
**Interstate Water Management
Recommendations of the Parties
to the U.S. Supreme Court Decree of 1954
to the Delaware River Basin Commission
Pursuant to Commission Resolution 78-20**

Delaware
New Jersey
New York
Pennsylvania
New York City

Governor Pierre S. du Pont, IV
Governor Thomas H. Kean
Governor Mario M. Cuomo
Governor Dick Thornburgh
Mayor Edward I. Koch

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NOVEMBER 1982

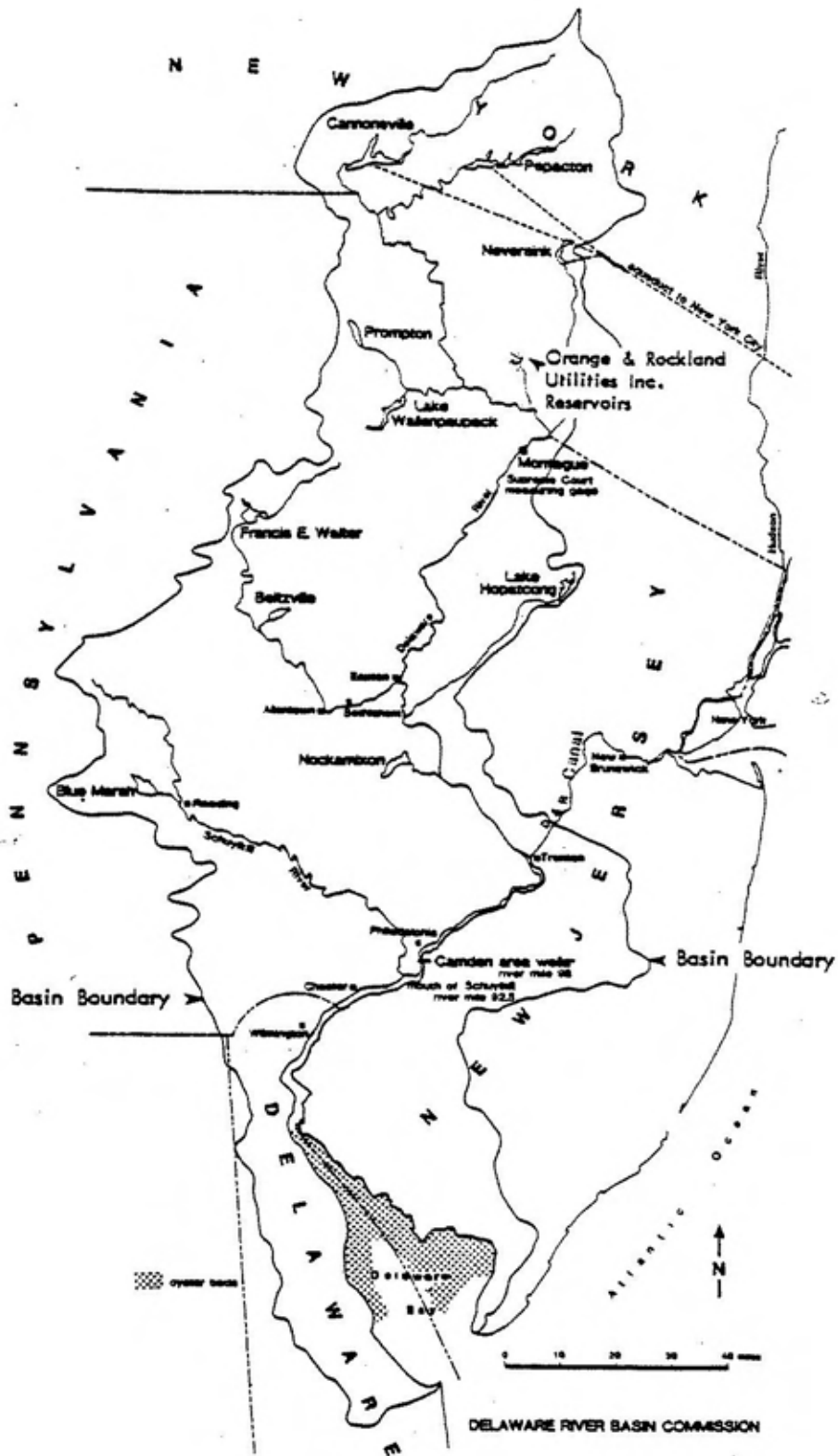
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INTRODUCTION

