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New Jersey Water Supply Authority

Annual Report - 1984



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Monthly Meetings

The 1985 Monthly Meetings of the New Jersey Water Supply Authority are scheduled to be held at 3:00 p.m. in the Conference Room of the Commissioner of the Department of Environmental Protection, Labor and Industry Building, Trenton, New Jersey, on the following Mondays:

January 7, 1985
February 4, 1985
March 4, 1985
April 1, 1985
May 6, 1985
June 3, 1985

July 1, 1985
August 5, 1985
September 9, 1985
October 7, 1985
November 4, 1985
December 2, 1985

Authority Members

Robert E. Hughey
Chairman

Saul K. Fenster
Vice Chairman

Melda C. Snyder
Secretary
Chairman, Consumers Committee

Robert Ferguson
Treasurer
Chairman, Finance Committee

Peggy Haskin
Chairman,
Public Participation Committee

James G. Ton
Chairman,
Capital Projects Committee

Staff

Rocco D. Ricci, P.E.
Executive Director

Michael J. Galley, P.E.
Chief Engineer



NEW JERSEY WATER SUPPLY AUTHORITY

P.O. BOX 5196 • CLINTON, N.J. 08809 • (201) 638-6121

February 28, 1985

To the Honorable Thomas H. Kean, Governor
and Members of the New Jersey Legislature:

Significant progress was achieved during the past year to provide adequate and reliable water supplies for central New Jersey and to complete the preliminary engineering and environmental studies for the proposed Manasquan Reservoir System.

This 1984 Annual Report indicates that the fiscal condition of the Authority is sound. It also reflects the progress being made to clear accumulated sediment from the Delaware and Raritan Canal, thereby restoring its full water carrying capacity, and discusses various aspects of the proposed Manasquan Reservoir System.

During 1985, decisions are to be made regarding the environmental, engineering and economic viability of the Manasquan project. The system is proposed to provide a new water supply for Monmouth County and the northern coastal communities in Ocean County. Should the project be determined to be viable, engineering design work is expected to begin by late summer, leading to an anticipated start of construction by late 1986.

By the end of next year, all contracts for the removal of sediment from the Delaware and Raritan Canal are scheduled to be completed. This completion will represent a major achievement in restoring the availability of a major water supply source for 1,200,000 people in central New Jersey.

Sincerely,

Robert E. Hughey
Chairman

Background

The New Jersey Water Supply Authority, created on October 7, 1981 (*P.L. 1981 c. 293*), is responsible for operating existing State water supply facilities and developing future State water supply projects as recommended in the Water Supply Master Plan. All such facilities must be operated on a self-supporting basis. The existing Spruce Run/Round Valley Reservoir System and the Delaware and Raritan Canal Water Transmission Complex, as described in this report, provide the basic water supply to a number of public and private water utilities serving over 1,200,000 people in central New Jersey.

Record of Progress — The Third Year

The financial statements of the Authority, included in this Report, provide clear evidence of the Authority's sound financial condition and are the outcome of the financial plans and policies put into place by the Authority during the previous year. Continuation of these policies and plans will provide the basis for generating sufficient future revenues to cover all operating expenses, as well as long and short term debt obligations. Toward this end, the Authority has proposed a rate increase, with an effective date of October 1, 1985, to cover the debt associated with the \$20,000,000 sediment removal program for the Delaware and Raritan Canal. During construction the cost of the project has been successfully financed on a short term basis by the issuance of tax exempt commercial paper. Over the past year the Authority has managed this temporary financing program with very positive results. Substantial savings in interest costs have accrued and this approach has enabled the Authority to defer the required rate increase for this construction program until the fall of 1985, approximately two years after the start of construction.

Three contracts have been awarded for the removal of sediment from the Delaware and Raritan Canal. The work, which covers 32 miles of the Canal from the Prallsville Lock in Stockton Borough to the Kingston Lock in South Brunswick Township, was about 50% completed by the end of 1984. When completed by the end of 1985, the full water carrying capacity of the Canal will have been restored.

Several other projects under the Authority's capital improvement program also progressed during the year. These include measures to provide more effective canal flow control, essential culvert and facilities rehabilitation, and the rerouting of storm flows which deposit flow restricting sediment in the waterway. Most of these projects should be under actual construction by mid-1985.

Engineering also commenced on the siren warning system to be put in place as part of the emergency response program for the dams located at Spruce Run and Round Valley and for the flow monitoring system to be installed in the Raritan Basin to facilitate more effective release of the water stored in the reservoir system. During 1984, construction of improvements to the filter blankets at the North and South Dams of the Round Valley Reservoir were undertaken and completed. Stone rip-rap was also purchased and stockpiled for placement on the upstream face of the Spruce Run Reservoir dam.

The consultants retained by the Authority for the Manasquan Reservoir System engineering and environmental studies were completing their reports by the end of the year. This project, if it is determined to be viable, will provide badly needed water in Monmouth County and the northern coastal communities in Ocean County. This additional supply is required to replace water which is currently obtained by over pumping the ground water resources in the area. The complex studies covering environmental,

technical and economic issues proceeded on an accelerated basis with the effective participation, recommendations and comments of numerous local representatives from various backgrounds. This participation was achieved through an extensive public information/involvement program with a Citizens Advisory Board and seven Task Forces as the centerpiece of the effort. The project has an estimated cost of \$144,500,000, including construction, engineering and financing during construction. The final engineering reports and environmental assessment report will be presented during the spring of 1985 with a final decision anticipated by early summer.

The preceeding discussion highlights the significant progress of the Authority in 1984 as it carried out its responsibilities to satisfy the water supply needs of two major areas in New Jersey. The following sections of this Annual Report provide a more detailed discussion of the Authority's programs, plans, services and financial status.

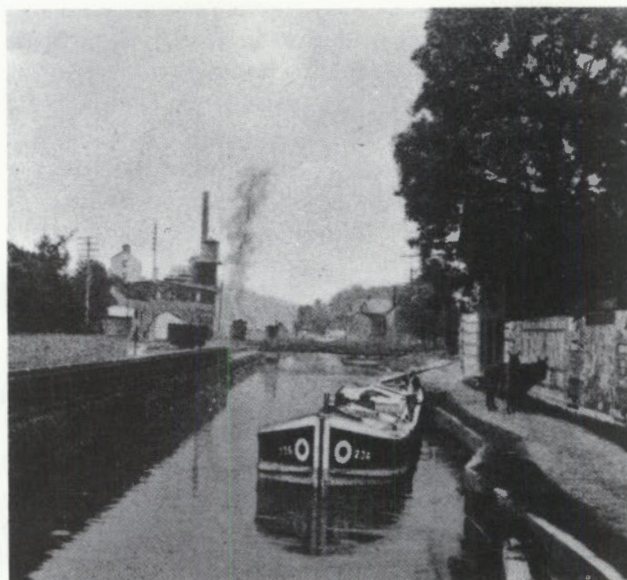
Facilities

Delaware and Raritan Canal

The Delaware and Raritan Canal Water Supply System was originally constructed in 1834 and operated as a barge canal until 1932. In 1974 the Canal was designated as a State Park and was also placed on the State and Federal Registry of Historic Sites.

Originally, the navigable Delaware and Raritan Canal consisted of 43 miles of main Canal between the Delaware River at Bordentown and the Raritan River at New Brunswick and the 22 miles of feeder Canal between Bulls Island, Hunterdon County and the City of Trenton. The present Canal water supply transmission facility is 60 miles long with its Delaware River intake at Bulls Island in Hunterdon County and its outlet at the Raritan River in the City of New Brunswick. The Canal Right of Way varies in width between 60 feet and 200 feet and includes a waterway varying between 40 and 80 feet. Flow from the Delaware River to the Raritan River is entirely by gravity and is regulated by control gates installed in the original lock structures.

In addition to the 100 million gallons per day (mgd) diversion entitlement from the Delaware River, 39 natural streams and approximately 40 storm drains are directly tributary to the Canal. Four Authority Canal Flow Controlmen, with 24 hour responsibility on their own initiative to take emergency action, constantly monitor water levels and weather conditions and adjust operating gates and open flood gates during times of heavy rainfall.



A mule drawn barge on the Canal at Lambertville. Originally opened for navigation in 1834, the Canal has been in existence for 150 years.

Spruce Run and Round Valley Reservoirs

The Spruce Run and Round Valley Reservoirs located in Hunterdon County were constructed by the State of New Jersey as initial steps in the long-range water conservation and development program authorized by the 1958 Water Supply Law and its companion Water Bond Act.

The 55 billion gallon Round Valley Reservoir, which became operational in 1965, was formed by construction of two dams and a dike, closing off gaps in a natural horseshoe rim-shaped valley. The earth dams and dike, faced with dumped stone riprap and sod, are of extra width, each with a clay core "off-center" to permit an increase in height for additional

storage capacity. With no appreciable local drainage area (five square miles), Round Valley Reservoir must be filled by pumping from the South Branch of the Raritan River. Minimum flows must be maintained in natural streams downstream of the Reservoir, and a total of one mgd is released from both the North and South Dams. A 108-inch diameter Release Pipeline which was completed in 1977, provides a discharge at the South Branch of the Rockaway Creek, through the Energy Dissipator, near Whitehouse Station in Readington Township.

The 350 mgd South Branch Pumping Station at Hamden, which pumps surplus waters from the South Branch of the Raritan River, maintains the storage in Round Valley Reservoir via a 3.2 mile nine foot diameter force main which enters the reservoir at the South Dam.



Canal company workboats regularly maintained the waterway.

The 11 billion gallon on-stream Spruce Run Reservoir, which was placed into operation in 1963, includes a 6,000 foot long earthen dam and two earthen dikes. A concrete spillway having a safe discharge capacity of 15.5 billion gallons per day provides protection for the earthen dams during periods of heavy rainfall.

The two reservoirs, by augmenting streamflow during periods of low natural runoff, make available 160 mgd for sale at Bound Brook based on the 1960's drought. Additionally, a minimum statutory flow of 90 mgd must be maintained in the Raritan River at the Bound Brook stream gage. For these purposes, waters are released from the Spruce Run Reservoir to the South Branch of the Raritan River and from the Round Valley Reservoir to the South Branch of the Rockaway Creek, for routing to the Raritan River. Operation by the Authority staff involves maintenance of continuous hydrographs on the basis of data transmitted from six stream gaging stations. Predictions of natural flow at these control points, including anticipated storm runoff, must be made sufficiently in advance to allow for time of travel so that the releases meet minimum streamflow regulation and customer demands.

