOW

             EFFLUENT        -------------- OPERATIONAL RESULTS -------------
           PERMIT LIMITS     INF.     EFFLUENT      PERCENT  VIOLA-  SAMPLES
           MG/L  LB/DAY      MG/L   MG/L   LB/DAY   REMOVAL   TION      BY

B.O.D.                       110.   88.     8440     20.0             PLANT RECORD
S.S.                         111.   60.0    5754     46.0             PLANT RECORD
SET. S.*                                             86.0             OTHER AGENCY
P- TOTAL
N- TOTAL

*  GIVEN IN ML/L
** MILE POINTS TO NEAREST TENTH
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                     1972  (FEB) MUNICIPAL S.T.W. INVENTORY

          1.  NAME OF LOCALITY                           NEW YORK C
          2.  COUNTY                                     N Y CITY  58
          3.  NAME OF PLANT                              HART ISLAND
          4.  PLANT NO.                                    5
          5.  TYPE OF PLANT                              CITY
          6.  DRAINAGE BASIN                             ATLANTIC OCEAN - LONG ISLAND SOUND
          7.  ENVIRONMENTAL REGION                       N.Y. CITY-2
          8.  LOCAL HEALTH UNIT
          9.  COLLECTION SYSTEM TYPE                     COMBINED
         10.  SIGNIFICANT INDUSTRIAL WASTES              YES
         11.  PLANT GRADE                                B
         12.  CHIEF OPERATOR GRADE                       3
         13.  ASSISTANT OPERATOR                         3
         14.  YEAR PLANT CONSTRUCTED                     1942
         15.  YEAR LATEST MAJOR IMPROVEMENTS
         16.  TRIBUTARY POPULATION                          6000
         17.  DESIGN FLOW (100S OF GAL.)                   15000
         18.  TREATMENT UNITS
                   PRELIMINARY
                   PRIMARY                               PLAIN SETTLING TANK
                   INTERMEDIATE
                   SECONDARY
                   TERTIARY
                   CHLORINATION                          POST CHLORINATION
                   DISPOSAL OF LIQUIDS                   SHORE DISCHARGE TO SURFACE WATERS
         19.  SLUDGE HANDLING UNITS
                   PRELIMINARY
                   DIGESTION                             ANAEROBIC DIGESTION/SEPARATE DIGESTERS
                   DEWATERING                            DRYING BED
                   DISPOSAL OF SLUDGE                    BURIAL- INCL. SANITARY LANDFILL
         20.  STREAM TYPE                                TIDAL
         21.  STREAM CLASS                               SPECIAL-A
         22.  RECEIVING WATER & MILE PT.**               LONG ISLAND SOUND
         23.  PERIOD OF CHLORINATION                     SEASONAL
         24.  ADDITIONAL EFFLUENT LIMITS
         25.  OPERATING PERMIT ISSUED ON
         26.  OPERATING PERMIT EXPIRES ON
         27.  ACTUAL FLOW (MGD)                            1.000
         28.  BASES FOR FLOW                             OTHER
         29.  ADEQUACY OF CHLORINATION                   ADEQUATE
         30.  HYDRAULIC OVERLOAD                         NO
         31.  METERING - SEWAGE FLOW

                    EFFLUENT        -------------- OPERATIONAL RESULTS -------------
                  PERMIT LIMITS     INF.      EFFLUENT      PERCENT   VIOLA-   SAMPLES
                  MG/L  LB/DAY      MG/L    MG/L  LB/DAY    REMOVAL    TION       BY

         B.O.D.                     110.     62.    517     43.6              PLANT RECORD
         S.S.                       115.     68.0   567     40.9              PLANT RECORD
         SET. S.*                    58.     16.0           72.4              OTHER AGENCY
         P- TOTAL
         N- TOTAL

         *  GIVEN IN ML/L
         ** MILE POINTS TO NEAREST TENTH
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                         1972  (FEB) MUNICIPAL S.T.W. INVENTORY

        1.  NAME OF LOCALITY                         N HEMPST T
        2.  COUNTY                                   NASSAU    28
        3.  NAME OF PLANT                            BELGRAVE  S D
        4.  PLANT NO.                                11
        5.  TYPE OF PLANT                            TOWN DISTRICT
        6.  DRAINAGE BASIN                           ATLANTIC OCEAN - LONG ISLAND SOUND
        7.  ENVIRONMENTAL REGION                     RONKONKOMA-1
        8.  LOCAL HEALTH UNIT                        NASSAU COUNTY
        9.  COLLECTION SYSTEM TYPE                   SEPARATE
       10.  SIGNIFICANT INDUSTRIAL WASTES            NO
       11.  PLANT GRADE                              B
       12.  CHIEF OPERATOR GRADE                     3
       13.  ASSISTANT OPERATOR                       3
       14.  YEAR PLANT CONSTRUCTED                   1928
       15.  YEAR LATEST MAJOR IMPROVEMENTS           1965
       16.  TRIBUTARY POPULATION                       15000
       17.  DESIGN FLOW (100S OF GAL.)                 20000
       18.  TREATMENT UNITS
                PRELIMINARY                          COMMINUTOR / GRIT CHAMBER
                PRIMARY                              SETTLING TANK- MECH. SLUDGE COLL.
                INTERMEDIATE
                SECONDARY                            HIGH RATE TRICKLING FILTER
                TERTIARY
                CHLORINATION                         POST CHLORINATION
                DISPOSAL OF LIQUIDS                  SHORE DISCHARGE TO SURFACE WATERS
       19.  SLUDGE HANDLING UNITS
                PRELIMINARY
                DIGESTION                            ANAEROBIC DIGESTION-SEPARATE DIGESTERS
                DEWATERING
                DISPOSAL OF SLUDGE                   TO ANOTHER S.T.W.
       20.  STREAM TYPE                              TIDAL
       21.  STREAM CLASS                             B
       22.  RECEIVING WATER & MILE PT.**             LITTLE NECK BAY
       23.  PERIOD OF CHLORINATION                   CONTINUOUS
       24.  ADDITIONAL EFFLUENT LIMITS
       25.  OPERATING PERMIT ISSUED ON
       26.  OPERATING PERMIT EXPIRES ON
       27.  ACTUAL FLOW (MGD)                         1.340
       28.  BASES FOR FLOW                           METERED
       29.  ADEQUACY OF CHLORINATION                 ADEQUATE
       30.  HYDRAULIC OVERLOAD                       NO
       31.  METERING - SEWAGE FLOW

                  EFFLUENT       -------------- OPERATIONAL RESULTS --------------
                PERMIT LIMITS     INF.       EFFLUENT      PERCENT  VIOLA-   SAMPLES
                MG/L  LB/DAY      MG/L    MG/L   LB/DAY   REMOVAL   TION       BY

        B.O.D.                    264.     41.      458    84.4             PLANT RECORD
        S.S.                      189.     22.6     252    87.8             PLANT RECORD
        SET. S.*                    7.2     0.1            99.9             PLANT RECORD
        P- TOTAL                   11.5     4.7      52    59.0             ENVIR. CONS.
        N- TOTAL                   31.16   27.48    307    11.0             ENVIR. CONS.

        *  GIVEN IN ML/L
        ** MILE POINTS TO NEAREST TENTH
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1972 (FEB) MUNICIPAL S.T.W. INVENTORY

1.	NAME OF LOCALITY	GREAT NK V
2.	COUNTY	NASSAU 28
3.	NAME OF PLANT	GREAT NECK V
4.	PLANT NO.	10
5.	TYPE OF PLANT	VILLAGE
6.	DRAINAGE BASIN	ATLANTIC OC AN - LONG ISLAND SOUND
7.	ENVIRONMENTAL REGION	RONKONKOMA-1
8.	LOCAL HEALTH UNIT	NASSAU COUNTY
9.	COLLECTION SYSTEM TYPE	SEPARATE
10.	SIGNIFICANT INDUSTRIAL WASTES	NO
11.	PLANT GRADE	B
12.	CHIEF OPERATOR GRADE	3
13.	ASSISTANT OPERATOR	3
14.	YEAR PLANT CONSTRUCTED	1933
15.	YEAR LATEST MAJOR IMPROVEMENTS	1968
16.	TRIBUTARY POPULATION	9083
17.	DESIGN FLOW (100S OF GAL.)	15000
18.	TREATMENT UNITS	
	PRELIMINARY	BAR SCREEN, COMMINUTOR, & GRIT CHAMBER
	PRIMARY	SETTLING TANK- MECH. SLUDGE COLL.
	INTERMEDIATE	
	SECONDARY	HIGH RATE TRICKLING FILTER
	TERTIARY	
	CHLORINATION	BOTH PRE & POST CHLORINATION
	DISPOSAL OF LIQUIDS	SHORE DISCHARGE TO SURFACE ATERS
19.	SLUDGE HANDLING UNITS	
	PRELIMINARY	
	DIGESTION	ANAEROBIC DIGESTION-SEPARATE DIGESTERS
	DEWATERING	MECH. DEWATERING- VAC. FILTRATION
	DISPOSAL OF SLUDGE	BURIAL- INCL. SANITARY LANDFILL
20.	STREAM TYPE	TIDAL
21.	STREAM CLASS	B
22.	RECEIVING WATER & MILE PT.**	MANHASSET BA-
23.	PERIOD OF CHLORINATION	CONTINUOUS
24.	ADDITIONAL EFFLUENT LIMITS	
25.	OPERATING PERMIT ISSUED ON	6/ 6/67
26.	OPERATING PERMIT EXPIRES ON	6/ 6/72
27.	ACTUAL FLOW (MGD)	.991
28.	BASES FOR FLOW	METERED
29.	ADEQUACY OF CHLORINATION	ADEQUATE
30.	HYDRAULIC OVERLOAD	NO
31.	METERING - SEWAGE FLOW	

	EFFLUENT PERMIT LIMITS		------------- OPERATIONAL RESULTS -------------					
			INF.	EFFLUENT		PERCENT	VIOLA-TION	SAMPLES BY
	MG/L	LB/DAY	MG/L	MG/L	LB/DAY	REMOVAL		
B.O.D.			254.	30.	247	88.3		PLANT RECORD
S.S.			200.	22.7	167	88.7		PLANT RECORD
SET. S.*			9.5	0.1		99.0		PLANT RECORD
P- TOTAL			10.1	8.5	70	15.0		ENVIR. CONS.
N- TOTAL			58.50	39.49	326	32.0		ENVIR. CONS.

* GIVEN IN ML/L

** MILE POINTS TO NEAREST TENTH

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                        1972  (FEB) MUNICIPAL S.T.W. INVENTORY

         1.  NAME OF LOCALITY                             N HEMSTD T
         2.  COUNTY                                       NASSAU    28
         3.  NAME OF PLANT                                GREAT NK SDSR
         4.  PLANT NO.                                     17
         5.  TYPE OF PLANT                                TOWN DISTRICT
         6.  DRAINAGE BASIN                               ATLANTIC OCEAN - LONG ISLAND SOUND
         7.  ENVIRONMENTAL REGION                         RONKONKOMA-1
         8.  LOCAL HEALTH UNIT                            NASSAU COUNTY
         9.  COLLECTION SYSTEM TYPE                       SEPARATE
        10.  SIGNIFICANT INDUSTRIAL WASTES                NO
        11.  PLANT GRADE                                  B
        12.  CHIEF OPERATOR GRADE                         2
        13.  ASSISTANT OPERATOR                           3
        14.  YEAR PLANT CONSTRUCTED                       1962
        15.  YEAR LATEST MAJOR IMPROVEMENTS               1967
        16.  TRIBUTARY POPULATION                           10000
        17.  DESIGN FLOW (100S OF GAL.)                     27000
        18.  TREATMENT UNITS
                 PRELIMINARY                              BAR SCREEN, COMMINUTOR, & GRIT CHAMBER
                 PRIMARY                                  SETTLING TANK- MECH. SLUDGE COLL.
                 INTERMEDIATE
                 SECONDARY                                HIGH RATE TRICKLING FILTER
                 TERTIARY
                 CHLORINATION                             POST CHLORINATION
                 DISPOSAL OF LIQUIDS                      SHORE DISCHARGE TO SURFACE  ATERS
        19.  SLUDGE HANDLING UNITS
                 PRELIMINARY
                 DIGESTION                                ANAEROBIC DIGESTION/SEPARATE DIGESTERS
                 DEWATERING                               MECH. DEWATERING- VAC. FILTRATION
                 DISPOSAL OF SLUDGE                       BURIAL- INCL. SANITARY LANDFILL
        20.  STREAM TYPE                                  TIDAL
        21.  STREAM CLASS                                 B
        22.  RECEIVING WATER & MILE PT.**                 MANHASSET BAY
        23.  PERIOD OF CHLORINATION                       CONTINUOUS
        24.  ADDITIONAL EFFLUENT LIMITS
        25.  OPERATING PERMIT ISSUED ON
        26.  OPERATING PERMIT EXPIRES ON
        27.  ACTUAL FLOW (MGD)                              2.560
        28.  BASES FOR FLOW                               METERED
        29.  ADEQUACY OF CHLORINATION                     ADEQUATE
        30.  HYDRAULIC OVERLOAD                           NO
        31.  METERING - SEWAGE FLOW

                     EFFLUENT        ------------- OPERATIONAL RESULTS -------------
                   PERMIT LIMITS     INF.       EFFLUENT      PERCENT  VIOLA-   SAMPLES
                   MG/L  LB/DAY      MG/L     MG/L  LB/DAY   REMOVAL   TION       BY

        B.O.D.                       238.      39.     832    83.6              PLANT RECORD
        S.S.                         164.      25.0    533    84.8              PLANT RECORD
        SET. S.*                       3.8      0.1           97.4              PLANT RECORD
        P- TOTAL                       3.6      4.7    100     0.0              ENVIR. CONS.
        N- TOTAL                     36.41    27.00    576    25.0              ENVIR. CONS.

        *  GIVEN IN ML/L
        ** MILE POINTS TO NEAREST TENTH
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1972 (FEB) MUNICIPAL S.T.W. INVENTORY

1.	NAME OF LOCALITY	N HEMSTD T
2.	COUNTY	NASSAU 28
3.	NAME OF PLANT	PT WASHGTN SD
4.	PLANT NO.	15
5.	TYPE OF PLANT	TOWN DISTRICT
6.	DRAINAGE BASIN	ATLANTIC OCEAN - LONG ISLAND SOUND
7.	ENVIRONMENTAL REGION	RONKONKOMA-1
8.	LOCAL HEALTH UNIT	NASSAU COUNTY
9.	COLLECTION SYSTEM TYPE	SEPARATE
10.	SIGNIFICANT INDUSTRIAL WASTES	NO
11.	PLANT GRADE	B
12.	CHIEF OPERATOR GRADE	2
13.	ASSISTANT OPERATOR	3
14.	YEAR PLANT CONSTRUCTED	1951
15.	YEAR LATEST MAJOR IMPROVEMENTS	1968
16.	TRIBUTARY POPULATION	21600
17.	DESIGN FLOW (100S OF GAL.)	30000
18.	TREATMENT UNITS	
	PRELIMINARY	BAR SCREEN, COMMINUTOR, & GRIT CHAMBER
	PRIMARY	SETTLING TANK- MECH. SLUDGE COLL.
	INTERMEDIATE	
	SECONDARY	HIGH RATE TRICKLING FILTER
	TERTIARY	
	CHLORINATION	BOTH PRE & POST CHLORINATION
	DISPOSAL OF LIQUIDS	SHORE DISCHARGE TO SURFACE WATERS
19.	SLUDGE HANDLING UNITS	
	PRELIMINARY	THICKENING
	DIGESTION	
	DEWATERING	DRYING BED
	DISPOSAL OF SLUDGE	INCINERATION
20.	STREAM TYPE	TIDAL
21.	STREAM CLASS	B
22.	RECEIVING WATER & MILE PT.**	MANHASSET BAY
23.	PERIOD OF CHLORINATION	CONTINUOUS
24.	ADDITIONAL EFFLUENT LIMITS	
25.	OPERATING PERMIT ISSUED ON	1/ 9/68
26.	OPERATING PERMIT EXPIRES ON	1/ 9/73
27.	ACTUAL FLOW (MGD)	2.629
28.	BASES FOR FLOW	METERED
29.	ADEQUACY OF CHLORINATION	ADEQUATE
30.	HYDRAULIC OVERLOAD	NO
31.	METERING - SEWAGE FLOW	

	EFFLUENT PERMIT LIMITS		------------- OPERATIONAL RESULTS	-------------				
			INF.	EFFLUENT		PERCENT	VIOLA-	SAMPLES
	MG/L	LB/DAY	MG/L	MG/L	LB/DAY	REMOVAL	TION	BY
B.O.D.			210.	53.	1162	74.8		PLANT RECORD
S.S.			208.	50.3	1102	76.0		PLANT RECORD
SET. S.*			6.5	0.1		98.5		PLANT RECORD
P- TOTAL			12.3	6.5	142	47.0		ENVIR. CONS.
N- TOTAL			45.98	28.08	615	38.0		ENVIR. CONS.

* GIVEN IN ML/L

** MILE POINTS TO NEAREST TENTH

1972 (FEB) MUNICIPAL S.T.W. INVENTORY

1.	NAME OF LOCALITY	ROSLYN V
2.	COUNTY	NASSAU 28
3.	NAME OF PLANT	ROSLYN V
4.	PLANT NO.	12
5.	TYPE OF PLANT	VILLAGE
6.	DRAINAGE BASIN	ATLANTIC OCEAN - LONG ISLAND SOUND
7.	ENVIRONMENTAL REGION	RONKONKOMA-1
8.	LOCAL HEALTH UNIT	NASSAU COUNTY
9.	COLLECTION SYSTEM TYPE	SEPARATE
10.	SIGNIFICANT INDUSTRIAL WASTES	YES
11.	PLANT GRADE	B
12.	CHIEF OPERATOR GRADE	3
13.	ASSISTANT OPERATOR	3
14.	YEAR PLANT CONSTRUCTED	1942
15.	YEAR LATEST MAJOR IMPROVEMENTS	1968
16.	TRIBUTARY POPULATION	3500
17.	DESIGN FLOW (100S OF GAL.)	5200
18.	TREATMENT UNITS	
	PRELIMINARY	BAR SCHEEN, COMMINUTOR, & GRIT CHAMBER
	PRIMARY	SETTLING TANK- MECH. SLUDGE COLL.
	INTERMEDIATE	
	SECONDARY	HIGH RATE TRICKLING FILTER
	TERTIARY	
	CHLORINATION	POST CHLORINATION
	DISPOSAL OF LIQUIDS	SHORE DISCHARGE TO SURFACE WATERS
19.	SLUDGE HANDLING UNITS	
	PRELIMINARY	
	DIGESTION	ANAEROBIC DIGESTION/IMHOFF
	DEWATERING	
	DISPOSAL OF SLUDGE	TO ANOTHER S.T.W.
20.	STREAM TYPE	TIDAL
21.	STREAM CLASS	A
22.	RECEIVING WATER & MILE PT.**	HEMPSTEAD HARBOR
23.	PERIOD OF CHLORINATION	CONTINUOUS
24.	ADDITIONAL EFFLUENT LIMITS	
25.	OPERATING PERMIT ISSUED ON	7/11/67
26.	OPERATING PERMIT EXPIRES ON	7/11/72
27.	ACTUAL FLOW (MGD)	0.422
28.	BASES FOR FLOW	METERED
29.	ADEQUACY OF CHLORINATION	ADEQUATE
30.	HYDRAULIC OVERLOAD	NO
31.	METERING - SEWAGE FLOW	

	EFFLUENT PERMIT LIMITS MG/L	EFFLUENT PERMIT LIMITS LB/DAY	------------ OPERATIONAL RESULTS ------------ INF. MG/L	EFFLUENT MG/L	EFFLUENT LB/DAY	PERCENT REMOVAL	VIOLATION	SAMPLES BY
B.O.D.			275.	51.	179	81.4		PLANT RECORD
S.S.			176.	46.3	162	73.8		PLANT RECORD
SET. S.*			10.8	0.1		99.0		PLANT RECORD
P- TOTAL			10.8	11.1	39	0.0		ENVIR. CONS.
N- TOTAL			31.34					ENVIR. CONS.

* GIVEN IN ML/L

** MILE POINTS TO NEAREST TENTH

1972 (FEB) MUNICIPAL S.T.P. INVENTORY

1.	NAME OF LOCALITY	GLEN COV C
2.	COUNTY	NASSAU 28
3.	NAME OF PLANT	GLEN COVE C 1
4.	PLANT NO.	1
5.	TYPE OF PLANT	CITY
6.	DRAINAGE BASIN	ATLANTIC OCEAN - LONG ISLAND SOUND
7.	ENVIRONMENTAL REGION	RONKONKOMA-1
8.	LOCAL HEALTH UNIT	NASSAU COUNTY
9.	COLLECTION SYSTEM TYPE	SEPARATE
10.	SIGNIFICANT INDUSTRIAL WASTES	YES
11.	PLANT GRADE	B
12.	CHIEF OPERATOR GRADE	2
13.	ASSISTANT OPERATOR	3
14.	YEAR PLANT CONSTRUCTED	1919
15.	YEAR LATEST MAJOR IMPROVEMENTS	1964
16.	TRIBUTARY POPULATION	25000
17.	DESIGN FLOW (100S OF GAL.)	40000
18.	TREATMENT UNITS	
	PRELIMINARY	BAR SCREEN, COMMINUTOR, & GRIT CHAMBER
	PRIMARY	SETTLING TANK- MECH. SLUDGE COLL.
	INTERMEDIATE	
	SECONDARY	HIGH RATE TRICKLING FILTER
	TERTIARY	
	CHLORINATION	POST CHLORINATION
	DISPOSAL OF LIQUIDS	SHORE DISCHARGE TO SURFACE ATERS
19.	SLUDGE HANDLING UNITS	
	PRELIMINARY	THICKENING
	DIGESTION	ANAEROBIC DIGESTION(SEPARATE DIGESTERS
	DEWATERING	
	DISPOSAL OF SLUDGE	BARGE TO SEA
20.	STREAM TYPE	TIDAL
21.	STREAM CLASS	B
22.	RECEIVING WATER & MILE PT.**	GLEN COVE CREEK
23.	PERIOD OF CHLORINATION	CONTINUOUS
24.	ADDITIONAL EFFLUENT LIMITS	
25.	OPERATING PERMIT ISSUED ON	12/ 6/63
26.	OPERATING PERMIT EXPIRES ON	
27.	ACTUAL FLOW (MGD)	5.060
28.	BASES FOR FLOW	METERED
29.	ADEQUACY OF CHLORINATION	ADEQUATE
30.	HYDRAULIC OVERLOAD	YES
31.	METERING - SEWAGE FLOW	

	EFFLUENT PERMIT LIMITS		------------- OPERATIONAL RESULTS -------------					
	MG/L	LB/DAY	INF. MG/L	EFFLUENT MG/L	EFFLUENT LB/DAY	PERCENT REMOVAL	VIOLA- TION	SAMPLES BY
B.O.D.			324.	99.	4177	69.5		PLANT RECORD
S.S.			440.	75.8	3198	82.8		PLANT RECORD
SET. S.*			10.5	.1		99.9		PLANT RECORD
P- TOTAL			137.3	83.8	3536	38.0		ENVIR. CONS.
N- TOTAL			26.00	24.90	1050	4.0		ENVIR. CONS.

* GIVEN IN ML/L

** MILE POINTS TO NEAREST TENTH

1972 (FEB) MUNICIPAL S.T.W. INVENTORY

1. NAME OF LOCALITY	GLEN COU C
2. COUNTY	NASSAU 28
3. NAME OF PLANT	MORGAN ISLAND
4. PLANT NO.	23
5. TYPE OF PLANT	CITY
6. DRAINAGE BASIN	ATLANTIC OCEAN - LONG ISLAND SOUND
7. ENVIRONMENTAL REGION	RONKONKOMA-1
8. LOCAL HEALTH UNIT	NASSAU COUNTY
9. COLLECTION SYSTEM TYPE	SEPARATE
10. SIGNIFICANT INDUSTRIAL WASTES	NO
11. PLANT GRADE	C
12. CHIEF OPERATOR GRADE	3
13. ASSISTANT OPERATOR	3
14. YEAR PLANT CONSTRUCTED	1945
15. YEAR LATEST MAJOR IMPROVEMENTS	
16. TRIBUTARY POPULATION	250
17. DESIGN FLOW (100S OF GAL.)	500
18. TREATMENT UNITS	
PRELIMINARY	
PRIMARY	SEPTIC TANK
INTERMEDIATE	
SECONDARY	
TERTIARY	
CHLORINATION	POST CHLORINATION
DISPOSAL OF LIQUIDS	SHORE DISCHARGE TO SURFACE WATERS
19. SLUDGE HANDLING UNITS	
PRELIMINARY	
DIGESTION	ANAEROBIC DIGESTION(IMHOFF
DEWATERING	
DISPOSAL OF SLUDGE	TO ANOTHER S.T.W.
20. STREAM TYPE	TIDAL
21. STREAM CLASS	A
22. RECEIVING WATER & MILE PT.**	LONG ISLAND SOUND
23. PERIOD OF CHLORINATION	CONTINUOUS
24. ADDITIONAL EFFLUENT LIMITS	
25. OPERATING PERMIT ISSUED ON	4/12/45
26. OPERATING PERMIT EXPIRES ON	
27. ACTUAL FLOW (MGD)	.040
28. BASES FOR FLOW	OTHER
29. ADEQUACY OF CHLORINATION	ADEQUATE
30. HYDRAULIC OVERLOAD	NO
31. METERING - SEWAGE FLOW	

	EFFLUENT PERMIT LIMITS		OPERATIONAL RESULTS					
			INF.	EFFLUENT		PERCENT	VIOLA-	SAMPLES
	MG/L	LB/DAY	MG/L	MG/L	LB/DAY	REMOVAL	TION	BY
B.O.D.			144.	118.	39	18.1		ENVIR. CONS.
S.S.			64.	19.0	6	70.3		ENVIR. CONS.
SET. S.*			13.0	5.0		61.6		OTHER AGENCY
P- TOTAL								
N- TOTAL								

* GIVEN IN ML/L

** MILE POINTS TO NEAREST TENTH

1972 (FEB) MUNICIPAL S.T.W. INVENTORY

1.	NAME OF LOCALITY	OYST BAY T
2.	COUNTY	NASSAU 28
3.	NAME OF PLANT	OYSTER BAY SD
4.	PLANT NO.	13
5.	TYPE OF PLANT	TOWN DISTRICT
6.	DRAINAGE BASIN	ATLANTIC OCEAN - LONG ISLAND SOUND
7.	ENVIRONMENTAL REGION	RONKONKOMA-1
8.	LOCAL HEALTH UNIT	NASSAU COUNTY
9.	COLLECTION SYSTEM TYPE	SEPARATE
10.	SIGNIFICANT INDUSTRIAL WASTES	NO
11.	PLANT GRADE	B
12.	CHIEF OPERATOR GRADE	3
13.	ASSISTANT OPERATOR	1
14.	YEAR PLANT CONSTRUCTED	1965
15.	YEAR LATEST MAJOR IMPROVEMENTS	
16.	TRIBUTARY POPULATION	7125
17.	DESIGN FLOW (100S OF GAL.)	12000
18.	TREATMENT UNITS	
	PRELIMINARY	BAR SCREEN : GRIT CHAMBER
	PRIMARY	SETTLING TANK- MECH. SLUDGE COLL.
	INTERMEDIATE	
	SECONDARY	HIGH RATE TRICKLING FILTER
	TERTIARY	
	CHLORINATION	POST CHLORINATION
	DISPOSAL OF LIQUIDS	SHORE DISCHARGE TO SURFACE WATERS
19.	SLUDGE HANDLING UNITS	
	PRELIMINARY	
	DIGESTION	ANAEROBIC DIGESTION/SEPARATE DIGESTERS
	DEWATERING	MECH. DEWATERING- VAC. FILTRATION
	DISPOSAL OF SLUDGE	BURIAL- INCL. SANITARY LANDFILL
20.	STREAM TYPE	TIDAL
21.	STREAM CLASS	A
22.	RECEIVING WATER & MILE PT.**	OYSTER BAY HARBOR
23.	PERIOD OF CHLORINATION	CONTINUOUS
24.	ADDITIONAL EFFLUENT LIMITS	
25.	OPERATING PERMIT ISSUED ON	
26.	OPERATING PERMIT EXPIRES ON	
27.	ACTUAL FLOW (MGD)	1.199
28.	BASES FOR FLOW	METERED
29.	ADEQUACY OF CHLORINATION	ADEQUATE
30.	HYDRAULIC OVERLOAD	NO
31.	METERING - SEWAGE FLOW	

	EFFLUENT PERMIT LIMITS		------------- OPERATIONAL RESULTS -------------					
			INF.	EFFLUENT		PERCENT	VIOLA-TION	SAMPLES BY
	MG/L	LB/DAY	MG/L	MG/L	LB/DAY	REMOVAL		
B.O.D.			141.	23.	229	83.7		PLANT RECORD
S.S.			124.	25.4	253	79.8		PLANT RECORD
SET. S.*			3.3	.1		99.9		PLANT RECORD
P- TOTAL			7.4	5.6	55	24.0		ENVIR. CONS.
N- TOTAL			26.65	20.46	204	23.0		ENVIR. CONS.

* GIVEN IN ML/L

** MILE POINTS TO NEAREST TENTH

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                    1972 (FEB) MUNICIPAL S.T.W. INVENTORY
        1.  NAME OF LOCALITY                        HUNTGTN  T
        2.  COUNTY                                  SUFFOLK   47
        3.  NAME OF PLANT                           HUNTINGTON SD
        4.  PLANT NO.                                 3
        5.  TYPE OF PLANT                           TOWN DISTRICT
        6.  DRAINAGE BASIN                          ATLANTIC OCEAN - LONG ISLAND SOUND
        7.  ENVIRONMENTAL REGION                    RONKONKOMA-1
        8.  LOCAL HEALTH UNIT                       SUFFOLK COUNTY
        9.  COLLECTION SYSTEM TYPE                  SEPARATE
       10.  SIGNIFICANT INDUSTRIAL WASTES           NO
       11.  PLANT GRADE                             8
       12.  CHIEF OPERATOR GRADE                    3
       13.  ASSISTANT OPERATOR                      3
       14.  YEAR PLANT CONSTRUCTED                  1915
       15.  YEAR LATEST MAJOR IMPROVEMENTS          1970
       16.  TRIBUTARY POPULATION                      16000
       17.  DESIGN FLOW (100S OF GAL.)                20000
       18.  TREATMENT UNITS
                 PRELIMINARY                        BAR SCREEN   GRIT CHAMBER
                 PRIMARY                            SETTLING TANK- MECH. SLUDGE COLL.
                 INTERMEDIATE
                 SECONDARY                          HIGH RATE TRICKLING FILTER
                 TERTIARY
                 CHLORINATION                       POST CHLORINATION
                 DISPOSAL OF LIQUIDS                SHORE DISCHARGE TO SURFACE WATERS
       19.  SLUDGE HANDLING UNITS
                 PRELIMINARY                        CHEMICAL ADDITION
                 DIGESTION
                 DEWATERING                         MECH. DEWATERING- VAC. FILTRATION
                 DISPOSAL OF SLUDGE                 BURIAL- INCL. SANITARY LANDFILL
       20.  STREAM TYPE                             TIDAL
       21.  STREAM CLASS                            D
       22.  RECEIVING WATER & MILE PT.**            LONG ISLAND SOUND
       23.  PERIOD OF CHLORINATION                  CONTINUOUS
       24.  ADDITIONAL EFFLUENT LIMITS
       25.  OPERATING PERMIT ISSUED ON              10/ 9/70
       26.  OPERATING PERMIT EXPIRES ON             10/ 9/72
       27.  ACTUAL FLOW (MGD)                         1.200
       28.  BASES FOR FLOW                          METERED
       29.  ADEQUACY OF CHLORINATION                ADEQUATE
       30.  HYDRAULIC OVERLOAD                      NO
       31.  METERING - SEWAGE FLOW

                  EFFLUENT      ------------- OPERATIONAL RESULTS -------------
                PERMIT LIMITS     INF.      EFFLUENT      PERCENT  VIOLA-  SAMPLES
                MG/L  LB/DAY      MG/L    MG/L  LB/DAY    REMOVAL   TION     BY

      B.O.D.                      372.     19.     190     94.9             PLANT RECORD
      S.S.                        480.     70.0    700     85.4             PLANT RECORD
      SET. S.*                     28.0     0.1            99.6             ENVIR. CONS.
      P- TOTAL                      5.0     1.6     16     68.0             ENVIR. CONS.
      N- TOTAL                     42.83   12.11   121     71.0             ENVIR. CONS.