Conditions in the Delaware River Basin have changed substantially over the past two decades. The drought emergency of the mid-1960's and the decision of 1975 not to proceed at that time with construction of the Tocks Island dam, were major background events giving rise to Commission action in 1978 calling upon the parties to enter into good faith discussions (page 30).

The recommendations that follow constitute a series of interrelated management steps designed to respond to changed conditions in the Basin. They are organized around a long-term salinity standard to be achieved through the development of new reservoir storage and flow augmentation capacity, water conservation actions, a drought management plan, and the regulation of new or expanded depletive water uses. Modified conservation releases from the New York City reservoirs to protect and enhance recreation below the reservoirs are proposed to be made permanent, but with required reductions during drought periods.



SECTION I

MANAGEMENT STANDARDS AND CRITERIA

Recommendation 1

The Commission should amend its Comprehensive Plan to include a revised salinity objective. The amendment should include a set of interim and long-term salinity objectives. The interim operating objective should be to limit salinity to a maximum 30-day average of 180 mg/l of chlorides and a maximum 30-day average of 100 mg/l of sodium at River Mile 98 (i.e., one mile upstream from the Walt Whitman Bridge). Through a set of step-by-step actions, a more protective objective should be established by the year 2000 to limit salinity to a maximum 30-day average of 150 mg/l of chlorides and a maximum 30-day average of 83 mg/l of sodium at River Mile 98.

As additional reservoir facilities and storage capacity become available in the Basin they should be used both to augment water supply, and to improve environmental conditions, water quality, and salinity protection. A portion of the new storage capacity recommended in recommendation 5 should be committed to salinity protection. As each unit comes on line, the operating salinity objective should be revised until the year-2000 objective is reached. Simultaneously, a series of depletive water use allocation budgets should be adopted at each stage. Each budget should be designed to meet the operating salinity objective with the capacity of the storage facilities then available.

The salinity objective should be periodically reviewed by the Commission in light of existing conditions and knowledge.

The parties join in this recommendation, in view of the fact that they are also committed to the implementation of the depletive water use budget set forth in recommendation 13, to the implementation of a drought operating formula and conservation programs, as set forth in recommendations 3, 4, 10, 11, and 12, and to the development of projects set forth in recommendations 5, 6, and 7.

All of the parties recognize the benefits of the salinity standards proposed in recommendation 1, but New York City abstains from supporting this recommendation because establishment of salinity standards is properly a matter for decision by the Commission. However, the City does agree with the specific drought operating schedules set forth in recommendation 3, which will assist in controlling salinity during drought periods over the course of this agreement.

Recommendation 2

The Basin's water management system should be capable of providing and protecting reliable water supplies for essential uses during a drought equal in severity to the drought of record, which occurred in the period 1961-1967. The Commission should amend the Comprehensive Plan to include a specific management criterion that the drought of record will be used as the basis for determination and planning of dependable water supply.

SECTION II

DIVERSIONS, RELEASES AND RESERVOIR
MANAGEMENT DURING DROUGHT

Recommendation 3

For purposes of management during a drought, the Parties agree to propose and support adoption by the Commission, pursuant to Section 3.3 of the Compact, a schedule of phased reductions in diversions, releases, and flow objectives as described in this section and set forth in Tables 1 and 2. The formula is based upon a differentiation between "normal", "drought warning" and "drought" conditions as defined by the combined storage levels shown on the operation curves for Cannonsville, Neversink and Pepacton reservoirs (page four). The division of the drought warning zone into upper and lower halves is defined as a physically equal division, or 20 billion gallons in each zone.