The 1958 Water Supply Law allows recreational use of the water supply facilities. The cost of the recreational facilities is provided and administered by the Department of Environmental Protection's Division of Parks and Forestry and Division of Fish, Game and Wildlife.

Raritan Basin to Delaware and Raritan Canal Interconnection Pumping Station

This 60 million gallons per day interconnection pumping station, located where the Raritan and Millstone Rivers meet adjacent to the Canal near South Bound Brook, represents the first major step in the plan to achieve an integrated management program for the water resources of the Raritan Basin and the water diverted from the Delaware River. Integration of the two systems provides for the maximum conservation of stored Raritan Basin water during periods when surplus water is available in the Delaware and Raritan Canal. When the Canal has been restored to its carrying capacity of 100 mgd, it will be possible to use any excess flows, up to 30 mgd, for diversion into the Raritan Basin. These diversions for water supply will result in the maximum conservation of stored waters in Spruce Run and Round Valley Reservoirs. Full development of the maximum possible yields, resulting from the integrated management of the water from the two basins, at least cost, is vital to meeting the water supply needs of Middlesex County and other central New Jersey areas dependent upon these sources of supply.



Four electric pumps with a combined capacity of 60 million gallons daily transfer Raritan River water to the Canal as needed at the interconnection pumping station near South Bound Brook.

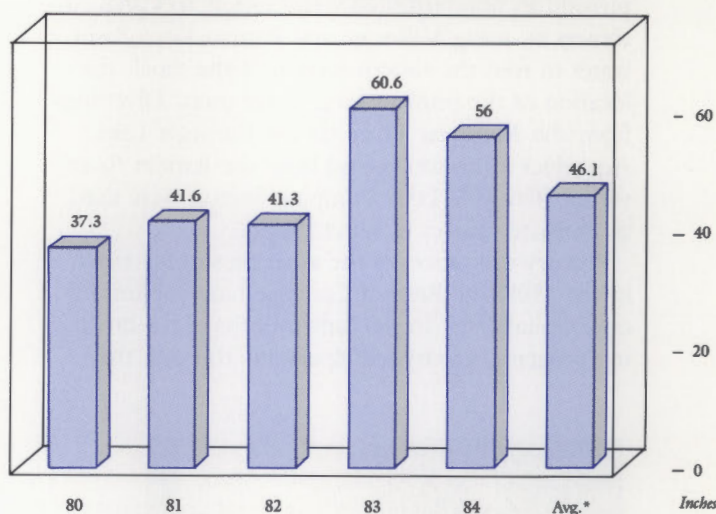
Lake Hopatcong Interconnection Facilities

A 25 million gallon per day pumping station and 13,200 feet of 800 millimeter (approximately 32 inch) diameter pipe were constructed by the State during the 1980-81 drought to convey an emergency water supply from Lake Hopatcong in the Delaware Basin to the Rockaway River in the Passaic Basin. The Department of Environmental Protection has determined that this interconnection should be retained and maintained in standby condition to assure its availability in the event of a future drought requiring a similar diversion. Based upon an agreement with the Department of Environmental Protection to provide funding, the Authority has accepted responsibility for the maintenance of these facilities.

Operations and Maintenance

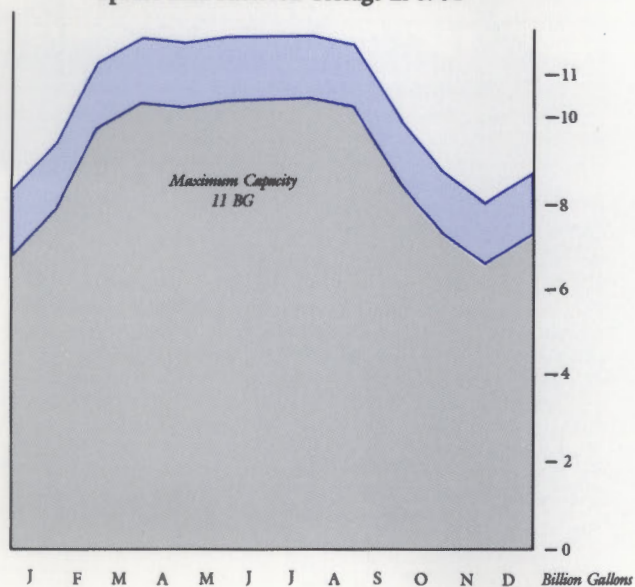
Due to the wet spring and early summer, 1984 was a year of better than average precipitation throughout the watershed. Abundant natural stream flows allowed the Spruce Run Reservoir to remain at its full 11 billion gallon capacity into the month of August without the need to release water in storage to meet water customer requirements. Storage in the Round Valley Reservoir also increased by 4.0 billion gallons during 1984. On the other hand, the persistent rainfall experienced during the spring and early summer created delays in the D & R Canal Sediment Removal Program by repeatedly refilling sections of the Canal which had been drained. At the Spruce Run Reservoir the planned placement of new stone rip-rap at certain locations on the upstream face of the dam had to be deferred since the reservoir level was not drawn down during the summer as anticipated.

Spruce Run — Round Valley Reservoirs Rainfall

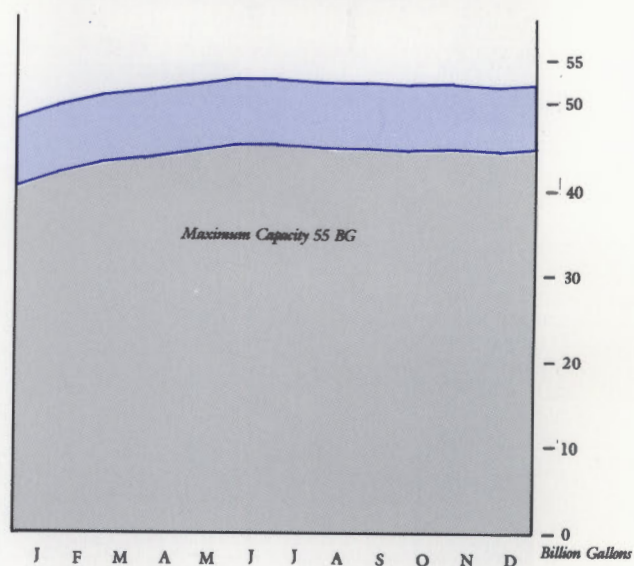


*Average annual rainfall for 23 year period of record.

Spruce Run Reservoir Storage in 1984



Round Valley Reservoir Storage in 1984



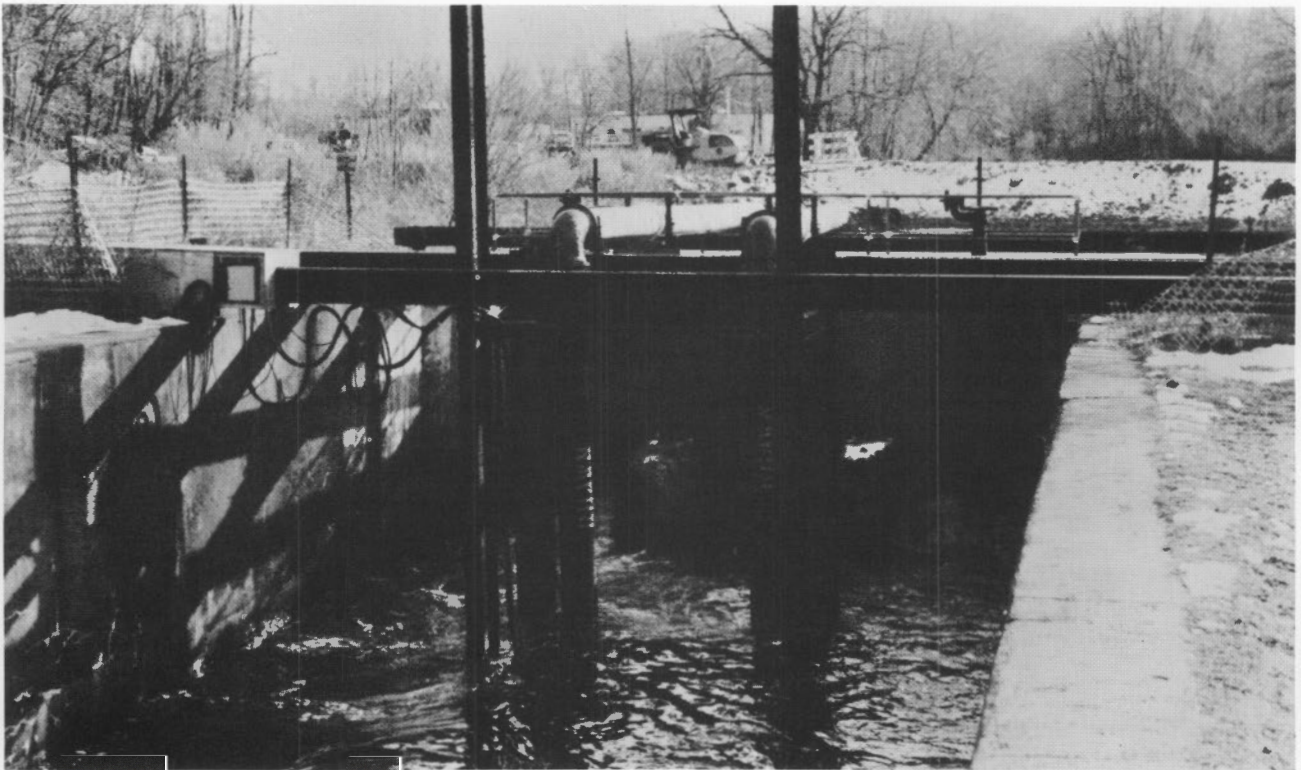
D & R Canal Water Supply

Water diversions from the Delaware River into the Canal were suspended in the spring of 1984 to facilitate the sediment removal program. As a result, an alternate Canal operational plan was implemented to provide an uninterrupted water supply to Canal customers by using Millstone and Raritan River Basin water to feed the eastern section of the canal, the location of the primary canal water users. Diversions from the Millstone River via the Carnegie Lake Aqueduct in Princeton and from the Raritan River via the Ten Mile Lock Pumping Station were used as alternate sources of water supply.