      *  GIVEN IN ML/L
      ** MILE POINTS TO NEAREST TENTH
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                    1972  (FEB) MUNICIPAL S.T.W. INVENTORY
        1.  NAME OF LOCALITY                      NORTHPRT V
        2.  COUNTY                                SUFFOLK   47
        3.  NAME OF PLANT                         NORTHPORT   V
        4.  PLANT NO.                               4
        5.  TYPE OF PLANT                         VILLAGE
        6.  DRAINAGE BASIN                        ATLANTIC OCEAN - LONG ISLAND SOUND
        7.  ENVIRONMENTAL REGION                  RONKONKOMA-1
        8.  LOCAL HEALTH UNIT                     SUFFOLK COUNTY
        9.  COLLECTION SYSTEM TYPE                SEPARATE
       10.  SIGNIFICANT INDUSTRIAL WASTES         NO
       11.  PLANT GRADE                           C
       12.  CHIEF OPERATOR GRADE                  3
       13.  ASSISTANT OPERATOR                    3
       14.  YEAR PLANT CONSTRUCTED                1932
       15.  YEAR LATEST MAJOR IMPROVEMENTS
       16.  TRIBUTARY POPULATION                    3000
       17.  DESIGN FLOW (100S OF GAL.)              3300
       18.  TREATMENT UNITS
                 PRELIMINARY                      BAR SCREEN
                 PRIMARY                          IMHOFF TANK
                 INTERMEDIATE
                 SECONDARY
                 TERTIARY
                 CHLORINATION                     POST CHLORINATION
                 DISPOSAL OF LIQUIDS              SHORE DISCHARGE TO SURFACE WATERS
       19.  SLUDGE HANDLING UNITS
                 PRELIMINARY                      HOLDING
                 DIGESTION                        ANAEROBIC DIGESTION(IMHOFF
                 DEWATERING                       DRYING BED
                 DISPOSAL OF SLUDGE               BURIAL- INCL. SANITARY LANDFILL
       20.  STREAM TYPE                           TIDAL
       21.  STREAM CLASS                          A
       22.  RECEIVING WATER & MILE PT.**          NORTHPORT HARBOR
       23.  PERIOD OF CHLORINATION                SEASONAL
       24.  ADDITIONAL EFFLUENT LIMITS
       25.  OPERATING PERMIT ISSUED ON             2/25/32
       26.  OPERATING PERMIT EXPIRES ON
       27.  ACTUAL FLOW (MGD)                      0.170
       28.  BASES FOR FLOW                        METERED
       29.  ADEQUACY OF CHLORINATION              ADEQUATE
       30.  HYDRAULIC OVERLOAD                    NO
       31.  METERING - SEWAGE FLOW

                 EFFLUENT        ------------- OPERATIONAL RESULTS -------------
               PERMIT LIMITS     INF.      EFFLUENT      PERCENT  VIOLA-  SAMPLES
               MG/L  LB/DAY      MG/L    MG/L  LB/DAY   REMOVAL   TION      BY

       B.O.D.                    216.    120.     170    43.5             ENVIR. CONS.
       S.S.                      179.    155.0    219    13.4             ENVIR. CONS.
       SET. S.*                   11.0     0.3           97.2             ENVIR. CONS.
       P- TOTAL
       N- TOTAL

       *  GIVEN IN ML/L
       ** MILE POINTS TO NEAREST TENTH
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                         1972 (FEB) MUNICIPAL S.T.W. INVENTORY

         1.  NAME OF LOCALITY                       BROKHAVN T
         2.  COUNTY                                 SUFFOLK   47
         3.  NAME OF PLANT                          STRMOR STY BR
         4.  PLANT NO.                                9
         5.  TYPE OF PLANT                          PRIVATE SEWERAGE DISPOSAL CORP.
         6.  DRAINAGE BASIN                         ATLANTIC OCEAN - LONG ISLAND SOUND
         7.  ENVIRONMENTAL REGION                   RONKONKOMA-1
         8.  LOCAL HEALTH UNIT                      SUFFOLK COUNTY
         9.  COLLECTION SYSTEM TYPE                 SEPARATE
        10.  SIGNIFICANT INDUSTRIAL WASTES          NO
        11.  PLANT GRADE                            A
        12.  CHIEF OPERATOR GRADE                   1
        13.  ASSISTANT OPERATOR                     2
        14.  YEAR PLANT CONSTRUCTED                 1966
        15.  YEAR LATEST MAJOR IMPROVEMENTS
        16.  TRIBUTARY POPULATION                     6400
        17.  DESIGN FLOW (100S OF GAL.)               3600
        18.  TREATMENT UNITS
                 PRELIMINARY                        COMMINUTOR OR BARMINUTOR
                 PRIMARY
                 INTERMEDIATE
                 SECONDARY                          CONTACT STABILIZATION
                 TERTIARY
                 CHLORINATION                       POST CHLORINATION
                 DISPOSAL OF LIQUIDS                SAND FILTER TO GROUND WATER
        19.  SLUDGE HANDLING UNITS
                 PRELIMINARY
                 DIGESTION                          AEROBIC DIGESTION
                 DEWATERING
                 DISPOSAL OF SLUDGE                 SCAVENGER
        20.  STREAM TYPE                            GROUND
        21.  STREAM CLASS                           A
        22.  RECEIVING WATER & MILE PT.**           TRIB TO LNG IS SOUND
        23.  PERIOD OF CHLORINATION
        24.  ADDITIONAL EFFLUENT LIMITS
        25.  OPERATING PERMIT ISSUED ON               1/20/65
        26.  OPERATING PERMIT EXPIRES ON
        27.  ACTUAL FLOW (MGD)                         .289
        28.  BASES FOR FLOW                         METERED
        29.  ADEQUACY OF CHLORINATION               ADEQUATE
        30.  HYDRAULIC OVERLOAD                     NO
        31.  METERING - SEWAGE FLOW                 WEIR

                 EFFLUENT        -------------- OPERATIONAL RESULTS --------------
               PERMIT LIMITS     INF.      EFFLUENT      PERCENT  VIOLA-   SAMPLES
               MG/L  LB/DAY      MG/L    MG/L   LB/DAY  REMOVAL   TION      BY

        B.O.D.                   290.    27.       65   90.7            PLANT RECORD
        S.S.                     200.    50.0     120   75.0            PLANT RECORD
        SET. S.*
        P- TOTAL
        N- TOTAL

        *  GIVEN IN ML/L
        ** MILE POINTS TO NEAREST TENTH
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                          1972 (FEB) MUNICIPAL S.T.M. INVENTORY

         1.  NAME OF LOCALITY                          BROKHAVN T
         2.  COUNTY                                    SUFFOLK    47
         3.  NAME OF PLANT                             P JEFERSON SO
         4.  PLANT NO.                                  1
         5.  TYPE OF PLANT                             COUNTY DISTRICT OR OWNERSHIP
         6.  DRAINAGE BASIN                            ATLANTIC OCEAN - LONG ISLANU SOUND
         7.  ENVIRONMENTAL REGION                      RONKONKOMA-1
         8.  LOCAL HEALTH UNIT                         SUFFOLK COUNTY
         9.  COLLECTION SYSTEM TYPE                    SEPARATE
        10.  SIGNIFICANT INDUSTRIAL WASTES             YES
        11.  PLANT GRADE                               B
        12.  CHIEF OPERATOR GRADE                      3
        13.  ASSISTANT OPERATOR                        3
        14.  YEAR PLANT CONSTRUCTED                    1918
        15.  YEAR LATEST MAJOR IMPROVEMENTS            1963
        16.  TRIBUTARY POPULATION                         9000
        17.  DESIGN FLOW (100S OF GAL.)                  15000
        18.  TREATMENT UNITS
                 PRELIMINARY                           BAR SCREEN
                 PRIMARY                               SETTLING TANK- MECH. SLUDGE COLL.
                 INTERMEDIATE
                 SECONDARY
                 TERTIARY
                 CHLORINATION                          BOTH PRE & POST CHLORINATION
                 DISPOSAL OF LIQUIDS                   SHORE DISCHARGE TO SURFACE WATERS
        19.  SLUDGE HANDLING UNITS
                 PRELIMINARY                           HOLDING
                 DIGESTION                             ANAEROBIC DIGESTION(SEPARATE DIGESTERS
                 DEWATERING
                 DISPOSAL OF SLUDGE                    SCAVENGER
        20.  STREAM TYPE                               TIDAL
        21.  STREAM CLASS                              C
        22.  RECEIVING WATER & MILE PT.**              PORT JEFFERSON HARBO
        23.  PERIOD OF CHLORINATION                    SEASONAL
        24.  ADDITIONAL EFFLUENT LIMITS
        25.  OPERATING PERMIT ISSUED ON                 6/13/55
        26.  OPERATING PERMIT EXPIRES ON
        27.  ACTUAL FLOW (MGD)                            1.240
        28.  BASES FOR FLOW                            METERED
        29.  ADEQUACY OF CHLORINATION                  ADEQUATE
        30.  HYDRAULIC OVERLOAD                        NO
        31.  METERING - SEWAGE FLOW

                     EFFLUENT        -------------- OPERATIONAL RESULTS --------------
                   PERMIT LIMITS     INF.      EFFLUENT      PERCENT  VIOLA-   SAMPLES
                   MG/L  LB/DAY      MG/L    MG/L  LB/DAY    REMOVAL   TION      BY

        B.O.D.                       141.     94.     972     33.3             PLANT RECORD
        S.S.                         117.     48.5    501     58.1             PLANT RECORD
        SET. S.*                       5.2     0.1            99.9             PLANT  ECORD
        P- TOTAL
        N- TOTAL                     19.06   24.03    248      0.0             ENVIR. CONS.

        *  GIVEN IN ML/L
        ** MILE POINTS TO NEAREST TENTH
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                    1972 (FEB) MUNICIPAL S.T.W. INVENTORY

       1.  NAME OF LOCALITY                           GREENPRT V
       2.  COUNTY                                     SUFFOLK   47
       3.  NAME OF PLANT                              GREENPORT    V
       4.  PLANT NO.                                         7
       5.  TYPE OF PLANT                              VILLAGE
       6.  DRAINAGE BASIN                             ATLANTIC OCEAN - LONG ISLAND SOUND
       7.  ENVIRONMENTAL REGION                       RONKONKOMA-1
       8.  LOCAL HEALTH UNIT                          SUFFOLK COUNTY
       9.  COLLECTION SYSTEM TYPE                     SEPARATE
      10.  SIGNIFICANT INDUSTRIAL WASTES              NO
      11.  PLANT GRADE                                C
      12.  CHIEF OPERATOR GRADE                       3
      13.  ASSISTANT OPERATOR                         3
      14.  YEAR PLANT CONSTRUCTED                     1940
      15.  YEAR LATEST MAJOR IMPROVEMENTS
      16.  TRIBUTARY POPULATION                           3000
      17.  DESIGN FLOW (100S OF GAL.)                     5000
      18.  TREATMENT UNITS
               PRELIMINARY                            BAR SCREEN
               PRIMARY                                IMHOFF TANK
               INTERMEDIATE
               SECONDARY
               TERTIARY
               CHLORINATION                           BOTH PRE & POST CHLORINATION
               DISPOSAL OF LIQUIDS                    SHORE DISCHARGE TO SURFACE  ATERS
      19.  SLUDGE HANDLING UNITS
               PRELIMINARY                            HOLDING
               DIGESTION                              ANAEROBIC DIGESTION(IMHOFF
               DEWATERING                             DRYING BED
               DISPOSAL OF SLUDGE                     TO PUBLIC AS SOIL CONDITIONER
      20.  STREAM TYPE                                TIDAL
      21.  STREAM CLASS                               A
      22.  RECEIVING WATER & MILE PT.**               LONG ISLAND SOUND
      23.  PERIOD OF CHLORINATION                     CONTINUOUS
      24.  ADDITIONAL EFFLUENT LIMITS
      25.  OPERATING PERMIT ISSUED ON                  3/21/38
      26.  OPERATING PERMIT EXPIRES ON
      27.  ACTUAL FLOW (MGD)                            0.298
      28.  BASES FOR FLOW                             METERED
      29.  ADEQUACY OF CHLORINATION                   ADEQUATE
      30.  HYDRAULIC OVERLOAD                         NO
      31.  METERING - SEWAGE FLOW

                EFFLUENT        ============== OPERATIONAL RESULTS =============
              PERMIT LIMITS     INF.       EFFLUENT      PERCENT  VIOLA-   SAMPLES
              MG/L  LB/DAY      MG/L     MG/L   LB/DAY   REMOVAL   TION      BY

     B.O.D.                     234.     156.     387    33.3             ENVIR. CONS.
     S.S.                       220.     95.0     236    56.8             ENVIR. CONS.
     SET. S.*                    14.0     0.1            99.9             ENVIR. CONS.
     P- TOTAL
     N- TOTAL

     *  GIVEN IN ML/L
     ** MILE POINTS TO NEAREST TENTH
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                        1972  (FEB) MUNICIPAL S.T.W. INVENTORY
          1.  NAME OF LOCALITY                          RIVERHD  T
          2.  COUNTY                                    SUFFOLK   47
          3.  NAME OF PLANT                             RIVERHEAD  SD
          4.  PLANT NO.                                   6
          5.  TYPE OF PLANT                             TOWN DISTRICT
          6.  DRAINAGE BASIN                            ATLANTIC OCEAN - LONG ISLAND SOUND
          7.  ENVIRONMENTAL REGION                      RONKONKOMA-1
          8.  LOCAL HEALTH UNIT                         SUFFOLK COUNTY
          9.  COLLECTION SYSTEM TYPE                    SEPARATE
         10.  SIGNIFICANT INDUSTRIAL WASTES             NO
         11.  PLANT GRADE                               B
         12.  CHIEF OPERATOR GRADE                      3
         13.  ASSISTANT OPERATOR                        3
         14.  YEAR PLANT CONSTRUCTED                    1937
         15.  YEAR LATEST MAJOR IMPROVEMENTS            1971
         16.  TRIBUTARY POPULATION                         6000
         17.  DESIGN FLOW (100S OF GAL.)                  12000
         18.  TREATMENT UNITS
                  PRELIMINARY                           BAR SCREEN    GRIT CHAMBER
                  PRIMARY                               SETTLING TANK- MECH. SLUDGE COLL.
                  INTERMEDIATE
                  SECONDARY                             HIGH RATE TRICKLING FILTER
                  TERTIARY
                  CHLORINATION                          POST CHLORINATION
                  DISPOSAL OF LIQUIDS                   SHORE DISCHARGE TO SURFACE WATERS
         19.  SLUDGE HANDLING UNITS
                  PRELIMINARY                           THICKENING
                  DIGESTION                             ANAEROBIC DIGESTION(SEPARATE DIGESTERS
                  DEWATERING                            DRYING BED
                  DISPOSAL OF SLUDGE                    BURIAL/TO PUBLIC AS SOIL CONDITIONER
         20.  STREAM TYPE                               TIDAL
         21.  STREAM CLASS                              C
         22.  RECEIVING WATER & MILE PT.**              PECONIC RIVER
         23.  PERIOD OF CHLORINATION                    CONTINUOUS
         24.  ADDITIONAL EFFLUENT LIMITS
         25.  OPERATING PERMIT ISSUED ON                11/18/59
         26.  OPERATING PERMIT EXPIRES ON
         27.  ACTUAL FLOW (MGD)                           0.375
         28.  BASES FOR FLOW                            METERED
         29.  ADEQUACY OF CHLORINATION                  ADEQUATE
         30.  HYDRAULIC OVERLOAD                        NO
         31.  METERING - SEWAGE FLOW

                    EFFLUENT      -------------- OPERATIONAL RESULTS --------------
                  PERMIT LIMITS     INF.      EFFLUENT      PERCENT  VIOLA-   SAMPLES
                  MG/L  LB/DAY      MG/L    MG/L  LB/DAY   REMOVAL   TION       BY

         B.O.D.                     332.     57.     178    82.8              ENVIR. CONS.
         S.S.                       188.    100.0    312    46.8              ENVIR. CONS.
         SET. S.*                    23.0     0.1           99.9              ENVIR. CONS.
         P- TOTAL                     9.7     7.5     23    22.0              ENVIR. CONS.
         N- TOTAL                    55.64   39.48   123    29.0              ENVIR. CONS.

         *  GIVEN IN ML/L
         ** MILE POINTS TO NEAREST TENTH
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                  1972 (FEB) MUNICIPAL S.T.W. INVENTORY

     1.  NAME OF LOCALITY                      PATCHOGE V
     2.  COUNTY                                SUFFOLK   47
     3.  NAME OF PLANT                         PATCHOGUE  V
     4.  PLANT NO.                               2
     5.  TYPE OF PLANT                         VILLAGE
     6.  DRAINAGE BASIN                        ATLANTIC OCEAN - LONG ISLAND SOUND
     7.  ENVIRONMENTAL REGION                  RONKONKOMA-1
     8.  LOCAL HEALTH UNIT                     SUFFOLK COUNTY
     9.  COLLECTION SYSTEM TYPE                SEPARATE
    10.  SIGNIFICANT INDUSTRIAL WASTES         YES
    11.  PLANT GRADE                           B
    12.  CHIEF OPERATOR GRADE                  3
    13.  ASSISTANT OPERATOR                    3
    14.  YEAR PLANT CONSTRUCTED                1927
    15.  YEAR LATEST MAJOR IMPROVEMENTS        1951
    16.  TRIBUTARY POPULATION                     5000
    17.  DESIGN FLOW (100S OF GAL.)               5000
    18.  TREATMENT UNITS
              PRELIMINARY                      BAR SCREEN & GRIT CHAMBER
              PRIMARY                          SETTLING TANK- MECH. SLUDGE COLL.
              INTERMEDIATE
              SECONDARY
              TERTIARY
              CHLORINATION                     POST CHLORINATION
              DISPOSAL OF LIQUIDS              SHORE DISCHARGE TO SURFACE WATERS
    19.  SLUDGE HANDLING UNITS
              PRELIMINARY                      HOLDING
              DIGESTION                        ANAEROBIC DIGESTION-SEPARATE DIGESTERS
              DEWATERING                       MECH. DEWATERING- VAC. FILTRATION
              DISPOSAL OF SLUDGE               TO PUBLIC AS SOIL CONDITIONER
    20.  STREAM TYPE                           OTHER
    21.  STREAM CLASS                          D
    22.  RECEIVING WATER & MILE PT.**          PATCHOGUE CREEK         10
    23.  PERIOD OF CHLORINATION                CONTINUOUS
    24.  ADDITIONAL EFFLUENT LIMITS
    25.  OPERATING PERMIT ISSUED ON             3/21/72
    26.  OPERATING PERMIT EXPIRES ON            3/20/74
    27.  ACTUAL FLOW (MGD)                       .275
    28.  BASES FOR FLOW                        METERED
    29.  ADEQUACY OF CHLORINATION              ADEQUATE
    30.  HYDRAULIC OVERLOAD                    NO
    31.  METERING - SEWAGE FLOW

                 EFFLUENT      ------------- OPERATIONAL RESULTS -------------
               PERMIT LIMITS    INF.       EFFLUENT      PERCENT  VIOLA-   SAMPLES
               MG/L  LB/DAY     MG/L     MG/L  LB/DAY    REMOVAL   TION      BY

    B.O.D.                      399.     196.     449    50.9             ENVIR. CONS.
    S.S.                        238.      99.0    227    58.9             ENVIR. CONS.
    SET. S.*                     10.0      0.1           99.9             ENVIR. CONS.
    P- TOTAL                     11.3      7.1     16    37.0             ENVIR. CONS.
    N- TOTAL                     14.64    12.72    29    13.0             ENVIR. CONS.

    *   GIVEN IN ML/L
    ** MILE POINTS TO NEAREST TENTH
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1972 (FEB) MUNICIPAL S.T.W. INVENTORY

1. NAME OF LOCALITY	OCEAN BH V
2. COUNTY	SUFFOLK 47
3. NAME OF PLANT	OCEAN BEACH V
4. PLANT NO.	5
5. TYPE OF PLANT	VILLAGE
6. DRAINAGE BASIN	ATLANTIC OCEAN - LONG ISLAND SOUND
7. ENVIRONMENTAL REGION	RONKONKOMA-1
8. LOCAL HEALTH UNIT	SUFFOLK COUNTY
9. COLLECTION SYSTEM TYPE	SEPARATE
10. SIGNIFICANT INDUSTRIAL WASTES	NO
11. PLANT GRADE	B
12. CHIEF OPERATOR GRADE	3
13. ASSISTANT OPERATOR	3
14. YEAR PLANT CONSTRUCTED	1917
15. YEAR LATEST MAJOR IMPROVEMENTS	1950
16. TRIBUTARY POPULATION	11000
17. DESIGN FLOW (100S OF GAL.)	5000
18. TREATMENT UNITS	
PRELIMINARY	BAR SCREEN
PRIMARY	SETTLING TANK- MECH. SLUDGE COLL.
INTERMEDIATE	
SECONDARY	
TERTIARY	
CHLORINATION	BOTH PRE & POST CHLORINATION
DISPOSAL OF LIQUIDS	SHORE DISCHARGE TO SURFACE WATERS
19. SLUDGE HANDLING UNITS	
PRELIMINARY	
DIGESTION	ANAEROBIC DIGESTION(SEPARATE DIGESTERS
DEWATERING	DRYING BED
DISPOSAL OF SLUDGE	BURIAL- INCL. SANITARY LANDFILL
20. STREAM TYPE	TIDAL
21. STREAM CLASS	A
22. RECEIVING WATER & MILE PT.**	GREAT SOUTH BAY
23. PERIOD OF CHLORINATION	CONTINUOUS
24. ADDITIONAL EFFLUENT LIMITS	
25. OPERATING PERMIT ISSUED ON	5/12/55
26. OPERATING PERMIT EXPIRES ON	
27. ACTUAL FLOW (MGD)	.324
28. BASES FOR FLOW	METERED
29. ADEQUACY OF CHLORINATION	ADEQUATE
30. HYDRAULIC OVERLOAD	NO
31. METERING - SEWAGE FLOW	

	EFFLUENT PERMIT LIMITS		------------- OPERATIONAL RESULTS -------------					
			INF.	EFFLUENT		PERCENT	VIOLA-	SAMPLES
	MG/L	LB/DAY	MG/L	MG/L	LB/DAY	REMOVAL	TION	BY
B.O.D.			84.	64.	172	23.8		ENVIR. CONS.
S.S.			103.	71.0	191	31.5		ENVIR. CONS.
SET. S.*			4.5	0.2		96.2		ENVIR. CONS.
P- TOTAL								
N- TOTAL								

* GIVEN IN ML/L

** MILE POINTS TO NEAREST TENTH

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                 1972 (FEB) MUNICIPAL S.T.W. INVENTORY

        1.  NAME OF LOCALITY                     BROKHAVN T
        2.  COUNTY                               SUFFOLK   47
        3.  NAME OF PLANT                        HOLBROOK SD
        4.  PLANT NO.                             10
        5.  TYPE OF PLANT                        COUNTY DISTRICT OR OWNERSHIP
        6.  DRAINAGE BASIN                       ATLANTIC OCEAN - LONG ISLAND SOUND
        7.  ENVIRONMENTAL REGION                 RONKONKOMA-1
        8.  LOCAL HEALTH UNIT                    SUFFOLK COUNTY
        9.  COLLECTION SYSTEM TYPE               SEPARATE
       10.  SIGNIFICANT INDUSTRIAL WASTES        NO
       11.  PLANT GRADE                          B
       12.  CHIEF OPERATOR GRADE                 3
       13.  ASSISTANT OPERATOR                   3
       14.  YEAR PLANT CONSTRUCTED               1966
       15.  YEAR LATEST MAJOR IMPROVEMENTS
       16.  TRIBUTARY POPULATION                     1200
       17.  DESIGN FLOW (100S OF GAL.)               7200
       18.  TREATMENT UNITS
                PRELIMINARY                      BAR SCREEN & COMMINUTOR
                PRIMARY                          SETTLING TANK- MECH. SLUDGE COLL.
                INTERMEDIATE
                SECONDARY                        HIGH RATE TRICKLING FILTER
                TERTIARY
                CHLORINATION                     POST CHLORINATION
                DISPOSAL OF LIQUIDS              SEEPAGE PIT/CESSPOOL TO GROUND WATER
       19.  SLUDGE HANDLING UNITS
                PRELIMINARY                      HOLDING
                DIGESTION
                DEWATERING
                DISPOSAL OF SLUDGE               SCAVENGER
       20.  STREAM TYPE                          GROUND
       21.  STREAM CLASS                         A
       22.  RECEIVING WATER & MILE PT.**         GROUND WATER G.S.BAY
       23.  PERIOD OF CHLORINATION               CONTINUOUS
       24.  ADDITIONAL EFFLUENT LIMITS
       25.  OPERATING PERMIT ISSUED ON            4/13/71
       26.  OPERATING PERMIT EXPIRES ON           4/13/73
       27.  ACTUAL FLOW (MGD)                      0.053
       28.  BASES FOR FLOW                       METERED
       29.  ADEQUACY OF CHLORINATION             ADEQUATE
       30.  HYDRAULIC OVERLOAD                   NO
       31.  METERING - SEWAGE FLOW

                 EFFLUENT       -------------- OPERATIONAL RESULTS --------------
               PERMIT LIMITS     INF.      EFFLUENT     PERCENT   VIOLA-   SAMPLES
               MG/L  LB/DAY      MG/L    MG/L  LB/DAY.  REMOVAL    TION       BY

       B.O.D.                    211.    123.     54    41.7            PLANT RECORD
       S.S.                      197.    76.6     33    60.0            PLANT RECORD
       SET. S.*                   8.9     0.3           96.6            PLANT RECORD
       P- TOTAL                  27.5    26.5     11     3.0            ENVIR. CONS.
       N- TOTAL                 56.66   52.24     23     7.0            ENVIR. CONS.

       *  GIVEN IN ML/L
       ** MILE POINTS TO NEAREST TENTH
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                        1972 (FEB) MUNICIPAL S.T.W. INVENTORY
         1.  NAME OF LOCALITY                         HUNTNGTN T
         2.  COUNTY                                   SUFFOLK   47
         3.  NAME OF PLANT                            STRATMOR HUNT
         4.  PLANT NO.                                 11
         5.  TYPE OF PLANT                            PRIVATE SEWERAGE DISPOSAL CORP.
         6.  DRAINAGE BASIN                           ATLANTIC OCEAN - LONG ISLAND SOUND
         7.  ENVIRONMENTAL REGION                     RONKONKOMA-1
         8.  LOCAL HEALTH UNIT                        SUFFOLK COUNTY
         9.  COLLECTION SYSTEM TYPE                   SEPARATE
        10.  SIGNIFICANT INDUSTRIAL WASTES            NO
        11.  PLANT GRADE                              A
        12.  CHIEF OPERATOR GRADE                     2
        13.  ASSISTANT OPERATOR                       3
        14.  YEAR PLANT CONSTRUCTED                   1968
        15.  YEAR LATEST MAJOR IMPROVEMENTS
        16.  TRIBUTARY POPULATION                         808
        17.  DESIGN FLOW (100S OF GAL.)                  2360
        18.  TREATMENT UNITS
                 PRELIMINARY                          COMMINUTOR OR BARMINUTOR
                 PRIMARY
                 INTERMEDIATE
                 SECONDARY                            EXTENDED AERATION
                 TERTIARY                             LAGOON
                 CHLORINATION                         POST CHLORINATION
                 DISPOSAL OF LIQUIDS                  SAND FILTER TO GROUND WATER
        19.  SLUDGE HANDLING UNITS
                 PRELIMINARY                          HOLDING
                 DIGESTION
                 DEWATERING
                 DISPOSAL OF SLUDGE                   SCAVENGER
        20.  STREAM TYPE                              GROUND
        21.  STREAM CLASS                             A
        22.  RECEIVING WATER & MILE PT.**             TRIB TO ATLANTIC OCN
        23.  PERIOD OF CHLORINATION                   CONTINUOUS
        24.  ADDITIONAL EFFLUENT LIMITS
        25.  OPERATING PERMIT ISSUED ON               10/ 5/67
        26.  OPERATING PERMIT EXPIRES ON              10/ 5/72
        27.  ACTUAL FLOW (MGD)                          .162
        28.  BASES FOR FLOW                           METERED
        29.  ADEQUACY OF CHLORINATION                 ADEQUATE
        30.  HYDRAULIC OVERLOAD                       NO
        31.  METERING - SEWAGE FLOW                   WEIR

                  EFFLUENT       -------------- OPERATIONAL RESULTS --------------
                PERMIT LIMITS     INF.       EFFLUENT       PERCENT   VIOLA-   SAMPLES
                MG/L  LB/DAY      MG/L    MG/L   LB/DAY    REMOVAL    TION       BY

        B.O.D.     20.0      39     168.                                      PLANT RECORD
        S.S.       24.0      47     154.                                      PLANT RECORD
        SET. S.*
        P- TOTAL
        N- TOTAL

        *  GIVEN IN ML/L
        ** MILE POINTS TO NEAREST TENTH
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                    1972 (FEB) MUNICIPAL S.T.W. INVENTORY

          1.  NAME OF LOCALITY                      HEMPSTED T
          2.  COUNTY                                NASSAU     28
          3.  NAME OF PLANT                         TWN INCINATOR
          4.  PLANT NO.                              25
          5.  TYPE OF PLANT                         COUNTY DISTRICT OR OWNERSHIP
          6.  DRAINAGE BASIN                        ATLANTIC OCEAN - LONG ISLAND SOUND
          7.  ENVIRONMENTAL REGION                  RONKONKOMA-1
          8.  LOCAL HEALTH UNIT                     NASSAU COUNTY
          9.  COLLECTION SYSTEM TYPE                SEPARATE
         10.  SIGNIFICANT INDUSTRIAL WASTES         NO
         11.  PLANT GRADE                           A
         12.  CHIEF OPERATOR GRADE                  3
         13.  ASSISTANT OPERATOR                    3
         14.  YEAR PLANT CONSTRUCTED                1963
         15.  YEAR LATEST MAJOR IMPROVEMENTS
         16.  TRIBUTARY POPULATION                        30
         17.  DESIGN FLOW (100S OF GAL.)                 900
         18.  TREATMENT UNITS
                   PRELIMINARY                      BAR SCREEN
                   PRIMARY
                   INTERMEDIATE
                   SECONDARY                        EXTENDED AERATION
                   TERTIARY                         LAGOON
                   CHLORINATION                     POST CHLORINATION
                   DISPOSAL OF LIQUIDS              SHORE DISCHARGE TO SURFACE WATERS
         19.  SLUDGE HANDLING UNITS
                   PRELIMINARY
                   DIGESTION
                   DEWATERING
                   DISPOSAL OF SLUDGE               SCAVENGER
         20.  STREAM TYPE                           TIDAL
         21.  STREAM CLASS                          SPECIAL-A
         22.  RECEIVING WATER & MILE PT.**          FREEPORT CREEK
         23.  PERIOD OF CHLORINATION                CONTINUOUS
         24.  ADDITIONAL EFFLUENT LIMITS
         25.  OPERATING PERMIT ISSUED ON
         26.  OPERATING PERMIT EXPIRES ON
         27.  ACTUAL FLOW (MGD)                      0.001
         28.  BASES FOR FLOW                        OTHER
         29.  ADEQUACY OF CHLORINATION              ADEQUATE
         30.  HYDRAULIC OVERLOAD                    NO
         31.  METERING - SEWAGE FLOW

                    EFFLUENT       ------------- OPERATIONAL RESULTS -------------
                  PERMIT LIMITS    INF.      EFFLUENT      PERCENT  VIOLA-  SAMPLES
                  MG/L  LB/DAY     MG/L    MG/L  LB/DAY    REMOVAL   TION     BY

         B.O.D.                    350.    30.              91.5            ENVIR. CONS.
         S.S.                      250.    87.0             65.2            ENVIR. CONS.
         SET. S.*                  134.0   17.0             87.2            ENVIR. CONS.
         P- TOTAL
         N- TOTAL

         *  GIVEN IN ML/L
         ** MILE POINTS TO NEAREST TENTH
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1972 (FEB) MUNICIPAL S.T.W. INVENTORY

1. NAME OF LOCALITY	FREEPORT V
2. COUNTY	NASSAU 28
3. NAME OF PLANT	FREEPORT V
4. PLANT NO.	7
5. TYPE OF PLANT	VILLAGE
6. DRAINAGE BASIN	ATLANTIC OCEAN - LONG ISLAND SOUND
7. ENVIRONMENTAL REGION	RONKONKOMA-1
8. LOCAL HEALTH UNIT	NASSAU COUNTY
9. COLLECTION SYSTEM TYPE	SEPARATE
10. SIGNIFICANT INDUSTRIAL WASTES	YES
11. PLANT GRADE	B
12. CHIEF OPERATOR GRADE	2
13. ASSISTANT OPERATOR	3
14. YEAR PLANT CONSTRUCTED	1927
15. YEAR LATEST MAJOR IMPROVEMENTS	1961
16. TRIBUTARY POPULATION	34200
17. DESIGN FLOW (100S OF GAL.)	40000
18. TREATMENT UNITS	
PRELIMINARY	COMMINUTOR GRIT CHAMBER
PRIMARY	SETTLING TANK- MECH. SLUDGE COLL.
INTERMEDIATE	
SECONDARY	HIGH RATE TRICKLING FILTER
TERTIARY	
CHLORINATION	POST CHLORINATION
DISPOSAL OF LIQUIDS	SHORE DISCHARGE TO SURFACE WATERS
19. SLUDGE HANDLING UNITS	
PRELIMINARY	
DIGESTION	ANAEROBIC DIGESTION(SEPARATE DIGESTERS
DEWATERING	
DISPOSAL OF SLUDGE	TO ANOTHER S.T.W.
20. STREAM TYPE	TIDAL
21. STREAM CLASS	D
22. RECEIVING WATER & MILE PT.**	FREEPORT CREEK
23. PERIOD OF CHLORINATION	CONTINUOUS
24. ADDITIONAL EFFLUENT LIMITS	
25. OPERATING PERMIT ISSUED ON	7/28/59
26. OPERATING PERMIT EXPIRES ON	
27. ACTUAL FLOW (MGD)	4.060
28. BASES FOR FLOW	METERED
29. ADEQUACY OF CHLORINATION	ADEQUATE
30. HYDRAULIC OVERLOAD	YES
31. METERING - SEWAGE FLOW	

	EFFLUENT PERMIT LIMITS		OPERATIONAL RESULTS					
			INF.	EFFLUENT		PERCENT	VIOLA-	SAMPLES
	MG/L	LB/DAY	MG/L	MG/L	LB/DAY	REMOVAL	TION	BY
B.O.D.			173.	74.	2505	57.2		PLANT RECORD
S.S.			167.	63.2	2139	62.3		PLANT RECORD
SET. S.*			10.5	0.1		99.9		PLANT RECORD
P- TOTAL			9.0	5.2	176	42.0		ENVIR. CONS.
N- TOTAL			43.77	33.04	1118	24.0		ENVIR. CONS.

* GIVEN IN ML/L

** MILE POINTS TO NEAREST TENTH

1972 (FEB) MUNICIPAL S.T.W. INVENTORY

1. NAME OF LOCALITY HEMPSTED T (BAY PART)
2. COUNTY NASSAU 28
3. NAME OF PLANT CO DISP DIS 2
4. PLANT NO. 4
5. TYPE OF PLANT COUNTY DISTRICT OR OWNERSHIP
6. DRAINAGE BASIN ATLANTIC OCEAN - LONG ISLAND SOUND
7. ENVIRONMENTAL REGION RONKONKOMA-1
8. LOCAL HEALTH UNIT NASSAU COUNTY
9. COLLECTION SYSTEM TYPE SEPARATE
10. SIGNIFICANT INDUSTRIAL WASTES YES
11. PLANT GRADE 1
12. CHIEF OPERATOR GRADE 1
13. ASSISTANT OPERATOR 2
14. YEAR PLANT CONSTRUCTED 1951
15. YEAR LATEST MAJOR IMPROVEMENTS 1961
16. TRIBUTARY POPULATION 459000
17. DESIGN FLOW (100S OF GAL.) 600000
18. TREATMENT UNITS
    PRELIMINARY BAR SCREEN - GRIT CHAMBER
    PRIMARY SETTLING TANK- MECH. SLUDGE COLL.
    INTERMEDIATE
    SECONDARY ACTIVATED SLUDGE
    TERTIARY
    CHLORINATION BOTH PRE & POST CHLORINATION
    DISPOSAL OF LIQUIDS SHORE DISCHARGE TO SURFACE WATERS
19. SLUDGE HANDLING UNITS
    PRELIMINARY THICKENING & HOLDING
    DIGESTION ANAEROBIC DIGESTION(SEPARATE DIGESTERS
    DEWATERING
    DISPOSAL OF SLUDGE BARGE TO SEA
20. STREAM TYPE TIDAL
21. STREAM CLASS B
22. RECEIVING WATER & MILE PT.** REYNOLDS CHANNEL
23. PERIOD OF CHLORINATION CONTINUOUS
24. ADDITIONAL EFFLUENT LIMITS
25. OPERATING PERMIT ISSUED ON
26. OPERATING PERMIT EXPIRES ON
27. ACTUAL FLOW (MGD) 65.000
28. BASES FOR FLOW METERED
29. ADEQUACY OF CHLORINATION ADEQUATE
30. HYDRAULIC OVERLOAD YES
31. METERING - SEWAGE FLOW

	EFFLUENT PERMIT LIMITS		------------- OPERATIONAL RESULTS -------------					
			INF.	EFFLUENT		PERCENT	VIOLA-	SAMPLES
	MG/L	LB/DAY	MG/L	MG/L	LB/DAY	REMO AL	TION	BY
B.O.D.			182.	21.	11384	90.7		PLANT RECORD
S.S.			246.	28.2	15287	92.4		PLANT RECORD
SET. S.*			12.5	.1		99.9		ENVIR. CONS.
P- TOTAL			13.1	3.3	1788	74.0		ENVIR. CONS.
N- TOTAL			54.61	24.95	13525	54.0		ENVIR. CONS.