TABLE 1

Interstate Operation Formula for Reductions
In Diversions, Releases, and Flow Objectives
During Periods of Drought

<u>NYC Storage Condition</u>	<u>NYC Div. mgd</u>	<u>NJ Div. mgd</u>	<u>Montague Flow Objective cfs</u>	<u>Trenton Flow Objective cfs</u>
Normal	800	100	1750	3000
Upper Half-- Drought Warning	680	85	1655	2700
Lower Half-- Drought Warning	560	70	1550	2700
Drought	520	65	1100-1650*	2500-2900*
Severe Drought (to be negotiated based on conditions)				

*Varies with time of year and location of salt front as shown on Table 2.

During drought conditions as defined by the operation curves shown on page four, the Montague and Trenton flow objectives should vary according to the location of the salt front (250 mg/l chloride isochlor 7-day average), in accordance with the following table:

TABLE 2

Flow Objectives for Salinity Control
During Drought Periods

Seven-day Average Location of "Salt Front," River-mile*	Flow Objective, Cubic Feet Per Second At:					
	Montague, N.J.			Trenton, N.J.		
	Dec-Apr	May-Aug	Sept-Nov	Dec-Apr	May-Aug	Sept-Nov
Upstream of R.M. 92.5	1600	1650	1650	2700	2900	2900
Between R.M. 87.0 and R.M. 92.5	1350	1600	1500	2700	2700	2700
Between R.M. 82.9 and R.M. 87.0	1350	1600	1500	2500	2500	2500
Downstream of R.M. 82.9	1100	1100	1100	2500	2500	2500

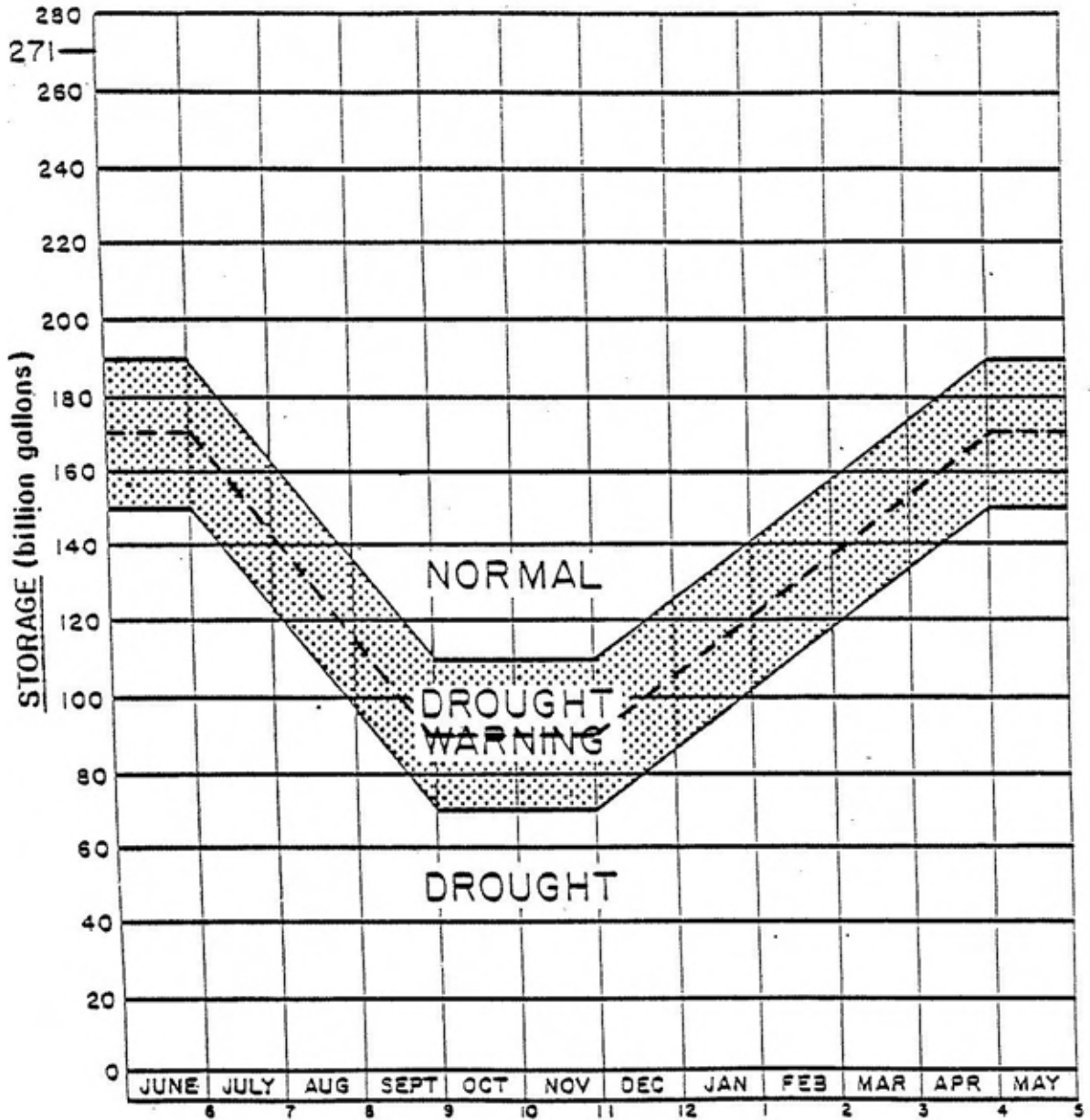
Diversions and releases under this drought operation formula should go into effect automatically whenever combined storage in the City reservoirs declines below the drought warning line and remains below that level for five consecutive days. When the combined storage (including the projected water runoff equivalent of actual snow and ice) reaches a level 15 billion gallons above the drought warning line, and remains above that level for five consecutive days, the drought operation formula should automatically terminate and normal operations provided for in the Decree should be resumed.