Primary utilization of the available surplus water in the Millstone River at Carnegie Lake minimized operational costs. In the early months of the dredging program, gravity-fed diversions through the

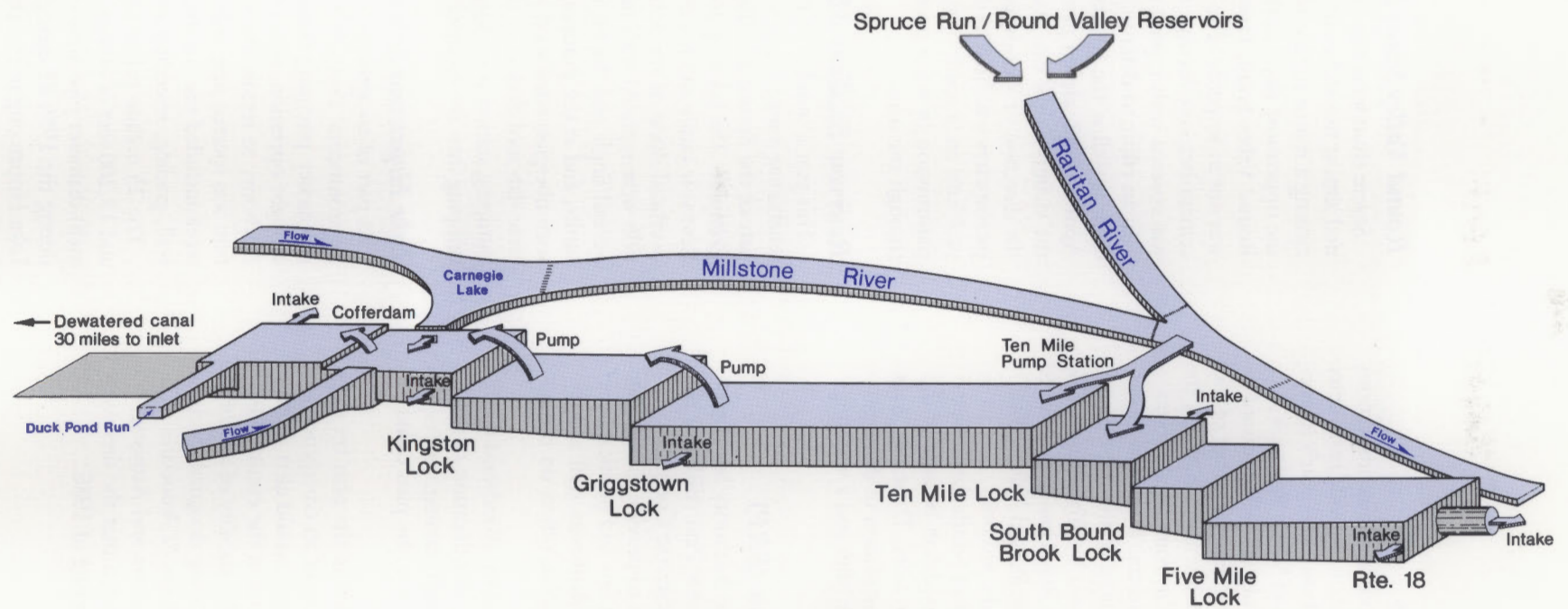
Carnegie Lake Aqueduct, supplemented by a few small streams, provided an adequate supply of water to meet contractual demands.

When natural flows in the Millstone River at the aqueduct diminish, the Ten Mile Pumping Station is placed into operation. As required, releases are made from the Spruce Run/Round Valley Reservoirs system to provide sufficient water for the Ten Mile Pumping Station operation. Upstream users are serviced by pumps with a total capacity of 18 million gallons per day (mgd) at the Kingston and Griggstown Locks and two diesel-driven pumps with a capacity of two mgd each at the temporary Harrison Street cofferdam.



While the Canal is dewatered for sediment removal purposes, these temporary electric pumps must lift water over the Kingston Lock to upstream users.

Alternate D & R Canal Operational Plan



Annual Dam Inspection

The Authority conducts formal annual inspections of its dams and appurtenances to provide early detection of any developing problems. This year's inspection of the Spruce Run/Round Valley Reservoir facilities was conducted on July 19 by Woodward-Clyde Consultants, assisted by representatives of the Authority Operations and Maintenance staff and the New Jersey Department of Environmental Protection, Division of Water Resources, Bureau of Flood Plain Management. The findings of the inspection, as outlined in a report prepared by Woodward-Clyde Consultants, rate the Spruce Run Dam and Dikes to be in "good" condition. The Round Valley Dike was also found to be in good condition.

The Round Valley North and South dams were considered to be in "fair" condition because of the wet areas on the downstream faces. These wet areas are being corrected by the installation of drainage blankets consisting of a stone filter and a surfacing of topsoil.

Emergency Response Plan (ERP)

After years of planning, the Authority has implemented an Emergency Response Plan (ERP) for the Spruce Run/Round Valley Reservoir Complex.

The purpose of the ERP is to provide timely identification of emergency situations and notification of essential personnel from the Authority staff and the emergency planning and response offices on the state, county and municipal levels.

The basic ERP was prepared by Woodward-Clyde Consultants in 1982 with an identification of the required additional staffing, staff training, and equipment which were essential before the plan could be fully implemented.

The only item recommended in the plan yet to be implemented is the installation of an emergency siren notification system. This system would alert immediate downstream communities in the event of an emergency which threatens the stability of any of the dams. A system is currently being designed by the engineering firms of Louis Berger & Associates together with Dresdner Associates and Acoustic Technology, Inc. It is anticipated that the siren system will be installed in the spring of 1985.

Round Valley South Dam Tension Crack

Severe thunderstorms on July 5th and 7th deposited almost five inches of rain in Hunterdon County causing a minor surface tension crack to occur in the uppermost slope of the downstream face of the Round Valley South Dam. The integrity of the dam was not in jeopardy. The crack was filled with a cement-betonite mixture to prevent expansion and was covered with topsoil to restore the area.

In an effort to determine the cause of the tension crack as well as the adjacent slump which occurred in April of 1983, eleven piezometers were installed in the vicinity of the east abutment of the dam under the direction of Woodward-Clyde Consultants. The piezometers will help to determine whether the problems are a result of poor surface drainage or the transmission of water from the hillside abutment through the dam.

Reservoir Facilities Maintenance Program

This year a number of projects were undertaken to rehabilitate various structures which are an integral part of the Spruce Run/Round Valley Reservoir Complex. The built-up roofs at the Round Valley Reservoir vaults and towers were replaced and the overhead doors at the South Branch Pumping Station were replaced with insulated overhead doors. Several single and double entry doors in the towers, vaults, and at the pumping station were also replaced with fiberglass reinforced plastic doors, and the concrete slab roof deck over the electrical room at the pumping station was sealed to prevent water from dripping into the electrical room.

Lake Hopatcong Interconnection Facilities

As part of an agreement with the Department of Environmental Protection to secure the 25 mgd emergency pumping facility for possible future drought operation, funds were provided for the Authority to restore the area where the pumping station was located near the lake's edge. The restoration work included the construction of a stone retaining wall, grading, reseeding and other site work.

The 25 million gallon per day pumping station and 13,200 feet of 800 millimeter (approximately 32 inch) diameter pipe were constructed by the State during the 1980-81 drought to convey water from Lake Hopatcong in the Delaware Basin to the Rockaway River in the Passaic Basin.

Six Mile Run Culvert Repairs

Heavy rains and subsequent high flood waters in May of 1984 caused the upstream headwall of the 150 year old Delaware and Raritan Canal Six Mile Run Culvert to collapse. Although some minor repairs had been made in the past, the poor structural condition of the headwall had been further aggravated in recent years by more and heavier traffic along Canal Road in Franklin Township, Somerset County.

Recognizing the seriousness of the situation, the Authority adopted a resolution at the June 4, 1984 meeting to engage Elson T. Killam Associates on an emergency basis to investigate the failure of the culvert headwall and design the necessary structural rehabilitation of the upstream headwall.

A construction contract was subsequently awarded to R. A. Hamilton Corporation of Hackensack, New Jersey for \$247,250. The construction activities provided a unique opportunity to inspect and examine each of the three barrels of the culvert. The stone arch barrels with wooden flooring were found to be in very good condition except for some isolated areas. Authority maintenance forces made necessary mortar repairs to the stone arch structure and removed silt bars from within each barrel.

The completion of this project eliminated a dangerous condition along Canal Road and also prevented any further deterioration of the Six Mile Run Culvert itself.



Repairs under way at the Six Mile Run Culvert in Franklin Township.



The restored Six Mile Run Culvert headwall maintains an historic appearance.

Capital Improvements Projects

Significant progress was achieved in several projects to improve the facilities of the Raritan Basin Reservoirs and the Delaware and Raritan Canal. These projects will help to ensure the reliability of this vital water supply to approximately 1,200,000 people in central New Jersey.

Work under *Contract I*, the first of three contracts awarded for the removal of sediment from the Delaware and Raritan Canal was well underway in 1984 and completion is scheduled for the fall of 1985. Work under *Contract III* was awarded on May 2, 1984 and will be completed ahead of schedule in the spring of 1985. *Contract II* was awarded on October 26, 1984 and work was started in November. These three contracts will remove approximately 700,000 cubic yards of sediment from 32 miles of the Canal between the Prallsville Lock and the Kingston Lock. Final completion of all work is expected in the fall of 1985.

The Authority's third year included the continuance of an important Capital Improvement Program involving the Spruce Run and Round Valley Reservoir Dams. This program was undertaken as a result of a Federal Dam Safety Inspection and Evaluation carried out by the U.S. Army Corps of Engineers.

Further, the Authority's third year saw the initiation of the first Five Year Capital Improvement Program to systematically repair and/or improve the physical facilities in an orderly and fiscally sound manner.

Delaware and Raritan Canal Sediment Removal Project

During 1984, work on the removal of approximately 700,000 cubic yards of sediment from 32 miles of the Canal was well underway.

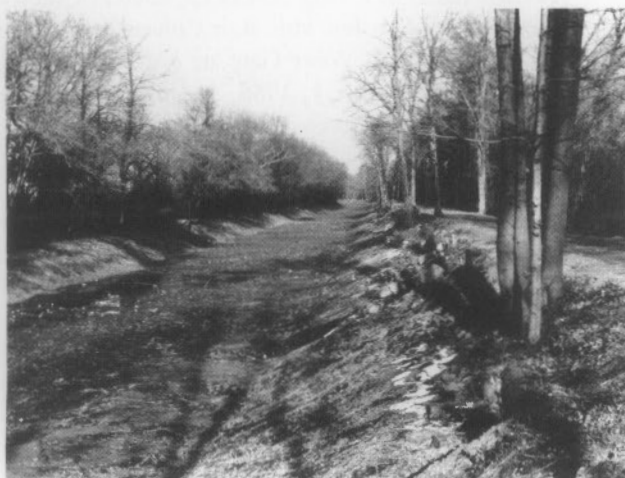
The Contractor's activities on *Contract I* were behind schedule for the first half of the year. However, work production increased significantly in the latter half of 1984. *CONTRACT I* covers the 16 mile reach from *MOORES CREEK*, Hopewell Township to *DUCK POND RUN* in West Windsor Township. The contract was awarded to D'Annunzio Constructors Corporation, Scotch Plains, New Jersey, at a cost of \$8,770,175. The work also includes the installation of soil anchors for the replacement and refurbishment of 8,000 feet of Canal bulkhead through the City of Trenton, and the automation of the Perdicaris Place Waste Gate for better flow control of storm water in the City of Trenton.