* GIVEN IN ML/L

** MILE POINTS TO NEAREST TENTH

1972 (FEB) MUNICIPAL S.T.W. INVENTORY

1.	NAME OF LOCALITY	LONG BCH C
2.	COUNTY	NASSAU 28
3.	NAME OF PLANT	LONG BEACH C
4.	PLANT NO.	3
5.	TYPE OF PLANT	CITY
6.	DRAINAGE BASIN	ATLANTIC OCEAN - LONG ISLAND SOUND
7.	ENVIRONMENTAL REGION	RONKONKOMA-1
8.	LOCAL HEALTH UNIT	NASSAU COUNTY
9.	COLLECTION SYSTEM TYPE	SEPARATE
10.	SIGNIFICANT INDUSTRIAL WASTES	NO
11.	PLANT GRADE	B
12.	CHIEF OPERATOR GRADE	2
13.	ASSISTANT OPERATOR	3
14.	YEAR PLANT CONSTRUCTED	1952
15.	YEAR LATEST MAJOR IMPROVEMENTS	1968
16.	TRIBUTARY POPULATION	35000
17.	DESIGN FLOW (100S OF GAL.)	63600
18.	TREATMENT UNITS	
	PRELIMINARY	BAR SCREEN, COMMINUTOR, - GRIT CHAMBER
	PRIMARY	SETTLING TANK- MECH. SLUDGE COLL.
	INTERMEDIATE	
	SECONDARY	HIGH RATE TRICKLING FILTER
	TERTIARY	
	CHLORINATION	POST CHLORINATION
	DISPOSAL OF LIQUIDS	SHORE DISCHARGE TO SURFACE WATERS
19.	SLUDGE HANDLING UNITS	
	PRELIMINARY	
	DIGESTION	ANAEROBIC DIGESTION:SEPARATE DIGESTERS
	DEWATERING	
	DISPOSAL OF SLUDGE	BARGE TO SEA
20.	STREAM TYPE	TIDAL
21.	STREAM CLASS	B
22.	RECEIVING WATER & MILE PT.**	REYNOLDS CHANNEL
23.	PERIOD OF CHLORINATION	CONTINUOUS
24.	ADDITIONAL EFFLUENT LIMITS	
25.	OPERATING PERMIT ISSUED ON	6/22/67
26.	OPERATING PERMIT EXPIRES ON	6/22/72
27.	ACTUAL FLOW (MGD)	6.870
28.	BASES FOR FLOW	METERED
29.	ADEQUACY OF CHLORINATION	ADEQUATE
30.	HYDRAULIC OVERLOAD	YES
31.	METERING - SEWAGE FLOW	PARSHALL FLUME

	EFFLUENT PERMIT LIMITS		------------ OPERATIONAL RESULTS ------------					
			INF.	EFFLUENT		PERCENT	VIOLA-TION	SAMPLES BY
	MG/L	LB/DAY	MG/L	MG/L	LB/DAY	REMOVAL		
B.O.D.			136.	24.	1375	82.4		PLANT RECORD
S.S.			155.	37.5	2148	76.2		PLANT RECORD
SET. S.*			7.1	0.2		97.1		PLANT RECORD
P- TOTAL								
N- TOTAL			29.72	33.12	1897	0.0		ENVIR. CONS.

* GIVEN IN ML/L

** MILE POINTS TO NEAREST TENTH

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                    1972  (FEB) MUNICIPAL S.T.W. INVENTORY

     1.  NAME OF LOCALITY                      HEMPSTED T
     2.  COUNTY                                NASSAU    28
     3.  NAME OF PLANT                         W LONG BCH SD
     4.  PLANT NO.                             - 9
     5.  TYPE OF PLANT                         TOWN DISTRICT
     6.  DRAINAGE BASIN                        ATLANTIC OCEAN - LONG ISLAND SOUND
     7.  ENVIRONMENTAL REGION                  RONKONKOMA-1
     8.  LOCAL HEALTH UNIT                     NASSAU COUNTY
     9.  COLLECTION SYSTEM TYPE                SEPARATE
    10.  SIGNIFICANT INDUSTRIAL WASTES         NO
    11.  PLANT GRADE                           B
    12.  CHIEF OPERATOR GRADE                  2
    13.  ASSISTANT OPERATOR                    3
    14.  YEAR PLANT CONSTRUCTED                1927
    15.  YEAR LATEST MAJOR IMPROVEMENTS        1960
    16.  TRIBUTARY POPULATION                    13000
    17.  DESIGN FLOW (100S OF GAL.)              30000 20
    18.  TREATMENT UNITS
              PRELIMINARY                      BAR SCREEN  GRIT CHAMBER
              PRIMARY                          SETTLING TANK- MECH. SLUDGE COLL.
              INTERMEDIATE
              SECONDARY                        HIGH RATE TRICKLING FILTER
              TERTIARY
              CHLORINATION                     POST CHLORINATION
              DISPOSAL OF LIQUIDS              SHORE DISCHARGE TO SURFACE WATERS
    19.  SLUDGE HANDLING UNITS
              PRELIMINARY
              DIGESTION                        ANAEROBIC DIGESTION-SEPARATE DIGESTERS
              DEWATERING                       MECH. DEWATERING- VAC. FILTRATION
              DISPOSAL OF SLUDGE               BURIAL/TO PUBLIC AS SOIL CONDITIONER
    20.  STREAM TYPE                           TIDAL
    21.  STREAM CLASS                          B
    22.  RECEIVING WATER & MILE PT.**          REYNOLDS CHANNEL
    23.  PERIOD OF CHLORINATION                CONTINUOUS
    24.  ADDITIONAL EFFLUENT LIMITS
    25.  OPERATING PERMIT ISSUED ON            11/17/59
    26.  OPERATING PERMIT EXPIRES ON
    27.  ACTUAL FLOW (MGD)                       0.599
    28.  BASES FOR FLOW                        METERED
    29.  ADEQUACY OF CHLORINATION              ADEQUATE
    30.  HYDRAULIC OVERLOAD                    NO
    31.  METERING - SEWAGE FLOW

              EFFLUENT        ------------- OPERATIONAL RESULTS -------------
             PERMIT LIMITS     INF.      EFFLUENT      PERCENT  VIOLA-   SAMPLES
             MG/L  LB/DAY      MG/L    MG/L   LB/DAY   REMOVAL   TION       BY

    B.O.D.                     192.     10.       49    94.8            PLANT RECORD
    S.S.                       339.     22.9     114    93.3            PLANT RECORD
    SET. S.*                    11.0     0.1            99.1            PLANT RECORD
    P- TOTAL                    14.7     7.0      34    52.0            ENVIR. CONS.
    N- TOTAL                    33.23   12.86     64    61.0            ENVIR. CONS.

    *  GIVEN IN ML/L
    ** MILE POINTS TO NEAREST TENTH
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                        1972 (FEB) MUNICIPAL S.T.W. INVENTORY

       1.  NAME OF LOCALITY                    LAWRENCE V
       2.  COUNTY                              NASSAU    28
       3.  NAME OF PLANT                       LAWRENCE    V
       4.  PLANT NO.                            8
       5.  TYPE OF PLANT                       VILLAGE
       6.  DRAINAGE BASIN                      ATLANTIC OCEAN - LONG ISLAND SOUND
       7.  ENVIRONMENTAL REGION                RONKONKOMA-1
       8.  LOCAL HEALTH UNIT                   NASSAU COUNTY
       9.  COLLECTION SYSTEM TYPE              SEPARATE
      10.  SIGNIFICANT INDUSTRIAL WASTES       NO
      11.  PLANT GRADE                         B
      12.  CHIEF OPERATOR GRADE                3
      13.  ASSISTANT OPERATOR                  3
      14.  YEAR PLANT CONSTRUCTED              1933
      15.  YEAR LATEST MAJOR IMPROVEMENTS      1966
      16.  TRIBUTARY POPULATION                    5300
      17.  DESIGN FLOW (100S OF GAL.)             15000
      18.  TREATMENT UNITS
               PRELIMINARY                     BAR SCREEN, COMMINUTOR, & GRIT CHAMBER
               PRIMARY                         SETTLING TANK- MECH. SLUDGE COLL.
               INTERMEDIATE
               SECONDARY                       HIGH RATE TRICKLING FILTER
               TERTIARY
               CHLORINATION                    POST CHLORINATION
               DISPOSAL OF LIQUIDS             SHORE DISCHARGE TO SURFACE WATERS
      19.  SLUDGE HANDLING UNITS
               PRELIMINARY
               DIGESTION                       ANAEROBIC DIGESTION-SEPARATE DIGESTERS
               DEWATERING                      DRYING BED
               DISPOSAL OF SLUDGE              TO PUBLIC AS SOIL CONDITIONER
      20.  STREAM TYPE                         TIDAL
      21.  STREAM CLASS                        SPECIAL-A
      22.  RECEIVING WATER & MILE PT.**        BANNISTER CREEK
      23.  PERIOD OF CHLORINATION              CONTINUOUS
      24.  ADDITIONAL EFFLUENT LIMITS
      25.  OPERATING PERMIT ISSUED ON           5/ 4/70
      26.  OPERATING PERMIT EXPIRES ON          5/ 4/75
      27.  ACTUAL FLOW (MGD)                     0.758
      28.  BASES FOR FLOW                      METERED
      29.  ADEQUACY OF CHLORINATION            ADEQUATE
      30.  HYDRAULIC OVERLOAD                  NO
      31.  METERING - SEWAGE FLOW

                   EFFLUENT      ------------- OPERATIONAL RESULTS -------------
                 PERMIT LIMITS    INF.      EFFLUENT     PERCENT  VIOLA-   SAMPLES
                 MG/L  LB/DAY     MG/L    MG/L  LB/DAY   REMOVAL   TION      BY

       B.O.D.                     104.     13.      82    87.5             PLANT RECORD
       S.S.                       162.     20.8    131    87.0             PLANT RECORD
       SET. S.*                     6.1     0.1           98.4             PLANT RECORD
       P- TOTAL                    13.9     4.3     27    69.0             ENVIR. CONS.
       N- TOTAL

       *  GIVEN IN ML/L
       ** MILE POINTS TO NEAREST TENTH
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1972 (FEB) MUNICIPAL S.T.W. INVENTORY

1.	NAME OF LOCALITY	CEDRHRST V
2.	COUNTY	NASSAU 28
3.	NAME OF PLANT	CEDARHURST V
4.	PLANT NO.	6
5.	TYPE OF PLANT	VILLAGE
6.	DRAINAGE BASIN	ATLANTIC OCEAN - LONG ISLAND SOUND
7.	ENVIRONMENTAL REGION	RONKONKOMA-1
8.	LOCAL HEALTH UNIT	NASSAU COUNTY
9.	COLLECTION SYSTEM TYPE	SEPARATE
10.	SIGNIFICANT INDUSTRIAL WASTES	NO
11.	PLANT GRADE	B
12.	CHIEF OPERATOR GRADE	3
13.	ASSISTANT OPERATOR	1
14.	YEAR PLANT CONSTRUCTED	1934
15.	YEAR LATEST MAJOR IMPROVEMENTS	1968
16.	TRIBUTARY POPULATION	6930
17.	DESIGN FLOW (100S OF GAL.)	10000
18.	TREATMENT UNITS	
	PRELIMINARY	BAR SCREEN, COMMINUTOR, & GRIT CHAMBER
	PRIMARY	SETTLING TANK- MECH. SLUDGE COLL.
	INTERMEDIATE	
	SECONDARY	HIGH RATE TRICKLING FILTER
	TERTIARY	
	CHLORINATION	BOTH PRE & POST CHLORINATION
	DISPOSAL OF LIQUIDS	SHORE DISCHARGE TO SURFACE WATERS
19.	SLUDGE HANDLING UNITS	
	PRELIMINARY	
	DIGESTION	ANAEROBIC DIGESTION/SEPARATE DIGESTERS
	DEWATERING	DRYING BED
	DISPOSAL OF SLUDGE	BURIAL- INCL. SANITARY LANDFILL
20.	STREAM TYPE	TIDAL
21.	STREAM CLASS	SPECIAL-A
22.	RECEIVING WATER & MILE PT.**	MOTTS CREEK
23.	PERIOD OF CHLORINATION	CONTINUOUS
24.	ADDITIONAL EFFLUENT LIMITS	
25.	OPERATING PERMIT ISSUED ON	4/18/67
26.	OPERATING PERMIT EXPIRES ON	4/18/72
27.	ACTUAL FLOW (MGD)	.961
28.	BASES FOR FLOW	TRIBUTARY POPULATION
29.	ADEQUACY OF CHLORINATION	ADEQUATE
30.	HYDRAULIC OVERLOAD	NO
31.	METERING - SEWAGE FLOW	

	EFFLUENT PERMIT LIMITS		------------ OPERATIONAL RESULTS			------------		
			INF.	EFFLUENT		PERCENT	VIOLA-	SAMPLES
	MG/L	LB/DAY	MG/L	MG/L	LB/DAY	REMOVAL	TION	BY
B.O.D.			165.	28.	224	83.3		PLANT RECORD
S.S.			165.	25.8	206	84.4		PLANT RECORD
SET. S.*			10.0	.1		99.9		PLANT RECORD
P- TOTAL			11.8	6.5	52	44.0		ENVIR. CONS.
N- TOTAL			30.04	25.00	200	16.0		ENVIR. CONS.

* GIVEN IN ML/L

** MILE POINTS TO NEAREST TENTH

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                  1972 (FEB) MUNICIPAL S.T.W. INVENTORY

      1. NAME OF LOCALITY                        HEMPSTED T
      2. COUNTY                                  NASSAU    28
      3. NAME OF PLANT                           INWOOD  S D 1
      4. PLANT NO.                                18
      5. TYPE OF PLANT                           COUNTY DISTRICT OR OWNERSHIP
      6. DRAINAGE BASIN                          ATLANTIC OCEAN - LONG ISLAND SOUND
      7. ENVIRONMENTAL REGION                    RONKONKOMA-1
      8. LOCAL HEALTH UNIT                       NASSAU COUNTY
      9. COLLECTION SYSTEM TYPE                  SEPARATE
     10. SIGNIFICANT INDUSTRIAL WASTES           NO
     11. PLANT GRADE                             B
     12. CHIEF OPERATOR GRADE                    2
     13. ASSISTANT OPERATOR                      3
     14. YEAR PLANT CONSTRUCTED                  1963
     15. YEAR LATEST MAJOR IMPROVEMENTS
     16. TRIBUTARY POPULATION                      6000
     17. DESIGN FLOW (100S OF GAL.)               25000
     18. TREATMENT UNITS
            PRELIMINARY                          BAR SCREEN, COMMINUTOR, & GRIT CHAMBER
            PRIMARY                              SETTLING TANK- MECH. SLUDGE COLL.
            INTERMEDIATE
            SECONDARY                            HIGH RATE TRICKLING FILTER
            TERTIARY
            CHLORINATION                         POST CHLORINATION
            DISPOSAL OF LIQUIDS                  SHORE DISCHARGE TO SURFACE WATERS
     19. SLUDGE HANDLING UNITS
            PRELIMINARY
            DIGESTION                            ANAEROBIC DIGESTION/SEPARATE DIGESTERS
            DEWATERING
            DISPOSAL OF SLUDGE                   TO ANOTHER S.T.W.
     20. STREAM TYPE                             TIDAL
     21. STREAM CLASS                            B
     22. RECEIVING WATER & MILE PT.**            JAMAICA BAY
     23. PERIOD OF CHLORINATION                  CONTINUOUS
     24. ADDITIONAL EFFLUENT LIMITS
     25. OPERATING PERMIT ISSUED ON
     26. OPERATING PERMIT EXPIRES ON
     27. ACTUAL FLOW (MGD)                        1.670
     28. BASES FOR FLOW                          METERED
     29. ADEQUACY OF CHLORINATION                ADEQUATE
     30. HYDRAULIC OVERLOAD                      NO
     31. METERING - SEWAGE FLOW

                 EFFLUENT       ------------ OPERATIONAL RESULTS ------------
               PERMIT LIMITS     INF.     EFFLUENT     PERCENT  VIOLA-  SAMPLES
               MG/L  LB/DAY      MG/L   MG/L  LB/DAY   REMOVAL   TION     BY

     B.O.D.                      174.    16.     222    90.8            PLANT RECORD
     S.S.                        251.    21.4    298    91.4            PLANT RECORD
     SET. S.*                    10.0    0.1            99.9            PLANT RECORD
     P- TOTAL
     N- TOTAL                    33.75  32.00    445     5.0            ENVIR. CONS.

     *  GIVEN IN ML/L
     ** MILE POINTS TO NEAREST TENTH
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1972 (FEB) MUNICIPAL S.T.W. INVENTORY

1.	NAME OF LOCALITY	NEW YORK C
2.	COUNTY	N Y CITY 58
3.	NAME OF PLANT	ROCKAWAY
4.	PLANT NO.	10
5.	TYPE OF PLANT	CITY
6.	DRAINAGE BASIN	ATLANTIC OCEAN - LONG ISLAND SOUND
7.	ENVIRONMENTAL REGION	N.Y. CITY=2
8.	LOCAL HEALTH UNIT	
9.	COLLECTION SYSTEM TYPE	COMBINED
10.	SIGNIFICANT INDUSTRIAL WASTES	YES
11.	PLANT GRADE	A
12.	CHIEF OPERATOR GRADE	1
13.	ASSISTANT OPERATOR	2
14.	YEAR PLANT CONSTRUCTED	1952
15.	YEAR LATEST MAJOR IMPROVEMENTS	1961
16.	TRIBUTARY POPULATION	70000
17.	DESIGN FLOW (100S OF GAL.)	300000
18.	TREATMENT UNITS	
	PRELIMINARY	PRE=AERATION, BAR SCREEN, GRIT CHAMBER
	PRIMARY	
	INTERMEDIATE	MODIFIED AERATION
	SECONDARY	
	TERTIARY	
	CHLORINATION	POST CHLORINATION
	DISPOSAL OF LIQUIDS	SHORE DISCHARGE TO SURFACE WATERS
19.	SLUDGE HANDLING UNITS	
	PRELIMINARY	THICKENING & HOLDING
	DIGESTION	ANAEROBIC DIGESTION(SEPARATE DIGESTERS
	DEWATERING	
	DISPOSAL OF SLUDGE	BARGE TO SEA
20.	STREAM TYPE	TIDAL
21.	STREAM CLASS	SPECIAL=A
22.	RECEIVING WATER & MILE PT.**	JAMAICA BAY
23.	PERIOD OF CHLORINATION	SEASONAL
24.	ADDITIONAL EFFLUENT LIMITS	
25.	OPERATING PERMIT ISSUED ON	3/10/59
26.	OPERATING PERMIT EXPIRES ON	
27.	ACTUAL FLOW (MGD)	19.300
28.	BASES FOR FLOW	METERED
29.	ADEQUACY OF CHLORINATION	ADEQUATE
30.	HYDRAULIC OVERLOAD	NO
31.	METERING = SEWAGE FLOW	

	EFFLUENT PERMIT LIMITS		============= OPERATIONAL RESULTS =============					
			INF.	EFFLUENT		PERCENT	VIOLA=	SAMPLES
	MG/L	LB/DAY	MG/L	MG/L	LB/DAY	REMOVAL	TION	BY
B.O.D.			86.	36.	5794	58.2		PLANT RECORD
S.S.			126.	49.0	7887	61.1		PLANT RECORD
SET. S.*			82.	8.5		89.6		OTHER AGENCY
P= TOTAL			4.8	4.0	643	16.0		PLANT RECORD
N= TOTAL			17.10	16.30	2623	4.0		PLANT RECORD

* GIVEN IN ML/L

** MILE POINTS TO NEAREST TENTH

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                      1972 (FEB) MUNICIPAL S.T.W. INVENTORY

         1.  NAME OF LOCALITY                        NEW YORK C
         2.  COUNTY                                  N Y CITY  58
         3.  NAME OF PLANT                           JAMAICA
         4.  PLANT NO.                                 6
         5.  TYPE OF PLANT                           CITY
         6.  DRAINAGE BASIN                          ATLANTIC OCEAN - LONG ISLAND SOUND
         7.  ENVIRONMENTAL REGION                    N.Y. CITY-2
         8.  LOCAL HEALTH UNIT
         9.  COLLECTION SYSTEM TYPE                  COMBINED
        10.  SIGNIFICANT INDUSTRIAL WASTES           YES
        11.  PLANT GRADE                             A
        12.  CHIEF OPERATOR GRADE                    1
        13.  ASSISTANT OPERATOR                      2
        14.  YEAR PLANT CONSTRUCTED                  1943
        15.  YEAR LATEST MAJOR IMPROVEMENTS          1964
        16.  TRIBUTARY POPULATION                     585000
        17.  DESIGN FLOW (100S OF GAL.)              1000000
        18.  TREATMENT UNITS
                 PRELIMINARY                         BAR SCREEN, COMMINUTOR, & GRIT CHAMBER
                 PRIMARY                             SETTLING TANK- MECH. SLUDGE COLL.
                 INTERMEDIATE
                 SECONDARY                           ACTIVATED SLUDGE
                 TERTIARY
                 CHLORINATION                        POST CHLORINATION
                 DISPOSAL OF LIQUIDS                 SHORE DISCHARGE TO SURFACE WATERS
        19.  SLUDGE HANDLING UNITS
                 PRELIMINARY                         THICKENING & HOLDING
                 DIGESTION                           ANAEROBIC DIGESTION(SEPARATE DIGESTERS
                 DEWATERING
                 DISPOSAL OF SLUDGE                  BARGE TO SEA
        20.  STREAM TYPE                             TIDAL
        21.  STREAM CLASS                            SPECIAL-A
        22.  RECEIVING WATER & MILE PT.**            BERGEN BASIN
        23.  PERIOD OF CHLORINATION                  SEASONAL
        24.  ADDITIONAL EFFLUENT LIMITS
        25.  OPERATING PERMIT ISSUED ON              11/ 9/60
        26.  OPERATING PERMIT EXPIRES ON
        27.  ACTUAL FLOW (MGD)                        92.800
        28.  BASES FOR FLOW                          PUMP OPERATION  TIME
        29.  ADEQUACY OF CHLORINATION
        30.  HYDRAULIC OVERLOAD                      NO
        31.  METERING - SEWAGE FLOW

                  EFFLUENT      -------------- OPERATIONAL RESULTS --------------
                PERMIT LIMITS     INF.      EFFLUENT      PERCENT  VIOLA-   SAMPLES
                MG/L  LB/DAY      MG/L    MG/L  LB/DAY    REMOVAL   TION       BY

        B.O.D.                    134.     54.    41793    59.7             PLANT RECORD
        S.S.                      174.     53.0   41019    69.5             PLANT RECORD
        SET. S.*                  224.     20.3            90.9             OTHER AGENCY
        P- TOTAL                    7.9     6.9    5340    12.0             PLANT RECORD
        N- TOTAL                   26.50   31.90  24689     0.0             PLANT RECORD

        *  GIVEN IN ML/L
        ** MILE POINTS TO NEAREST TENTH
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1972 (FEB) MUNICIPAL S.T.W. INVENTORY

1. NAME OF LOCALITY	NEW YORK C
2. COUNTY	N Y CITY 58
3. NAME OF PLANT	26TH WARD
4. PLANT NO.	7
5. TYPE OF PLANT	CITY
6. DRAINAGE BASIN	ATLANTIC OCEAN - LONG ISLAND SOUND
7. ENVIRONMENTAL REGION	N.Y. CITY-2
8. LOCAL HEALTH UNIT	
9. COLLECTION SYSTEM TYPE	COMBINED
10. SIGNIFICANT INDUSTRIAL WASTES	YES
11. PLANT GRADE	A
12. CHIEF OPERATOR GRADE	1
13. ASSISTANT OPERATOR	2
14. YEAR PLANT CONSTRUCTED	1944
15. YEAR LATEST MAJOR IMPROVEMENTS	1951
16. TRIBUTARY POPULATION	316000
17. DESIGN FLOW (100S OF GAL.)	600000
18. TREATMENT UNITS	
PRELIMINARY	PRE-AERATION, BAR SCREEN, GRIT CHAMBER
PRIMARY	SETTLING TANK- MECH. SLUDGE COLL.
INTERMEDIATE	
SECONDARY	ACTIVATED SLUDGE
TERTIARY	
CHLORINATION	POST CHLORINATION
DISPOSAL OF LIQUIDS	SHORE DISCHARGE TO SURFACE WATERS
19. SLUDGE HANDLING UNITS	
PRELIMINARY	THICKENING
DIGESTION	ANAEROBIC DIGESTION(SEPARATE DIGESTERS
DEWATERING	DRYING BED
DISPOSAL OF SLUDGE	BARGE TO SEA
20. STREAM TYPE	TIDAL
21. STREAM CLASS	SPECIAL-A
22. RECEIVING WATER & MILE PT.**	JAMAICA BAY
23. PERIOD OF CHLORINATION	SEASONAL
24. ADDITIONAL EFFLUENT LIMITS	
25. OPERATING PERMIT ISSUED ON	1/23/40
26. OPERATING PERMIT EXPIRES ON	
27. ACTUAL FLOW (MGD)	70.100
28. BASES FOR FLOW	METERED
29. ADEQUACY OF CHLORINATION	INADEQUATE
30. HYDRAULIC OVERLOAD	YES
31. METERING - SEWAGE FLOW	

	EFFLUENT PERMIT LIMITS		---------- OPERATIONAL RESULTS ----------					
	MG/L	LB/DAY	INF. MG/L	EFFLUENT MG/L	EFFLUENT LB/DAY	PERCENT REMOVAL	VIOLA-TION	SAMPLES BY
B.O.D.			97.	36.	21046	62.9		PLANT RECORD
S.S.			111.	37.0	21631	66.7		PLANT RECORD
SET. S.*			160.8	6.3		96.1		OTHER AGENCY
P- TOTAL			3.5	3.8	2221	0.0		PLANT RECORD
N- TOTAL			17.10	13.70	8009	19.0		PLANT RECORD

* GIVEN IN ML/L

** MILE POINTS TO NEAREST TENTH

1972 (FEB) MUNICIPAL S.T.W. INVENTORY

1. NAME OF LOCALITY	NEW YORK C
2. COUNTY	N Y CITY 58
3. NAME OF PLANT	CONEY ISLAND
4. PLANT NO.	1
5. TYPE OF PLANT	CITY
6. DRAINAGE BASIN	ATLANTIC OCEAN - LONG ISLAND SOUND
7. ENVIRONMENTAL REGION	N.Y. CITY-2
8. LOCAL HEALTH UNIT	
9. COLLECTION SYSTEM TYPE	COMBINED
10. SIGNIFICANT INDUSTRIAL WASTES	YES
11. PLANT GRADE	A
12. CHIEF OPERATOR GRADE	1
13. ASSISTANT OPERATOR	2
14. YEAR PLANT CONSTRUCTED	1936
15. YEAR LATEST MAJOR IMPROVEMENTS	1963
16. TRIBUTARY POPULATION	600000
17. DESIGN FLOW (100S OF GAL.)	1100000
18. TREATMENT UNITS	
PRELIMINARY	PRE-AERATION, BAR SCREEN, GRIT CHAMBER
PRIMARY	
INTERMEDIATE	MODIFIED AERATION
SECONDARY	
TERTIARY	
CHLORINATION	POST CHLORINATION
DISPOSAL OF LIQUIDS	SHORE DISCHARGE TO SURFACE WATERS
19. SLUDGE HANDLING UNITS	
PRELIMINARY	THICKENING
DIGESTION	ANAEROBIC DIGESTION(SEPARATE DIGESTERS
DEWATERING	
DISPOSAL OF SLUDGE	BARGE TO SEA
20. STREAM TYPE	TIDAL
21. STREAM CLASS	SPECIAL-A
22. RECEIVING WATER & MILE PT.**	ROCKAWAY INLET
23. PERIOD OF CHLORINATION	SEASONAL
24. ADDITIONAL EFFLUENT LIMITS	
25. OPERATING PERMIT ISSUED ON	11/20/59
26. OPERATING PERMIT EXPIRES ON	
27. ACTUAL FLOW (MGD)	91.900
28. BASES FOR FLOW	METERED
29. ADEQUACY OF CHLORINATION	ADEQUATE
30. HYDRAULIC OVERLOAD	NO
31. METERING - SEWAGE FLOW	

	EFFLUENT PERMIT LIMITS		OPERATIONAL RESULTS					
			INF.	EFFLUENT		PERCENT	VIOLA-TION	SAMPLES BY
	MG/L	LB/DAY	MG/L	MG/L	LB/DAY	REMOVAL		
B.O.D.			132.	56.	42920	57.6		PLANT RECORD
S.S.			137.	55.0	42154	59.8		PLANT RECORD
SET. S.*			88.8	9.3		89.5		OTHER AGENCY
P- TOTAL			5.8	4.7	3602	18.0		ENVI.. CONS.
N- TOTAL			22.80	17.90	13719	21.0		ENVIR. CONS.

* GIVEN IN ML/L

** MILE POINTS TO NEAREST TENTH

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ENVIRONMENTAL CONTROL UNIT
STONY BROOK, N.Y. 11794

NOTICE TO ALL SHELLFISH HARVESTERS

NOTICE OF CONDITION OF ALL SHELLFISH GROUNDS LOCATED WITHIN OR ADJACENT TO THE TOWN OF BABYLON, SUFFOLK COUNTY, STATE OF NEW YORK.

Excerpted from Part 41 of the Official Compilation of Codes, Rules and Regulations of the State of New York.

The following is a statement of sanitary condition of shellfish lands in New York State. Notice of changes in classification will be sent to baymen by mail as and when they may occur. Whenever used in this Part 41:

(a) the term "mile" refers to statute mile;

(b) the term "monument" refers to a permanent post or marker placed on or near the shore by the Department of Environmental Conservation to serve as a landmark in establishing the lines of closure.

Section 41.3 Shellfish Lands In Suffolk County

(a) The shellfish lands in Suffolk County, except those listed in subdivision (b) are in such sanitary condition that shellfish thereon may be taken for use as food, and such lands are designated as certified areas.

(b) The following shellfish lands in Suffolk County are in such sanitary condition that shellfish thereon may not be taken for use as food and such lands are designated as uncertified areas.

Town of Babylon

Great South Bay

1. All that area, including adjacent creeks and canals, north of a line extending easterly from the southernmost tip of the bulkhead at Unqua Point to the southeastern end of the dock at the Unqua-Corinthian Yacht Club (local landmark).

2. All that area, including adjacent creeks and canals, north of a line extending easterly from the southeastern end of the dock at the Unqua-Corinthian Yacht Club (local landmark) to the southern tip of the easternmost bulkhead at the Amityville Village Beach (local landmark).

3. All that area, including adjacent creeks and canals, lying north of a line extending easterly from the southern tip of the easternmost bulkhead extending from shore at the Amityville Village Beach (local landmark) to the southern tip of the bulkhead extending from shore at the foot of Western Concourse at Copiague (local landmark).

4. All that area, including adjacent creeks, rivers and canals, lying north of a line extending southeasterly from the southern tip of the bulkhead extending from shore at the foot of Western Concourse at Copiague (local landmark) to a buoy located at the northern edge of the east-west boat channel south of the entrance to Howell Creek, thence continuing easterly along the northern edge of the east-west boat channel, as defined by a series of buoys regularly spaced, to a buoy marking the intersection of said east-west channel with Oak Island Channel, thence continuing easterly along a line as defined by a series of buoys to the southwestern corner of the large concrete base at the northern end of the Robert Moses Causeway Bridge located at Conklin Point. Said buoys are of a can type, white and orange in color and have lettered thereon, "N.Y.S. CONSV. DEPT., SHELLFISH CLOSURE LINE".

Atlantic Ocean

1. All areas of the Atlantic Ocean in the Town of Babylon are certified for the taking of shellfish.

Note: All reference points in the Town of Babylon taken from U.S.C. & G.S. Nautical Chart #120-SC dated December, 1971, except as indicated as "local landmark".

Ogden Reid
Commissioner

By:

Robert B. Mac Millan
Supervisor of Marine
Environmental Control

Dated: Albany, N.Y.
April 8, 1969

As amended thru
October 23, 1972

As Amended
1/1/76

STATE LAW PROHIBITS THE TAKING OF SHELLFISH FROM THE UNCERTIFIED AREAS OF THE SHELLFISH LANDS AND WATERS OF THE STATE.

If you intend to harvest shellfish from the waters of any town other than that in which you claim residency, then contact the offices of the New York State Department of Environmental Conservation at Stony Brook and obtain listings of the uncertified areas in that town.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
BUREAU OF SHELLFISHERIES
STONY BROOK, NEW YORK 11794

NOTICE TO ALL SHELLFISH HARVESTERS

NOTICE OF CONDITION OF ALL SHELLFISH GROUNDS LOCATED WITHIN OR ADJACENT TO THE TOWN OF BROOKHAVEN, SUFFOLK COUNTY, STATE OF NEW YORK.

Excerpted from Part 41 of the Official Compilation of Codes, Rules and Regulations of the State of New York.

The following is a statement of sanitary condition of shellfish lands in New York State. Notice of changes in classification will be sent to baymen by mail as and when they may occur. Whenever used in this Part 41:

(a) the term "mile" refers to statute mile;

(b) the term "monument" refers to a permanent post or marker placed on or near the shore by the N.Y.S. Department of Environmental Conservation to serve as a landmark in establishing the lines of closure.

Section 41.3 Shellfish Lands in Suffolk County

(a) The shellfish lands in Suffolk County, except those listed in subdivision (b) are in such sanitary condition that shellfish thereon may be taken for use as food, and such lands are designated as certified areas.

(b) The following shellfish lands in Suffolk County are in such sanitary condition that shellfish thereon shall not be taken for use as food, and such lands are designated as uncertified areas.

Town of Brookhaven (South Shore)

Great South Bay

1. All rivers, creeks, canals and boat basins between Nicoll Point and Howells Point.
2. All that area lying 500 feet easterly and westerly of the bulkheads forming the entrance to the harbor serving Fire Island Pines and extending 1,000 feet northerly of the entrance to said harbor.
3. All that area adjacent to Sailors Haven lying within an area extending one thousand feet northerly of the entrance to the boat basin at Sailors Haven and extending five hundred feet easterly and westerly of the entrance to said boat basin, during the period May 15 to September 30, both inclusive.
4. All that area adjacent to Barrett Beach lying within an area extending one thousand feet northerly of the entrance to the boat basin at Barrett Beach and extending five hundred feet easterly and westerly of the entrance to said boat basin, during the period May 15 to September 30, both inclusive.
5. All that area adjacent to Davis Park lying within an area extending one thousand feet northerly of the entrance to the harbor serving Davis Park and extending five hundred feet easterly and westerly of the entrance to said harbor, during the period May 15 to September 30, both inclusive.
6. All that area adjacent to Watch Hill lying within an area extending one thousand feet northerly of the entrance to the harbor serving Watch Hill and extending five hundred feet easterly and westerly of the entrance to said harbor during the period May 15 to September 30, both inclusive.

Note: All reference points in the Town of Brookhaven (Great South Bay) taken from N.O.A.A. Nautical Chart #12352 dated December 1975, except as indicated as "local landmark" or "local name."

Patchogue Bay

1. All that area lying north of a line extending easterly from the southwesternmost extremity of the Brookhaven Town Dock located at the foot of Blue Point Avenue in Blue Point (local landmark), to Buoy N"4" in the channel leading from Patchogue River, thence continuing easterly to Buoy Fl G"1" located at the entrance to Abets Creek and thence continuing northeasterly to the southernmost extremity of land forming the eastern side of the entrance to Abets Creek.