Pursuant to Section 3.3(a) of the Compact, the Parties hereby give their unanimous consent to adoption and implementation of this drought operation formula by the Commission. The Parties agree that the drought operation formula will go into effect automatically, and be binding on all parties for not less than 180 days following the triggering of drought warning operation, unless terminated automatically by improved storage conditions as described above. During the 180-day period, the parties will convene no less frequently than once each month to review current conditions, and they may extend, modify, or extend as modified the formula recommended here. If no unanimous agreement as to a continuing drought operation formula is reached within the 180-day period, all parties shall be released from the terms of the formula contained in this agreement and may pursue their rights and obligations under the Delaware River Basin Compact and the U.S. Supreme Court Decree.

The City of New York joins in recommendation 3 but does not by doing so accept any general responsibility under the doctrine of equitable apportionment or otherwise to vary releases from the City's reservoirs in accordance with the location of the salt front.

*Measured in statute miles along the navigation channel from the mouth of Delaware Bay.

OPERATION CURVES FOR
 CANNONSVILLE, PEPACTION AND NEVERSINK RESERVOIRS



Recommendation 4

The Commission should develop a plan for coordinated operation of other existing impoundments during drought periods to complement the operating formula for the New York City reservoirs, as outlined above, in order to maintain reliable supplies for essential uses, to conserve water, and to control salinity.

The plan should include operating criteria for the Beltzville, Blue Marsh, Walter, Prompton and Nockamixon projects, and the hydroelectric power reservoirs in the Basin of the Pennsylvania Power and Light Company and Orange and Rockland Utilities, Inc. Criteria for defining a lower Basin drought warning and drought should be prepared and made part of the plan. The plan should be completed by July 1, 1983, and made part of the Commission's Comprehensive Plan.