This dewatered section of the Canal graphically illustrates the sediment accumulation in the Canal.



Contractor removing sediment from dewatered Canal.

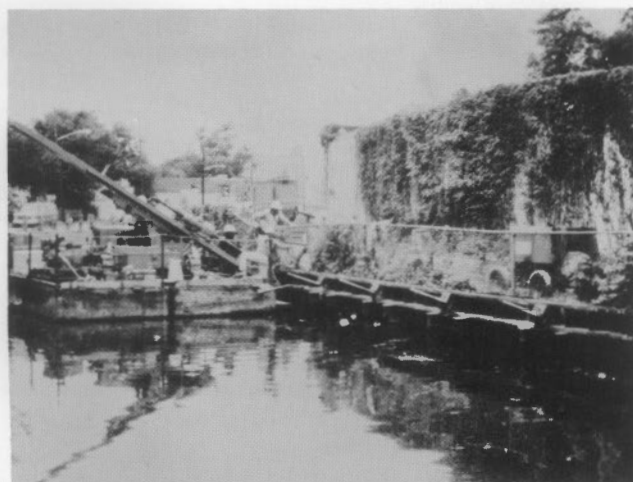


A restored section of the Canal in Lawrence Township.

CONTRACT III, which was started in the spring includes the removal of 150,000 cubic yards of sediment from the upstream 7.5 miles between *PRALLSVILLE LOCK* in Stockton Borough and *MOORES CREEK* in Hopewell Township. *CONTRACT III* was awarded to Conti Construction Company of South Plainfield, N. J., at a cost of \$3,093,093.

During an early Canal dewatering for inspection purposes, an old Canal work barge was found in the mud some 325 feet downstream of the Prallsville Lock in the Borough of Stockton. It was archaeologically measured and protected until it was retrieved in one piece by Conti Construction Co. It is being stored by the State's Office of New Jersey Heritage. Other historical features restored or protected include: repairs to the Brookville Flood Gate near the Borough of Stockton and the removal and the recording of dimensions of all members of a structurally unsound railroad trestle near Moores Creek in Hopewell Township.

On October 26, 1984, *Contract II* was awarded to Conti Construction Co. in the amount of \$4,767,767. The work under *CONTRACT II* involves the removal of 200,000 cubic yards of sediment from the downstream 8.5 miles from *DUCK POND RUN* in West Windsor Township to *KINGSTON LOCK* in South Brunswick Township and the installation of a slurry wall to improve the stability of the towpath embankment between the Canal and adjacent Carnegie Lake, running from the Millstone River Aqueduct to the Carnegie Lake Dam. Work by the contractor was started in November with an estimated completion by the latter half of 1985.

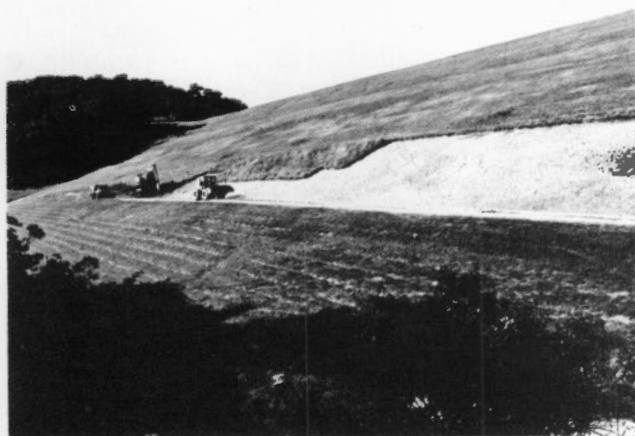


Rehabilitation of the steel bulkhead of the Canal in the city of Trenton.

Dam Safety Program

The Authority's Consulting Engineers developed plans and specifications for the construction of filter blankets to control surface drainage for the downstream faces of the North and South Dams at Round Valley Reservoir. Competitive bids were received on June 28 and a contract was awarded to Amwell Utility Contractors, Inc. of Somerset, N. J. at a cost of \$174,940. During the course of the project the amount of the work was increased by \$52,000.

In addition, the Consulting Engineers developed plans and specifications for the multi-phased, stockpiling and later placement of stone rip-rap on the face of the Spruce Run Reservoir Dam. The Phase I rip-rap procurement work was awarded to Conti Construction Co. of South Plainfield, N. J. at a cost of \$274,500. The stone purchased under this contract has been stockpiled at the dam site. Due to heavy spring and summer rains, the anticipated reservoir drawdown of storage to supply customers affected by the Delaware and Raritan Canal Sediment Removal Project did not occur and the first phase placement of stone rip-rap was deferred until 1985.



Installation of drainage blanket on the downstream face of the Round Valley North Dam.

Five Year Capital Improvement Program

Engineering is underway for the design and construction of other projects under the first Five Year Capital Improvement Program. This work will be partially financed from monies already appropriated from the 1976 Clean Water Bond Fund.

Engineering contracts were awarded to Camp Dresser & Mc Kee, Inc. for a feasibility study to investigate the elimination of storm water from the Delaware and Raritan Canal water supply system at the U. S. Route 1 Conduit in Trenton; to Tippetts-Abbett-McCarthy-Stratton for the professional engineering design needed for the rehabilitation of the Ten Mile Run Culvert on the Delaware and Raritan Canal in Franklin Township, Somerset County, New Jersey; and to Malcom Pirnie, Inc. for professional engineering services needed to design new waste gates in the vicinity of Scudders Falls on the Delaware and Raritan Canal in Ewing Township, Mercer County, New Jersey. The Ten Mile Run Culvert repairs and the Scudders Falls Waste Gate are estimated to go to construction by July 1, 1985, and the Storm Water Bypass Feasibility Study is to be complete by January 1985.

The major focus of the first Five Year Capital Improvement Program is the continuance of facilities rehabilitation, especially for the Delaware and Raritan Canal. The following table presents the current listing of these planned projects.

New Jersey Water Supply Authority
Five Year Capital Improvement Program
July 1, 1985 - June 30, 1990

Rev. 1/8/85

PROJECT	FIVE YEAR PROGRAM						FUNDING SOURCE
	FY85	FY86	FY87	FY88	FY89	FY90	
1. RV North & South Dam Filter Blankets	C \$226,940*						1969 Bond Funds
2. SR Rip-Rap Replacement — Phase I Purchase/Install	C 274,500*	C \$ 100,000(1)					1969 Bond Funds
3. ERP Sirens (SR/RV)	D 82,427*						1969 Bond Funds
	C 160,000						1969 Bond Funds
TOTAL (1969 Bond Funds)	743,867	100,000					
4. U.S. 1 Conduit Stormwater Bypass (DRC)	FS 59,910*	C 500,000(2)					1976 Bond Funds
5. Ten Mile Run Culvert (DRC)	D 100,000						1976 Bond Funds
6. Scudders Falls Waste Gate (DRC)	D 246,113*	C 1,000,000					1976 Bond Funds
	C 400,000						1976 Bond Funds
7. (a) Alexaukin Creek Aqueduct	D 30,000						1976 Bond Funds
(b) Swan Creek Aqueduct	C 270,000						1976 Bond Funds
(c) Carnegie Lake Aqueduct (DRC)							1976 Bond Funds
8. (a) Griggstown Waste Gate	D 60,000	C 525,000					1976 Bond Funds
(b) Kingston Lock							1976 Bond Funds
(c) Head Gates (DRC)							1976 Bond Funds
9. (a) Titusville Culvert	D 25,000						1976 Bond Funds
(b) Jacobs Creek Culvert (DRC)	C 250,000						1976 Bond Funds
TOTAL (1976 Bond Funds)	1,486,023	2,025,000					
10. Passaic Street Guardrail (DRC)	D/C 50,000						Rehab Fund
11. DRC Stockpile Areas	D 20,000	C 100,000					Rehab Fund
12. Brookville Flood Gate (DRC)	(Incorporated into D&R Canal Sediment Removal Project — Cost \$30,487)						
13. Lambertville House Rehabilitation (DRC)	C 16,000						Rehab Fund
14. Kingston House Rehabilitation (DRC)	C 6,000						Rehab Fund
15. SBPS Pumping Station Roof	D/C 75,000		D/C \$ 75,000				Rehab Fund
16. RV Observation Wells	C 52,000						Rehab Fund
17. Langenfelder Storage Area (RV)	C 6,500*						Rehab Fund
18. Hamden Intake Dredging (SBPS)	D 25,000	C 250,000					Rehab Fund
19. Rehabilitation of Flood Gates — Delaware River & Five Mile Lock (DRC)		FS 25,000	D/C 400,000				Rehab Fund
20. Tattersall Wall Repair (DRC)	(To be incorporated into D&R Canal Sediment Removal Project)						
21. Washington Crossing Spillway & Waste Gate (DRC)	C 25,000						Rehab Fund
22. Glen Afton Fencing (DRC)	C 40,000(3)						Rehab Fund
23. Instrumentation Raritan Basin	D 47,667*						Rehab Fund
	C 55,000						Rehab Fund
24. Six Mile Run Culvert Repairs (DRC)	D/C 300,000*						Rehab Fund
25. South Dam Repairs (RV)	D/C 40,000*						Rehab fund
26. Siltation Control Study (DRC)		FS 150,000					Rehab Fund
27. Storage Building 40' x 70' (RV/SR)	D/C 60,000						Rehab Fund
28. SR Rip-Rap Replacement — Phase I Install	C 173,000						Rehab Fund
29. Administration Building Roof (RV/SR)	D/C 130,000	D/C 70,000					Rehab Fund
30. Bridge & Pier Removal (DRC)	D 10,000	C 50,000					Rehab fund
31. Kingston Flood Gate (DRC)	D 10,000	C 90,000					Rehab Fund
32. RV Roads		D/C 70,000					Rehab Fund
33. Fiddlers Creek Culvert Lining (DRC)			D/C \$110,000				Rehab Fund
34. SR Roads			D/C 70,000				Rehab Fund
35. Ten Mile Lock Flood Gate (DRC)				D/C \$ 90,000			Rehab Fund
36. Administration Building Roads (SR/RV)				D/C 40,000			Rehab Fund
TOTAL (Rehabilitation Fund)	758,167	908,000	755,000	180,000	130,000		
37. SR Rip-Rap Replacement — Phases II & III		D 200,000	C 500,000	C 1,000,000	C 1,000,000		To Be Determined
38. Lumberville Wing Dam (DRC)	D 95,000	C 1,000,000					To Be Determined
39. Shipetaukin Creek Culvert (DRC)	D 50,000	C 800,000					To Be Determined
40. Port Mercer Dike & Flood Guard Bank (DRC)		D 115,000	C 1,100,000				To Be Determined
41. U.S. 1 Conduit Stormwater Bypass (DRC)	C 500,000						To Be Determined
TOTAL (Funding to be Determined)		645,000	2,115,000	1,600,000	1,000,000	1,000,000	
GRAND TOTAL	\$2,988,057	\$3,678,000	\$2,870,000	\$1,780,000	\$1,130,000	\$1,000,000	