   Note: In the eventBuoy N"4" and/or Buoy Fl G"1", referenced above, are moved from their established locations per U.S.C. & G.S. Nautical Chart #120-SC, dated December 1971, that area north of a line extending easterly from the southwesternmost extremity of the Brookhaven Town Dock located at the foot of Blue Point Avenue in Blue Point (local landmark), to the southernmost extremity of land forming the eastern side of the entrance to Abets Creek, shall remain closed to the taking of shellfish until said Buoy N"4" and/or Buoy Fl G"1" shall be permanently relocated on their designated stations by the United States Coast Guard.

Bellport Bay

1. All that area, including tributaries, north of a line extending southeasterly from the flagstaff of the Bellport Yacht Club (local landmark), located at the foot of Bellport Lane in Bellport, to Buoy Fl G"5", located in the main east-west channel southerly of Fireplace Neck, and thence northeasterly to the peak of the gable of the building known as the "Manor of St. George Museum" (local landmark), located on the eastern shore of Bellport Bay south of Sandy Point at Shirley.

   Note: In the event Buoy Fl G"5" is moved from its established location per U.S.C. & G.S. Nautical Chart #120-SC dated December 1971, that area north of a line extending southeasterly from the flagstaff of the Bellport Yacht Club (local landmark) located at the foot of Bellport Lane in Bellport to Smith Point shall remain closed to the taking of shellfish until said Buoy Fl G"5" shall be permanently relocated on its designated station by the United States Coast Guard.

Narrow Bay

1. Shirley Basin (local landmark) located west of the Smith Point Bridge at the foot of the William Floyd Parkway.
2. All that area, including creeks, canals, rivers and coves of the mainland shore, north of a line extending easterly from the shore at the northern end of the Smith Point Bridge to the bulkhead at the foot of Cranberry Drive.
3. All that area, including Pattersquash Creek and Mastic Beach Lagoon (local name), at Mastic Beach north of a line extending northeasterly from the southern tip of the first point of land east of the foot of Cranberry Drive to the bulkhead at the foot of Jefferson Drive and continuing northeasterly to the southern tip of the point of land at the foot of Washington Drive.
4. All coves, creeks, and canals between Pattersquash Creek and Home Creek (local name).

Moriches Bay

1. All that area including all creeks, canals, rivers and coves north of a line extending easterly from Forge Point and running magnetic east to Buoy C"25", thence running northeasterly to Buoy Fl G"27", thence running easterly to Buoy C"29", thence running southeasterly to Buoy N"4", thence running southerly to the northeasternmost point of land located on the west side of Moriches Inlet, thence continuing northeasterly to Buoy N"42" (located within waters of the Town of Southampton).

Atlantic Ocean

1. All areas of the Atlantic Ocean in the Town of Brookhaven are certified for the taking of shellfish.

Note: All reference points in the Town of Brookhaven (South Shore) taken from U.S.C. & G.S. Nautical Chart #120-SC dated December 1971, except as indicated as "local landmark" or "local name".

Town of Brookhaven (North Shore)

Port Jefferson Harbor

1. All that area south and east of a line extending southwesterly from the flashing light and bell on the jetty on the eastern side of the entrance to Port Jefferson Harbor to the flashing red light on the jetty on the western side of the harbor entrance and then continuing southerly to a stone jetty at the shore near Buoy C"3" at the entrance to Setauket Harbor.

Note: All reference points in the Town of Brookhaven (North Shore) taken from U.S.C. & G.S. Nautical Chart #361 dated December 7, 1968

Peter A. A. Berle
Commissioner

By:

Robert B. Mac Millan
Supervisor
Marine Environmental Control

Dated: Albany, New York
July 16, 1976

STATE LAW PROHIBITS THE TAKING OF SHELLFISH FROM THE UNCERTIFIED AREAS OF THE SHELLFISH LANDS AND WATERS OF THE STATE.

If you intend to harvest shellfish from the waters of any town other than that in which you claim residency, then contact the offices at N.Y.S. Department of Environmental Conservation at Stony Brook and obtain listings of the uncertified areas in that town.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ENVIRONMENTAL CONTROL UNIT
STONY BROOK, N.Y. 11794

NOTICE TO ALL SHELLFISH HARVESTERS

NOTICE OF CONDITION OF ALL SHELLFISH GROUNDS LOCATED WITHIN OR ADJACENT TO THE TOWN OF EAST HAMPTON, SUFFOLK COUNTY, STATE OF NEW YORK.

Excerpted from Part 41 of the Official Compilation of Codes, Rules and Regulations of the State of New York.

The following is a statement of sanitary condition of shellfish lands in New York State. Notice of changes in classification will be sent to baymen by mail as and when they may occur. Whenever used in this Part 41:

(a) the term "mile" refers to statute mile;

(b) the term "monument" refers to a permanent post or marker placed on or near the shore by the Environmental Conservation Department to serve as a landmark in establishing the lines of closure.

Section 41.3 Shellfish Lands in Suffolk County

(a) The shellfish lands in Suffolk County, except those listed in subdivision (b) are in such sanitary condition that shellfish thereon may be taken for use as food, and such lands are designated as certified areas.

(b) The following shellfish lands in Suffolk County are in such sanitary condition that shellfish thereon shall not be taken for use as food, and such lands are designated as uncertified areas.

Town of East Hampton

Sag Harbor

1. All that area, including tributaries, lying westerly of a line extending northerly along the breakwater located at the entrance to Sag Harbor (local landmark) and thence continuing northerly from the northern end of the breakwater to the northeasternmost extremity of the timber bulkhead protecting the shoreline adjacent to East Harbor Drive, North Haven (local landmark); and east of a line extending south (magnetic) from the wooden staircase located at the southern end of Cliff Drive, Sag Harbor, to the staircase on the opposite shoreline (local landmarks).

   Note: All reference points in Sag Harbor in the Town of East Hampton taken from N.O.A.A. Nautical Chart #12358 (formerly U.S.C. & G.S. #363) dated August 17, 1974, except as indicated as "local landmark".

Montauk Lake (Montauk Harbor)

1. All that area lying south of a line extending easterly from the flashing red light on the jetty on the western side of the entrance to Montauk Harbor (Lake Montauk) to the flashing green light on the jetty on the eastern side of the entrance to the harbor; and north of the causeway to Star Island and a line extending easterly from the flag tower at the U.S. Coast Guard Station on Star Island to the southern extremity of the gas and oil dock serving the Lake Montauk Marina (local landmark) on the eastern shore of Montauk Harbor (Lake Montauk).

   Note: All reference points in Montauk Lake (Montauk Harbor) in the Town of East Hampton taken from N.O.A.A. Nautical Chart #13205 (formerly U.S.C. & G.S. #1211) dated November 23, 1974, except as indicated as "local landmark".

Peter A. A. Berle
Commissioner

As amended
January 1976

By:

Robert R. Mac Millan
Supervisor of
Marine Environmental Control

Dated: Albany, N.Y.
June 30, 1975

STATE LAW PROHIBITS THE TAKING OF SHELLFISH FROM THE UNCERTIFIED AREAS OF THE SHELLFISH LANDS AND WATERS OF THE STATE.

If you intend to harvest shellfish from the waters of any town other than that in which you claim residency, then contact the offices at N.Y.S. Department of Environmental Conservation at Stony Brook and obtain listings of the uncertified areas in that town.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
REGION I, ENVIRONMENTAL CONTROL UNIT
STONY BROOK, N.Y. 1179

NOTICE TO ALL SHELLFISH HARVESTERS

NOTICE OF CONDITION OF ALL SHELLFISH GROUNDS LOCATED WITHIN OR ADJACENT TO THE TOWN OF HEMPSTEAD, NASSAU COUNTY, STATE OF NEW YORK.

Excerpted from Part 41 of the Official Compilation of Codes, Rules and Regulations of the State of New York.

The following is a statement of sanitary condition of shellfish lands in New York State. Notice of changes in classification will be sent to baymen by mail as and when they may occur. Whenever used in this Part 41:

(a) the term "mile" refers to statute mile;

(b) the term "monument" refers to a permanent post or marker placed on or near the shore by the N.Y.S. Environmental Conservation Department to serve as a landmark in establishing the lines of closure.

Section 41.2 Shellfish Lands in Nassau County

(a) The shellfish lands in Nassau County, except those listed in subdivision (b) are in such sanitary condition that shellfish thereon may be taken for use as food, and such lands are therefore designated as certified areas.

(b) The following shellfish lands in Nassau County are in such sanitary condition that shellfish thereon shall not be taken for use as food and such lands are therefore designated as uncertified areas.

Town of Hempstead

Jamaica Bay

1. All of the headwaters of Jamaica Bay and its tributaries lying within the Town of Hempstead.

Hempstead Bay

1. All that area lying west of the Jones Beach Causeway portion of the Wantagh State Parkway which includes all waters within Hempstead Bay.

2. [illegible]

Atlantic Ocean

1. All that area of the Atlantic Ocean lying west of a line extending southeasterly from GONG R"4", located at the entrance to East Rockaway Inlet, through Buoy R"4" WHISTLE, located at the southwestern corner of the Fish Haven.

2. All that area in the Atlantic Ocean lying within a one-half nautical mile distance of any portion of the Ocean portion of the sewer outfall line serving the Wantagh Water Pollution Control Plant.

South Oyster Bay

1. All that area lying east of the Jones Beach Causeway portion of the Wantagh State Parkway and west of a magnetic north-south line originating at the southernmost tip of the bulkhead at the western side of the unnamed canal at Fort Neck Meadow (property occupied by the Harbour Green Shore Club) and extending to the barrier beach.

South Oyster Bay (Cont.)

2. All of Jones Creek and all other creeks and canals between Fort Neck Meadow and Unqua Point, including that area lying north of a line extending easterly from the southeasternmost tip of the bulkhead at the western side of the unnamed canal at Fort Neck Meadow (property occupied by the Harbour Green Shore Club), to the southernmost tip of the bulkhead at Unqua Point.

3. All that area, including adjacent creeks and canals, north of a line extending easterly from the southernmost tip of the bulkhead at Unqua Point to the southeastern end of the yacht club dock at the Unqua-Corinthian Yacht Club (local landmark).

Note: All reference points in the Town of Hempstead taken from U.S.C. & G.S. Nautical Charts #120-SC dated December 1970 and #1215 dated July 18, 1970, except as indicated as "local landmark".

Ogden Reid
Commissioner

By:

Robert B. Mac Millan
Supervisor of
Marine Environmental Control

Dated: Albany, N.Y.
April 8, 1969

As Amended thru
July 1, 1974

Dated: January 1, 1976

STATE LAW PROHIBITS THE TAKING OF SHELLFISH FROM THE UNCERTIFIED AREAS OF THE SHELLFISH LANDS AND WATERS OF THE STATE.

If you intend to harvest shellfish from the waters of any town other than that in which you claim residency, then contact the offices at N.Y.S. Department of Environmental Conservation at Stony Brook and obtain listings of the uncertified areas of that town.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
REGION I, ENVIRONMENTAL CONTROL UNIT
STONY BROOK, N. Y. 11794

NOTICE TO ALL SHELLFISH HARVESTERS

NOTICE OF CONDITION OF ALL SHELLFISH GROUNDS LOCATED WITHIN OR ADJACENT TO THE TOWN OF HUNTINGTON, SUFFOLK COUNTY, STATE OF NEW YORK.

Excerpted from Part 41 of the Official Compilation of Codes, Rules and Regulations of the State of New York.

The following is a statement of sanitary condition of shellfish lands in New York State. Notice of changes in classification will be sent to baymen by mail as and when they may occur. Whenever used in this Part 41:

(a) the term "mile" refers to statute mile;

(b) the term "monument" refers to a permanent post or marker placed on or near the shore by the N.Y.S. Environmental Conservation Department to serve as a landmark in establishing the lines of closure.

Section 41.3 Shellfish Lands in Suffolk County.

(a) The shellfish lands in Suffolk County, except those listed in subdivision (b) are in such sanitary condition that shellfish thereon may be taken for use as food, and such lands are designated as certified areas.

(b) The following shellfish lands in Suffolk County are in such sanitary condition that shellfish thereon shall not be taken for use as food, and such lands are designated as uncertified areas.

Town of Huntington

Northport Harbor

1. All that area, including tributaries, south and east of a line extending southwesterly from the tip of the dock serving the large white house located at 27 Bluff Point Road, Northport, and owned in November, 1972 by H. Richardson (local landmark), to the northernmost side of the building known as the Vanderbilt Plane Hanger, located on the opposite shore (local landmark).

Centerport Harbor

1. All that area, including tributaries, lying south of a line extending in an easterly direction from the dock serving the Huntington Beach Association Refreshment Stand (local landmark), located at the foot of Adams Street, Huntington Beach, to the western tip of the sand spit forming the entrance to Centerport Harbor.

Huntington Harbor

1. All that area including tributaries, lying south and east of a line extending northeasterly from Utility Pole No. "LIL 55", located at the foot of Wendover Drive on West Shore Road, to the staircase located on the point of land on the opposite shore (owned by Thomas A. Knutson and formerly known as Elbertson's Point).

Cold Spring Harbor

1. All that area, including tributaries, south and east of a line extending southerly from the tip of the dock serving the Cold Spring Harbor Beach Club (local landmark) to the western extremity of the white house located on the shoreline immediately west of Cold Spring Beach (local landmark).

Note: All reference points in the Town of Huntington taken from U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Survey, Nautical Chart #224 dated August 26, 1972 except those indicated as "local landmark".

Ogden Reid
Commissioner

By:

Robert B. Mac Millan
Supervisor
Marine Environmental Control

Dated: Albany, N.Y.
April 8, 1969

As amended thru
June 4, 1973

Dated: January 1, 1975

As amended: January 1976

STATE LAW PROHIBITS THE TAKING OF SHELLFISH FROM THE UNCERTIFIED AREAS OF THE SHELLFISH LANDS AND WATERS OF THE STATE.

If you intend to harvest shellfish from the waters of any town other than that in which you claim residency, contact N.Y.S. Environmental Conservation Department and obtain listings of the uncertified areas in that town.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ENVIRONMENTAL CONTROL UNIT
STONY BROOK, N. Y. 11794

NOTICE TO ALL SHELLFISH HARVESTERS

NOTICE OF CONDITION OF ALL SHELLFISH GROUNDS LOCATED WITHIN OR ADJACENT TO THE TOWN OF ISLIP, SUFFOLK COUNTY, STATE OF NEW YORK.

Excerpted from Part 41 of the Official Compilation of Codes, Rules and Regulations of the State of New York.

The following is a statement of sanitary condition of shellfish lands in New York State. Notice of changes in classification will be sent to baymen by mail as and when they may occur. Whenever used in this Part 41:

(a) the term "mile" refers to statute mile;

(b) the term "monument" refers to a permanent post or marker placed on or near the shore by the N.Y.S. Department of Environmental Conservation to serve as a landmark in establishing the lines of closure.

Section 41.3 Shellfish Lands in Suffolk County

(a) The shellfish lands in Suffolk County, except those listed in sub-division (b) are in such sanitary condition that shellfish thereon may be taken for use as food, and such lands are designated as certified areas.

(b) The following shellfish lands in Suffolk County are in such sanitary condition that shellfish thereon shall not be taken for use as food, and such lands are designated as uncertified areas.

Town of Islip

Great South Bay

1. All that area, including adjacent creeks, rivers and canals, lying north of a line extending southeasterly from the southern tip of the bulkhead extending from shore at the foot of Western Concourse at Copiague (local landmark) to a buoy located on the northern edge of the east-west boat channel south of the entrance to Howell Creek, thence continuing easterly along the northern edge of the east-west boat channel, as defined by a series of buoys regularly spaced, to a buoy marking the intersection of said east-west channel with Oak Island Channel, thence continuing easterly along a line as defined by a series of buoys to the southwestern corner of the large concrete base at the northern end of the Robert Moses Causeway Bridge located at Conklin Point. Said buoys are of a can type, white and orange in color and have lettered thereon, "N.Y.S. ENV. CONSV. DEPT., SHELLFISH CLOSURE LINE."

2. All creeks and canals between Conklin Point and the southwestern tip of the bulkhead at the Bay Way Cabana and Tennis Club, located at the foot of Girard Avenue in Brightwaters.

3. All that area of Great Cove (Islip Cove), and all adjacent creeks, rivers and canals lying north of a line extending easterly from the southwestern tip of the bulkhead at the Bay Way Cabana and Tennis Club, located at the foot of Girard Avenue in Brightwaters, as defined by a series of buoys regularly spaced, to the southwestern tip of the bulkhead at the Islip Town Beach, located at the foot of South Bay Avenue at Bayberry Point. Said buoys are of a can type, white and orage in color and have lettered thereon, "N.Y.S. ENV. CONS. DEPT., SHELLFISH CLOCURE LINE."

4. All of Champlin Creek and adjacent creeks and canals, north of a line extending easterly from the southwestern tip of the bulkhead at the Islip Town Beach, located at the foot of South Bay Avenue at Bayberry Point, along a series of buoys to the southern extremity of the beach house serving Hollins Memorial Beach (Town of Islip), located at the foot of Bayview Avenue at East Islip. Said buoys are of a can type, white and orange in color and have lettered thereon, "N.Y.S. ENV. CONSV. DEPT., SHELLFISH CLOSURE LINE."

5. All creeks and canals between the southern extremity of the beach house serving Hollins Memorial Beach (Town of Islip), located at the foot of Bayview Avenue at East Islip and Timber Point.

6. All of the Connetquot River (Great River) and adjacent creeks and canals north of a line extending northeasterly from the southeasternmost tip of Timber Point to the southwestern corner of La Salle Military Academy (local landmark).

7. All creeks and canals between the Connetquot River (Great River) and Blue Point, and that area lying north of a line extending easterly from the southeasterly corner of the town dock at the foot of West Avenue in West Sayville to the southeasternmost corner of the bulkheaded breakwater near the foot of Clyde St. in West Sayville and continuing easterly to the southern tip of the bulkheading along the eastern shore of the mouth of Green Creek (local landmarks). Also, all that area lying north of a line running southeasterly from a flagpole on the property of South Bay Manor Garden Apartments (located at the foot of Candee Avenue in Sayville) to Buoy C"1" south of Brown Creek, thence easterly to Buoy Fl R"2" and continuing in a northeasterly direction to the southeastern extremity of the bulkhead of the private boat basin located near the foot of Seaman Avenue (property owned by National Lead Company).

8. All that area adjacent to the shore of Fire Island at Ocean Beach south of a line extending northeasterly from the northeastern corner of the building housing Maguires Restaurant on Bungalow Walk at Ocean Beach (local landmark) to Channel Buoy C"13" and continuing southeasterly to Channel Buoy C"13A", and thence southerly to the water tank at Sea View.

Atlantic Ocean

1. All areas of the Atlantic Ocean in the Town of Islip are certified for the taking of shellfish.

Note: All reference points in the Town of Islip taken from U.S.C. & G.S. Nautical Chart [illegible]-SC dated December 1971, except as indicated as "local landmark".

James L. Biggane
Commissioner

By:

Robert B. Mac Millan
Supervisor of Environmental Control Unit

Dated: Albany, N.Y.
April 8, 1969

As amended thru
January 1, 1976

As Amended thru
October 23, 1972

As amended thru
January 1, 1975

STATE LAW PROHIBITS THE TAKING OF SHELLFISH FROM THE UNCERTIFIED AREAS OF THE SHELLFISH LANDS AND WATERS OF THE STATE.

If you intend to harvest shellfish from the waters of any town other than that in which you claim residency, then contact the offices at New York State Department of Environmental Conservation at Stony Brook and obtain listings of the uncertified areas in that town.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
REGION I, ENVIRONMENTAL CONTROL UNIT
STONY BROOK, N.Y. 11794

NOTICE TO ALL SHELLFISH HARVESTERS

NOTICE OF CONDITION OF ALL SHELLFISH GROUNDS LOCATED WITHIN OR ADJACENT TO THE TOWN OF NORTH HEMPSTEAD, NASSAU COUNTY, STATE OF NEW YORK.

Excerpted from Part 41 of the Official Compilation of Codes, Rules and Regulations of the State of New York.

The following is a statement of sanitary condition of shellfish lands in New York State. Notice of changes in classification will be sent to baymen by mail as and when they may occur. Whenever used in this Part 41:

(a) the term "mile" refers to statute mile;

(b) the term "monument" refers to a permanent post or marker placed on or near the shore by the N.Y.S. Environmental Conservation Department to serve as a landmark in establishing the lines of closure.

Section 41.2 Shellfish Lands in Nassau County

(a) The shellfish lands in Nassau County, except those listed in subdivision (b) are in such sanitary condition that shellfish thereon may be taken for use as food, and such lands are designated as certified areas.

(b) The following shellfish lands in Nassau County are in such sanitary condition that shellfish thereon shall not be taken for use as food, and such lands are designated as uncertified areas.

Town of North Hempstead

Long Island Sound

1. All that area of Long Island Sound, including tributaries, lying west of a line extending northerly from the northeasternmost tip of land at Rocky Point, Centre Island, to Buoy R"32A" and thence continuing to the New York-Connecticut State boundary, except that area bounded on the east by a line extending northerly from the northeasternmost tip of land at Rocky Point, Centre Island to Buoy R"32A" and thence continuing to the New York-Connecticut State boundary and on the west by a line originating at the W CRY at Peacock Point and extending magnetic north to the Nassau-Westchester County boundary shall be classified as certified during the period August 4 through and including September 16, 1975.

2. All rivers, creeks and canals including Frost Creek, located between Peacock Point and Rocky Point, Centre Island.

Note: All reference points in the Town of North Hempstead taken from N.O.A.A. Nautical Charts #12365 (formerly U.S.C. & G.S. #224) dated October 12, 1974 and #12364 (formerly U.S.C. & G.S. #117-SC) dated November 2, 1974, except those indicated as "local landmark".

Dated: Albany, New York

As Amended thru
8/4/75

Ogden Reid
Commissioner

By:

Robert B. Mac Millan
Supv., Mar. Env. Control

STATE LAW PROHIBITS THE TAKING OF SHELLFISH FROM THE UNCERTIFIED AREAS OF THE SHELLFISH LANDS AND WATERS OF THE STATE.

If you intend to harvest shellfish from the waters of any town other than that in which you claim residency, then contact the offices at N.Y.S. Dept. of Environmental Conservation, and obtain listings of the uncertified areas in that town.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
REGION I, ENVIRONMENTAL CONTROL UNIT
STONY BROOK, N.Y. 11794

NOTICE TO ALL SHELLFISH HARVESTERS

NOTICE OF CONDITION OF ALL SHELLFISH GROUNDS LOCATED WITHIN OR ADJACENT TO THE TOWN OF OYSTER BAY, NASSAU COUNTY, STATE OF NEW YORK.

Excerpted from Part 41 of the Official Compilation of Codes, Rules and Regulations of the State of New York.

The following is a statement of sanitary condition of shellfish lands in New York State. Notice of changes in classification will be sent to baymen by mail as and when they may occur. Whenever used in this Part 41:

(a) the term "mile" refers to statute mile;

(b) the term "monument" refers to a permanent post or marker placed on or near the shore by the N.Y.S. Environmental Conservation Department to serve as a landmark in establishing the lines of closure.

Section 41.2 Shellfish Lands in Nassau County

(a) The shellfish lands in Nassau County, except those listed in subdivision (b) are in such sanitary condition that shellfish thereon may be taken for use as food, and such lands are designated as certified areas.

(b) The following shellfish lands in Nassau County are in such sanitary condition that shellfish thereon shall not be taken for use as food, and such lands are designated as uncertified areas.

Town of Oyster Bay (South Shore)

South Oyster Bay

1. All that area lying east of the Jones Beach Causeway portion of the Wantagh State Parkway and west of a magnetic north-south line originating at the southernmost tip of the bulkhead at the western side of the unnamed canal at Fort Neck Meadow (property occupied by the Harbour Green Shore Club) and extending to the barrier beach.

2. All of Jones Creek and all other creeks and canals between Fort Neck Meadow and Unqua Point, including that area lying north of a line extending easterly from the southeasternmost tip of the bulkhead at the western side of the unnamed canal at Fort Neck Meadow (property occupied by the Harbour Green Shore Club), to the southernmost tip of the bulkhead at Unqua Point.

3. All that area, including adjacent creeks and canals, north of a line extending easterly from the southernmost tip of the bulkhead at Unqua Point to the southeastern end of the yacht club dock at the Unqua-Corinthian Yacht Club (local landmark).

Atlantic Ocean

1. All that area in the Atlantic Ocean lying within a one-half nautical mile distance of any portion of the Ocean portion of the sewer outfall line serving the Wantagh Water Pollution Control Plant.

Note: All reference points in the Town of Oyster Bay (South Shore) taken from U.S. Dept. of Commerce, National Oceanic and Atmospheric Administration National Ocean Survey, Nautical Chart #120-SC dated December 1972, except those indicated as "local landmark".

Town of Oyster Bay (North Shore)

Long Island Sound

1. All that area of Long Island Sound, including tributaries, lying west of a line extending northerly from the northeasternmost tip of land at Rocky Point, Centre Island, to Buoy R"32A" and thence continuing to the New York-Connecticut State boundary, except that area bounded on the east by

a line extending northerly from the northeasternmost tip of land at Rocky Point, Centre Island to Buoy R"32A" and thence continuing to the New York-Connecticut State boundary and on the west by a line originating at the W CHY at Peacock Point and extending magnetic north to the Nassau-Westchester County boundary shall be classified as certified during the period August 4 through and including September 16, 1975.

2. All rivers, creeks and canals including Frost Creek, located between Peacock Point and Rocky Point, Centre Island.

Oyster Bay Harbor

1. All that area, including tributaries, lying southerly of a line extending northwesterly from the tip of the first dock easterly of Steamboat Landing Road at Oyster Bay Cove (local landmark) to Channel Buoy C"5", located in the main channel southwest of Moses Point, and continuing southwesterly to the flagpole near shore at Roosevelt Memorial Park at Oyster Bay.

2. All that area north of a line extending westerly from the southernmost tip of Plum Point to the southernmost tip of the dock serving the Seawanhaka Yacht Club located at Centre Island (local landmark).

Mill Neck Creek

1. All that area, including tributaries, west of a line extending northerly from a utility pole (numbered NYT 27) (local landmark) located at the foot of the private road on the western side of the premises of M. Dost at Mill Neck to the eastern extremity of the concrete bulkhead located west of the foot of Wansor Avenue at Bayville (local landmark).

Cold Spring Harbor

1. All that area, including tributaries, south and east of a line extending southerly from the tip of the dock serving the Cold Spring Harbor Beach Club (local landmark) to the western extremity of the white house located on the shoreline immediately west of Cold Spring Beach (local landmark).

Note: All reference points in the Town of Oyster Bay (North Shore) taken from N.O.A.A. Nautical Charts #12365 (formerly U.S.C. & G.S. #224) dated October 12, 1974 and #12364 (formerly U.S.C. & G.S. #117-SC) dated November 2, 1974, except those indicated as "local landmark".

Ogden Reid
Commissioner

Dated: Albany, N.Y.

By:

As Amended thru
8/4/75
As amended: January 1976

Robert B. Mac Millan
Supv., Mar. Env. Control

STATE LAW PROHIBITS THE TAKING OF SHELLFISH FROM THE UNCERTIFIED AREAS OF THE SHELLFISH LANDS AND WATERS OF THE STATE.

If you intend to harvest shellfish from the waters of any town other than that in which you claim residency, then contact the offices at N.Y.S. Environmental Conservation Department and obtain listings of uncertified areas in that town.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ENVIRONMENTAL CONTROL UNIT
STONY BROOK, N.Y. 11794

NOTICE TO ALL SHELLFISH HARVESTERS

NOTICE OF CONDITION OF ALL SHELLFISH GROUNDS LOCATED WITHIN OR ADJACENT TO THE TOWN OF SHELTER ISLAND, SUFFOLK COUNTY, STATE OF NEW YORK.

Excerpted from Part 41 of the Official Compilation of Codes, Rules and Regulations of the State of New York.

The following is a statement of sanitary condition of shellfish lands in New York State. Notice of changes in classification will be sent to baymen by mail as and when they may occur. Whenever used in this Part 41:

(a) the term "mile" refers to statute mile;

(b) the term "monument" refers to a permanent post or marker placed on or near the shore by the Environmental Conservation Department to serve as a landmark in establishing the lines of closure.

Section 41.3 Shellfish Lands in Suffolk County

(a) The shellfish lands in Suffolk County, except those listed in subdivision (b) are in such sanitary condition that shellfish thereon may be taken for use as food, and such lands are designated as certified areas.

(b) The following shellfish lands in Suffolk County are in such sanitary condition that shellfish thereon shall not be taken for use as food, and such lands are designated as uncertified areas.

Town of Shelter Island

Shelter Island Sound

1. All that area lying north and east of a line extending northwesterly from the westernmost tip of the ferry dock at Shelter Island to the southernmost tip of Fanning Point at Greenport, and south and west of a line extending northwesterly from the easternmost tip of Chequit Point (local name) at Shelter Island to the easternmost tip of the Long Island Railroad dock at Greenport Station (local name).

Dering Harbor

1. All that area, including tributaries, lying south of a line extending westerly from the northwestern corner of the bulkhead serving the Dering Harbor Marine Mobilheat Storage Tank area (local landmark) to a utility pole Number "LIL 23" (local landmark) located on the easterly side of Clinton Avenue approximately 500 ft. north of the bridge crossing Chases Creek (local landmark) on N.Y. Route No. 114.

Note: All reference points in the Town of Shelter Island taken from N.O.A.A. Nautical Chart #12358 (formerly U.S.C. & G.S. #363) dated August 17, 1974, except as indicated as (local landmark) or (local name).

Ogden Reid
Commissioner

By:

Robert E. Mac Millan
Supervisor of
Marine Environmental Control

Dated: Albany, N.Y.
June 30, 1975

STATE LAW PROHIBITS THE TAKING OF SHELLFISH FROM THE UNCERTIFIED AREAS OF THE SHELLFISH LANDS AND WATERS OF THE STATE.

If you intend to harvest shellfish from the waters of any town other than that in which you claim residency, then contact the offices at N.Y.S. Department of Environmental Conservation at Stony Brook and obtain listings of the uncertified areas in that town.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ENVIRONMENTAL CONTROL UNIT
STONY BROOK, N.Y. 11794

NOTICE TO ALL SHELLFISH HARVESTERS

NOTICE OF CONDITION OF ALL SHELLFISH GROUNDS LOCATED WITHIN OR ADJACENT TO THE TOWN OF SMITHTOWN, SUFFOLK COUNTY, STATE OF NEW YORK.

Excerpted from Part 41 of the Official Compilation of Codes, Rules and Regulations of the State of New York.

The following is a statement of sanitary condition of shellfish lands in New York State. Notice of changes in classification will be sent to baymen by mail as and when they may occur. Whenever used in this Part 41:

(a) the term "mile" refers to statute mile;

(b) the term "monument" refers to a permanent post or marker placed on or near the shore by the Environmental Conservation Department to serve as a landmark in establishing the lines of closure.

Section 41.3 Shellfish Lands in Suffolk County

(a) The shellfish lands in Suffolk County, except those listed in subdivision (b) are in such sanitary condition that shellfish thereon may be taken for use as food, and such lands are designated as certified areas.

(b) The following shellfish lands in Suffolk County are in such sanitary condition that shellfish thereon shall not be taken for use as food, and such lands are designated as uncertified areas.

Town of Smithtown

Smithtown Bay

1. All that area of Smithtown Bay, including the Nissequogue River and its tributaries and Sunken Meadow Creek, lying south of a line extending northeasterly from the flagpole at the East Bath House at Sunken Meadow State Park (local landmark) to Buoy BW "NR", located approximately one mile north of the mouth of the Nissequogue River, thence southeasterly to the flagpole located at the Town of Smithtown beach at Short Beach (local landmark).

2. All that area within a one-half mile radius of Buoy BW "NR", located approximately one mile north of the mouth of the Nissequogue River.

Note: All areas referenced within the Town of Smithtown taken from N.O.A.A. Nautical Chart #12364 (formerly U.S.C. & G.S. #117-SC) dated November 2, 1974, except those indicated as "local landmark".

Ogden Reid
Commissioner

By:

Dated: Albany, New York
June 30, 1975

Robert B. Mac Millan
Supervisor of
Marine Environmental Control

STATE LAW PROHIBITS THE TAKING OF SHELLFISH FROM THE UNCERTIFIED AREAS OF THE SHELLFISH LANDS AND WATERS OF THE STATE.

If you intend to harvest shellfish from waters of any town other than that in which you claim residency, contact the offices of New York State Department of Environmental Conservation at Stony Brook and obtain listings of the uncertified areas in that town.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ENVIRONMENTAL CONTROL UNIT
STONY BROOK, N.Y. 11794

NOTICE TO ALL SHELLFISH HARVESTERS

NOTICE OF CONDITION OF ALL SHELLFISH GROUNDS LOCATED WITHIN OR ADJACENT TO THE TOWN OF SOUTHAMPTON, SUFFOLK COUNTY, STATE OF NEW YORK.

Excerpted from Part 41 of the Official Compilation of Codes, Rules and Regulations of the State of New York.

The following is a statement of sanitary condition of shellfish lands in New York State. Notice of changes in classification will be sent to baymen by mail as and when they may occur. Whenever used in this Part 41:

(a) the term "mile" refers to statute mile;

(b) the term "monument" refers to a permanent post or marker placed on or near the shore by the Environmental Conservation Department to serve as a landmark in establishing the lines of closure.

Section 41.3 Shellfish Lands in Suffolk County

(a) The shellfish lands in Suffolk County, except those listed in subdivision (b) are in such sanitary condition that shellfish thereon may be taken for use as food, and such lands are designated as certified areas.

(b) The following shellfish lands in Suffolk County are in such sanitary condition that shellfish thereon shall not be taken for use as food, and such lands are designated as uncertified areas.

Town of Southampton

Moriches Bay

1. All that area, including creeks, rivers, canals and coves, north of a line extending northeasterly from the northeasternmost point of land located on the west side of Moriches Inlet to Buoy N"42", thence to Buoy Fl G"43", thence to Buoy C"45", thence to Buoy Fl G"47", thence to Buoy N"48", thence to Buoy N"50", thence to Buoy Fl R"52", and thence continuing northeasterly to the northern base of the highway bridge at Potunk Point.

Quantuck Bay

1. All creeks and canals at Westhampton Beach, Quiogue and Quogue from the northern base of the highway bridge at Potunk Point eastward to Buoy Fl R"8", except the Quantuck Canal, the Quogue Canal, Quantuck Bay, Quantuck Creek and Aspatuck Creek (local name).
2. Quantuck Creek north of the Montauk Highway (Route 27).
3. Aspatuck Creek (local name) north of Main Street in Westhampton Beach.
4. The Boat Basin at Westhampton Beach, including the canal leading to it from Moneybogue Bay (local name), north of a line extending due east and west (magnetic) across the canal and passing through Buoy Fl R"6".

Shinnecock Bay

1. All mainland creeks and canals at Quogue, East Quogue, Pine Neck, West Tiana, Tiana, Springville and Ponquogue.
2. That area of Weesuck Creek north of a line extending due east (magnetic) from the southeasternmost utility pole (numbered LIL 15) on Weesuck Avenue to the opposite shore (local landmark).
3. That area of Smith Creek lying north of a straight line from shore to shore passing through Buoys Fl "3" and N"4".

Shinnecock Canal

1. All that area including boat basins and marinas lying south of a line extending northeasterly from the tip of the rock jetty on the western side of the canal in Great Peconic Bay to the tip of the rock jetty on the eastern side of the canal in Great Peconic Bay; and north of a line extending easterly from the eastern end of the bulkhead on the southern side of the entrance to Salivar's Marina (local landmark) to the southernmost extremity of the dock at Jackson's Marina (local landmark) on the opposite shore.