SECTION III

WATER STORAGE, WATER SUPPLY AND FLOW AUGMENTATION PROJECTS

The parties agree that the Basin needs additional flow augmentation facilities if the region is to grow and the risk of saline contamination in the estuary is to be held within reasonable bounds. Development of new facilities according to schedules recommended here will allow the Basin to accommodate projected demands for new water use and at the same time realize the year 2000 salinity objective. But achievement of these goals will also require careful monitoring of increased depletive water use and rigorous application of conservation measures during drought periods.

Recommendation 5

The Parties agree to endorse and promote, individually and collectively, construction or modification of the following projects for water supply and flow augmentation for salinity control, according to the following timetables and implementing provisions:

- (a) Enlargement of the Francis E. Walter Reservoir in Luzerne County, Pennsylvania.

Implementing Provisions:

- The Parties agree to propose and support adoption by the Commission of an amendment to the Comprehensive Plan adding an updated description of the project, as set forth in Appendix A, page 15.
- The Parties agree to support and assist timely completion of design studies currently underway by the U.S. Army Corps of Engineers.
- The Parties agree to support action by Congress and the Federal Administration to appropriate funds necessary for timely design and construction of this project.

- Prior to December 31, 1984, Pennsylvania, New Jersey and Delaware will negotiate arrangements to underwrite and finance non-Federal cost-sharing obligations necessary to complete this project. Such arrangements may include action by the Commission to serve as non-Federal sponsor for water supply storage in the project, pursuant to Article 4 of the Compact and the 1958 Water Supply Act, as amended, 43 U.S.C. §390 b-f.
- Prior to December 31, 1984, Pennsylvania, New Jersey and Delaware will negotiate and present for approval by the Commission a plan for utilization of the additional storage provided by the project, including proposed additions to apportionments within the depletive use budget and allocations to be used for improved salinity control within the Delaware Estuary.
- The Parties agree that the target date for completion of construction is December 31, 1990.

(b) Enlargement of Prompton Reservoir in Wayne County, Pennsylvania.

Implementing Provisions:

- The Parties agree to propose and support adoption by the Commission of an amendment to the Comprehensive Plan adding an updated description of the project, as set forth in Appendix B.
- Pursuant to §3.3(a) of the Compact, the Parties hereby give their unanimous consent and agree to support adoption by the Commission of a Comprehensive Plan amendment incorporating the following operating policy for the modified Prompton project:

When New York City is releasing from its reservoirs by direction of the River Master to meet Montague flow objectives--

- (i) inflow to Prompton may be passed through the reservoir and released downstream with no change in the Montague flow objective, or stored in the reservoir with an equivalent reduction in the Montague flow objective; and
- (ii) releases may be made from Prompton storage to meet Trenton flow requirements, and such releases will not be counted as part of the Montague objective.

When New York City is not releasing from its reservoirs to meet Montague flow objectives--

- (i) inflow at Prompton may be stored (except for minimum conservation releases); and
- (ii) releases may be made from Prompton storage to meet Trenton flow requirements, and such releases will not be counted as part of the Montague objective.

- The Parties agree to support and assist early initiation and timely completion of design studies by the U.S. Army Corps of Engineers.
- The Parties agree to support action by Congress and the Federal Administration to appropriate funds necessary for timely design and construction of this project.
- Prior to December 31, 1986, Pennsylvania, New Jersey, and Delaware will negotiate arrangements to underwrite and finance non-Federal cost-sharing obligations necessary to complete this project. Such arrangements may include action by the Commission to serve as non-Federal sponsor for water supply storage in the project, pursuant to Article 4 of the Compact and the 1958 Water Supply Act, as amended, 43 U.S.C. §390 b-f.
- Prior to December 31, 1986, Pennsylvania, New Jersey and Delaware will negotiate and present for approval to the Commission a plan for utilization of the additional storage provided by the project, including proposed additions to apportionments within the depletive use budget and allocations to be used for improved salinity control in the Delaware Estuary.
- The Parties agree that the target date for completion of construction is December 31, 1995.
- A proposed revised Comprehensive Plan description of the Prompton project is made part of this report as Appendix B, page 17.

(c) Construction of Merrill Creek Reservoir in Warren County, New Jersey.