*Contract awarded — completed or nearing completion

(1) Installation will utilize \$100,000 from 1969 Bond Funds and \$173,000 from Authority Rehabilitation Funds (see project No. 28)

(2) Construction will utilize \$500,000 from 1976 Bond Funds and \$500,000 from sources to be determined (see project No. 41)

(3) 50% funding by others

SR — Spruce Run Reservoir

RV — Round Valley Reservoir

DRC — Delaware & Raritan Canal

SBPS — South Branch Pump Station

FS — Feasibility Study

D — Design Cost

C — Construction Cost

D/C — Design and Construction Cost

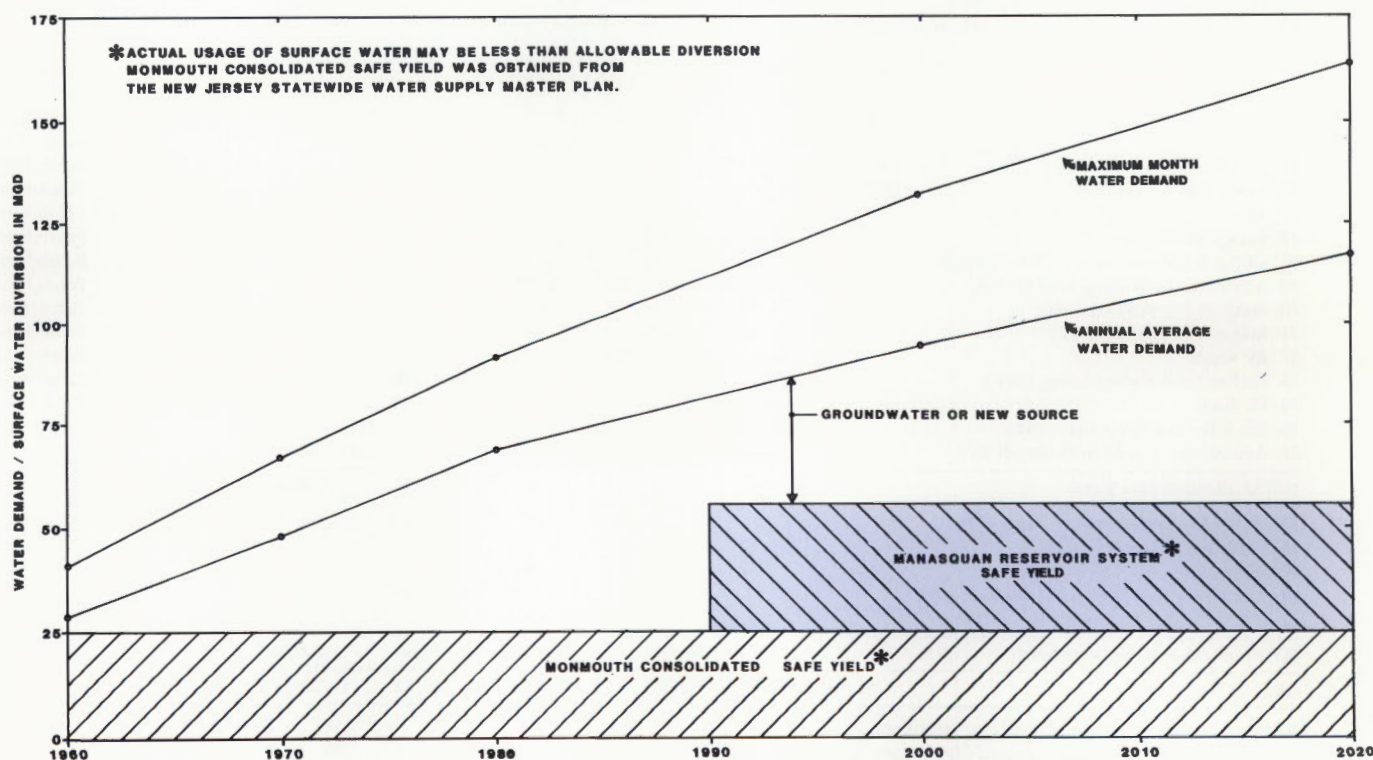
Manasquan Reservoir System

Proposed Water Supply for Monmouth County and Northern Coastal Area of Ocean County.

Monmouth County and the northern coastal area of Ocean County are greatly dependent upon the use of ground water for water supply. Over the past 25 years, this region has been steadily increasing its use of ground water, to the point where today about 45 million gallons of ground water are being used daily on average, an increase of 150 percent since 1960. The result is that ground water levels have been decreasing at an alarming rate. The Manasquan Reservoir System, if it is determined to be viable, could add 30 million gallons a day of surface water to meet

the needs of the region, and that would help alleviate the current over-dependence on the fragile ground water resource. Average total water consumption in the region is projected to grow from the current rate of 69 million gallons per day to 95 million gallons daily by the year 2000, a 38 percent increase, according to results of the feasibility study which has been underway since the fall of 1983.

Metcalf & Eddy, Inc. is heading up the team of engineering and management consultants engaged by the Authority to study the feasibility of proceeding

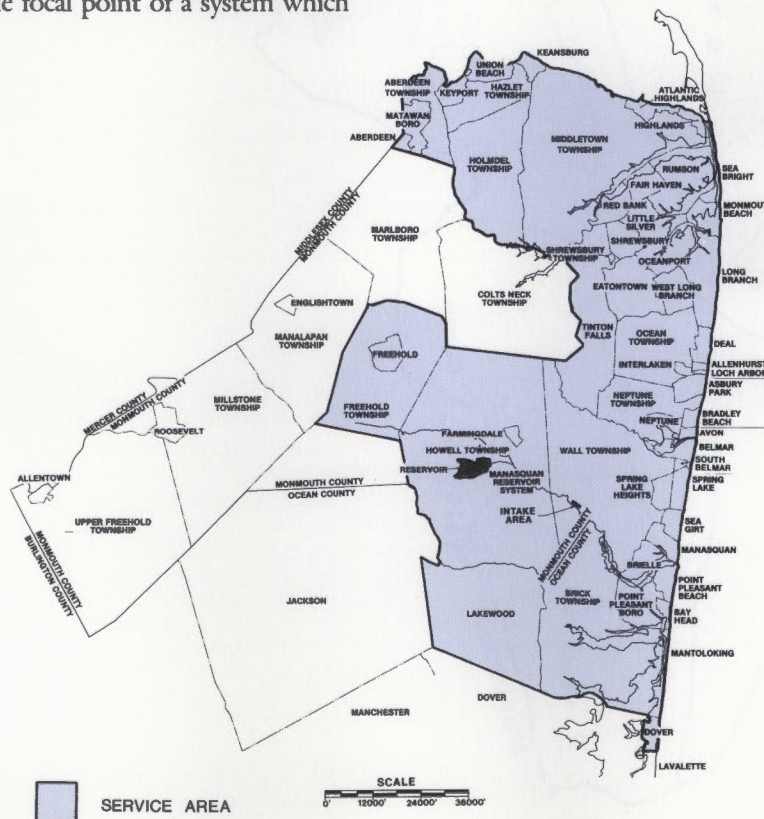


*Manasquan Reservoir System Study Area
Water Demands And Surface Water Safe Yields*

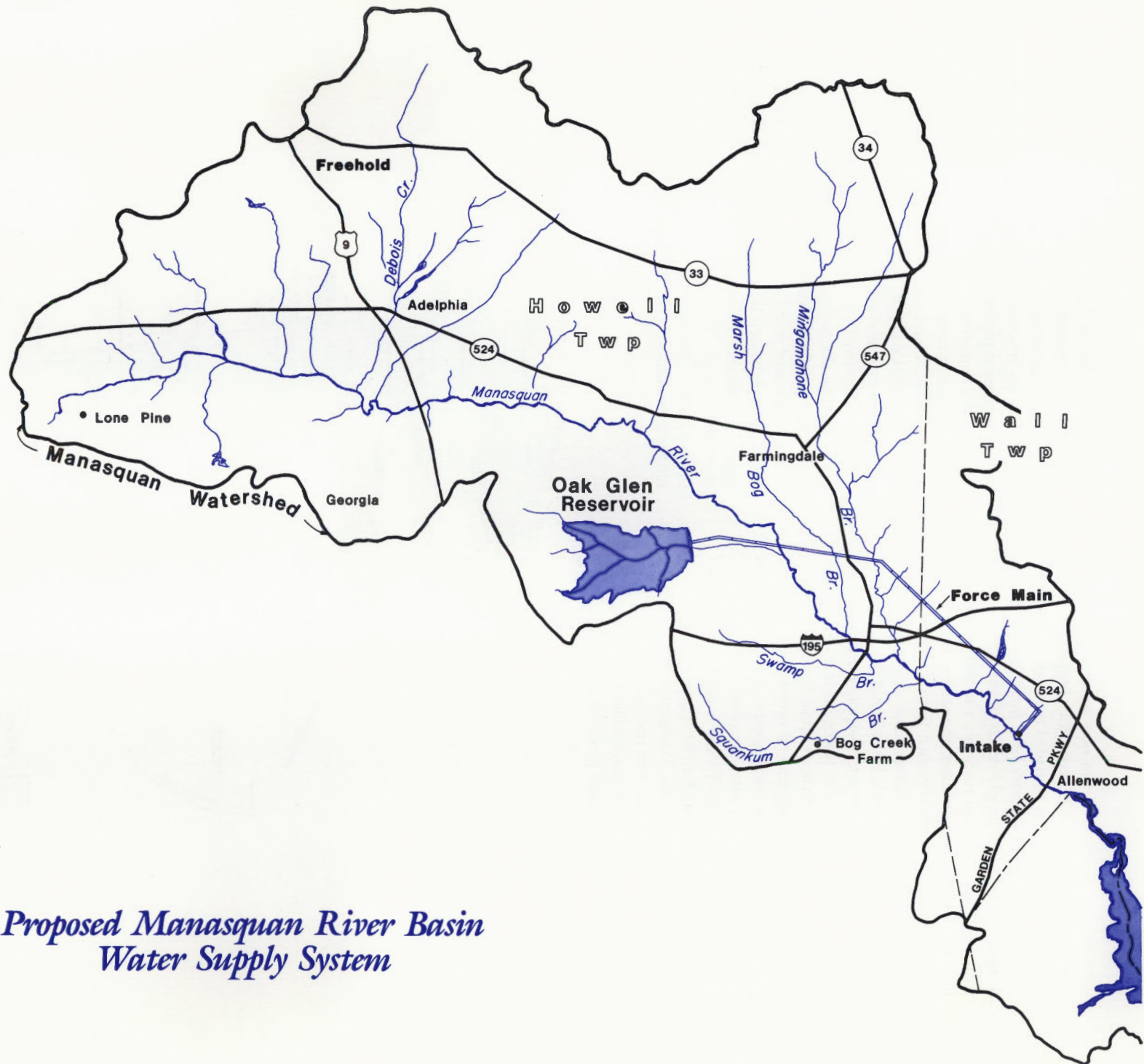
As presently planned, the Manasquan Water Supply System includes a 740 acre reservoir in Howell Township that would hold four billion gallons of water and become the focal point of a system which

These facilities have an estimated construction cost (1984 dollars), exclusive of engineering, financing and other development costs of \$90,800,000.