   Note: All reference points in the foregoing areas in the Town of Southampton taken from N.O.A.A. Nautical Chart #12352 (formerly U.S.C. & G.S. #120-SC) dated November 16, 1974, except as indicated as "local landmark" or "local name".

Mecox Bay

1. All that area known as Channel Pond and any tributaries thereto lying west of Flying Point Road (local landmark).
2. All that area, including creeks and coves, lying north and west of a line extending northeasterly from utility pole number "LIL 71" (local landmark) located on the easterly side of Flying Point Road, to the western end of the large white house located just east of the foot of Mohawk Avenue, Water Mill (local landmark).
3. All that area, including creeks and coves, lying between Mohawk Avenue and Rose Hill Avenue.
4. All that area, including creeks and coves, lying north of a line extending easterly from the foot of Rose Hill Avenue, Water Mill (local landmark) to the northern end of the building serving as the Mecox Bay Yacht Club (local landmark) located at the foot of Bay Avenue, Mecox.
5. All that area of Swan Creek.
6. All that area of Sam's Creek lying easterly of Job's Road (local landmark).
7. All that area of Mecox Bay and Inlet, lying south of a line extending northeasterly from utility pole number "LIL 7 BBL" (local landmark), located at the northern end of the private road located on the west side of the inlet, a distance of approximately 1,000 feet to a buoy, thence continuing southeasterly to utility pole number "NYT 3" (local landmark), located at the western end of Job's Road, on the eastern side of the inlet.

   Note: All reference points in Mecox Bay in the Town of Southampton taken from N.O.A.A. Nautical Chart #12353 (formerly U.S.C. & G.S. #1214) dated August 24, 1974, except as indicated as "local landmark".

Sag Harbor

1. All that area, including tributaries, lying westerly of a line extending northerly along the breakwater located at the entrance to Sag Harbor (local landmark) and thence continuing northerly from the northern end of the breakwater to the northeasternmost extremity of the timber bulkhead protecting the shoreline adjacent to East Harbor Drive, North Haven (local landmark); and east of a line extending south (magnetic) from the wooden staircase located at the southern end of Cliff Drive, Sag Harbor, to the staircase on the opposite shoreline (local landmarks).

   Note: All reference points in Sag Harbor in the Town of Southampton taken from N.O.A.A. Nautical Chart #12358 (formerly U.S.C. & G.S. #363) dated August 17, 1974, except as indicated as "local landmark".

Peconic River

1. All waters of the Peconic River and its tributaries within the Town of Southampton.

Flanders Bay

1. All that area of Flanders Bay, including tributaries, lying north and west of a line extending northeasterly from the northeasternmost tip of land at Iron Point (local name) to the southernmost tip of Simmons Point (local name) exposed at mean high water as indicated on Nautical Chart #12358 noted below.

Note: All reference points in the Peconic River and Flanders Bay in the Town of Southampton taken from N.O.A.A. Nautical Chart #12358 (formerly U.S.C. & G.S. #363) dated August 17, 1974, except as indicated as "local name".

North Sea Harbor

1. All that area of Alewive Creek (local name) lying south of a line extending southeasterly from the most easterly corner of the Town Dock (local landmark) on the easterly side of Conscience Point, to the most northerly end of the bulkhead on the opposite shore of the creek.

2. All that area of Turtle Cove (local name) lying east of a line extending southerly from a monument on the northern shore of Davis Creek (local name) immediately west of Turtle Cove, to a monument on the southern shore of Davis Creek.

Note: All reference points in North Sea Harbor in the Town of Southampton taken from N.O.A.A. Nautical Chart #12358 (formerly U.S.C. & G.S. #363) dated August 17, 1974, except as indicated as "local name".

Ogden Reid
Commissioner

By:

Robert B. Mac Millan
Supervisor of
Marine Environmental Control

Dated: Albany, N.Y.
June 30, 1975

STATE LAW PROHIBITS THE TAKING OF SHELLFISH FROM THE UNCERTIFIED AREAS OF THE SHELLFISH LANDS AND WATERS OF THE STATE.

If you intend to harvest shellfish from the waters of any town other than that in which you claim residency, then contact the offices at N.Y.S. Department of Environmental Conservation at Stony Brook and obtain listings of the uncertified areas in that town.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ENVIRONMENTAL CONTROL UNIT
STONY BROOK, N.Y. 11794

NOTICE TO ALL SHELLFISH HARVESTERS

NOTICE OF CONDITION OF ALL SHELLFISH GROUNDS LOCATED WITHIN OR ADJACENT TO THE TOWN OF SOUTHOLD, SUFFOLK COUNTY, STATE OF NEW YORK.

Excerpted from Part 41 of the Official Compilation of Codes, Rules and Regulations of the State of New York.

The following is a statement of sanitary condition of shellfish lands in New York State. Notice of changes in classification will be sent to baymen by mail as and when they may occur. Whenever used in this Part 41:

(a) the term "mile" refers to statute mile;

(b) the term "monument" refers to a permanent post or marker placed on or near the shore by the Environmental Conservation Department to serve as a landmark in establishing the lines of closure.

Section 41.3 Shellfish Lands in Suffolk County

(a) The shellfish lands in Suffolk County, except those listed in subdivision (b) are in such sanitary condition that shellfish thereon may be taken for use as food, and such lands are designated as certified areas.

(b) The following shellfish lands in Suffolk County are in such sanitary condition that shellfish thereon shall not be taken for use as food, and such lands are designated as uncertified areas.

Town of Southold

Long Island Sound

1. All that area lying within a one-half mile radius of the sewer outfall located offshore at Inlet Point and serving the Greenport Sewage Treatment Plant.

Greenport Harbor

1. All that area, including tributaries, lying north and west of a line extending northeasterly from the northeastern corner of the Long Island Railroad dock at Greenport Station (local name) to the southern end of the breakwater at Young's Point.

Schoolhouse Creek

1. All that area including Schoolhouse Creek (local name) being the creek located northerly of Orchard Street (local name) in New Suffolk, lying west of a line extending northerly from the eastern end of the rock jetty which projects off the shoreline immediately south of the creek (local landmark) to the eastern end of the dock which projects off the shoreline immediately north of the creek (local landmark).

Hashamomuck Pond

1. All that area of Long Creek, including tributaries, lying west of a line extending southerly from the red brick chimney on the house (painted red in April 1975) located at 99 Mill Creek Drive, Southold, to a monument on the opposite shore.

Mattituck Inlet

1. All that area of Mattituck Creek, Long Creek and tributaries thereof, south of a line extending westerly from the dock on the premises of Morton Phillips (April 1975) located at the intersection of Brower Road and West View Drive, Mattituck, to the southernmost side of the red beach house on the premises of Norbert Falzon (April 1975) located on the opposite shoreline.

Shelter Island Sound

1. All that area lying north and east of a line extending northwesterly from the westernmost tip of the ferry dock at Shelter Island to the southernmost tip of Fanning Point at Greenport, and south and west of a line extending northwesterly from the easternmost tip of Chequit Point (local name) at Shelter Island to the easternmost tip of the Long Island Railroad dock at Greenport Station (local name).

   Note: All reference points in the foregoing areas in the Town of Southold taken from N.O.A.A. Nautical Chart #12358 (formerly U.S.C. & G.S. #363) dated August 17, 1974, except as indicated as (local name) or (local landmark).

Fishers Island Sound

1. All that area within one mile of the shore of Fishers Island between the northeasternmost tip of the point on the western side of the entrance to Hay Harbor and the westernmost tip of Race Point, and including all of Silver Eel Pond.

   Note: All reference points in Fishers Island Sound in the Town of Southold taken from N.O.A.A. Nautical Chart #13205 (formerly U.S.C. & G.S. #1211) dated November 23, 1974.

Peter A. A. Berle
Commissioner

By:

Robert B. Mac Millan
Supervisor of
Marine Environmental Control

Dated: Albany, N.Y.
June 30, 1975
As amended thru January 1, 1976

STATE LAW PROHIBITS THE TAKING OF SHELLFISH FROM THE UNCERTIFIED AREAS OF THE SHELLFISH LANDS AND WATERS OF THE STATE.

If you intend to harvest shellfish from the waters of any town other than that in which you claim residency, then contact the offices at N.Y.S. Environmental Conservation Department at Stony Brook and obtain listings of the uncertified areas in that town.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ENVIRONMENTAL CONTROL UNIT
STONY BROOK, N.Y. 11794

NOTICE TO ALL SHELLFISH HARVESTERS

NOTICE OF CONDITION OF ALL SHELLFISH GROUNDS LOCATED WITHIN OR ADJACENT TO THE TOWN OF RIVERHEAD, SUFFOLK COUNTY, STATE OF NEW YORK.

Excerpted from Part 41 of the Official Compilation of Codes, Rules and Regulations of the State of New York.

The following is a statement of sanitary condition of shellfish lands in New York State. Notice of changes in classification will be sent to baymen by mail as and when they may occur. Whenever used in this Part 41:

(a) the term "mile" refers to statute mile;

(b) the term "monument" refers to a permanent post or marker placed on or near the shore by the New York State Department of Environmental Conservation to serve as a landmark in establishing the lines of closure.

Section 41.3 Shellfish Lands in Suffolk County

(a) The shellfish lands in Suffolk County, except those listed in subdivision (b) are in such sanitary condition that shellfish thereon may be taken for use as food, and such lands are designated as certified areas.

(b) The following shellfish lands in Suffolk County are in such sanitary condition that shellfish thereon shall not be taken for use as food, and such lands are designated as uncertified areas.

Town of Riverhead

Flanders Bay

1. All that area of Flanders Bay, including tributaries, lying north and west of a line extending northeasterly from the northeasternmost tip of Iron Point (local name) to the southernmost tip of Simmons Point (local name) exposed at mean high water as indicated on Nautical Chart #12358 noted below.

Peconic River

1. All waters of the Peconic River and its tributaries within the Town of Riverhead.

Note: All reference points in Flanders Bay and Peconic River within the Town of Riverhead taken from N.O.A.A. Nautical Chart #12358 (formerly U.S.C. & G.S. #363) dated August 17, 1974, except where indicated as "local name".

Wading River

1. All waters of Wading River and its tributaries.

Ogden Reid
Commissioner

By:

Robert B. Mac Millan
Supervisor of
Marine Environmental Control

Dated: Albany, N.Y.
June 30, 1975

STATE LAW PROHIBITS THE TAKING OF SHELLFISH FROM THE UNCERTIFIED AREAS OF THE SHELLFISH LANDS AND WATERS OF THE STATE.

If you intend to harvest shellfish from the waters of any town other than that in which you claim residency, then contact the offices at N.Y.S. Environmental Conservation Department at Stony Brook and obtain listings of the uncertified areas in that town.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ENVIRONMENTAL CONTROL UNIT
STONY BROOK, N. Y. 11794

NOTICE TO ALL SHELLFISH HARVESTERS

NOTICE OF CONDITION OF ALL SHELLFISH GROUNDS LOCATED WITHIN OR ADJACENT TO THE COUNTY OF WESTCHESTER AND NEW YORK CITY, STATE OF NEW YORK.

Excerpted from Part 41 of the Official Compilation of Codes, Rules and Regulations of the State of New York.

The following is a statement of sanitary condition of shellfish lands in New York State. Notice of changes in classification will be sent to baymen by mail as and when they may occur. Whenever used in this Part 41:

(a) the term "mile" refers to statute mile;

(b) the term "monument" refers to a permanent post or marker placed on or near the shore by the Environmental Conservation Department to serve as a landmark in establishing the lines of closure.

Section 41.1 Shellfish Lands in Westchester, Bronx, Kings, New York, Richmond and Queens Counties.

(a) The shellfish lands in Westchester, Bronx, Kings, New York, Richmond and Queens Counties, except the one listed in subdivision (b) are in such sanitary condition that shellfish thereon shall not be taken for use as food and all such shellfish lands are designated uncertified areas.

(b) The following area in Queens County is in such sanitary condition that surf clams thereon may be taken for use as food, and it is, therefore, designated a certified area to that extent.

Atlantic Ocean

1. All that area of the Atlantic Ocean lying east of a line extending southeasterly from GONG R"4", located at the entrance to East Rockaway Inlet, through Buoy R"4" WHISTLE, located at the southwestern corner of the Fish Haven is certified for the taking of shellfish.

Note: All reference points for this area taken from U.S.C. & G.S. Nautical Chart 1215 dated July 10, 1970.

James L. Biggane
Commissioner

By:
Robert B. Mac Millan
Supervisor of Marine Environmental Control

Dated: Albany, N.Y.
April 8, 1969
As amended thru 10/1/72
Dated: January 1, 1975

STATE LAW PROHIBITS THE TAKING OF SHELLFISH FROM THE UNCERTIFIED AREAS OF THE SHELLFISH LANDS AND WATERS OF THE STATE.

If you intend to harvest shellfish from the waters of any town other than that in which you claim residency, then contact the offices at N.Y.S. Dept. of Environmental Cons. at Stony Brook and obtain listings of the uncertified areas in that town.

[illegible] 1975 [illegible]

	[illegible] BY NAME		CAT. I CAT. II	CAT. III A CAT. III B	CAT. IV A CAT. IV B	CAT. V	TOTAL
1001-001	Belgrave WPC District Mr. Samuel McNichol Chairman, Belgrave WPC Dist. P.O. Box 408 Great Neck, NY 11022	(17-02)	3,000 0	15 200	0 234		3,449
1002-001	Cedarhurst (V) Hon. Nicholas Farina Mayor, Village of Cedarhurst Village Hall 200 Cedarhurst Ave. Cedarhurst, NY 11516	(17-01)	200 0	28 52	0 0	0	280
1003-001	Freeport (V) Edwin H. Prefer Supt. of Pub. Works Municipal Building 46 North Ocean Avenue Long Island, NY 11520	(17-01)	0 0	1,462 0	0 0	0	1,462
1004-001	Glen Cove (C) Mr. Ernest Pascucci Commissioner of Pub. Works City of Glen Cove Dept. Of Pub. Works 16 Bridge Street Glen Cove, NY 11542	(17-02)	19,000 0	596 0	2,850 0	0	22,446
1005-001	Great Neck (V) Hon, Herman Sussman Mayor, Village of Great Neck 61 Baker Hill Road Great Neck, NY 11022	(17-02)	550 0	22 150	0 0	0	722

1974 NEEDS SURVEY

NYSDEC-REGION 1 NASSAU COUNTY

NOTE: ALL COSTS REPORTED IN THOUSANDS OF JUNE 1973 DOLLARS

rity & ity No.	Authority Address & Facility Name	CAT. I CAT. II	CAT. III A CAT. III B	CAT. IV A CAT. IV B	CAT. V	TOTAL
06-	Great Neck Sewer Dist (17-02) Mr. George Worthington Chairman, Great Neck Sew. Dist. 236 East Shore Road Great Neck, NY 11023					
001	East Shore Road STP	0 4,320	700 0	0 966	0	5,986
007-001	Lawrence (V) (17-01) Hon. Jay F. Nenson Mayor, Village of Lawrence Village Hall 196 Central Ave. Lawrence, NY 11559	600 0	180 0	2,760 0	0	3,540
08-001	Long Beach (C) (17-01) Mr. William Bowen City Manager, City of Long Beach Dept. of Pub. Works City Hall Long Beach, NY 11561	0 10,800	2,540 18,480	4,000 6,300	0	42,120
09-001	Long Beach Sewer Dist. (17-01) Dr. Joseph Kuhn, Chairman W. Long Beach Sewer Dist. Board of Sewer Commissions 2150 Bay Boulevard Atlantic Beach, NY 11509	1,900 0	125 0	0 0	0	2,025
010-	Nassau Co. Dept. of Pub. Works Mr. John Flock (17-01) Acting Commissioner of Pub. W. Nassau County Executive Bldg. Mineola, NY 11501					

1974 NEEDS SURVEY

NYSDEC-REGION 1 NASSAU COUNTY

NOTE: ALL COSTS REPORTED IN THOUSANDS OF JUNE 1973 DOLLARS

thority & ility No.	Authority Address & Facility Name	CAT. I CAT. II	CAT. III A CAT. III B	CAT. IV A CAT. IV B	CAT. V	TOTAL
1010-001	Bay Park	0 145,000	100 0	0 0	0	145,100
002	Inwood	1,685 0	65 0	0 0	0	1,750
003	Meadow Brook Hosp.	0 0	0 0	0 0	0	-0-
004	Mitchell Field	0 0	0 0	0 0	0	-0-
005	Farmingdale Sanitorium	0 0	0 0	0 0	0	-0-
006	Wantaugh STP	0 82,080	0 0	375,000 0	0	457,080
007	Sewer Dist. #7	0 0	0 0	0 0	0	-0-
008	Kings Pt. Manhasset Col. Dist.	0 0	0 0	35,204 4,036	0	39,240
009	Kings Pt. Manhasset Col. Dist.	0 0	0 0	3,223 494	0	3,717
010	Sea Cliff - Roslyn Hbr. Dist.	0 0	0 0	29,469 12,145	0	41,614
011	Plandome - Sands Pt. Dist.	0 0	0 0	40,138 9,564	0	49,702
012	Coll. Dist. #4	0 80,000	0 0	144,000 74,880	0	298,880
013	Tertiary plant at Wantagh	0 14,803	0 0	0 0	0	14,803

1974 NEEDS SURVEY

NYSDEC-REGION 1 NASSAU COUNTY

NOTE: ALL COSTS REPORTED IN THOUSANDS OF JUNE 1973 DOLLARS

ority & ility No.	Authority Address & Facility Name	CAT. I CAT. II	CAT. III A CAT. III B	CAT. IV A CAT. IV B	CAT. V	TOTAL
011-001	Oyster Bay (T) (17-02) Mr. John Burke Supervisor, Town of Oyster Bay Sanitary Services Town Hall Oyster Bay, NY 11771	0 0	0 0	0 500	0	500
002	STP	125 0	0 0	0 0	0	125
012-001	Oyster Bay Sewer Dist. (17-02) Mr. William Wanser, Chairman Oyster Bay Sewer District Board of Sewer Commissions 80 Lexingtion Ave. Oyster Bay, NY 11771	0 8,515	180 400	12,285 3,022	0	24,402
013-001	Port Washington Sew. Dist. Mr. James Jennings (17-02) Chairman Port Washington Sew. Dist. Board of Sewer Commissioners 70 Harbor Road Port Washington, NY 11050	19,400 0	475 5,300	0 3,200	0	28,375
014-001	Roslyn (V) (17-02) Hon. Elias Spielman Mayor, Village of Roslyn Village Hall 1 Paper Mill Road Roslyn, NY 11576	0 1,578	10 0	0 0	0	1,588

1974 NEEDS SURVEY

NYSDEC-REGION 1 NASSAU COUNTY

NOTE: ALL COSTS REPORTED IN THOUSANDS OF JUNE 1973 DOLLARS

ority & lity No.	Authority Address & Facility Name		CAT. I CAT. II	CAT. III A CAT. III B	CAT. IV A CAT. IV B	CAT. V	TOTAL
29-001	Manorhaven (V) Hon. Dennis T. Watt 33 Manorhaven Blvd. Port Washington, NY 11050	(17-02)	0 0	132 0	97 0	0	229
30-001	Lake Success (V) Hon. J. Shan Mayor of Lake Success 318 Lakeville Rd. Post Office Great Neck, NY 11022	(17-02)	0 0	0 0	0 0	0	-0-
35-001	Hempstead (T) Mr. Francis Purcell Supervisor, Town of Hempstead Town Hall, Town Hall Plaza Hempstead, NY 11551	(17-01)	6,127 0	0 0	0 0	0	6,127
002	Oceanside Incinerator		2,660 0	0 0	0 0	0	2,660
36-001	North Hempstead (T) Mr. Michael J. Tulley, Jr. Supervisor, Town of N. Hempstead Town Hall, 220 Plandome Road Manhasset, NY 11030	(17-01)	1,500 0	0 0	0 0	0	1,500

1974 NEEDS SURVEY

NYSDEC-REGION 1 SUFFOLK COUNTY

NOTE: ALL COSTS REPORTED IN THOUSANDS OF JUNE 1973 DOLLARS

Authority & Facility No. 36-	Authority Address & Facility Name	CAT. I CAT. II	CAT. III A CAT. III B	CAT. IV A CAT. IV B	CAT. V	TOTAL
* 1015-	County of Suffolk (17-02) Mr. John Flynn Dept. of Environmental Cons. 1324 Motor Parkway Hauppauge, NY 11737					
001	Pt. Jefferson SD	0 0	0 0	0 0	0	-0-
002	Holbrook Rd SD #2	0 200	0 0	0 0	0	200
003	Strathmore at Huntington-SD#5	0 391	0 0	0 0	0	391
004	SD # 6 Kings Park	0 19,900	0 0	111,618 54,750	0	186,268
005	SD # 7 Birchwood - No. Shore	0 290	0 0	0 0	0	290
006	SD # 8 Strathmore Ridge	0 0	0 0	0 0	0	-0-
007	SD # 10 College Park	0 0	0 0	0 0	0	-0-
008	SD # 11 Greenwood Village	0 232	0 0	0 0	0	232
009	SD # 12 Parkland 3	0 0	0 0	0 0	0	-0-
010	SD # 13 Heatherwood at Calverton	0 90	0 0	0 0	0	90

G-6

... POPULATION ** 25% STATISTICAL SAMPLE

1974 NEEDS SURVEY

NYSDEC-REGION 1 SUFFOLK COUNTY

NOTE: ALL COSTS REPORTED IN THOUSANDS OF JUNE 1973 DOLLARS

ority & lity No.	Authority Address & Facility Name	CAT. I CAT. II	CAT. III A CAT. III B	CAT. IV A CAT. IV B	CAT. V	TOTAL
015-011	SD # 14 Waverly Park	0 190	0 0	0 0	0	190
012	SD # 15 Windbrooke	0 302	0 0	0 0	0	302
013	Suffolk Co. Comm. Coll.	0 226	0 0	0 0	0	226
014	SD # 3 SWSD	0 34,363	0 0	201,500 59,300	0	295,163
015	SD # 1	0 19,000	0 0	40,200 20,172	0	79,372
016	SD # 9 Parr Village	0 0	0 0	0 0	0	-0-
017	San Remo	0 0	0 0	1,896 279	0	2,175
018	West Central	53,509 0	0 0	176,700 69,300	0	299,509
019	So. Central	0 150,800	0 0	110,088 173,845	0	434,733 389,733
020	Co. SD	0 82,400	0 0	183,600 127,127	0	393,127
021	Yaphank Co. Center	0 89,184	0 0	26,400 100,209	0	215,793
022	Westhampton Beach	10,815 0	0 0	8,640 17,640	0	37,095

NOTE: ALL COSTS REPORTED IN THOUSANDS OF JUNE 1973 DOLLARS

Authority & Facility No. 16-	Authority Address & Facility Name		CAT. I CAT. II	CAT. III A CAT. III B	CAT. IV A CAT. IV B	CAT. V	TOTAL
1015-023	Disposal Dist. 4,5,6		0 25,200	0 0	163,200 22,962	0	211,362
024	Disposal Dist. 11		20,760 0	0 0	3,250 4,700	0	28,710
025	Disposal Dist. 13		0 18,980	0 0	4,500 18,670	0	42,150
026	Disposal Dist. 14		2,430 0	0 0	373 2,500	0	5,303
027	Disposal Dist. 15		0 37,300	0 0	22,100 48,300	0	107,700
028	Disposal Dist. 16		0 6,885	0 0	2,170 7,480	0	16,535
1016-001	Greenport (V) Hon. David E. Walker Mayor, Village of Greenport 236 Third Street Greenport, NY 11944	(17-01)	755 0	6 0	0 0	0	761
1017-001	Huntington Mr. Robert Gance Director of Sanitation 53 N.Y. Ave. No. Halesite, NY 11743	(17-02)	0 18,750	491 0	24,350 6,900	0	50,491
1018-001	Northport (V) Hon. Jack D. Campbell Mayor, Village of Northport 224 Main Street Northport, NY 11768	(17-02)	0 1,220	58 0	983 887	0	3,148

*** 25% STATISTICAL SAMPLE

1974 NEEDS SURVEY

NYSDEC-REGION 1 SUFFOLK COUNTY

NOTE: ALL COSTS REPORTED IN THOUSANDS OF JUNE 1973 DOLLARS

hority & ility No.	Authority Address & Facility Name	CAT. I CAT. II	CAT. III A CAT. III B	CAT. IV A CAT. IV B	CAT. V	TOTAL
019-001	Ocean Beach (V) (17-01) Hon. Arthur Siledorf Mayor, Village of Ocean Beach Ocean Beach, NY 11770	0 1,850	66 0	0 0	0	1,916
020-001	Patchogue (V) (17-01) Hon. Robert Waldbauer Mayor, Village of Patchogue 14 Baker Street P.O. Box 719 Patchogue, NY 11772	0 6,552	5 0	14,600 800	0	21,957
021-001	Riverhead (V) (17-01) Mr. John Leonard Supervisor, Town of Riverhead Riverhead Sewer District 220 Rosnoke Ave. Riverhead, NY 11901	0 8,764	15 0	6,700 13,636	0	29,115
022-001	Sag Harbor (V) (17-01) Hon. Harry Fick, Mayor Village of Sag Harbor Main Street Sag Harbor, NY 11963	0 720	25 0	250 150	0	1145 1,100
024-001	Smithtown (T) (17-02) Paul Fitzpatrick, Supervisor Town of Smithtown 99 West Main Street Smithtown, NY 11787	1,103 0	0 0	0 0	0	1,103
028-001	Brookhaven (T) (17-01) Councilman Reid 205 South Ocean Avenue Patchogue, NY 11772	0 0	0 0	0 0	0	-0-

1974 NEEDS SURVEY

NYSDEC-REGION 1 SUFFOLK COUNTY

NOTE: ALL COSTS REPORTED IN THOUSANDS OF JUNE 1973 DOLLARS

thority & cility No.	Authority Address & Facility Name	CAT. I CAT. II	CAT. III A CAT. III B	CAT. IV A CAT. IV B	CAT. V	TOTAL
1037-001	Babylon (T) (17-01) A. Barnett, Supervisor Town of Babylon 200 East Sunrise Highway Lindenhurst, NY 11757	0 0	0 0	0 0	0	-0-
1038-001	East Hampton (T) (17-01) Mrs. Sudita Hope Supervisor, Town of East Hampton 159 Santiago Road East Hampton, NY 11937	0 5,470	0 0	4,212 216	0	9,898
1039-001	Islip (T) (17-01) Mr. Peter J. Coholon Supervisor, Town of Islip 655 Main Street Islip, NY 11751	0 0	0 0	0 0	0	-0-
1040-001	Shelter Island (T) Mr. Thomas L. Jernick Supervisor, Town of Shelter Is. Ferry Road Shelter Island, NY 11964	0 810	0 0	0 0	0	810
1041-001	Southhold (T) (17-01) Mr. Albert W. Martocchia Supervisor, Town of Southhold 16 South Street Greenport, NY 11944	0 141	0 0	0 0	0	141
1042-001	South Hampton (T) Mr. T. Hulse, Supervisor Town of South Hampton Montauk Highway South Hampton, NY 11968	0 0	0 0	0 0	0	-0-

** [illegible] OVER 10,000 POPULATION

*** 25% STATISTICAL SAMPLE

1974 NEEDS SURVEY

NYSDEC-REGION 1

COUNTY

NOTE: ALL COSTS REPORTED IN THOUSANDS OF JUNE 1973 DOLLARS

rity & lity No.	Authority Address & Facility Name	CAT. I CAT. II	CAT. III A CAT. III B	CAT. IV A CAT. IV B	CAT. V	TOTAL
25-	NYS Univ. Cons. Fund Richard R. Murray Director of Engineering State University Cons. Fund 194 Washington Ave. Albany, NY					
001	Farmingdale Nass, Co.	0 0	3 0	0 30	0	33
002	Stony Brook Suffolk Co.	0 0	11 0	0 0	0	11
003	Old Westbury Nass. Co.	0 0	0 0	8 0	0	8
26-	NYS Dept. of Mental Hygiene (For all projects in Region 1) Mr. Paul F. Dwyer Director, Engineering Services NYS Dept. of Mental Hygiene 44 Holland Ave. Albany, NY					
001	Central Islip St. Hosp. Nass. Co.	0 0	0 0	0 400	0	400
002	Pilgrim St. Hosp. Suff. Co.	0 800	0 0	0 0	0	800
003	Suffolk St. School Suff. Co.	0 150	0 0	0 0	0	150

COPY

NOTE: ALL COSTS REPORTED IN THOUSANDS OF JUNE 1973 DOLLARS

thority & cility No.	Authority Address & Facility Name	CAT. I CAT. II	CAT. III A CAT. III B	CAT. IV A CAT. IV B	CAT. V	TOTAL
1031-001	NYS Dept. of Correctional Serv. Mr. Norman E. Gervais Director of Facilities Planning Dept. of Correctional Serv. Building 2 State Campus Albany, NY 12226	0 0	0 0	0 0	0	-0-
1033-001	NYS Div. for Youth Mr. Paul M. Mockovciak Director of Planning Division of Youth 2 University Place Albany, NY	0 0	0 0	0 0	0	-0-
1034-	NYS Div. of Parks & Recreation Mr. Phillip Deemers Div. of Parks & Recreation Swan Street Office Building Division of Parks & Recreation Albany, NY					
001	Bethpage St. Pk., Nassau Co.	60 0	4 0	0 0	0	64
002	Heckscher St. Pk, Suffolk Co.	35 0	3 0	0 0	0	38
003	Jones Beach St. Pk. Nassau Co.	0 0	7 0	0 0	0	7
004	Montauk Pt. St. Pk, Suffolk Co.	40 0	3 0	0 0	0	43
005	Robert Moses St. Pk., Suffolk Co.	60 0	4 0	0 0	0	64

______________________ COUNTY

NOTE: ALL COSTS REPORTED IN THOUSANDS OF JUNE 1973 DOLLARS

ty & y No.	Authority Address & Facility Name	CAT. I CAT. II	CAT. III A CAT. III B	CAT. IV A CAT. IV B	CAT. V	TOTAL
006	Sunken Meadow St. Pk., Suffolk Co.	95 0	3 0	0 0	0	98
007	Wildwood St. Pk., Suffolk Co.	75 0	3 0	0 0	0	78
008	Valley Stream St. Pk., Nassau Co.	0 0	4 0	0 0	0	4
009	Hempstead Lake St. Pk., Nassau Co.	0 0	3 0	0 0	0	3
010	Massapequa St. Pk., Nassau Co.	0 0	0 0	0 0	0	0
011	Planting Fields-Arboretum-Osyter Bay, Nassau Co.	0 0	1 0	0 0	0	1
012	Caumsett St. Pk., Suffolk Co.	80 0	0 0	75 0	0	155
013	Belmont Lake St. Pk. Suffolk Co.	0 0	3 0	0 0	0	3
014	Gilgo St. Pk.	0 0	0 0	0 0	0	0
015	Orient Beach St. Pk.	0 0	0 0	0 0	0	0
016	Captree St. Pk.	0 0	0 0	0 0	0	0
017	Middle Is. St. Game Pk.	0 0	0 0	0 0	0	0
018	Bayard Cutting Arboretum, Suffolk Co.	0 0	3 0	0 0	0	3

** AUTHORITIES OVER 10,000 POPULATION

1974 NEEDS SURVEY

NYSDEC-REGION 1 ______________ COUNTY

NOTE: ALL COSTS REPORTED IN THOUSANDS OF JUNE 1973 DOLLARS

rity & lity No.	Authority Address & Facility Name	CAT. I CAT. II	CAT. III A CAT. III B	CAT. IV A CAT. IV B	CAT. V	TOTAL
1034-019	Connetquot River St., Pk.	0 0	0 0	0 0	0	0
* 020-	Nessequoge River ST.Park	0 0	0 0	0 0	0	0
* 021	Brookhaven State Park	0 0	0 0	0 0	0	0
* 022	Hither Hills State Park	0 0	0 0	0 0	0	0

A ** AUTHORITIES OVER 10,000 POPULATION *** 25% STATISTICAL SAMPLE

1974 NEEDS SURVEY

NYSDEC-REGION 2 NEW YORK CITY COUNTY

NOTE: ALL COSTS REPORTED IN THOUSANDS OF JUNE 1973 DOLLARS

ority & ility No.	Authority Address & Facility Name	CAT. I CAT. II	CAT. III A CAT. III B	CAT. IV A CAT. IV B	CAT. V	TOTAL
001-	Mr. Charles E. Samovitz, P.E. Assistant Commissioner Director of Water Pollution Control New York City Environmental Protection Administration 40 Worth Street New York, New York 10013 (17-01)					
001	Wards Island	0 95,600	107,950 526,228	0 0	509,700	1,239,478
002	Hunts Point	0 25,900	58,899 93,520	48,993 0	336,652	563,964
003	Bowery Bay	0 21,600	4,223 73,741	193,837 0	284,940	578,341
004	Tallmans Island	0 62,300	4,010 57,949	269,630 25,000	185,660	604,549
005	Jamaica	0 16,000	6,319 86,158	310,009 0	135,100	553,586
006	26th Ward	0 14,400	2,392 46,500	1,525 0	36,400	101,217
007	Red Hook	0 185,100	1,366 85,442	0 83,536	143,900	499,344
008	Port Richmond	0 11,500	1,436 82,900	44,715 0	0	140,551
009	Coney Island	0 97,300	7,540 77,070	2,804 0	58,190	242,904

[illegible] 1973 [illegible]

		CAT. I CAT. II	CAT. III A CAT. III B	CAT. IV A CAT. IV B	CAT. V	TOTAL
	[illegible] Head	0 211,353	7,070 80,834	820 17,792	363,100	680,969
011	Newton Creek	0 318,000	29,665 406,412	62,419 1,000	780,800	1,598,296
013	Oakwood Beach	0 74,400	1,042 118,922	348,021 89,250	0	631,635
014	Rockaway	0 10,100	988 60,322	47,548 0	0	118,958
015	Hart Island	0 0	0 0	0 0	0	-0-

NEEDS SURVEY NYS DEC - REGION 3 WESTCHESTER COUNTY

LOCALITY	CAT. I CAT. II	CAT. III A CAT. III B	CAT. IV A CAT. IV B	CAT. V	TOTAL
Scarsdale (V)	0 0	0 1,000	546 0	0	1,546
Rye (T)	0 0	1,025 0	200 0	0	1,225
White Plains					
SD #1	0 0	2,468 0	30 0	0	2,498
SD #2	0 0	2,693 0	90 950	0	3,733
Bronxville (V)	0 0	823 0	0 0	0	823
Eastchester (T)	0 0	902 0	0 0	0	902
Harrison (T)					
SD #1	0 0	1,300 0	800 0	0	2,100
SD #2	0 0	494 0	800 0	0	1,294
Purchase Sewer Improvement Area	0 0	82 0	400 0	0	482

1974 NEEDS SURVEY NYS DEC - REGION 3 WESTCHESTER COUNTY

LOCALITY	CAT. I CAT. II	CAT. III A CAT. III B	CAT. IV A CAT. IV B	CAT. V	TOTAL
Larchmont	0 0	902 0	0 120	0	1,022
Mamaroneck (T)	0 0	1,576 0	835 265	0	2,676
Mamaroneck (V)	0 0	2,165 0	430 335	0	2,930
Westchester County					
Blind Brook SD	7,856 0	1,550 0	0 0	0	9,406
Bronx Valley SD	0 0	2,375 0	0 0	0	2,375
Hutchinson SD	0 0	1,669 0	0 0	0	1,669
Mamaroneck SD	27,100 0	4,512 0	0 0	0	31,612
New Rochelle SD	22,840 0	2,846 0	0 0	0	25,686
Port Chester SD	11,057 0	340 0	0 0	0	11,397

LOCALITY	CAT. I CAT. II	CAT. III A CAT. III B	CAT. IV A CAT. IV B	CAT. V	TOTAL
Mount Vernon (C)	0 0	2,244 2,125	0 0	0	4,369
New Rochelle (C)	0 0	0 0	300 0	0	300
Scarsdale (T)	0 0	0 0	0 0	0	0
North Castle (T)	0 1,123	0 0	809 489	0	2,421
North Pelham (V)	0 0	515 0	0 0	0	515
Tuckahoe (V)	0 0	574 0	0 0	0	574
Pelham (V)	0 0	0 43	0 0	0	43
Pelham Manor (V)	0 0	2,165 0	0 0	0	2,165
Port Chester (V)	0 0	1,910 0	131 0	0	2,041
Pound Ridge (T)	0 934	0 0	50 187	0	1,171
Rye (C)	0 0	0 0	1,663 604	0	2,267 ~~1,225~~

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DIVISION OF PURE WATERS

BUREAU OF SEWAGE PROGRAMS

REPORT OF STATUS OF WATER QUALITY IMPROVEMENT PROJECTS

Projects Listed On
New York State's Priority Project List
For Funding Under P.L. 92-500

March 1, 1976

Distribution:

Commissioner Reid
First Deputy Commissioner Elston
Deputy Commissioner Hullar
Mr. Seebald
Mr. Trad
Mr. Bagley

Mr. Mt Pleasant
Mr. Garvey
Mr. O'Toole - Room 416
Mr. Al Davis - Room 414
Mr. Caspe - EPA
Mr. Marcy (2)
Mr. Weibold
Mr. Sausville - Room 416

Mr. Bogedain
Mr. LaRow
BSP Section Chiefs
Mr. Wallace
Mrs. Nowak
All NYSDEC Regional Engineers

EXPLANATION OF REPORT

This report provides the status of the 168 proposed municipal water quality improvement projects listed on New York State's Project List for Fiscal Year 1975 funding, under the Federal Water Pollution Control Act Amendments of 1972 (P.L. 92-500).

Abbreviations

Apr	- Approved by NYSDEC (Date
Com	- Review Comments Forwarded to Applicant for response (Date
Dra	- Draft Received
DrB	- Drainage Basin (Codes Shown Below)
EPA	- Copy Under Review by United States Environmental Protection Agency (EPA) (Date Forwarded)
El Pr Co	- Eligible Project Cost shown in thousands of dollars
En As St	- Environmental Assessment Statement
Eng Rpt	- Wastewater Facilities (Engineering Report)
Est	- Estimated date of receipt
EST-EPA	- Estimated date complete grant application package will be forwarded to EPA, Region II
FY	- Fiscal Year of Federal Funding
Gr App	- NYSDEC receipt of complete and acceptable construction grant application
I/I	- Infiltration/Inflow Analysis
Ind	- Major Industry
La Mtg	- Most recent Project Progress Meeting
Let Int	- Letter of Intent
Mun	- Municipality
N/A	- Not Applicable
Nec Dist Form	- Formation of any necessary sewer or collection districts completed
NP ES	- National Pollutant Discharge Elimination System Application
Pri	- Ranking on 1975 Priority List
Pl&Sp.	- NYSDEC receipt of complete contract documents
Rec	- Received by NYSDEC (date)
Reg	- NYSDEC Region

*Project has been approved and forwarded to EPA on date shown under Est-EPA

Des - Description Code

FM	- Force Main
INT	- Interceptor
MOD	- Modification
OS	- Outfall Sewer
PS	- Pump Station
STP	- Sewage Treatment Plant
STP ADD	- Sewage Treatment Plant Addition
STP UP	- Upgrading existing sewage treatment plant from primary to secondary

Drainage Basin Codes

1. Erie-Niagara
2. Allegany
3. Lake Ontario
4. Genesee
5. Chemung
6. Susquehanna
7. Seneca-Oneida-Oswego
8. Black
9. St. Lawrence
10. Lake Champlain
11. Upper Hudson
12. Mohawk
13. Lower Hudson
14. Delaware
15. Raritan-Newark
16. Housatonic
17. Atlantic-Long Island

REGION I
SOUTHEASTERN PROJECTS SECTION
NASSAU COUNTY
STEP 3 PROJECTS

Pri No. C-36- DrB		St/Ph Des	El Pr Co (Fy) Est-EPA	Pl Stu	Gr App	Eng Rpt	En As St	I/I	Ph&Sp	Con Strt	Remarks Problems
57 982 17	Cedar Creek WPCF Nassau Co. SD#3	St3 PS;FM;STP ADD; REC-FAC	21,017(75/76) 4/76	N/A	Est3/76	*Rec6/74	Rec1/76	N/A	Rec1/76	Est10/76	*Supplement to the Engr. Rpt. Rec. & under review by NYSDEC. Pl&Sp under review; Pre-hearing EnAsSt received; EnAsSt hearing scheduled 3/76; Possible problems with prehistoric site at the plant (78)

STEP 2

Pri No. C-36- DrB		St/Ph Des	El Pr Co (Fy) Est-EPA	Pl Stu	Gr App	Eng Rpt	En As St	I/I	Ph&Sp	Con Strt	Remarks Problems
--- 666 17	Port Washington SD	St2 STP-ADD;INT; St3 PS;FM	1,779(75/76) 25,722 (Fut)	N/A	No Schedule Established						Decision must be made between county and sewer district on preparation of 201 plan. Proj must be coordinated with 208.

Pri No. C-36- DrB		St/Ph Des	El Pr Co (Fy) Est-EPA	Pl Stu	Gr App	Eng Rpt	En As St	I/I	Ph&Sp	Con Strt	Remarks Problems
	NASSAU COUNTY STEP I										
--- 891 17	Bay Park WPCF Nassau Co. SD#2	St1 STP-ADD St2&3	1,000(75/76) 150,000(Fut)		Est3/76	Est3/76	Est3/76	Rec8/75	3/76	10/76	I/I has been approved by USEPA; Pre-hearing EnAsSt rec. Proj has been delegat-to EPA for review and processing. (78)
	SUFFOLK COUNTY STEP 3 PROJECTS										
19 433 17	Sag Harbor (V)	PhII OS	157(75/76)	N/A	*	*	*	*	Est4/76		Outfall required by EPA as PhII PhI under const. (82)
	STEP I										
--- 709 (17)	Port Jefferson SD	St1	318(75/76) ---(Fut)	*	4/76					Apr	*Pl of Study Approved by NYSDEC & USEPA; Step I application expected shortly(146)
--- 741 (17)	Patchogue (V)	St1 St2&3	53(75/76)	*	4/76						*Pl of Study being revised by Suffolk Co. DEC as the Applicant (283)

Pri No. C-36- DrB		St/Ph Des	El Pr Co (Fy) Est-EPA	Pl Stu	Gr App	Eng Rpt	En As St	I/I	Ph&Sp	Con Strt	Remarks Problems

SUFFOLK COUNTY
STEP I

Pri No. C-36- DrB		St/Ph Des	El Pr Co (Fy) Est-EPA	Pl Stu	Gr App	Eng Rpt	En As St	I/I	Ph&Sp	Con Strt	Remarks Problems
--- 977 17	Riverhead (T)	St1 STP-UP;ADD St2&3 INT	100(75/76) 25,900(Fut)	*	*						*Step I grant made by EPA (160)
--- 994 17	Yaphank SD	St1 St2&3	3,084(75/76) ---(Fut)								*Pl of Study is under review by NYSDEC; Suffolk Co. revising the cost figures in view of 208 planning work (146)
--- ---	Huntington (T)	St1 St2&3	136(75/76) ---(Fut)	*							*Under review by NYSDEC
--- 995 17	West Central SD	St1 St2&3	7,328(75/76) ---(Fut)	*							*Pl of Study is under review by NYSDEC; Suffolk Co. revising the cost figures in view of 208 planning work (146)

NEW YORK CITY
STEP 3 PROJECTS

Pri No. C-36- DrB		St/Ph Des	El Pr Co (Fy) Est-EPA	Pl Stu	Gr App	Eng Rpt	En As St	I/I	Ph&Sp	Con Strt	Remarks Problems
10 394 17	Red Hook New York City	PhII PS-UP; PhIII STP; PhIV INT	11,000(75/76) 171,856,000(75/76) 84,386,000(75/76) Ph III* Ph II 6/76 Ph IV 9/76	N/A	*	*	*	*(PhIII) Rec7/75 (PhII)	*(PhIII) Rec3/75 (PhII) Rec5/70 (PhIV)	2	Revised plans for PHII submitted; PhI of proj under construction; PhII delayed until after PhIII because of I/I/ Applic & Pl&Sp for PhIII appr & forwarded to EPA 6/75,. but returned 2/76; Steam/ elec energy load bal under review by NYSDEC (149-212-224-244)
54 396 17	Coney Island WPCP New York City	St3 STP-UP	95,000(75/76) *		Not Scheduled	Apr11/70 RevEst6/76	Not Scheduled	Not Scheduled	Rec12/71		Revised rpt being prepared. No schedule for EAS & I/I. Proj will not meet deadline for Step 3 (135)

Pri No. -36- DrB		St/Ph Des	El Pr Co (Fy) Est-EPA	Pl Stu	Gr App	Eng Rpt	En As St	I/I	Ph&Sp	Con Strt	Remarks Problems

NEW YORK CITY
STEP I PROJECTS

Pri No. -36- DrB		St/Ph Des	El Pr Co (Fy) Est-EPA	Pl Stu	Gr App	Eng Rpt	En As St	I/I	Ph&Sp	Con Strt	Remarks Problems
--- 91 17	Jamaica Bay New York City	Stl Ret-Fac St2&3	1,000(75/76) 223,000(Fut)								City is not working on proj.
--- 02 7	Owl's Head WPCP New York City	Stl STP-UP;INT St2&3 PS;FM	1,250(75/76) 207,000(Fut) *	Rec8/75							Pl of Study under review by NYSDEC & comments forwarded to NYC (78)
--- 713 17	Newtown Creek WPCP New York City	Stl STP-UP;EXP St2&3	2,000(75/76) 275,000(Fut)	Rec8/75							Pl of Study under review by NYSDEC & comments forwarded to NYC

REGION 3
SOUTHEASTERN PROJECTS SECTION
WESTCHESTER COUNTY
STEP 3 PROJECTS

Pri No. -36- DrB		St/Ph Des	El Pr Co (Fy) Est-EPA	Pl Stu	Gr App	Eng Rpt	En As St	I/I	Ph&Sp	Con Strt	Remarks Problems
34 696 17	Blind Brook SD	St3 STP-UP;FM;OS	13,980(75/76) Est3/76	N/A	Rec12/75	EPA2/76	EPA	EPA10/75	Rec12/75		Reviewed & comments to Applicant 2/76 (253)

WESTCHESTER COUNTY
STEP 3 PROJECTS

Pri No. -36- DrB		St/Ph Des	El Pr Co (Fy) Est-EPA	Pl Stu	Gr App	Eng Rpt	En As St	I/I	Ph&Sp	Con Strt	Remarks Problems
43 672 13	Westchester County Ossining SD	St3 STP INT;PS FM;OS	33,484(75/76) Est4/76	N/A	Rec3/75	Apr9/71 Revised Report Rec 9/75	Rec3/75	App'd EPA	Rec9/75		Rpt conditionally approved. Pl&Sp for Proj reviewed & comments to. Applicant (220-317-380)
5 55 695 17	Port Chester SD	St3 STP-UP;FM	18,884(75/76) Est3/76	N/A	Rec12/75	EPA2/76	Rec7/75	EPA10/75	Est3/76		Pl&Sp r[illegible]wed & comme[illegible]o Applicant 2/76

Pri No. C-36- LrB		St/Ph Des	El Pr Co (Fy) Est-EPA	Pl Stu	Gr App	Eng Rpt	En As St	I/I	Ph&Sp	Con Strt	Remarks Problems

REGION 2
SOUTHEASTERN PROJECTS SECTION
NEW YORK CITY
STEP 3 PROJECTS

5 392 17	Oakwood Beach New York City	PhII PS:FM PhIII INT PhIV PS;INT;FM	17,000(75/76) 35,000(75/76) 84,632(75/76) Phase II5/76 Phase III 1/76 Phase IV 10/76	N/A	Rec3/75	*	EPA2/75 EPA3/75	Rec7/75 Rec3/75	Est12/76 Est11/76		*Phase I of proj processed & approved by EPA 3/73. EnAsSt hear-1/75. Awaiting notification that City has ability to fund their share. All Pl&Sp being revised for lower per capita flow (146-170-255-318-351-352)

Pri No. C-36- DrB		St/Ph Des	El Pr Co (Fy) Est-EPA	Pl Stu	Gr App	Eng Rpt	En As St	I/I	Ph&Sp	Con Strt	Remarks Problems
59 694 13	Peekskill SD	PhI STP-UP PhII INT;OS;PS;FM	18,575(75/76) 15,780(75/76)	N/A	PhI * PhII3/76	* N/A	* N/A	* N/A	* 3/76		PhI to EPA 9/75. SHPO certificate Rec. Review & approval responsibility for PhII transferred to USEPA. State contract forwarded to Applicant for signature (149)

WESTCHESTER COUNTY
STEP 2 PROJECTS

908	Mamaroneck SD	St2 STP-UP	283(75/76)	N/A	Est3/77	Est12/76	Est12/76	Est12/76			Step I Grant issued by EPA (149)

STEP I PROJECTS

1018	Yonkers SD	St1 Ret-Fac	800(75/76)	Rec7/75	Est3/76						Awaiting revised Pl of Study (135)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF PURE WATERS

SEMI-ANNUAL REPORT OF STATUS OF FEDERAL AND STATE GRANTS PROJECTS FOR CONSTRUCTION OF MUNICIPAL SEWAGE TREATMENT WORKS COMMENCED BETWEEN JULY 1, 1957 AND MARCH 31, 1972*

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* This report contains those municipal sewage treatment works construction projects funded under one or more of the following Laws: Federal Water Pollution Control Act (PL 84-660) as amended by the Federal Water Pollution Control Act Amendments of 1961 - (PL 87-88), the Water Quality Act of 1965 - (PL 89-234), and the Clean Water Restoration Act of 1966 - (PL 89-753) the Pure Waters Bond Act of 1965 (Chapters 176, 177 of the Laws of 1965).

Each project is listed with three (3) lines of figures, the top line lists the Federal amounts, the middle line lists the State amounts and the bottom line lists the Local amounts. If figures on the top line are not enclosed by parentheses, the Federal Grant Offer (Part A) has been made and accepted by the Applicant. If figures are not enclosed by parentheses on the middle line, the State Contract has been executed. If middle line figures are in parentheses, the eligible project costs are estimated (proposed) costs and the State grant amounts are proposed.

If a line appears under the project number, the project is eligible under the Federal Clean Water Restoration Act of 1966 (P.L. 89-753), for a 50% Federal grant, assuming Federal funds become available. If a line does not appear under the Project number, the project is eligible, under legislation prior to the Federal Clean Water Restoration Act of 1966, for Federal participation of 30% or a lesser amount.

A plus sign (+) after the project number indicates that the project has received an additional United States Environmental Protection Agency (USEPA) 10% grant for compliance with metropolitan regional planning.

An asterisk (*) after the construction completion percentage indicates that the project is in operation.

State and Federal eligible costs may be different since only costs after May 12, 1965 are eligible for State grants.

Proj. No.	Applicant County STP-MGD	Eligible Project Cost Federal State Local	Financing: Amount Federal Share (%) State Share (%) Local Share (%)	Financing: Prefinancing State (%) Local (%)	Pay'ts To Date Federal State - - -	Percent Compl. Design Constr
C-36-						
			REGION I SOUTHEASTERN PROJECTS SECTION			
432+	Glen Cove (C)	872,300	436,450 (50.03)	- - -	188,300	D-100%
	Nassau (17)	872,300	261,690 (30.00)	- - -	229,320	C-99%*
	--- ---	872,300	130,845 (15.00)	43,315 (4.97)		
341+	Great Neck (V)	440,110	220,330 (50.06)	- - -	210,280	D-100%
	Nassau (17)	433,503	130,050 (30.00)	- - -	66,420	C-99%*
	STP-1.5	440,110	68,000 (15.45)	21,730 (4.94)		
629+	Great Neck SD	5,800,000	1,419,000 (24.47)	- - -	8,400	D-95%
	Nassau (17)	(5,800,000)	(1,740,000) (30.00)	(321,000) (5.53)	215,000	C-5%
	STP-8.0	5,800,000	870,000 (15.00)	1,450,000 (25.00)		
609+	N. Hempstead (T)	730,500	351,460 (48.11)	- - -	289,300	D-100%
	Belgrave SD	730,500	219,150 (30.00)	- - -	185,220	C-99%*
	Nassau (17)	730,500	109,575 (15.00)	50,315 (6.89)		
	STP-2.0					
361+	Nassau Co. SD#3	164,384,324	76,334,600 (46.44)	- - -	64605,280	D-100%
	Nassau (17)	151,416,000	45,424,800 (30.00)	- - -	38,696,670	C-95%*
	STP-45.0	164,384,324	28,548,146 (17.47)	14,076,778 (8.56)		
628+	Nassau.Co. SD#3	83,150,000	31,580,880 (37.98)	- - -	8,580,090	D-65%
	Phase II	(83,150,000)	(24,945,000) (30.00)	- - -	4,697,250	C-50%
	Nassau (17)	83,150,000	12,472,500 (15.00)	14,151,620 (17.02)		
	--- ---					

Proj. No.	Applicant County STP-MGD	Eligible Project Cost Federal State Local	Financing: Amount Federal Share (%) State Share (%) Local Share (%)	Financing: Prefinancing State (%) Local (%)	Pay'ts To Date Federal State - - -	Percent Compl. Design Constr
C-36-				Region 1 (Con't)		
351+	North Hempstead (T)					
	Port Washington WPCD	637,914	318,200 (49.88)	- - -	286,380	D-100%
	Nassau (17)	637,030	191,109 (30.00)	- - -	191,109	C-99%*
	STP-8.0	637,914	95,952 (15.04)	32,652 (5.12)		
559+	Hempstead (T)	96,002	47,770 (49.76)	- - -	46,500	D-100%
	West Long Beach SD	96,002	28,801 (30.00)	- - -	28,801	C-99%*
	Nassau (17)	96,002	14,400 (15.00)	5,031 (5.24)		
	--- ---					
669+	Huntington (T)	206,000	90,680 (44.02)	- - -	57,200	D-100%
	Centerport SD	206,000	61,800 (30.00)	- - -	53,370	C-99%*
	Suffolk (17)	206,000	30,900 (15.00)	22,620 (10.98)		
	--- ---					
577+	Northport (V)	820,350	394,730 (48.12)	- - -	324,800	D-100%
	Suffolk (17)	820,350	246,105 (30.00)	- - -	202,410	C-99%*
	STP-.3	820,350	123,053 (15.00)	56,462 (6.88)		
536+	Riverhead SD	311,000	146,950 (47.25)	- - -	132,550	D-100%
	Suffolk (17)	311,000	93,300 (30.00)	- - -	56,710	C-99%*
	STP-1.2	311,000	46,650 (15.00)	24,100 (7.75)		

			Financing			
Proj. No.	Applicant County STP-MGD	Eligible Project Cost Federal State Local	Amount Federal Share (%) State Share (%) Local Share (%)	Prefinancing State (%) Local (%)	Pay'ts To Date Federal State - - -	Percent Compl. Design Constr
C-36-						
				Region 1 (Con't)		
624+	Suffolk (Co)	307,600,000	119,683,900 (38.91)	- - -	14,027,200	D-55%
	Southwest SD	(307,600,000)	(92,280,000)(30.00)	- - -	3,500,000	C-5%
	Suffolk (17)	307,600,000	46,140,000 (15.00)	49,496,100 (16.09)		
	STP-30.0					
355+	Suffolk County	459,400	235,100 (51.18)	- - -	205,000	D-100%
	Suffolk Co. Comm.	- - -	- - -	- - -		C-99%*
	College-Suffolk (17)	459,400	206,730 (45.00)	17,570 (3.82)		
	STP-0.151					

State Funds equal to 50% of residual cost to be provided under Education Law 6305

			Financing			
Proj. No.	Applicant County STP-MGD	Eligible Project Cost Federal State Local	Amount Federal Share (%) State Share (%) Local Share (%)	Prefinancing State (%) Local (%)	Pay'ts To Date Federal State - - -	Percent Compl. Design Constr
C-36-				Region 2 SOUTHEASTERN PROJECTS SECTION		
86	Newtown Creek	170,419,509	250,000 (0.15)	- - -	250,000	D-100%
	New York City (17)	64,488,733	19,346,620 (30.00)	19,249,887 (29.85)	30,357,630	C-95%*
	STP-310.0	170,419,509	131,573,002 (77.20)			
178+	North River	845,032,000	321,535,000 (38.05)	- - -	115,650,440	D-95%
	New York City (13)	(845,032,000)	(253,509,600) (30.00)	- - -	38,514,234	C-45%
	STP-220.0	845,032,000	126,754,800 (15.00)	143,232,600 (16.95)		
357+	Owls Head	108,630	56,390 (51.91)	- - -	43,800	D-100%
	New York City (17)	106,900	32,070 (30.00)	- - -	32,070	C-99%*
	--- ---	108,630	16,813 (15.47)	3,356 (3.09)		
346+	Port Richmond	2,701,484	1,550,760 (57.40)	- - -	1,426,440	D-100%
	New York City (17)	2,701,484	810,445 (30.00)	- - -	810,445	C-99%*
	--- ---	2,701,484	340,279 (12.60)	- - -		
593+	Port Richmond	165,283,000	68,053,850 (41.17)	- - -	51,636,310	D-100%
	New York City (17)	165,283,000	49,584,900 (30.00)	- - -	33,062,310	C-80%
	STP-60.0	165,283,000	24,792,450 (15.00)	22,851,800 (13.83)		

C-36-

Region 2 (Con't)

Proj. No.	Applicant County STP-MGD	Eligible Project Cost Federal State Local	Financing: Amount Federal Share (%) State Share (%) Local Share (%)	Financing: Prefinancing State (%) Local (%)	Pay'ts To Date Federal State - - -	Percent Compl. Design Constr
406+	Bowery Bay New York City (17) --- ---	975,340 975,340 975,340	499,050 (51.17) 292,602 (30.00) 146,301 (15.00)	- - - - - - 37,387 (3.83)	375,400 216,540	D-100% C-99%*
398+	Bowery Bay New York City (17) STP-150.0	89,115,929 86,117,000 89,115,929	34,344,150 (38.54) 25,835,100 (30.00) 14,267,519 (16.01)	- - - - - - 14,669,160 (16.46)	17,854,820 12,211,436	D-100% C-55%
403+	Rockaway New York City (17) STP-45.0	47,471,000 47,471,000 47,471,000	18,771,950 (39.54) 14,241,300 (30.00) 7,120,650 (15.00)	- - - - - - 7,337,100 (15.46)	13,007,480 8,739,630	D-100% C-85%
363+	Wards Island New York City (17) --- ---	1,090,200 1,083,775 1,090,200	531,550 (48.76) 325,132 (30.00) 163,530 (15.00)	- - - - - - 68,060 (6.24)	485,200 255,150	D-100% C-99%*
395+	Wards Island New York City (17) STP-290.0	116,313,000 116,313,000 116,313,000	46,076,156 (39.61) 34,893,900 (30.00) 17,446,950 (15.00)	- - - - - - 17,895,994 (15.39)	29,273,790 20,673,030	D-100% C-65%
405+	26th Ward New York City (17) STP-85.0	48,089,000 48,089,000 48,089,000	21,381,970 (44.46) 14,426,700 (30.00) 7,213,350 (15.00)	- - - - - - 5,066,980 (10.54)	19,243,770 11,892,060	D-100% C-95%
345+	Coney Island New York City (17) STP-110.0	4,559,005 4,559,005 4,559,005	2,299,170 (50.43) 1,367,702 (30.00) 683,850 (15.00)	- - - - - - 208,283 (4.57)	1,807,800 1,217,970	D-100% C-99%*

Proj. No.	Applicant County STP-MCD	Eligible Project Cost Federal State Local	Financing: Amount Federal Share (%) State Share (%) Local Share (%)	Financing: Prefinancing State (%) Local (%)	Pay'ts To Date Federal State - - -	Percent Compl. Design Constr
C-36-				Region 2 (Con't)		
404+	Tallmans Island New York City (17) STP-80.0	43,005,000 43,005,000 43,005,000	17,303,190 (40.24) 12,901,500 (30.00) 6,450,750 (15.00)	- - - - - - 6,349,560 (14.76)	10,929,800 7,091,460	D-100% C-70%
321+	Jamaica New York City (17) --- ---	718,951 718,951 718,951	316,350 (44.00) 215,685 (30.00) 107,842 (15.00)	- - - - - - 79,073 (11.00)	248,300 173,070	D-100% C-99%*
400+	Jamaica New York City (17) STP-100.0	31,449,000 31,449,000 31,449,000	14,317,750 (45.53) 9,434,700 (30.00) 4,717,350 (15.00)	- - - - - - 2,979,200 (9.47)	11,357,940 6,656,580	D-100% C-80%
397+	Hunts Point New York City (17) STP-200.0	67,901,000 67,901,000 67,901,000	27,535,900 (40.55) 20,370,300 (30.00) 10,185,150 (15.00)	- - - - - - 9,809,650 (14.45)	22,078,690 15,234,840	D-100% C-90%
347+	Spring Creek New York City (17) --- ---	17,499,000 17,164,500 17,499,000	8,419,770 (48.12) 5,149,350 (30.00) 2,725,200 (15.57)	- - - - - - 1,204,680 (6.88)	7,699,570 4,235,580	D-100% C-99%*

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF PURE WATERS
BUREAU OF SEWAGE PROGRAMS

SEMI-ANNUAL REPORT OF STATUS OF INACTIVE FEDERAL AND STATE GRANTS PROJECTS FOR CONSTRUCTION OF MUNICIPAL SEWAGE TREATMENT WORKS

September 30, 1975

GENERAL

This Inactive Projects Report of the Status of Federal and State Construction Grants Projects for the Municipal Sewage Treatment Works Program includes Completed Projects and Projects for which Applications were made and which were subsequently cancelled (Cancelled Projects). Projects are included in the Report of Status of Approved Federal and State Grants Projects for Construction of Municipal Sewage Treatment Works until final payments are made and are then listed in this Report.

The data contained herein represents the latest status information available as of the date of the Report. Sources of data are: the Bureau of Sewage Programs (BSP), New York State Department of Environmental Conservation (NYSDEC); and United States Environmental Protection Agency (USEPA), Region II, New York City.

EXPLANATION

If a line appears under the project number, the project is eligible under the Federal Clean Water Restoration Act of 1966, for a 50% Federal grant, assuming Federal funds become available. If a line does not appear under the number, the project is eligible, under legislation prior to the Federal Clean Water Restoration Act of 1966, for Federal participation of 30% or a lesser amount.

A plus sign after the project number indicates that the project has received an additional USEPA 10% grant for compliance with metropolitan regional planning.

Proj No.	Applicant County STP-MGD	Eligible Project Cost Federal State Local	Financing: Amount Federal Share (%) State Share (%) Local Share (%)	Financing: Prefinancing State (%) Local (%)	Pay'ts To Date Federal State - - -	Comments
			REGION I SOUTHEASTERN PROJECTS SECTION			
318+	Cedarhurst (V)	907,592	464,911 (51.22)	- - -	464,911	Completed
	Nassau (17)	907,932	272,380 (30.00)	- - -	272,380	
	STP-1.0	907,932	136,376 (15.02)	34,265 (3.78)		
42	Freeport (V)	869,352	250,000 (28.76)	- - -	250,000	Completed
	Nassau (17)	- - -	- - -	- - -	- - -	
	STP-4.0	869,352	608,547 (70.00)	10,805 (1.24)		
236	Glen Cove (C)	177,411	36,000 (20.29)	- - -	36,000	Completed
	Nassau (17)	47,748	14,324 (30.00)	4,632 (9.70)	18,956	
	STP-4.0	177,411	122,455 (69.02)	- - -		
84	Great Neck SD	1,276,356	250,000 (19.59)	- - -	250,000	Completed
	Hempstead (T).	- - -	- - -	- - -	- - -	
	Nassau (17)	1,276,356	893,450 (70.00)	132,906 (10.41)		
	STP-2.7					
289+	Great Neck SD	1,137,463	547,451 (48.13)	- - -	547,451	Completed
	Nassau (17)	1,137,463	341,239 (30.00)	- - -	341,239	
	STP-1.5	1,137,463	170,620 (15.00)	78,153 (6.87)		
61	Kings Point (V)					Cancelled
	Nassau (17)					
250+	Lawrence (V)	1,650,924	544,805 (33.00)	- - -	544,805	Completed
	Nassau (17)	1,650,516	495,154 (30.00)	- - -	495,154	
	STP-1.5	1,650,924	610,965 (37.01)	- - -		
305+	Long Beach (C)	238,298	114,640 (48.11)	- - -	114,640	Completed
	Nassau (17)	238,298	71,489 (30.00)	- - -	71,489	
	STP-9.55	238,298	35,746 (15.00)	16,423 (6.89)		
97	Nassau Co. SD#1	1,911,789	250,000 (13.08)	- - -	250,000	Completed
	Nassau (17)	- - -	- - -	- - -	- - -	
	STP-2.5	1,911,789	1,338,253 (70.00)	323,536 (16.92)		

Proj No.	Applicant County STP-MGD	Eligible Project Cost Federal State Local	Financing Amount Federal Share (%) State Share (%) Local Share (%)	Financing Prefinancing State (%) Local (%)	Pay'ts To Date Federal State - - -	Comments
			REGION I (Con't)			
940	Nassau Co. SD#2	17,714,446	- - -	- - -	- - -	Completed
	Nassau (17)	- - -	- - -	- - -	- - -	
	STP-60.0	17,714,446	12,400,113 (70.00)	5,314,333 (30.00)		
190	No. Hempstead (T)	405,355	120,000 (29.69)	- - -	120,000	Completed
	Nassau (17)	86,812	26,044 (30.00)	310 (0.36)	26,354	
	STP-2.0	405,355	257,704 (63.58)	1,297 (3.20)		
269	Oyster Bay (T)					Cancelled
	Nassau (17)					
130	Oyster Bay (T)	1,092,124	327,637 (30.00)	- - -	327,637	Completed
	SD#1	- - -	- - -	- - -	- - -	
	Nassau (17)	1,092,124	764,487 (70.00)	- - -		
	- - -					
342+	Roslyn (V)	133,602	68,289 (51.11)	- - -	68,289	Completed
	Nassau (17)	130,056	39,017 (30.00)	- - -	39,017	
	STP-0.52	133,602	21,104 (15.80)	5,192 (3.89)		
343+	Huntington (T)	193,517	99,210 (51.27)	- - -	99,210	Completed
	Huntington SD	193,517	58,055 (30.00)	- - -	58,055	
	Suffolk (17)	193,517	29,028 (15.00)	7,224 (3.73)		
	STP-1.7					
237	Northport (V)	55,812	16,736 (30.00)	- - -	16,736	Completed
	Suffolk (17)	55,800	16,740 (30.00)	- - -	16,740	
	- - -	55,812	22,336 (40.00)	- - -		
57	Riverhead (T)	250,369	75,110 (30.00)	- - -	75,110	Completed
	Suffolk (17)	- - -	- - -	- - -	- - -	
	STP-1.2	250,369	175,259 (70.00)	- - -		
28	Southampton (T)	29,400	7,350 (25.00)	- - -	7,350	Completed
	Suffolk (17)	- - -	- - -	- - -	- - -	
	STP	29,400	20,580 (70.00)	1,470 (5.00)		

Proj No.	Applicant County STP-MCD	Eligible Project Cost Federal State Local	Financing Amount Federal Share (%) State Share (%) Local Share (%)	Prefinancing State (%) Local (%)	Pay'ts To Date Federal State - - -	Comments
	REGION I (Con't)					
344	Suffolk County					Cancelled
	SD#1					
	Suffolk (17)					
	REGION 2 **SOUTHEASTERN PROJECTS SECTION**					
44	Coney Island (17)	13,980,519	250,000 (1.79)	- - -	250,000	Completed
	STP-110.0	- - -	- - -	- - -	- - -	
		13,980,519	9,986,363 (70.00)	3,944,156 (28.21)		
143	Hunts Point (17)	7,438,676	600,000 (8.07)	- - -	600,000	Completed
	STP-150.0	- - -	- - -	- - -	- - -	
		7,438,676	5,207,073 (70.00)	1,631,603 (21.93)		
399	Hunts Point (17)					Cancelled
106	Rikers Island (17)	432,810	102,000 (23.57)	- - -	102,000	Completed
	- - -	- - -	- - -	- - -	- - -	
		432,810	302,967 (70.00)	27,843 (6.43)		
68	Rockaway (17)	4,695,883	250,000 (5.32)	- - -	250,000	Completed
	STP-30.0	- - -	- - -	- - -	- - -	
		4,695,883	3,287,118 (70.00)	1,158,765 (24.68)		
597	Newtown Creek (17)					Included under Project 713
393	Owls Head (17)					Cancelled
401	Oakwood Beach (17)					Cancelled
481	Rikers Island (17)					Cancelled
109	Jamaica (17)	18,289,687	250,000 (1.37)	- - -	250,000	Completed
	STP-100.0	148,936	44,680 (30.00)	42,641 (28.63)	87,321	
		18,289,687	12,758,101 (74.52)	5,194,265 (17.68)		

Proj No.	Applicant County STP-MGD	Eligible Project Cost Federal State Local	Financing		Pay'ts To Date Federal State - - -	Comments
			Amount Federal Share (%) State Share (%) Local Share (%)	Prefinancing State (%) Local (%)		
			REGION 2(Con't)			
214	Wards Island	1,407,403	422,221 (30.00)	- - -	422,221	Completed
	New York City (17)	1,345,151	403,545 (30.00)	- - -	403,545	
	- - -	1,407,403	581,637 (41.32)	- - -		
166	Tallmans Island	6,148,035	250,000 (4.07)	- - -	250,000	Completed
	New York City (17)	237,636	71,290 (30.00)	61,620 (25.93)	132,910	
	STP-80.0	6,148,035	5,765,125 (97.02)	- - -		
			REGION 3			
67	Port Chester (V)	1,360,708	250,000 (18.37)	- - -	250,000	Completed
	Westchester (17)	77,879	23,364 (30.00)	9,057 (11.63)	32,421	
	STP-5.0	1,360,708	929,132 (68.28)	149,155 (10.96)		
105	Westchester County	1,233,436	250,000 (20.27)	- - -	250,000	Completed
	Blind Brook	- - -	- - -	- - -	- - -	
	Westchester (17)	1,233,436	863,405 (70.00)	120,031 (9.73)		
	STP-5.0					

Proj No.	Applicant County STP-MGD	Eligible Project Cost Federal State Local	Financing Amount Federal Share (%) State Share (%) Local Share (%)	Prefinancing State (%) Local (%)	Pay'ts To Date Federal State - - -	Comments
			REGION 3 (Con't)			
232	Ellenville (V)	315,776	94,730 (30.00)	- - -	94,730	Completed
	Ulster (13)	145,427	43,628 (30.00)	- - -	43,628	
	STP-0.75	315,776	177,418 (56.18)	- - -		
121	Kingston (C)	282,300	84,226 (30.00)	- - -	84,226	Completed
	Ulster (13)	- - -	- - -	- - -	- - -	
	STP-5.0	282,300	198,074 (70.00)	- - -		
112	Lloyd (T) SD	127,513	38,254 (30.00)	- - -	38,254	Completed
	Ulster (13)	- - -	- - -	- - -	- - -	
	STP-0.5	127,513	89,259 (70.00)	- - -		
23	New Paltz (V)	254,556	76,360 (30.00)	- - -	76,366	Completed
	Ulster (13)	- - -	- - -	- - -	- - -	
	STP-4.0	254,556	178,190 (70.00)	- - -		
155	Buchannan (V)	364,042	109,212 (30.00)	- - -	109,212	Completed
	Westchester (13)	- - -	- - -	- - -	- - -	
	STP-0.55	364,042	254,830 (70.00)	- - -		
247	Buchanan (V)	156,162	46,849 (30.00)	- - -	46,849	Completed
	Westchester (13)	146,514	43,954 (30.00)	- - -	43,954	
	- - -0.55	156,162	65,359 (41.85)	- - -		
2	Irvington (V)	39,239	10,600 (27.01)	- - -	10,600	Completed
	Westchester (13)	- - -	- - -	- - -	- - -	
	- - -	39,239	27,468 (70.00)	1,171 (2.99)		
494	Ossining (T)					Cancelled
	Westchester (13)					

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FEB 9 1976

OFFICE OF WATER AND
HAZARDOUS MATERIALS

SUBJECT: Relationship Between 201 Facility Planning and Water Quality Management (WQM) Planning

FROM: Andrew W. Breidenbach, Assistant Administrator for Water and Hazardous Materials

TO: Regional Administrators
Regions I - X

PROGRAM GUIDANCE MEMORANDUM
Construction Grants No. 66
Water Quality Management SAM-1

PURPOSE

This policy statement describes the relationships between 201 facility planning and WQM planning under Section 208 and the minimum facility planning requirements which an initial WQM plan must meet for EPA approval of the WQM plan.