The development of the many consultant reports which address the technical, environmental, financial issues and questions, has benefitted from the significant involvement of a Citizens Advisory Board. This 16 member Advisory Board, and its seven task forces, represent a broad cross-section of the region's population and interests. They have reviewed interim and draft reports of the Consultants and have provided recommendations on all aspects of the feasibility study.



Manasquan Reservoir System Recommended Service Area



*Proposed Manasquan River Basin
Water Supply System*

Financial Management

Through the continued implementation of the sound set of fiscal policies introduced during 1983 and the exercise of firm financial management, the financial position of the Authority continued to be healthy during 1984 and the Authority was able to accomplish its goals during the year. A most significant factor was the implementation of the policy governing the flow of funds which gave the Authority the ability to meet reserve fund requirements as planned and approved by the Authority in the budgets for fiscal years 1984 and 1985. In this manner the Authority has in place a financial system that enables it to face unplanned and unforeseen financial outlays without sudden and serious impact on the water users. The reserves set up for rehabilitation, pumping and the replacement of equipment are primarily intended to accomplish this objective. During 1984 a portion of the funds accumulated in the rehabilitation reserve were needed to repair a minor surface tension crack on the downstream face of the South Dam of Round Valley Reservoir and a washout of the Delaware and Raritan Canal Six Mile Run Culvert Headwall. The cost to cover these emergencies was \$40,000 and \$300,000, respectively. The availability of the funds from the rehabilitation, pumping, and renewal and replacement reserves, and a sound fiscal management program, have contributed to the stabilization of the Operation and Maintenance rate. As a result, there will be no need for a rate increase for the Operation and Maintenance portion of the rate base through June 30, 1986.

During 1984 the Authority also reached settlements with three water users concerning revenues withheld during the 1980-81 drought period. Most of the \$81,042.50 in agreed upon payments has been collected and these funds helped to replenish the reserve accounts.

Contracts were negotiated with the three Raritan Basin non-depletive water users which added a total of 5.0 mgd to the Operations and Maintenance rate sales base. However, this increase was offset somewhat due to a reduction in the Union Carbide Corporation allocation from 3.0 mgd to 0.720 mgd upon renewal of its Canal Contract DR-33C effective March 1, 1984.

The Tax-Exempt Commercial Paper (TECP) Program used during construction to finance the dredging of the Delaware and Raritan Canal was increased to \$20,041,000 in August 1984 based upon the approval of an additional appropriation in the amount of \$5,550,000 from the Water Supply Bond Fund. The TECP has been successfully implemented by the Authority since the start of the Canal dredging program in the Fall of 1983. Through September 30, 1984 the net earning of the TECP, which is the interest earned on monies invested over the interest cost on the sale of short term notes, plus other expenses, was \$320,000. The TECP Program is planned to continue through July 1, 1986. Based upon present cash flow projections through September 30, 1985, the continuation of the TECP Program for the first 2-year period should show a net construction period interest cost of less than 3.00%. The TECP Program has greatly reduced the interest costs to our customers during construction and has enabled the work on the dredging of the Delaware and Raritan Canal to proceed without an increase in the rate schedule for this purpose. The TECP Program will be retired by using 1981 Water Supply Bond Funds to be borrowed from the State Treasurer. This long term debt will be incurred when the final project costs are known and the market conditions are judged to be most favorable for the issuance of long term debt. The Authority has proposed a rate increase of \$41.98 per million gallons, effective October 1, 1985, to cover the long term debt associated with the Delaware and Raritan Canal dredging project.

Summary of Water Use Contracts
as of January 1, 1985
(Million Gallons per Day — mgd)
Delaware and Raritan Canal

User	Potable	Industrial	Irrigation	Total Allotment
Lambertville Water Company	0.200 (1)			0.200
Mercer County Park Commission			0.100 (1)	0.100
Trenton Country Club			0.133 (1)	0.133
SDS Bio Tech Corporation		0.667 (1)		0.667
Total Delaware Basin	0.200	0.667	0.233	1.100 mgd
Vaccaro Brothers			0.200	0.200
Mercer County Park Commission			0.135	0.135
Princeton University (Forrestal)		1.000		1.000
Princeton Nurseries			0.300	0.300
North Brunswick	8.000			8.000
AGI Rubber Company		0.050		0.050
Selody Sod Farms, Inc.			0.100	0.100
Elizabethtown Water Company	32.000			32.000
Union Carbide		0.720		0.720
East Brunswick	4.000			4.000
New Brunswick	10.500			10.500
Johnson & Johnson		2.326		2.326
Middlesex Water Company	10.000			10.000
Total Raritan Basin	64.500	4.096	0.735	69.331 mgd
Total Delaware and Raritan Canal	64.700	4.763	0.968	70.431 mgd

Spruce Run/Round Valley Reservoirs

Tenneco Polymers, Inc.		0.500 (2)		0.500
Johns Manville Sales Corporation		3.500 (2&3)		3.500
American Cyanamid Corporation		1.000 (2)		1.000
Elizabethtown Water Company	70.000			70.000
Middlesex Water Company	10.000			10.000
Total Spruce Run/Round Valley	80.000	5.000	0.000	85.000 mgd
GRAND TOTAL	144.700	9.763	0.968	155.431 mgd*

(1) These users are excluded from payment of the debt service rate component for the Spruce Run/Round Valley Reservoir System.

(2) Non-depletive use.

(3) Annualized allocation.

*NOTE: Since eight of the above contracts provide for demand charge payments for less than a full 365 days per year, the projected annualized Operations & Maintenance and Debt Service rate sales bases for the Fiscal Year starting July 1, 1985 are 153.045 mgd and 149.505 mgd, respectively. It is anticipated that these sales bases will drop to 152.872 mgd and 149.472 mgd for Fiscal Year 1987 (7/1/86 to 6/30/87).

Summary of Fire Standby Contracts
Delaware and Raritan Canal

User	Withdrawal Capacity (gpm)
Friction Division Products, Inc.	1,500
Union Carbide Corp.	4,700

Spruce Run/Round Valley Reservoirs

Tenneco Polymers, Inc.	4,800
Johns-Manville Sales Corp.	1,500
National Starch & Chemical Co.	700
American Cyanamid Corp.	1,000

Auditors Report

Coopers
& Lybrand

certified public accountants

To the Members of the
New Jersey Water Supply Authority

We have examined the balance sheets of the New Jersey Water Supply Authority as of June 30, 1984 and 1983, and the related statements of operations and net income appropriated for reserves and changes in financial position for the year ended June 30, 1984 and for the six months ended June 30, 1983. Our examinations were made in accordance with generally accepted auditing standards and, accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our report dated September 9, 1983, our opinion on the June 30, 1983 financial statements was qualified as being subject to the effects on the June 30, 1983 financial statements of such adjustments, if any, as might have been required had the outcome of the uncertainty regarding title to certain land from the State of New Jersey been known. As described in Note 8, the uncertainty was resolved on August 24, 1984. Accordingly, our present opinion on the June 30, 1983 financial statements, as presented herein, is different from that expressed in our previous report.

In our opinion, the financial statements referred to above present fairly the financial position of the New Jersey Water Supply Authority at June 30, 1984 and 1983, and the results of its operations and the changes in its financial position for the year ended June 30, 1984 and for the six months ended June 30, 1983, in conformity with generally accepted accounting principles applied on a consistent basis.

Our examination was made for the purpose of forming an opinion on the basic financial statements taken as a whole. The Statement of Funds (Cash Basis) is presented for purposes of additional analysis and is not a required part of the basic financial statements. Such information has been subjected to the auditing procedures applied in the examination of the basic financial statements and, in our opinion, is fairly stated in all material respects in relation to the basic financial statements taken as a whole.