The purpose is to assure that facility plans can be completed and processed expeditiously through EPA approval during those periods when an initial WQM plan is either being prepared, approved, or implemented. A second purpose is to have initial WQM plans prepared that satisfy, at a minimum, certain requirements with respect to facility planning. As WQM planning requirements overlap with the 201 planning requirements, this policy seeks to minimize duplication and conflict between the two planning efforts.

This policy statement supersedes the memo on the same subject signed March 11, 1975, by James L. Agee (issued as construction grants program guidance memo number 47 and planning guidance memo AM-1). Any other policy or guidance statements contrary to this policy are also superseded. This policy statement applies to all agencies (State and local) responsible for either 201 or WQM planning.

BACKGROUND

201 Facility Planning

Facility planning consists of the plans and studies prerequisite to the award of grant assistance for detailed design and construction of publicly-owned treatment works. In the absence of a completed and approved WQM plan or approved interim outputs produced by the WQM planning process, the facility plan must contain the following elements:

1. Description of the planning area.

2. Selection of service areas.

3. Selection of overall treatment systems, including location, capacity and configuration of all facilities, treatment levels, and preliminary identification of type of treatment and method of disposal of residual wastes.

4. Analysis supporting the selections in 2 and 3 based on identification, evaluation and cost-effective comparison of alternatives.

5. Preliminary designs and studies related to the selected wastewater treatment systems, including sewer evaluation surveys, surface and subsurface investigations of sites for proposed facilities, preliminary designs and detailed cost-effectiveness assessment, and other requirements set forth in Section 35.917-1 of the Title II regulations.

WQM Planning under Section 208

WQM planning sets forth a comprehensive management program for collection and treatment of wastes and controlling pollution from all point and non-point sources. Control measures for abating pollution from these sources utilize a combination of traditional structural measures together with land-use or land management practices and regulatory programs. These measures are implemented by a management agency or agencies designated in the plan. An initial WQM plan is developed over a prescribed planning period and, thereafter, updated and approved annually.

POLICY: RELATIONSHIP BETWEEN 201 FACILITY PLANNING AND WQM PLANNING

I. THE RELATIONSHIPS BETWEEN 201 AND WQM PLANNING IN THE SAME GEOGRAPHIC AREA DURING THE PERIOD BEFORE FINAL EPA APPROVAL OF A WQM PLAN ARE AS FOLLOWS:

A. 201 Planning

All 201 plans underway and on current or subsequent approved priority lists should proceed expeditiously through to completion, State certification and approval by EPA. The scope of 201 planning approved before the final WQM work plan is approved by EPA should be at a level necessary to complete all required elements of the facility plan. The scope of 201 planning approved after the final WQM work plan is approved by EPA should be at a level necessary to supplement work assigned to and within the capability of the responsible WQM planning agency to accomplish expeditiously so that a complete facility plan can be provided with minimal delay.

The WQM planning agency's review of ongoing facility plans will generally be handled in accordance with procedures for the A-95 review process.

B. Minimum Requirements for Facility Planning by WQM Planning Agencies

During the initial planning period, WQM planning agencies must produce the interim outputs specified in Program Guidance Memorandum AM-2; generally, for designated areawide agencies, these interim outputs will be completed within 9 months of the date upon which the planning process becomes operational as selected by the Regional Administrator. States conducting the planning in non-designated areas may elect to place a lower priority on facilities planning outputs, and, with the approval of the Regional Administrator, may provide alternative schedules to satisfy this interim output requirement.

For those municipal facilities within the WQM planning area expected to receive a construction grant award during the five years following initial WQM plan approval, the initial WQM plan will include the facility planning information listed below. In most cases, 201-funded facilities planning is either ongoing or scheduled in the near term to support facilities construction over the next several years. Thus, WQM planning agencies are expected during this period to utilize and incorporate (not duplicate) the 201-funded planning information, supplementing the 201-funded or programmed activities whenever deemed necessary by the Regional Administrator.

Minimum requirements for facility planning to be summarized in initial WQM plans for any facilities expected to receive a construction grant award during the five years following initial WQM plan approval:

1. Selection of service areas

2. Preliminary estimate of municipal wastewater flows to be generated during a 20 year planning period based on economic and population projections for the WQM planning area.

3. Preliminary identification and comparison of the cost of alternative treatment systems needed to handle projected municipal wastewater flows, and to meet the requirements of BPWTT or any more stringent discharge limitation necessitated under the Act. Cost estimates may be based on streamlined cost-estimating systems such as those prepared by Bechtel, Black and Veatch, and ICARUS.

4. Preliminary comparison of the cost of alternative general configurations for needed wastewater collection at the trunk line level.

5. Overall summary of environmental impacts of alternative treatment and wastewater collection configurations.

6. Preliminary determinations, based on the above analysis, of which municipal treatment systems and conveyance configurations are likely to be most cost-effective.

7. Estimate of the land area required and possible financial arrangements which could be utilized to construct these facilities.

The terms "preliminary", "summary" and "estimate" in this description are used to emphasize that the WQM plan will satisfy these requirements by brief, general analysis and conclusions which are much shorter and less detailed than those in a facility plan. As such, these conclusions may be modified as a result of 201-funded facility planning conducted in accordance with policies and procedures described in Section II (see p. 5).

WQM planning agencies are also required to meet statutory requirements which are normally not considered a part of the facility planning process but which, after approval of the WQM plan, will affect facility planning. Such requirements include establishment of priorities and time schedules for completion of treatment works, estimation of municipal waste treatment system needs, identification of agencies necessary to construct, operate and maintain treatment works, and establishment of a regulatory program that can affect facilities in the area (example - stormwater or pretreatment controls).

C. Detailed Facility Planning in WQM planning Work Plans

New WQM planning work plans shall not be approved by the Regional Administrator when they provide for detailed facility planning beyond the minimum requirements in section B, above. This detailed facility planning shall be handled by existing and subsequent 201 facility planning grants.

Existing approved work plans for FY 74 and 75 designated 208 areawide agencies which provide for facility planning beyond the minimum requirements should be amended to eliminate such detailed planning, except where designated WQM planning agencies have already contracted to conduct detailed facility planning and the contractor has started the work and is too far along for the contract to be revised or terminated as determined by the Regional Administrator. If work plans are revised to eliminate detailed facility planning, Section 201 planning grants should be quickly provided in these areas in accordance with paragraph A above.

D. Interim 208 Outputs

After interim outputs (AM-2) are approved by the State and EPA for a WQM planning area, the relationship between 201 and WQM planning in that area will be the same as described above except that planning under any 201 grant awarded after the approval of the interim outputs must be consistent with these interim WQM outputs. The scope and funding of new 201 planning should not extend to developing a justification for the interim outputs, as this will have been produced by the WQM planning process.

E. Coordination Between Concurrent 201 and WQM Planning

All WQM planning must be coordinated with facility planning and other construction grant activity so that the final WQM plan will facilitate needed construction in the area. Each State, working with the Regional office must assure that effective coordination between concurrent 201 and WQM planning does occur, and that relationships between the two planning efforts are consistent with this policy statement. The procedures for securing agreement on relationships and responsibilities between concurrent 201 and WQM planning efforts are at the discretion of the State. Conflicts in approaches between concurrent 201 and WQM planning should be resolved between the 201 and WQM planning agencies and concerned State and local officials.

F. Transition to New WQM Requirements Affecting Facility Planning

Any WQM plan which proposes a significant change in either management or approach affecting construction grant awards must allow adequate time and establish detailed procedures for transition to the new approach or management once the WQM plan is approved by EPA.

II. THE FOLLOWING SPECIFIES THE RELATIONSHIPS BETWEEN 201 AND WQM PLANNING AFTER THE WQM PLAN HAS BEEN COMPLETED, AND THE MANAGEMENT AGENCY OR AGENCIES IDENTIFIED BY THE PLAN ARE APPROVED BY THE STATE AND EPA.

A. Facility Plans Underway

All facility plans underway at the time of approval will be completed by the agency which received the Step 1 grant. The planning effort will continue expeditiously through to State certification and EPA approval unless the approved WQM plan clearly justifies a change in required treatment levels or alternative approach on the basis of substantially lower costs or major changes in projected environmental impacts.

PART 5

DRINKING WATER SUPPLIES

(Statutory authority: Public Health Law, § 225)

Subpart 5-1 Public Water Supplies
Subpart 5-2 Water Well Construction

Historical Note

Part repealed, new added, filed Feb. 28, 1967; Part repealed, new added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

SUBPART 5-1

PUBLIC WATER SUPPLIES

Sec.

GENERAL PROVISIONS

5-1.1 Definitions
5-1.2 Approval of plans and completed works
5-1.3 Reporting emergency changes in public water supplies
5-1.4 Approval of fluoridation of drinking water supplies
5-1.5 Disinfection of spring basins, collecting basins, wells, infiltration galleries, water mains and reservoirs

SOURCES OF WATER SUPPLIES

5-1.10 Protection and supervision of public water supplies
5-1.11 Sampling new sources of public water supply

Sec.

WATER TREATMENT PLANTS

5-1.20 Providing treatment for public water supplies
5-1.21 Operation of a public water supply

WATER QUALITY AND PROTECTION

5-1.30 Examination of samples of water
5-1.31 De-watering trenches
5-1.32 Adequacy of distribution system
5-1.33 Physical connections
5-1.34 Blow-off facilities
5-1.35 Protection of equalizing and distribution reservoirs
5-1.36 Pumping equipment

BOTTLED AND BULKWATER

5-1.40 Distribution of bottled or bulk water

Historical Note

Subpart (§§ 5-1.1—5-1.40) added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

GENERAL PROVISIONS

Section 5-1.1 Definitions. (a) The term, *public water supply,* as used in this Part shall mean any drinking water supply system including the source, treatment works, transmission mains, distribution system and storage facilities serving the public. This term shall include a drinking water supply for a group of five or more dwelling units, a temporary residence, school, institution, factory, industrial plant or place frequented by the public, other than a household.

(b) The term, *dwelling unit,* shall mean one or more rooms with provisions for living, sanitary and sleeping facilities arranged for the use of one family.

(c) The term, *drinking water supply,* shall mean water available for human consumption, food preparation or culinary purposes.

(d) The term, *source of water supply,* shall mean any ground water aquifer, surface water body or water course from which by any means water is regularly taken either periodically or continuously.

(e) The term, *auxiliary source of water supply,* shall mean a source of water supply which is not normally used but which has been approved by the appropriate State agency having jurisdiction as a source of water and developed for use when for any reason the normal source or sources fail to meet water supply requirements.

(f) The term, *emergency source of water supply,* shall mean a source of water which has not been developed and approved as a regular source of water and which is developed during an emergency for temporary use as a source of water in case of failure or inadequacy of the regular or auxiliary source of public water supply.

(g) The term, *water treatment plant,* shall mean any plant or equipment which, through the addition of chemicals or through aeration, ion exchange, demineralization, sedimentation or filtration, or through any other means or combinations of treatment, shall change the physical, chemical, radiological, biological, or bacterial quality of the water.

(h) The term, *protection by natural means,* involves the processes of nature that produce water meeting requirements of Part 72 of the administrative rules and regulations, entitled "Drinking Water Standards".

(i) The term, *protection by treatment,* means any one or any combination of the controlled processes of aeration, coagulation, sedimentation, absorption, filtration, disinfection, or other processes which produce a water meeting the requirements of Part 72 of the administrative rules and regulations.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5-1.2 Approval of plans and completed works. (a) No owner or operator of a public water supply shall make, install or construct, or allow to be made, installed or constructed, a public water supply system or any addition to or modification of a public water supply which will or may affect the quality of the water or which may affect the adequacy of the supply to serve consumers, until the plans and specifications first shall have been submitted to and received the approval of the State Commissioner of Health.

(b) "Recommended Standards for Water Works"* and "Rural Water Supply"**, as issued by the State Department of Health, shall be the basis upon which all plans and specifications for public water supplies will be reviewed for approval as applicable. Variations will be considered upon justification by the designing engineer.

(c) The State Commissioner of Health may grant approval of such plans or may require such modification as, in his opinion the public health or safety may require. Application for such approval shall be made on a form prescribed by and in accordance with the requirements of the State Commissioner of Health.

(d) No owner or operator of a public water supply shall place into service any works constructed under the requirements of this section until he has first applied to and received the approval of the State Commissioner of Health for the completed works.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5-1.3 Reporting emergency changes in public water supplies. (a) The person or persons in charge of any public water supply shall not take, use, or cause to be taken for use for public water supply purposes, water from any source other than the regular or auxiliary source or sources of public water supply, discontinue the chlorination or treatment of any public water supply or make any change whatsoever which may affect the quality of such water supply without first having notified by telephone or telegram, and received the approval of, the district State health officer, the county commissioner of health or the city commissioner of health having jurisdiction. Upon the receipt of such notification the district State health officer, the county commissioner of health or the city commissioner of health having jurisdiction shall in turn advise the local water supply officials and interested local health officers of action required to be taken or of the approval of the action proposed

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* See Appendix 72-C, *infra.*
** See Appendix 72-D, *infra.*

to be taken by the local water supply officials to protect the health of the consumers served by the water supply during the emergency.

(b) A printed copy of this section shall be kept constantly posted in the office used by the authorities owning or having charge of any such water supply.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5-1.4 Approval of flouridation of drinking water supplies. Flourine compounds shall not be added to a public water supply until a written application has been submitted to and written approval is granted by the State Commissioner of Health.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5-1.5 Disinfection of spring basins, collecting basins, wells, infiltration galleries, water mains and reservoirs. No spring basin, collecting basin, well or infiltration gallery used as a source of public water supply, nor any main, standpipe, reservoir, tank or other pipe or structure through which water is delivered to consumers for potable purposes shall be placed in use after it has been constructed, cleaned or repaired until such structure or main has been disinfected in a manner approved by the State Commissioner of Health.

SOURCES OF WATER SUPPLIES

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5-1.10 Protection and supervision of public water supplies. The owner and the person or persons operating a public water supply shall exercise due care and diligence in the maintenance and supervision of all sources of public water supply so as to prevent their pollution and depletion insofar as possible.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5-1.11 Sampling new sources of public water supply. No new permanent source of public water supply shall be placed in service until a sanitary survey has been made and water from said source has been examined and reported upon by the State Department of Health. A supply may be placed in service under either of the following conditions:

(a) If the sanitary survey indicates the source to be adequately protected by natural means and the water is reported to be of a quality satisfactory to the State Commissioner of Health.

(b) If the sanitary survey indicates the source to be inadequately protected by natural means or the quality of the water is not satisfactory, a treatment process has been instituted and the treated water is tested by the State Department of Health and written approval of the effectiveness of treatment has been issued by the State Commissioner of Health.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

WATER TREATMENT PLANTS

5-1.20 Providing treatment for public water supplies. [Statutory authority: Public Health Law, § 225] (a) The owner of a public water supply shall provide such treatment facilities that the water delivered to consumers conforms to Part 72 of the administrative rules and regulations. Minimum treatment for a water supply obtained in whole or in part from a surface water or in whole or in part from a ground water source shall be disinfection by chlorination or other method acceptable to the State Commissioner of Health.

(b) Notwithstanding anything to the contrary contained in subdivision (a) of this section, the State Commissioner of Health is hereby authorized, upon the submission of a written application therefor, to grant an annual waiver of the disinfection rule established by this section for a ground source public water supply, provided that:

(1) the full-time public health officer having jurisdiction over such ground source public water supply recommends such waiver;

(2) the record of the bacteriological and physical characteristics for such supply demonstrates that they conformed to the drinking water standards of Part 72 of the administrative rules and regulations of the State Department of Health (10 NYCRR Part 72) for the 12 months immediately preceding the date of application for waiver;

(3) a laboratory satisfactory to the State Commissioner of Health is utilized by the water purveyor to insure surveillance of drinking water quality and delivery of drinking water in conformity with Part 5 of the State Sanitary Code (10 NYCRR Part 5) and Part 72 of the administrative rules and regulations of the State Department of Health (10 NYCRR Part 72);

(4) an active physical connection control program acceptable to the State Commissioner of Health to prevent the backflow or entry of undesirable and toxic substances into the water distribution system is adopted and maintained by the purveyor;

(5) appropriate watershed rules and regulations to protect such ground source public water supply are adopted pursuant to the provisions of article 11 of the Public Health Law, updated as necessary, and maintained by the purveyor, or other watershed controls satisfactory to the State Commissioner of Health are provided;

(6) all water storage facilities are adequately protected from contamination, including covering or disinfection where necessary; and

(7) the source or sources of the supply are properly located and constructed and effectively protected and maintained in a manner acceptable to the State Commissioner of Health.

(c) Notwithstanding anything to the contrary contained in either subdivision (a) or subdivision (b) of this section, the State Commissioner of Health, the regional health director, the State district health officer, a county or part-county commissioner of health or the health commissioner or health officer of a city of 50,000 population or over, is hereby authorized to waive the disinfection rule established by this section for a ground source water supply at a temporary residence, school, institution, factory, industrial plant or place frequented by the public based upon periodic evaluation of a sanitary survey and the geology of the area; the bacteriological, chemical and physical characteristics of the water; the location, construction and protection of the well or spring; and the method of water storage and distribution.

(d) The health commissioner or health officer of a county or part-county health district or the health commissioner or health officer of a city of 50,000 population or over may designate the director of environmental health of such health district; and, the regional health director or the State district health officer may designate the district sanitary engineer, as additional persons auhorized to issue the waivers permitted under the provisions of subdivision (c) of this section.

Historical Note

Sec. added, filed Aug. 3, 1972; amds. filed: Apr. 3, 1973; May 6, 1974 eff. May 6 1974 Amended (b)(2) and (5).

5-1.21 Operation of a public water supply. (a) The person or persons in charge of the operation of a public water supply shall operate and maintain the water supply system in such a manner as to produce a supply meeting the requirements of Part 72 of the administrative rules and regulations.

(b) Complete daily records shall be kept of the operation of water supply systems on forms furnished or approved by the State Commissioner of Health.

(continued)

A copy of such records shall be forwarded to the State Commissioner of Health or his designated representative at monthly intervals, and shall be held available for inspection by the State Commissioner of Health or his designated representative, as he may prescribe.

(c) Every owner of a water treatment plant shall provide laboratory facilities satisfactory to the State Commissioner of Health. Tests for the control of the operation of such treatment plant shall be made daily or more frequently if required. The results of such tests shall be recorded on forms furnished or approved by the State Commissioner of Health and forwarded to him or to his designated representative at monthly intervals.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

WATER QUALITY AND PROTECTION

5-1.30 Examination of samples of water. The number and type of samples, frequency and points of samplings shall be in accordance with a sampling program approved or as directed by the State Commissioner of Health.

(a) (1) It shall be the responsibility of the owner or the person or persons in charge of the operation of a public water supply to arrange for the sampling and analysis of the source and distributed waters of the supply for bacteriological, physical and chemical quality. Minimum sampling shall be in accordance with the schedule set forth herein or as modified by the State Commissioner of Health. In determining the number of samples examined, the following samples may be included, provided all results are assembled and available for inspection and the laboratory methods and technical competence of the laboratory personnel are satisfactory to the State Commissioner of Health:

(i) samples examined by a water treatment plant operator, or a chemist employed by a public water supply;

(ii) samples examined by commercial laboratories;

(iii) samples examined by local government laboratories;

(iv) samples examined by State laboratories.

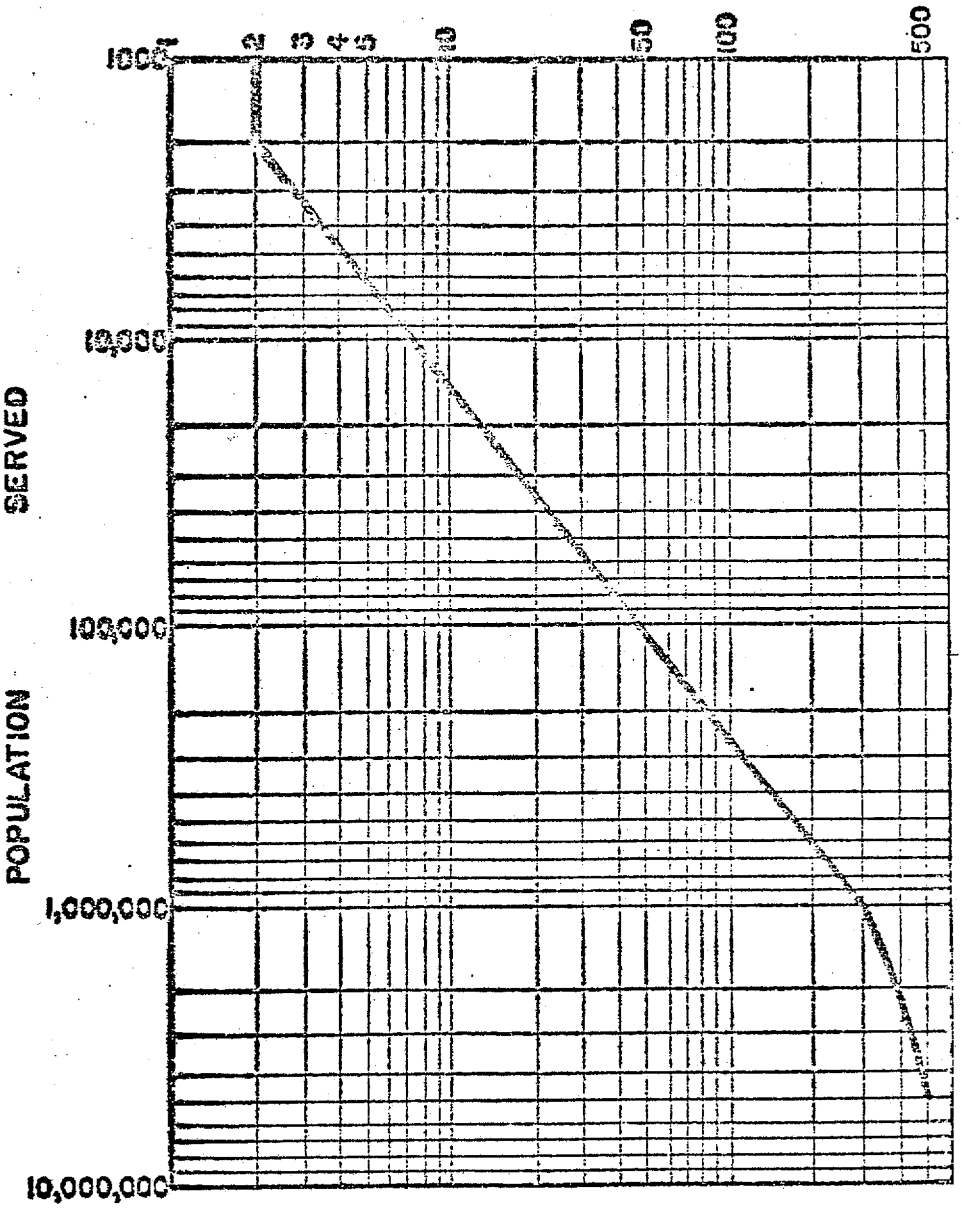
(2) The laboratories in which these examinations are made and the methods used in making them shall be subject to inspection at any time by the State Commissioner of Health. Only the laboratory procedures set forth in the latest edition of the American Public Health Association Standard Methods for the Examination of Water and Waste-water, or those specified by the State Department of Health, shall be acceptable.

(3) The untreated waters of the source shall be sampled to characterize raw water bacteriological quality at the following minimum frequency: ground water, quarterly; surface waters, biweekly; or as prescribed by the State Commissioner of Health.

(4) The minimum number of samples to be collected from the distribution system and examined each month for bacteriological quality shall be in accordance with the number of the graph included herein for the population served by the system. Scheduling of samples must be distributed in time and the location must be representative of water quality available to the consumer. For populations under 1,000, the minimum number of samples shall be one each month, or as prescribed by the State Commissioner of Health.

(continued)

MINIMUM NUMBER OF SAMPLES PER MONTH



EXAMINATIONS FOR BACTERIOLOGICAL QUALITY

(5) Chemical analyses to characterize the sanitary quality of the water and the presence of certain mineral constituents shall be performed periodically. The specific tests shall be prescribed by the State Commissioner of Health. The untreated waters of the source shall be sampled at the following minimum frequency: ground water, annually; surface waters, semiannually. The minimum number of samples to be collected from the distribution system and examined for chemical analyses shall be two per year at six-month intervals; or as required by the State Commissioner of Health.

(6) If any substance listed in Part 72 of the administrative rules and regulations is found to approach the maximum permissible concentration, the State Commissioner of Health may require routine sampling and examination for that constituent at a prescribed frequency.

(7) The untreated waters of the source shall be sampled to characterize the physical quality of the water as to turbidity and color at the following frequency: ground water, annually; surface waters, weekly; or as required by the State Commissioner of Health.

(8) The minimum number of samples to be collected from the distribution system and examined for physical quality shall be one each day that the required samples are collected for bacteriological analysis; or as required by the State Commissioner of Health.

(b) Additional samples of water shall be collected from the source and distribution system of each public water supply by the person or persons in charge, as may be required by the State Commissioner of Health or as may be considered necessary by the persons in charge, to assure adequate control of the sanitary quality of the supply and to measure conformance with Part 72 of the administrative rules and regulations.

(c) The State Department of Health may arrange for collection of samples of water from public water supplies and for their examination in a laboratory approved by the State Commissioner of Health.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5-1.31 De-watering trenches. No repairs to distribution systems of public water supplies shall be made until those portions of the trenches containing the mains, valves or other structures being repaired have been de-watered to a point below the mains, valves or other structures. and every effort made to prevent the entrance of foreign material and seepage into such mains, valves or other structures.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5-1.32 Adequacy of distribution system. The water supply distribution system including pumping equipment, supply mains, distribution system, water storage facilities, and other related works, shall be so constructed, maintained and operated by the owner as to continuously assure a minimum working pressure of 20 pounds per square inch under all flow requirements of the distribution system.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5-1.33 Physical connections. No owner of a public water supply shall permit any physical connection between the distribution system or other structure of such supply containing drinking water and any other water supply system, drain, sewer,

sewer flush tank, siphon manhole, pipe, open tank, pressure tank, sump or vat, or other structure which contains liquids, chemicals, water of unsafe, unsatisfactory or unknown quality, sewage or any other contaminating substances, except under the following conditions:

(a) When the separate water supply is regularly examined as to its quality by those in charge of the public water supply to which the connection is to be made and is found to be of a quality satisfactory to the State Commissioner of Health and approval has been given by the person or persons in charge of the public water supply to the owner of the separate supply authorizing the maintenance of the connection. A copy of such approval and one set of the plans for such connection shall be filed with the State Commissioner of Health.

(b) When the water from the public water supply is discharged into an elevated tank, suction tank, sump or pit above the elevation of the maximum water level of such tank, sump or pit to which water of unsatisfactory quality is also discharged. Such tank, sump or pit shall be open to atmospheric pressure. Such elevated tank, suction tank, sump or pit shall be inspected at least annually by persons in charge of the public water supply and records of such inspections shall be maintained by the persons in charge of the public water supply.

(c) When special adjustable pipe connections or other protective devices are provided and so arranged that water cannot be secured simultaneously from both the public water supply and a separate supply of unsatisfactory quality nor flow from the separate supply to the public water supply, provided an application and plans for such special connections are submitted to and receive the approval of the person or persons in charge of the public water supply and of the State Commissioner of Health. All such adjustable pipe connections or other protective devices shall be inspected at least annually by persons in charge of the public water supply and a record of such inspection shall be maintained.

(d) When sprinkler systems or piping systems serving fire hydrants used exclusively for fire protection purposes are connected to a public water supply system and also to the pressure system of a fire pump taking suction from a separate supply which is unsatisfactory without treatment, but which has been approved for the purpose by the State Commissioner of Health, provided that the separate water supply system is equipped with a special fire pump chlorinator, and check valves of a design approved by the State Commissioner of Health. an application and plans for which shall be submitted to and receive approval by a responsible person in charge of the public water supply and by the State Commissioner of Health. Such check valves shall be examined and tested for leakage at specified intervals as noted in the certificate of approval. Records of such tests and of the daily operation of the fire pump chlorinator shall be maintained and submitted at monthly intervals to the person or persons in charge of the public water supply and to the State Commissioner of Health. The person or persons in charge of the public water supply, or their designated representatives, shall inspect the fire pump chlorinator at least monthly and records of such inspections shall be maintained.

(e) When the connection is installed and protected in a manner satisfactory to the State Commissioner of Health so as to prevent the pumpage, drainage, blackflow or siphonage of liquids, chemicals, unsafe or otherwise unsatisfactory water, sewage or any other contaminating substance into the drinking water supply system.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5-1.34 Blow-off facilities. All blow-off drains or discharge pipes connected to distribution systems of public water supplies shall be terminated at points where these structures will not be subject to flooding or otherwise subject to contamination by sewage or surface water.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5-1.35 Protection of equalizing and distribution reservoirs. The reservoirs utilized for the storage of water of a public water supply which will be delivered to the public without subsequent treatment, shall be covered. The water from an uncovered reservoir must be effectively disinfected by chlorination or other methods acceptable to the State Commissioner of Health before being discharged into a public water supply distribution system.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5-1.36 Pumping equipment. Equipment used for the pumping of a public water supply, which is not subject to subsequent treatment, shall be so installed and operated as to prevent flooding by surface water and exposure of the suction pipe to polluted water. Whenever priming is necessary, such pump shall be primed with water of a quality satisfactory to the State Commissioner of Health.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

BOTTLED AND BULK WATER

5-1.40 Distribution of bottled or bulk water. No person shall sell, offer for sale or deliver water for human consumption, food preparation or culinary purposes unless the source, equipment, treatment, and method of handling are approved by the State Commissioner of Health. This provision shall apply also to the distribution of water in containers or by bulk tank transportation.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

SUBPART 5-2

WATER WELL CONSTRUCTION

Sec.
5-2.1 Statement
5-2.2 Scope
5-2.3 Definitions
5-2.4 Need for permit
5-2.5 Applications
5-2.6 Permit
5-2.7 Notice of disapproval and appeal
5-2.8 Application to construct a water well

Sec.
5-2.9 Completed works
5-2.10 Certificate or letter of compliance
5-2.11 Notification of abandonment of a water well
5-2.12 Variance
5-2.13 General provisions
5-2.14 Applicability

Historical Note

Subpart (§§ 5-2.1—5-2.14) added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

Section 5-2.1 Statement. The improper construction, operation, maintenance or abandonment of water wells and the improper installation of water well pumps and pumping equipment represent a potential hazard to public health and safety. More than two million people in New York State depend upon private or individual water well supplies as their only sources of drinking water because public water supply systems are not available to serve them. To assure such consumers that the ground waters available to them will be reasonably safe and sanitary for drinking, culinary or food processing purposes, the following regulations for water well construction have been promulgated.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5-2.2 Scope. Minimum requirements are hereby prescribed governing the location, construction and abandonment of water wells used for drinking, culinary and food processing purposes other than municipal or public sources, together with procedures relating thereto, in implementation of this Subpart. No person shall construct or abandon or cause to be constructed or abandoned, any water well, nor shall any person install or cause to be installed, any pump or pumping equipment contrary to this Subpart. Distribution of water beyond the point of discharge from the storage or pressure tank, or beyond the point of discharge from the pump if no tank is employed and to wells used or intended to be used as a source of water supply for public water supply systems, or to any pump, well, or other equipment used temporarily for de-watering purposes shall comply with all other applicable State and local regulations.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5-2.3 **Definitions.** As used in this Subpart:

(a) *Abandoned well* means a well whose use has been permanently discontinued. A well shall be deemed abandoned if it is in such a state of disrepair that continued use for the purpose of obtaining a satisfactory ground water supply is impracticable.

(b) *Applicant* means the owner, lessee or other person having the possession and control of property on which a well is to be constructed or abandoned.

(c) *Construction of water wells* means all acts necessary to obtain ground water by wells, including the location and excavation of the well.

(d) *Permit issuing official* means the health commissioner or health officer of a city of 50,000 population or over, the health commissioner or health officer of a county or part-county health district, or the State regional health director or district health officer having jurisdiction. The health commissioner or health officer of a city of 50,000 population or over or the health commissioner or health officer of a county or part-county health district may designate the director of environmental health of such health district; and, the State regional health director or district health officer may designate the district sanitary engineer as additional persons authorized to issue the permits required by this Part.

(e) *Installation of pumps and pumping equipment* means the procedure employed in the placement, protection and preparation for operation of pumps and pumping equipment, including all construction involved in making entrance to the well and establishing seals.

(f) *Person* means any individual, public or private corporation, political subdivision, government agency, municipality, industry, copartnership, association, firm, trust, estate or any other legal entity.

(g) *Pumps and pumping equipment* means any equipment or materials utilized or intended for use in withdrawing or obtaining ground water for any use; including, without limitation, seals and tanks, together with fittings and controls.

(h) *Yield* means the quantity of water per unit of time, per foot of drawdown which may flow or be pumped from a well at a stabilized drawdown water level.

(i) *Specific capacity* means the rate of yield of a well per unit drawdown expressed either as gallons per minute per foot or as liters per minute per meter.

(j) *Water well contractor* means any person, firm, or corporation engaged in the business of constructing water wells.