Newark, New Jersey
September 21, 1984

Coopers & Lybrand

New Jersey Water Supply Authority
BALANCE SHEETS
June 30, 1984 and 1983

<u>ASSETS</u>	<u>June 30, 1984</u>	<u>June 30, 1983</u>
Utility plant:		
In service, at original cost (Notes 3 and 8)	\$58,448,741	\$58,197,284
Less, accumulated depreciation	<u>8,525,568</u>	<u>7,821,046</u>
Net utility plant in service	49,923,173	50,376,238
Construction work in progress (Notes 3 and 6)	<u>2,679,050</u>	<u>1,507,253</u>
Net utility plant	<u>52,602,223</u>	<u>51,883,491</u>
Current assets:		
Cash	45,542	52,818
Short-term investments	4,126,813	1,896,460
Accounts receivable, less allowance for doubtful accounts of \$5,500 at 1984 and \$150,000 at 1983 (Note 9)	505,582	878,805
Accrued interest receivable	470,806	
Prepaid expenses	50,825	51,545
Other current assets	<u>49,089</u>	<u>72,065</u>
Total current assets	<u>5,248,657</u>	<u>2,951,693</u>
Other assets:		
Restricted investments (Notes 2 and 6)	13,480,034	
Appropriations receivable — State of New Jersey (Note 4)	<u>7,153,726</u>	<u>7,515,216</u>
Total other assets	<u>20,633,760</u>	<u>7,515,216</u>
Total assets	<u><u>\$78,484,640</u></u>	<u><u>\$62,350,400</u></u>

*The accompanying notes are an integral
part of these financial statements.*

New Jersey Water Supply Authority

BALANCE SHEETS

June 30, 1984 and 1983

<u>CAPITALIZATION AND LIABILITIES</u>	<u>June 30, 1984</u>	<u>June 30, 1983</u>
Capitalization:		
Contributed capital	\$48,039,504	\$48,039,504
Net income appropriated for reserves	<u>3,277,868</u>	<u>819,655</u>
Total capitalization	<u>51,317,372</u>	<u>48,859,159</u>
Long-term liabilities:		
Due to State of New Jersey (Note 5)	11,003,777	12,147,990
Notes payable, tax-exempt commercial paper, (Note 6) net of unamortized issuance costs of \$146,043	<u>14,478,957</u>	<u> </u>
Total long-term liabilities	<u>25,482,734</u>	<u>12,147,990</u>
Current liabilities:		
Current portion of payable to State of New Jersey (Note 5)	1,143,352	793,039
Accounts payable	396,116	284,534
Accrued payroll and payroll taxes	112,452	223,680
Accrued interest payable	<u>32,614</u>	<u>41,998</u>
Total current liabilities	<u>1,684,534</u>	<u>1,343,251</u>
Total capitalization and liabilities	<u>\$78,484,640</u>	<u>\$62,350,400</u>

New Jersey State Library

*The accompanying notes are an integral
part of these financial statements.*

New Jersey Water Supply Authority
Statement Of Operations And
Net Income Appropriated For Reserves

	For the year ended June 30, 1984	For the six months ended June 30, 1983
Operating revenues:		
Water sales	\$5,913,375	\$2,594,805
Operating expenses:		
Payroll	1,835,340	836,724
Operations and maintenance	1,125,029	732,825
Fringe benefits	397,673	217,603
Total operating expenses	3,358,042	1,787,152
Income from operations before depreciation	2,555,333	807,653
Depreciation	744,037	356,666
Income from operations	1,811,296	450,987
Non-operating revenues:		
Drought and non-depletive use settlements (Note 9)	486,814	
Interest income	405,289	67,611
Rental income	33,440	26,758
Total non-operating revenues	925,543	94,369
Non-operating expenses:		
Payments to State of New Jersey for interest component of debt service	177,919	124,702
Amortization of financing costs	87,626	
Brokers' fees	13,081	
Total non-operating expenses	278,626	124,702
Net income	2,458,213	420,654
Net income appropriated for reserves, beginning of period	819,655	399,001
Net income appropriated for reserves, end of period	\$3,277,868	\$ 819,655

*The accompanying notes are an integral
part of these financial statements.*

New Jersey Water Supply Authority
Statements Of Changes In Financial Position

	For the year ended <u>June 30, 1984</u>	For the six months ended <u>June 30, 1983</u>
Funds provided by:		
Net income	\$ 2,458,213	\$ 420,654
Add back, items not affecting funds:		
Depreciation	744,037	356,666
Amortization of finance costs	<u>87,626</u>	<u> </u>
Funds derived from operations	3,289,876	777,320
Issuance of tax-exempt commercial paper	291,127,000	
Decrease (increase) in appropriations receivable	361,490	(2,767,187)
Decrease (increase) in accounts receivable, net	373,223	(440,650)
Capital contributed by the State of New Jersey		3,330,000
Increase in accounts payable	111,582	276,849
Decrease in other current assets	22,976	217,985
Decrease in prepaid expenses	<u>720</u>	<u>76,836</u>
Total funds provided	<u>295,286,867</u>	<u>1,471,153</u>
Funds applied to:		
Redemption of tax-exempt commercial paper	276,502,000	
Additions to utility plant in service and under construction	1,423,254	663,332
Decrease in accrued interest payable	9,384	
Payment due to State of New Jersey for bond principal	793,900	186,401
Increase in accrued interest receivable	470,806	
Financing costs of tax-exempt commercial paper	233,669	
Decrease (increase) in accrued payroll and payroll taxes	111,228	(71,436)
Retirement of fixed assets	<u>39,515</u>	<u> </u>
Total funds used	<u>279,583,756</u>	<u>778,297</u>
Increase in cash, short-term and restricted investments	15,703,111	692,856
Cash, short-term and restricted investments, beginning of period	<u>1,949,278</u>	<u>1,256,422</u>
Cash, short-term and restricted investments, end of period	<u>\$17,652,389</u>	<u>\$1,949,278</u>

*The accompanying notes are an integral
part of these financial statements.*

New Jersey Water Supply Authority — Notes to Financial Statements

1. Organization and Operations

The New Jersey Water Supply Authority (the "Authority") is a public body, corporate and politic, constituted as an instrumentality of the State of New Jersey, exercising public and essential governmental functions. The Authority was created by the New Jersey Water Supply Authority Act (the "Act") on October 7, 1981, and in connection with the Act, all water supply facilities owned or operated by the State (Delaware and Raritan Canal Transmission Complex and Spruce Run-Round Valley Reservoir Complex) were transferred to the Authority. Prior to October 7, 1981, the activities now conducted by the Authority were conducted by the "Water Supply Facilities Element in the Division of Water Resources of the Department of Environmental Protection." The Act empowers the Authority to acquire, finance, construct and operate water systems, under certain circumstances and authorizes the issuance of bonds of the Authority and provides for the terms and security thereof. The members of the Authority consist of the Commissioner of the New Jersey Department of Environmental Protection (ex officio member) and six public members appointed by the Governor upon the advice and consent of the New Jersey Senate. The public members represent the agricultural community, industrial water users, residential water users, and private water shed associations.

2. Summary of Significant Accounting Policies

Basis of Accounting

The Authority derives most of its revenues from water user charges and is considered to be an enterprise fund; accordingly, the Authority presents its financial statements on the accrual basis of accounting. Effective July 1, 1983, pursuant to a resolution passed by the Authority on August 1, 1983, certain restricted funds were established as directed by the resolution.

Revenues

Charges for wholesale water usage are established to provide sufficient services, essential repairs and improvements to the utility plant, and repayment of the debt service on certain State bonds used for plant construction. Sales are recognized as revenue after water is used by customers.

Utility Plant

Utility plant is stated at original cost and consists primarily of amounts expended to license, construct, acquire, complete and place in operation the projects of the Authority. Such expenditures include labor, materials, services and indirect costs. Normal maintenance and repair costs are charged to operations and maintenance expense. Major repairs, improvements and replacements are capitalized. Interest earned on tax-exempt commercial paper used for utility plant construction and temporarily invested during the construction period is offset to the amount of interest expense incurred with the excess being offset against construction work in progress. The cost of utility plant retired and any gain or loss on the disposal of such utility plant is charged to accumulated depreciation.

Depreciation

The utility plant is depreciated on the straight-line basis over the estimated useful lives of the various classes of plant.

Investments

Short-term investments and restricted investments for construction and repayment of interest on the tax-exempt commercial paper issued consists primarily of U.S. Government securities, money market funds and certificates of deposit which are carried at cost, which approximates market. Interest on all investments is accrued as earned.

3. Utility Plant

At June 30, 1984 and 1983, utility plant consists of the following major classifications:

	Estimated Useful Life	June 30, 1984	June 30, 1983
Land and land rights		\$ 6,091,877	\$ 6,091,877
Dams	100 years	47,185,208	47,185,208
Buildings, structures and improvements	40 years	3,872,907	3,794,445
Machinery and equipment	5-10 years	1,298,749	1,125,754
		<u>\$58,448,741</u>	<u>\$58,197,284</u>

Construction work in progress consists principally of uncompleted improvements to the Delaware and Raritan Canal and preliminary engineering studies for the proposed Manasquan water supply project.

4. Appropriations Receivable — State of New Jersey

Appropriations receivable represent amounts appropriated for future utility plant construction to the Authority under the following State of New Jersey general obligation bond acts.

Bond Acts	June 30, 1984
1969	\$1,356,550
1976	5,189,670
1980	607,506
	<u>\$7,153,726</u>

5. Due to State of New Jersey

The Authority entered into an agreement with the State of New Jersey in December 1982 to repay certain bond issues from future revenues derived from the operation of the Authority's water supply facilities. Through June 30, 1983, the Authority had an obligation to meet the principal and interest payment requirement on a 1958 bond issue from net revenues, if any, with respect to water supply facilities funded by the 1958 bonds. Beginning July 1, 1983, the Authority has a contractual obligation to retire the remaining principal and interest associated with the 1958 and 1969 bond issues. The bonds bear interest at 3.269% and 5.407%, respectively, with aggregate maturities of bond principal and interest as follows:

New Jersey Water Supply Authority — Notes to Financial Statements

As of June 30	
1985	\$ 1,291,000
1986	1,291,000
1987	1,291,000
1988	1,291,000
1989	577,500
1990 through 2002	10,010,000
Total principal and interest	15,751,500
Less, Amounts representing interest	3,604,371
Principal amount due to State of New Jersey	\$12,147,129

The Authority has no obligation to repay 1976 and 1980 bond proceeds as these issues were considered to be contributed capital.

6. Notes Payable — Tax-Exempt Commercial Paper Program

On September 12, 1983, the Authority adopted a Resolution authorizing issuance of tax-exempt commercial paper (Series A Notes) up to \$14,625,000 (subsequently increased to \$20,041,000 on August 20, 1984, by the issuance of \$5,416,000 of Series B Notes) to finance improvements to the Delaware and Raritan Canal, including the dredging of sediment. As of June 30, 1984, the interest rates being paid on such commercial paper ranged between $5\frac{1}{4}\%$ to 6% with maturity dates ranging from July 10, 1984 to August 10, 1984. The maximum maturity dates of the notes are 270 days after the applicable date of issuance. It is the intention of the Authority to renew the outstanding notes each maturity date until fiscal year 1986, when it is anticipated the Delaware and Raritan Canal Project will be complete, at which time the project will be permanently financed. Accordingly, the tax-exempt commercial paper has been classified as long-term on the financial statements.

Pledged as collateral for the tax-exempt commercial paper is a letter of credit from a major bank supported by an agreement between the Authority and the State of New Jersey which authorizes the \$20,550,000 of appropriations under the Water Supply Bond Act of 1981 to be used as support for payment under the letter of credit, if required.

The proceeds from the tax-exempt commercial paper issues are restricted for capital improvements and repayment of principal and interest on the issues as they mature.