(k) *Well* means any excavation that is drilled, cored, bored, washed, driven, dug, jetted, or otherwise constructed when the intended use of such excavation is for the location or acquisition of ground water, but such term does not include an excavation made for the purpose of obtaining or for prospecting for oil, natural gas, minerals, or products of mining or quarrying, or for inserting media to repressure oil or natural gas-bearing formation or for storing petroleum, natural gas or other products.[1]

Historical Note

Sec. added, filed Aug. 3, 1972; amd. filed May 8, 1973 eff. May 8, 1973. Substituted new (d).

5-2.4 **Need for permit.** No person shall construct or abandon any water well unless a permit has first been secured from the permit issuing official.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5-2.5 **Applications.** Applications for a permit to construct or abandon a water well shall be directed to the permit issuing official by the applicant or his agent and shall be on a form prescribed by the State Department of Health.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5-2.6 **Permit.** The permit issuing official shall issue a permit whenever he finds that an application is in proper form and contains required information, provided that on the basis of the information therein contained, the proposed location, construction, abandonment or installation will not be contrary to applicable law, rules or regulations. Such permit, may, at the discretion of the permit issuing official, direct the applicant to file a "compliance notice" as hereinafter provided.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5-2.7 **Notice of disapproval and appeal.** The permit issuing official shall issue a "notice of disapproval" whenever he finds that an application fails to meet the requirements for issuance of a permit as hereinabove provided. Such notice shall:

(a) state the grounds for disapproval; and

(b) be served upon the applicant or his agent, provided, however, that such notice shall be deemed to be properly served upon such applicant or agent, if a copy thereof is sent by registered or certified mail to his last known address, or if he is served by such other methods as are, or may be authorized, under the laws of this State governing personal service of process upon individuals. Such notice may state any remedial action which, if taken, will effect compliance with this Subpart and permit approval of the application.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5-2.8 **Application to construct a water well.** An application for permission to construct a water well shall be submitted by the applicant or his agent and contain the following information:[2]

(a) name and address of the applicant;

(b) legal or other description adequate to locate the property and the well;

(c) name and address of the water well contractor;

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[1] Counties wishing to do so may include within the coverage of this definition dewatering, seismological, geophysical, prospecting, observation or test wells.

[2] Counties may require additional information, such as geologic description when necessary to make a determination.

(d) estimated depth in feet and method of construction;

(e) purpose for which well is to be used and desired yield;

(f) proposed diameter of the well and drillhole in inches;

(g) type and depth of the proposed well casing;

(h) approximate distance and relative elevation to well of any potential sources of ground water pollution which may be located within 200 feet of such well including, without limitation, the following: privy, sewage seepage pit, sewage filter bed, sewage disposal field, underground sewers, septic tank, storm water drain, building foundation drain, milk house drain outlet, manure pile, barn gutter, silo, abandoned well, other well, sink hole, cow yard, hog lot, chicken yard, other animal yard, stone quarry, mine, rock outcrop, rain water cistern, solid waste disposal site, calcium or salt piles;

(i) distance to well from existing and proposed structures, as well as property lines located within 100 feet;

(j) statement of whether site is subject to flooding; and

(k) statement regarding the availability of a public water supply.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5-2.9 Completed works. Within 30 days of the completion of water well construction, the applicant or his agent shall:

(a) pump the well until the water is clear;

(b) disinfect the well in accordance with the requirements of the permit issuing official; and

(c) submit a well log to the permit issuing official. Such well log shall specify the well location, depth and diameter, formations penetrated, casing length, extent and nature of grouting, well output tests and associated water levels, and any other information required by the permit issuing official. In addition, analytical data of the water quality associated with such well shall be submitted when available.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5-2.10 Certificate or letter of compliance. Upon satisfactory completion of the requirements of the permit issuing official as contained in sections 5-2.9 and 5-2.13 of this Subpart, a certificate of compliance will be issued to the applicant.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5-2.11 Notification of abandonment of a water well. Every abandoned well shall be sealed or closed so as to protect the aquifer from pollution and to prevent a hazard to life or property. If such well is to be sealed or closed the owner of the property shall make application of notification to abandon such water well and provide the following information:

(a) name and address of the applicant;

(b) legal or other description adequate to locate the property and the well;

(c) name and address of the water well contractor employed to perform the work herein required for abandonment;

(d) type and description of well;

(e) reason for abandonment; and

(f) description of work to be performed to effect abandonment.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5-2.12 Variance. (a) Where the permit issuing official finds that compliance with all requirements of this Subpart would result in undue hardship, a variance from any one or more such requirements may be granted by the State Department of Health to the extent necessary to ameliorate such undue hardship and to the extent such variance can be granted without impairing the intent and purpose of this Subpart.

(b) An application for a variance shall be submitted to the permit issuing official by the applicant including any requested additional information concerning the application.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5-2.13 General provisions. Provisions and standards applicable to the construction and location of all water wells, and the installation of all pumps and pumping equipment contained in Appendix 72-D of Title 10 (Health) of the Official Compilation of Codes, Rules and Regulations of the State of New York shall be used as the basis for issuing or denying a permit.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5-2.14 Applicability. The requirements of this Subpart shall:

(a) Apply within a county health district, a part-county health district, and a city having a city health department, when adopted by the appropriate local authority.

(b) Apply in those State district health areas designated by the State Commissioner of Health.

Historical Note

Sec. added, filed Aug. 3, 1972 eff. Aug. 3, 1972.

Section 5.1-5.2

Historical Note

Secs. amd. filed Oct. 10. 1962; repealed, new added, filed Feb. 28, 1967; repealed, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5.3-5.5

Historical Note

Secs. repealed, new added, filed Feb. 23, 1967; repealed, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5.6

Historical Note

Sec. repealed, filed Feb. 28, 1967 to be eff. Mar. 15, 1967.

5.10-5.11

Historical Note

Secs. repealed, new added, filed Feb. 23, 1967; repealed, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5.20

Historical Note

Sec. repealed, new added, filed Feb. 28, 1967; amds. filed: Sept. 24, 1970; June 1, 1972; repealed, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5.21

Historical Note

Sec. repealed, new added, filed Feb. 28, 1967; repealed, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5.30-5.33

Historical Note

Sec. repealed, new added, filed Feb. 28, 1967; repealed, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5.34-5.36

Historical Note

Sec. added, filed Feb. 28, 1967; repealed, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5.40

Historical Note

Sec. repealed, new added, filed Feb. 28, 1967; repealed, filed Aug. 3, 1972 eff. Aug. 3, 1972.

5.41

Historical Note

Sec. repealed, filed Feb. 28, 1967 to be eff. Mar. 15, 1967.

PART 72

DRINKING WATER STANDARDS

(Statutory authority: Public Health Law, §§ 201, 1100)

Sec.
72.1 Sampling requirements
72.2 Analytical methods
72.3 Bacteriological characteristics
72.4 Physical characteristics

Sec.
72.5 Chemical characteristics
72.6 Biological organisms
72.7 Radioactivity

Historical Note

Part (§§ 72.1-72.6) added, filed Nov. 27, 1964 to be eff. Nov. 27, 1964.

Section 72.1 Sampling requirements. Compliance with the drinking water standards shall be determined by examinations of properly collected samples submitted to a laboratory approved for the purpose by the State Commissioner of Health. The number and type of samples examined from a drinking water supply shall be in accordance with a sampling program approved or as directed by the State Department of Health.

Historical Note

Sec. added, filed Nov. 27, 1964 to be eff. Nov. 27, 1964.

72.2 Analytical methods. Analytical methods to determine conformance with the requirements of these standards shall be those specified by the State Department of Health.

Historical Note

Sec. added, filed Nov. 27, 1964 to be eff. Nov. 27, 1964.

72.3 Bacteriological characteristics. (a) Samples from a chlorinated drinking water supply submitted for bacteriological examination shall be collected in sterile containers containing a dechlorinating agent. The coliform group of bacteria includes all organisms considered in the coliform group as set forth in *Standard Methods for the Examination of Water and Waste Water*, current edition, prepared and published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation. The standard sample for the bacteriologic tube dilution technic for the presence of coliform group bacteria shall consist of at least five 10-ml portions, one 1-ml portion, and one 0.1-ml portion. If records are available indicating that the 1.0-ml and 0.1-ml portions do not yield more than one positive tube in three consecutive months, these portions may be eliminated in future examinations of samples from the same supply. For the membrane filter technic for the enumeration of the coliform group, not less than 50-ml of sample shall be examined.

(b) To conform with the standards the number of organisms of the coliform group as indicated by the results of laboratory examination of samples shall not exceed the following values:

(1) The arithmetic average of the most probable number (MPN) per 100 ml of all samples examined in any month shall not exceed 1.1 coliform organisms per 100 ml of sample. A most probable number (MPN) per 100 ml of 8.8 or greater shall not occur in:

(i) two consecutive samples;

(ii) more than one sample per month when less than 20 are examined per month; or

(iii) more than five per cent of the samples when 20 or more are examined per month.

(2) The arithmetic average of the membrane filter count per 100 ml of samples examined in any month shall not exceed 1 coliform organism per 100 ml of sample. Coliform colonies per sample shall not exceed 3 per 50 ml, 4 per 100 ml, 7 per 200 ml, or 13 per 500 ml in:

(i) two consecutive samples;

(ii) more than one sample per month when less than 20 are examined per month; or

(iii) more than five per cent of the samples when 20 or more are examined per month.

Historical Note

Sec. added, filed Nov. 27, 1964 to be eff. Nov. 27, 1964.

72.4 Physical characteristics. To conform with these standards not more than two of the following values shall be exceeded in any single sample. The arithmetic average of all samples examined in any month shall not exceed any of the following:

turbidity, 5 units
color, 15 units
threshold odor, 3.

Historical Note

Sec. added, filed Nov. 27, 1964 to be eff. Nov. 27, 1964.

72.5 Chemical characteristics. (a) Drinking water shall not contain added or natural impurities in concentrations which may be hazardous to the health of the consumers, as determined by the State Commissioner of Health. It shall not be excessively corrosive to the water supply system. Substances which may have a deleterious physiological effect, or for which physiological effects are not known, shall not be introduced into the system in a manner which would permit them to reach the consumer. Substances used in treatment shall not remain in the water in concentrations greater than required by good practice.

(b) The presence of any of the following substances in drinking water in an amount detectable by the specified laboratory determination shall require examination of additional samples as specified by the State Department of Health to determine the levels of concentration for such substances to which consumers are exposed. Such levels of concentration shall not exceed the following:

Substance	*Concentration (mg/l=milligrams perliter) (ug/l=micrograms per liter)*
Arsenic (As)	0.1 mg/l
Barium (Ba)	1.0 mg/l
Cadmium (Cd)	0.01 mg/l
Carbon chloroform extract (CCE)	0.7 mg/l
Chromium (hexavalent) (Cr^{+6})	0.05 mg/l
Chloride (Cl)	250.0 mg/l
Copper (Cu)	1.0 mg/l
Cyanide (CN)	0.2 mg/l
Fluoride (F)	1.5 mg/l
Foaming agents (as methylene-blue active substances)	0.5 mg/l
Iron (Fe)	0.3 mg/l[1]
Lead (Pb)	0.05 mg/l
Manganese (Mn)	0.3 mg/l[1]
Mercury (Hg)	0.005 mg/l
Nitrate (N)	10.0 mg/l[2]
Pesticides	
Chlorinated hydrocarbon insecticides	
Aldrin	1.0 ug/l
Chlordane	3.0 ug/l
DDT	50.0 ug/l
Dieldrin	1.0 ug/l

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[1] If iron and manganese are both present, the total allowable concentration for such substances, taken together, shall not exceed 0.3 mg/l.

[2] Nitrite in water poses a greater health hazard but seldom occurs in high concentrations. Water with nitrite-nitrogen concentrations over 1.0 mg/l should not be used for infant feeding.

Endrin	0.5	ug/l
Heptachlor epoxide	0.1	ug/l
Lindane	5.0	ug/l
Methoxychlor	100.0	ug/l
Toxaphene	5.0	ug/l
Chlorophenoxy herbicides		
2,4 - Dichlorophenoxyacetic acid (2,4-D)	20.0	ug/l
2,4 - Dichlorophenoxy~~acetic~~ acid (2,4,5-TP or 5 Tr propionic silvex)	30.0	ug/l
Organophosphate insecticides (total)	10.0	mg/l
Selenium (Se)	0.01	mg/l
Silver (Ag)	0.05	mg/l
Sodium (Na)	no designated limits	
Sulfate (SO4)	250.0	mg/l
Zinc (Zn)	5.0	mg/l

Historical Note

Sec. added, filed Nov. 27, 1964; amd. filed Jan. 6, 1975 eff. Jan. 6, 1975.

72.6 Biological organisms. Biological organisms shall not be allowed in drinking water in amounts sufficient to render the water unsafe or otherwise objectionable, as determined by the State Commissioner of Health.

Historical Note

Sec. added, filed Nov. 27, 1964 to be eff. Nov. 27, 1964.

72.7 Radioactivity.

(a) *Alpha activity.*

(1) Gross-alpha activity shall either not exceed a concentration of one picocurie per liter or, if the concentration of gross-alpha activity be greater than one picocurie per liter but less than five picocuries per liter, the concentration of Radium-226 activity shall not exceed one picocurie per liter.

(2) Notwithstanding anything to the contrary contained in paragraph (1) of this subdivision, the State Commissioner of Health may deem a drinking water supply acceptable:

(i) where the concentration of gross-alpha activity and of Radium-226 activity in the drinking water supply exceeds the permissible levels of concentration established therefor by paragraph (1) of this subdivision, provided that the total activity of Radium-226 plus other alpha emitters does not exceed a concentration of five picocuries per liter and sampling and analytical measures as prescribed by the State Commissioner of Health are carried out; or

(ii) where the concentration of Radium-226 activity plus other alpha emitters in the drinking water supply exceeds five picocuries per liter, provided that sampling, analytical and control measures as prescribed by the State Commissioner of Health are carried out to reduce the total daily dietary intake of Radium-226 so that the organ dose will not exceed the organ dose which would result from a daily dietary intake of 20 picocuries[4] of Radium-226.

(b) *Beta activity (excluding tritium oxide).*

(1) Gross-beta activity either shall not exceed a concentration of 10 picocuries per liter or, if the concentration of gross-beta activity be greater than

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[3] Water containing more than 20 mg/l of sodium should not be used for drinking by those on severely restricted sodium diets. Water containing more than 270 mg/l of sodium should not be used for drinking by those on moderately restricted sodium diets.

[4] The organ dose limitation established for Radium-226 by this Part is the same as that established by the upper limit of range II of the recommended radiation protection guide for Radium-226 set forth in paragraph 3.11 of section III of Report No. 2 issued by the Federal Radiation Council in September, 1961 (not filed with the Department of State).

10 picocuries but less than 100 picocuries per liter after subtraction of Potassium-40, the concentration of Strontium-90 activity shall not exceed 10 picocuries per liter.

(2) Notwithstanding anything to the contrary contained in paragraph (1) of this subdivision, the State Commissioner of Health may deem a drinking water supply acceptable where the concentration of gross-beta activity and of Strontium-90 activity in the drinking water exceeds the permissible levels of concentration established therefor by paragraph (1) of this subdivision, provided that Strontium-90, Strontium-89 and gamma spectrometric analyses are performed, the total daily dietary intake of Strontium-90 is such that organ dose will not exceed the organ dose which would result from a daily dietary intake of 200 picocuries[5] of Strontium-90, the total daily dietary intake of Strontium 89 is such that organ dose will not exceed the organ dose which would result from a daily dietary intake of 2000 picocuries[6] of Strontium-89 and provided, further, that sampling, analytical and control measures as prescribed by the State Commissioner of Health are carried out.

(c) *Tritium oxide.*

(1) The concentration of tritium oxide in a drinking water supply shall not exceed 2000 picocuries per liter.

(2) Notwithstanding anything to the contrary contained in paragraph (1) of this subdivision, the State Commissioner of Health may deem a drinking water supply acceptable:

(i) where the concentration of tritium oxide in the drinking water supply exceeds the permissible limit established therefor by paragraph (1) of this subdivision but does not exceed 20,000 picocuries per liter, provided that sampling and analytical measures as prescribed by the State Commissioner of Health are carried out; or

(ii) where the concentration of tritium oxide exceeds 20,000 picocuries per liter, provided that sampling, analytical and control measures as prescribed by the State Commissioner of Health are carried out to maintain the tritium oxide concentration at less than 75,000 picocuries per liter.

Historical Note

Sec. filed Jan. 6, 1975 eff. Jan. 6, 1975.

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[5] The organ dose limitation established for Strontium-90 by this Part is the same as that established by the upper limit of range II of the recommended radiation protection guide for Strontium-90 set forth in paragraph 4.29 of section IV of Report No. 2 issued by the Federal Radiation Council in September, 1961 (not filed with Department of State).

[6] The organ dose limitation established for Strontium-89 by this Part is the same as that established by the upper limit of range II of the recommended radiation protection guide for Strontium-89 set forth in paragraph 4.35 of section IV of Report No. 2 issued by the Federal Radiation Council in September, 1961 (not filed with Department of State).

155.108 Stamford Water Company.

(a) [*Application.*] The rules and regulations hereinafter given, duly made an enacted in accordance with the provisions of sections 70, 71 and 72 of the Public Health Law heretofore set forth shall apply to Trinity Lake, Mud Pond or Mead Pond and to all those portions of Mill River, otherwise called Rippowan River, which are situated within the State of New York (Westchester County) lying above the reservoir and intake of the Stamford Water Company, as well as to every spring, stream, ditch, gutter, drain or watercourse of any kind, the waters of which when running eventually flow into Mud Pond, Trinity Lake or Mill River within the said State above such intake.

(b) *Privies adjacent to ponds, lakes, reservoirs or watercourses.* (1) No privy, privy vault, pit, cesspool or any other receptacle of any kind used for the deposit, reception or storage of human excreta shall be constructed, located, placed or maintained with its nearest point within 50 feet, horizontal measurement, of the high-water mark of any lake, pond or reservoir or of the edge, margin or precipitous bank of any spring, stream, ditch, gutter, drain or other watercourse of any kind, the waters of which comprise or, when running, flow eventually into Trinity Lake, Mud Pond or Mill River within the said State.

(2) Every privy, privy vault, pit or cesspool or other receptacle or place used for the deposit, reception or storage of human excreta which is constructed, located or maintained within 250 feet, horizontal measurement, of the high-water mark of any lake, pond or reservoir or of the edge, margin or precipitous bank of any spring, stream, ditch, gutter, drain or watercourse of any kind whose waters comprise or, when running, flow into Trinity Lake, Mud Pond or Mill River within the said State, and from which privy or other receptacle the excreta are not at once removed automatically by means of suitable watertight pipes or conduits to some proper place of ultimate disposal as hereinafter provided, shall be arranged in such manner that all such excreta shall be received temporarily in suitable vessels or receptacles which shall at all times be maintained in an absolutely watertight condition, and which will permit of convenient removal to some place of ultimate disposal as hereinafter set forth.

(3) The excreta collected in the aforesaid removable receptacles shall be removed and the receptacles cleaned and deodorized as often as may be found necessary in order to maintain the privy in proper sanitary condition and to effectually and strictly prevent any overflow upon the soil or upon the foundations or floor of the privy. In effecting this removal none of the contents shall be allowed to escape while being transferred from the privy to the place of disposal hereinafter specified, so that the least possible annoyance and inconvenience shall be caused to the occupants of the premises or of adjacent premises.

(4) Unless otherwise specifically ordered or permitted by the State Department of Health, the excreta collected in the aforesaid receptacles shall, when removed, be disposed of by burying in trenches or by thoroughly digging into the soil in such place and manner as to effectually prevent them being washed over the surface of the ground by rain or melting snow and at distances not less than 250 feet, horizontal measurement, from the high-water mark of any lake, pond or reservoir or from the edge, margin or precipitous bank of any spring, stream, ditch, gutter, drain or watercourse of any kind, the waters of which comprise or, when running, flow into Trinity Lake, Mud Pond or Mill River within the said State.

(5) Whenever it shall be found that, owing to the character of the soil or to the surface of the ground or owing to the height or flow of subsoil or surface water or through special local conditions, the excremental matter from any privy or aforesaid receptacle or from any trench or place of disposal may, in the opinion of the State Department of Health, be washed over the surface of

the ground or through the soil into any lake, pond or reservoir, spring, stream, ditch or gutter, drain or other watercourse, the waters of which comprise or, when running, flow into the aforesaid Trinity Lake, Mud Pond or Mill River within the said State, then the said privy or receptacle for excreta or the said trench or place of disposal shall, after due notice to the owner thereof, be removed to such greater distance or to such place as shall be considered safe and proper by the State Department of Health.

(c) *House slops, sink waste, laundry water, garbage, refuse, etc.* (1) No sewage, garbage, putrescible matter, house slops, bath water, kitchen or sink waste, refuse or waste water from creameries, cheese factories or laundries or water in which milk cans, utensils, clothes, bedding, carpets or harnesses have been washed or rinsed nor any polluted water or liquid shall be thrown or discharged directly into any lake, pond, reservoir, spring, stream, ditch, gutter, drain or other watercourse comprising or flowing into Trinity Lake, Mud Pond or Mill River within the said State, nor shall any such liquid be thrown or discharged upon the surface of the ground or into the ground below the surface in any manner whereby the same may flow into any lake, pond, reservoir, spring, stream, ditch, gutter, drain or watercourse aforesaid within 100 feet, horizontal measurement, of the high-water mark of any lake, pond or reservoir or of the edge, margin or precipitous bank of any spring, stream, ditch, gutter, drain or other watercourse aforesaid.

(2) No clothing, bedding, carpets, harness, vehicles, tanks, barrels, receptacles, utensils nor animals nor anything that pollutes water shall be washed or rinsed in, nor shall any person bathe in any lake, pond, reservoir, spring, stream, ditch, gutter, drain or other watercourse comprising or flowing into Trinity Lake, Mud Pond or Mill River within the State of New York.

(d) *Manures, compost, etc.* (1) No stable for cattle or horses, barnyard, hogyard, poultry yard, cattle pen, pigsty, henhouse, hitching place or standing place for horses or other animals and no manure pile, compost heap, piles of fermented or decayed fruit, apple pumice, cider mill waste, vegetables, roots, grain, leaves or other vegetable substances shall be located, placed or maintained or allowed to remain in such place or manner that the washing or draining therefrom may flow in open, blind or covered drains or channels of any kind into any lake, pond, reservoir, spring, stream, ditch, gutter, drain or watercourse aforesaid without first having passed over or through such an extent of soil as to have become properly purified and in no case shall the above named sources or causes of pollution be so located or allowed to remain that their nearest point is less than 100 feet, horizontal measurement, from the high-water mark of any lake, pond, reservoir or the edge, margin or precipitous bank of any spring, stream, ditch, gutter, drain or watercourse of any kind which comprises or, when running, flows into Trinity Lake, Mud Pond or Mill River within the State of New York.

(2) No human excreta or compost containing human excreta shall be spread upon the ground within 250 feet, horizontal measurement, of the high-water mark of any lake, pond, reservoir or of the edge, margin or precipitous bank of any spring, stream, ditch, gutter, drain or watercourse of any kind whose waters comprise or, when running, flow into Trinity Lake, Mud Pond or Mill River in the said State, and no manure or compost of any kind shall be spread or deposited upon the ground so as to be washed a less distance than 100 feet over the surface or through the soil before reaching the nearest point of any such aforesaid lake, pond, reservoir, spring, stream, ditch, gutter, drain or other watercourse.

(e) *Dead animals, offal, manufacturing wastes, etc.* (1) No dead animal, bird, fish nor any part thereof nor any offal nor putrescible matter nor any polluted waters or refuse from any slaughterhouse, dairy, creamery, cheese factory, cider mill or other manufactory shall be thrown or allowed to run into any lake, pond, reservoir, spring, stream, ditch, gutter drain or other watercourse whose waters comprise or, when running, flow into Trinity Lake, Mud Pond or Mill River in the said State, nor shall any such refuse or polluted material aforesaid be so deposited that any portion thereof or of the polluted drainage therefrom shall be washed over or through the soil a less distance than 100 feet before reaching the nearest point of any such aforesaid lake, pond, reservoir, spring, stream, ditch, gutter, drain or watercourse.

(2) No dead animal, bird, fish, fowl or reptile nor any part thereof shall be buried in the ground within 250 feet of the high-water mark of any aforesaid lake, pond or reservoir or the high-water mark or precipitous bank of any such aforesaid spring, stream or watercourse.

(3) No live sheep or other animals shall be washed in any lake, pond or reservoir or in any such aforesaid spring, stream or watercourse; neither shall any person swim, bathe or wash in any said lakes, ponds or reservoirs, streams or watercourses.

(4) The waste liquids which may be polluted with putrescible or deleterious organic matter from any of the operations above indicated shall be all thoroughly filtered or otherwise properly purified before being allowed to escape into any lake, pond or reservoir or into any spring, stream or watercourse tributary thereto.

(f) *Cemeteries.* No interment shall be made in any cemetery or other place of burial within 250 feet, horizontal measurement, of the high-water mark or precipitous bank of any lake, pond or reservoir or of any spring, stream or watercourse whose waters comprise or, when running, flow into Trinity Lake, Mud Pond or Mill River within the aforesaid State.

(g) *Penalties.* In accordance with section 70 of chapter 661 of the Laws of 1893, as finally amended by chapter 484 of the Laws of 1904, the penalty of each and every violation of or noncompliance with any of these rules and regulations which relate to a permanent source or act of contamination is hereby fixed at $100.

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DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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POLICIES AND PROCEDURES MANUAL

TITLE 9100 - WATER QUALITY

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August 13, 1976

POLICIES AND PROCEDURES MANUAL

TITLE 9100 - WATER QUALITY

CHAPTER 9140 - DISCHARGES TO CLASSIFIED WATERS

9141 - SPDES Permit Effluent Limits

9141.1 - Procedures Governing Discharges to Classified Waters

9141.11 - Authority

1. Article 17 of ECL: Sections 17-0809, 17-0811, 17-0815 and 17-0819.

2. Title 6 of NYCCRR, Sections 750.2, 751.1, 752.1, 754.1, 754.2.

3. PL 92-500, Sections 301, 302, 303(d).

9141.12 - Objectives

1. To clarify the application and enforcement of SPDES permit effluent limits for discharges to "water quality limiting" waters.

2. To establish the procedure and responsibility for determining applicable permit effluent limits for existing and proposed discharges into intermittent streams.

3. To provide guidance on the reliability of certain wastewater treatment process trains, for smaller installations, in meeting effluent standards for discharges to intermittent streams.

9141.13 - Background. By definition, water quality limiting waters are those for which effluent limits determined on the basis of BPCTCA (industrial) or secondary treatment (municipal) are not adequate to meet applicable water quality standards. Unlike discharges to effluent limiting segments where permit limits are to be met on a year around basis, effluent limits for discharges to water quality limiting segments are determined on the basis of critical drought flow, high stream temperature or other seasonal conditions. Considerable controversy has arisen regarding the interpretation and application of allowable waste loads allocated to discharges to water quality limiting segments. It is the purpose of this statement to clarify the application and enforcement of SPDES permit effluent limits determined for water quality limiting situations.

Commissioner's Directive First Deputy Commissioner **Date:** August 13, 1976 **SPECIAL INSTRUCTIONS:**	**DISTRIBUTION:**

POLICIES AND PROCEDURES MANUAL

TITLE 9100 - WATER QUALITY

Permit effluent limitations will be determined by the Department pursuant to Section 754.1 of the SPDES rules and regulations codified as Chapter 10, Sub-chapter A, Article 3 of Title 6 of Official Compilation of 6NYCRR. In order to achieve the SPDES permit effluent limits, the permittee shall provide waste treatment facilities and/or control systems which assure reliable efficiency. Section 754.4(c) requires the permittee to "at all times maintain in good working order and operate as efficiently as reasonably possible any facilities, including systems of control installed by the permittee to achieve compliance with the provisions of the permit, covered by the permit". Section 754.1(b) provides that "if operation pursuant to the permit causes or contributes to a condition in contravention of state water quality standards, the Department may require abatement action to be taken by the permittee and may modify the permit pursuant to Part 757 of this Article".

9141.14 - Policy. In concert with the above constraints imposed by SPDES Rules and Regulations, it is the policy of this Department to apply and enforce SPDES permit effluent limits as follows:

1. Discharges to Effluent Limiting Waters - Permit effluent limits will be based on applicable BPCTCA or "effective secondary treatment" and enforced as year-round effluent requirements. New industrial discharges shall meet applicable New Source Performance Standards.

2. Discharges to Water Quality Limiting Waters - Permit effluent limits will be based on information pertinent to the waste discharge situation addressed. The Pure Waters Unit (field or central office) responsible for making the waste load determinations shall specify the calendar period for which the water quality based permit effluent limits apply. These calendar periods with applicable effluent limits shall be embodied in the SPDES permit. Permit effluent limits applicable to existing discharges outside the specified calendar period shall be those based on applicable BPCTCA or "effective secondary treatment" subject to Section 754.4(c) of SPDES Rules and Regulations and shall be so stated in the SPDES permit. New industrial sources shall meet applicable New Source Performance Standards outside the specified calendar period.

3. Sewage Discharges to Intermittent Streams - Discharges to intermittent streams are recognized as special water quality limiting situations. An intermittent stream is defined as (1) any stream that periodically goes dry at any point down stream of the proposed point of discharge, or (2) any stream segment below the proposed point of discharge in which the MA7CD/10 yr. flow is less than 1 cfs and the MA7CD/10 yr. stream flow to cumulative wastewater flow ratio is equal to or less than 8:1.

a. Existing Discharges - SPDES permits will be drafted by the field unit having jurisdiction using effluent limitations shown on the previous operating permits or based on a reasonable estimate of optimum removal efficiency of the treatment system but in no case reflecting less than 85% BOD_5 and suspended solids removal (30mg/1 - 30 day average). It may be that the situation would warrant the provision of full scale intermittent stream effluent limitations but this should be backed up with a definitive compliance schedule which will be enforced. It will no longer be written with both "initial" and "final" effluent limitations unless there is a specific compliance schedule for upgrading treatment. If limits are not provided by the field then intermittent stream standards will be applied by the Bureau of Monitoring & Surveillance.

b. Proposed Discharges - New, expanded or proposed discharges to intermittent streams will be subject to the effluent limits described in Table 1. Central Office personnel will leave undisturbed for the most part limitations established by the field for projects which they previously approved.
If experience shows that the limitations prescribed in the permit are inadequate then said permit will have to be modified to provide more stringent limitations coupled with an appropriate compliance schedule pursuant to Section 754.1(b) of 6NYCRR.

9141.15 - Guidance Material

1. Selection and Design of Small Wastewater Treatment Systems that Discharge into Intermittent Streams - Selection of a process train for a wastewater treatment system involves consideration of the following criteria:

a. Effluent requirements
b. Influent waste volume and characteristics
c. Sludge generation and ease of disposal
d. Economics
e. Process compatibility
f. Operational simplicity
g. Reliability

For small plants (less than 100,000 gpd), discharging to intermittent streams criteria a, f and g are of prime importance.

Since there will be no dilution water available in an intermittent stream during part of the year, the treatment system must be capable of producing an effluent that will meet the stream standards. Based on this, Table 1 presents a translation of Class D stream standards into effluent standards.

A listing of unit processes currently available for removal of various pollutants is given in Table 2.

As stated previously, operational simplicity and reliability are of primary importance in selection of a process scheme for small plants discharging to intermittent streams. Based on these criteria, the following process trains appear to be especially applicable to small plants (less 100,000 gpd):

A. Phosphorus Removal not Required:

1. Equalization - Rotating biological disc / Extended aeration / Slow rate trickling filter - Slow sand filter

2. Aerated Lagoons (with equalization designed in) - Slow sand filter

3. For Very Small Systems - less than 10,000 gpd

   Septic tank - Slow sand filter - Cascade re-aeration

   NOTE: a.) Land disposal may be substituted for slow sand filter.
   b.) Disinfection must be added as required.

B. Phosphorus Removal Required:

1. Equalization - Rotating biological disc / Extended aeration / Slow rate trickling filter - Land disposal

2. Aerated Lagoons (with equalization designed in) - Land disposal

3. For Very Small Systems - less than 10,000 gpd

   Septic tank - Subsurface land disposal

For treatment of sanitary waste, any of the above process trains should meet or exceed the effluent standards presented in Table 1 if they are properly designed and operated.

9141.16 - Definitions

1. BPCTCA - Best practicable control technology currently available as defined by USEPA Administrator pursuant to Section 304(b) of PL 92-500 which establishes effluent limitations for point sources other than publicly owned treatment works.

2. Secondary Treatment - As defined by Article 17-0509 of ECL - Minimum Treatment Requirement: Effective secondary treatment shall mean the removal of substantially all floating and settleable solids and the removal of at least 85% of suspended solids and at least 85% of five day biochemical oxygen demand, or such other standard as may be adopted pursuant to PL 92-500.

9141.17 - Tables

Table 1 - Effluent Standards for Discharges to Intermittent (Class D) Streams

Table 2 - Unit Processes Available for Removal of Various Pollutants

TABLE 1

Effluent Standards for Discharges to Intermittent (Class D) Streams

Quality Item	Surface Water Standard	Effluent Standard
Turbidity	No increase except from natural sources	Will be controlled by suspended solids criteria
Color	None from man-made sources that will be detrimental to anticipated best uses	Will not be a problem with domestic sewage
Suspended solids	None which will cause deposition	10 mg/l
Colloidal solids	" " " "	N.A.
Settleable solids	" " " "	0
Oil and floating substances	None attributable to sewage	0
Taste and odor-producing substances, toxic wastes and deleterious substances	None that will be injurious to fishlife; refer to Note 1 under Class "AA" (701.4 6NYCRR) which also applies to Class "D" standards	
Chlorine		0
Ammonia		2.0 mg/l
pH	6.0 - 9.5	6.0 - 9.5
Dissolved oxygen	3.0 mg/l	>7.0 mg/l*
BOD	--	5.0 mg/l*
Phosphorus	Although there is no direct standard for phosphorus, it is an important factor in lake eutrophication and for effluents discharges to lake watersheds, it should be minimized to prevent secondary violation of other standards.	

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*The effluent dissolved oxygen minus its biological oxygen demand should be such that the stream standard of 3.0 mg/l is achieved. If one allows 1 mg/l for re-aeration in the stream bed, this can be achieved with an effluent DO 7.0 mg/l and BOD 5 mg/l.

TABLE 2

Unit Processes Available for Removal of Various Pollutants

Pretreatment	Initial BOD and SS Removal	Nitrification or Nitrogen Removal	Phosphorus Removal	Polishing	Disinfection	Re-aeration
Equalization*	Primary and Conventional Secondary	Staged activated sludge	Chemical precipitation	Chem. Coag. and high rate sand filter	Chlorination with dechlorination	Diffused aeration
	Chem. Coag. sedimentation and carbon adsorption	Breakpoint chlorination	Biological-chemical removal	Microscreens	Ozone	Mechanical aeration
	Extended aeration*	Ion exchange	Biological luxury uptake	Slow sand filter*		Cascades*
	Aerated lagoon*	Slow sand filter*	Land disposal*	Land disposal*		U-tube
	Rotating biological disk*	Extended aeration*		Activated carbon adsorption		
		Slow rate trickling filter*				
		Rotating biological disk*				
		Land disposal*				

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*Unit process especially applicable to small (less than 100,000 gpd) plants because of their operational simplicity and reliability.