Interest income earned for the year on the restricted investments amounted to \$941,711 and interest expense incurred on the related notes outstanding amounted to \$575,834. The excess of the interest income over the interest expense has been credited to construction work in progress.

7. Pension Costs

Employees of the Authority who are eligible for pension coverage are enrolled in the Public Employees' Retirement System established by the New Jersey State Legislature. Benefits, contributions, funding and manner of administration are determined by the State Legislature. The Division of Pensions within the Treasury Department of the State of New Jersey is the administrator of the funds. Annually, the Division of Pensions charges the Authority for their contribution. Total pension cost for the year ended June 30, 1984, approximated \$121,000 and for the six month period ended June 30, 1983, approximated \$58,000.

8. Land

On August 19, 1983, the Attorney General of the State of New Jersey advised the Authority that it did not acquire legal title to reservoir and canal real properties by operation of the New Jersey Water Supply Authority Act. The Authority estimates the carrying value of the properties to be approximately \$6 million in the accompanying financial statements. On November 23, 1983, the Authority was advised that the aforementioned properties may be transferred to the Authority from the State of New Jersey upon application and approval of the State House Commission with such application and approval requiring agreement by the New Jersey Department of Environmental Protection (NJDEP) as to the lands required for the Reservoir System and the Delaware and Raritan Canal operations. On August 24, 1984, the Governor of the State of New Jersey assigned the deeds for the aforementioned land to the Authority.

9. Drought and Non-Depletive User Settlements

During fiscal 1984, the Authority negotiated settlement with customers resulting in non-operating revenues of \$486,814. These amounts represent settlements of prior payments withheld by customers during the drought of 1980 and 1981 and settlements with certain customers for their non-depletive use of water controlled by the Authority.

New Jersey Water Supply Authority
Statement of Funds (Cash Basis)
for the year ended June 30, 1984

	<u>General Fund</u>	<u>Operating Fund</u>	<u>Rehabilitation Fund</u>	<u>Renewal & Replacement Fund</u>	<u>Pumping Fund</u>
Fund Balance — June 30, 1983	\$ 461,422	\$ 52,818	\$ 625,741	\$291,674	\$224,348
Cash Receipts:					
Water Sales	2,028,133	4,258,465			
Drought and Non-depletive User Settlements		486,814			
Interest Income	113,389	9,351	83,659	35,486	24,411
Receipt of Interest purchased on Investments					
Initial Sale of Promissory Notes					
Rollover Sale of Promissory Notes					
Receipt of Appropriations — State of New Jersey	190,338	171,152			
Reimbursements for Capital Projects from State of New Jersey	247,034	718,515			
Rental Income	5,426	35,700			
Repurchase Agreement		125,000			
Fund Transfers	(2,139,741)	539,403	1,361,427	133,449	50,004
Total Cash Receipts	<u>444,579</u>	<u>6,344,400</u>	<u>1,445,086</u>	<u>168,935</u>	<u>74,415</u>
Total Available Funds	<u>\$ 906,001</u>	<u>\$6,397,218</u>	<u>\$2,070,827</u>	<u>\$460,609</u>	<u>\$298,763</u>

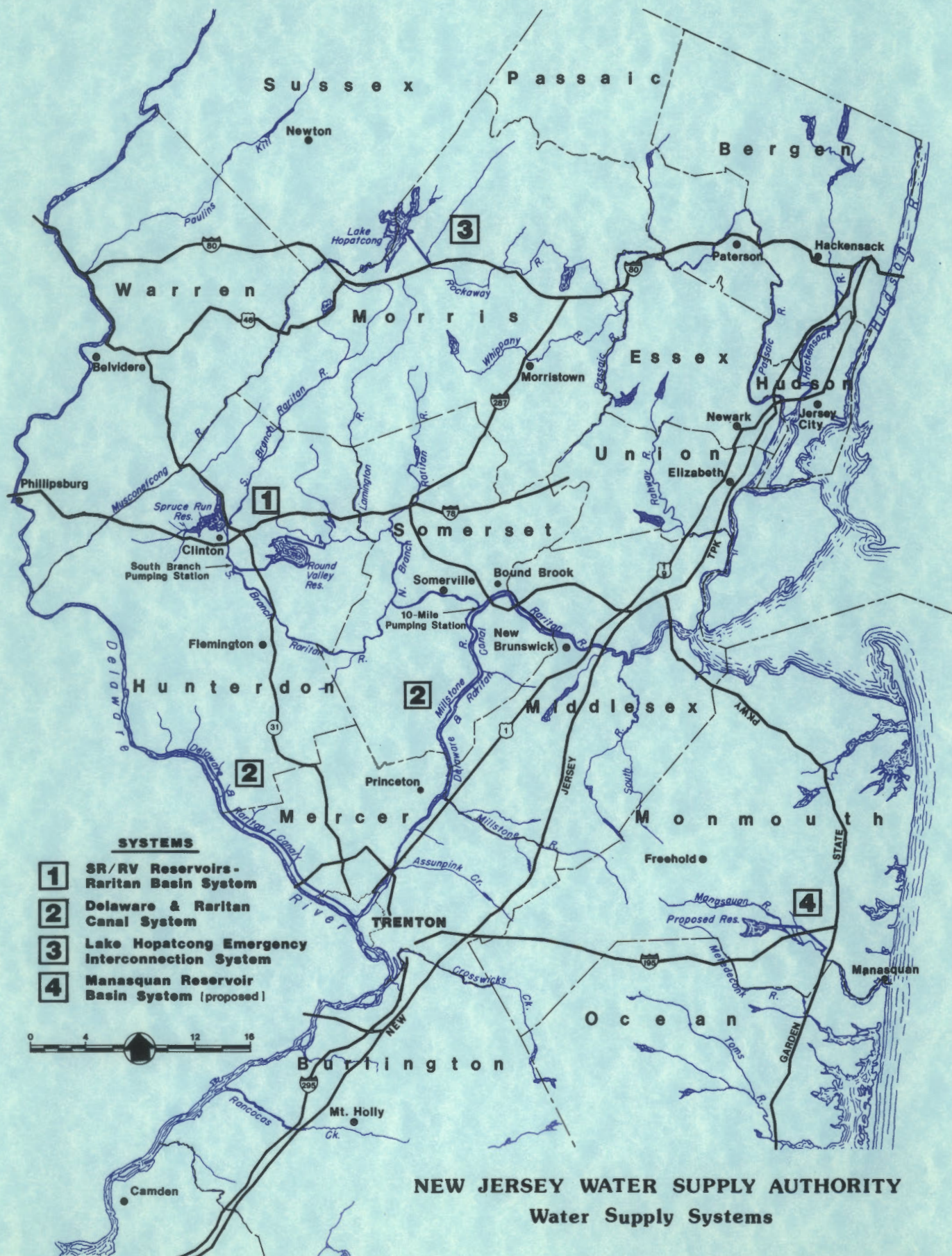
Canal Project Fund
Tax-exempt Commercial Paper

<u>Bonded Indebtedness Fund</u>	<u>Loan Reserve Fund</u>	<u>Construction Fund</u>	<u>Capitalized Interest & Commitment Fee Fund</u>	<u>Note Payment Fund</u>	<u>Employee Benefits Fund</u>	<u>TOTALS</u>
\$111,864					\$181,411	\$1,949,278
						6,286,598
						486,814
16,218	14,185	513,458	70,757		11,477	892,391
		292,960				292,960
		13,186,500	1,438,500			14,625,000
				276,502,000		276,502,000
						361,490
						965,549
						41,126
						125,000
(116,949)	322,750				(150,343)	
(100,731)	336,935	13,992,918	1,509,257	276,502,000	(138,866)	300,578,928
<u>\$ 11,133</u>	<u>\$336,935</u>	<u>\$13,992,918</u>	<u>\$1,509,257</u>	<u>\$276,502,000</u>	<u>\$42,545</u>	<u>\$302,528,206</u>

New Jersey Water Supply Authority
Statement of Funds (Cash Basis)
for the year ended June 30, 1984

	<u>General Fund</u>	<u>Operating Fund</u>	<u>Rehabilitation Fund</u>	<u>Renewal & Replacement Fund</u>	<u>Pumping Fund</u>
Total Available Funds (<i>Carried Forward</i>)	\$906,001	\$6,397,218	\$2,070,827	\$460,609	\$298,763
Cash Disbursements:					
Payroll		1,846,031			
Fringe Benefits		498,210			
Operations & Maintenance		1,251,985			
Capital Improvements to Utility Plant		615,149			
Capital Projects Reimbursed by State of New Jersey		965,549			
Principal on 1958 Bonds		793,039			
Interest on 1958 Bonds		219,917			
Interest on Tax-exempt Commercial Paper Notes					
Rollover Retirement of Promissory Notes					
Issuance Expenses — Tax-exempt Commercial Paper					
Broker's Fees — Tax-exempt Commercial Paper					
Interest Purchased on Investments — Tax-exempt Commercial Paper					
Repurchase Agreement		150,000			
Miscellaneous Disbursements		11,796			
Total Cash Disbursements		<u>6,351,676</u>			
Fund Balance — June 30, 1984	<u>\$906,001</u>	<u>\$ 45,542</u>	<u>\$2,070,827</u>	<u>\$460,609</u>	<u>\$298,763</u>
 <u>Summary of Funds:</u>					
Cash		\$ 45,542			
Short-Term Investments	\$906,001		\$2,070,827	\$460,609	\$298,763
Restricted Investments					
Total Funds	<u>\$906,001</u>	<u>\$ 45,542</u>	<u>\$2,070,827</u>	<u>\$460,609</u>	<u>\$298,763</u>

Bonded Indebtedness Fund	Loan Reserve Fund	Construction Fund	Capitalized Interest & Commitment Fee Fund	Note Payment Fund	Employee Benefits Fund	TOTALS
\$11,133	\$336,935	\$13,992,918	\$1,509,257	\$276,502,000	\$42,545	\$302,528,206
						1,846,031
						498,210
						1,251,985
		923,014				1,538,163
						965,549
						793,039
						219,917
			543,220			543,220
				276,502,000		276,502,000
		200,200	33,469			233,669
			13,081			13,081
		309,157				309,157
						150,000
						11,796
		1,432,371	589,770	276,502,000		284,875,817
\$11,133	\$336,935	\$12,560,547	\$919,487		\$42,545	\$ 17,652,389
\$11,133	\$336,935				\$42,545	\$ 45,542
		\$12,560,547	\$919,487			\$ 4,126,813
						\$ 13,480,034
\$11,133	\$336,935	\$12,560,547	\$919,487		\$42,545	\$ 17,652,389



NEW JERSEY WATER SUPPLY AUTHORITY
Water Supply Systems