Implementing Provisions:

- If determined practicable by feasibility and environmental studies, the Parties agree to support adoption by the Commission of an amendment to the Comprehensive Plan adding a description of this project, as set forth in Appendix C, page 19.
- If approved by the Commission pursuant to the Compact, the project will be developed by the Merrill Creek Owners Group.
- The Parties agree to expedite the processing of necessary permits and approvals for this project.
- The Parties agree that, subject to the completion of necessary feasibility and environmental studies, the target date for completion of construction is December 31, 1986.

Recommendation 6

The State of New York will enlarge the Cannonsville reservoir in Delaware County, New York, if determined to be practicable by feasibility and environmental studies. Subject to the outcome of these studies construction should be completed

by 1990. The requirements of Section IIIB of the U.S. Supreme Court Decree of 1954 relating to excess releases should be waived as to the additional storage included in the Cannonsville modification project. Additional project yield should be used primarily to maintain conservation releases. Secondary purposes should be to support the Montague flow objectives and diversions to New York City within the limits of the 1954 U.S. Supreme Court Decree. The Commission should amend its Comprehensive Plan by adding an updated description of the Cannonsville project. A proposed revised Comprehensive Plan description is made part of this report as Appendix D, page 22.

Recommendation 7

New Jersey will undertake a study to examine potential solutions to the Camden Metropolitan area water supply problems and the related overpumping of the Potomac-Raritan-Magothy aquifer system. Alternatives to be explored should include the proposed conjunctive use of ground and surface water; pumping of ground water from the Cohansey Sands aquifer; and interconnection with and water transfer from the City of Philadelphia.

This study should be completed and an alternative or some combination of alternatives should be selected by December 31, 1985. The selected alternative(s) should be implemented by December 31, 1990.

Recommendation 8

It is recommended that the Commission evaluate the recommendation of its ground water consultants that a field demonstration be made to gather further physical information about the effects of pumping from glacial alluvium to supplement flow augmentation capacity during drought periods.* Possible development of such new sources of supply should be considered as a standby alternative, for use in emergency after the year 2000.

Recommendation 9

The parties are agreed that the proposed Tocks Island project should be held in reserve status for development after the year 2000 if needed for water supply. The Commission should amend its Comprehensive Plan by adding an updated description of the Tocks Island project. A proposed revised Comprehensive Plan description is made part of this report as Appendix E, page 23.

SECTION IV

CONSERVATION

Conservation during drought periods requires extraordinary measures not justified under normal hydrologic conditions. In order to protect public health, economic activity and the environment, conservation of depletive use is of special importance in the Delaware. It is the depletive uses of both surface and ground waters that impact quantitatively upon minimum flows and the Basin's capability to maintain them.

*Special Ground Water Study of the Upper Delaware River Basin, Study Area III. A report prepared for the Delaware River Basin Commission by R.E. Wright Associates, Inc., July, 1982.

Recommendation 10

Storage conditions in the New York City Delaware Basin reservoirs should be the principal consideration of the Commission in declaring a basinwide drought emergency under the Compact, and the initiation of emergency conservation measures. The operation curves shown on page four should be the basis for such a declaration by the Commission based upon storage conditions. The Commission should include within its Comprehensive Plan a statement of general policy that a drought emergency will be declared for purposes of imposing mandatory in-Basin conservation measures whenever combined storage in the three reservoirs falls into the drought zone shown on the operation curves and remains in that zone for five consecutive days. The statement of policy should also provide that termination of a drought emergency will be considered by the Commission whenever combined storage in the three reservoirs reaches 40 billion gallons above the drought warning level and remains above that level for 30 consecutive days, and that the drought emergency will be terminated by the Commission whenever the combined storage remains above that level for 60 consecutive days unless the Commission unanimously agrees to extend the emergency.

This recommendation is not intended to extend, impair, or conflict with the Commission's authority under the Compact to declare or terminate a drought or water shortage emergency in the Basin, or sub-region thereof, in other instances as conditions may require.

Recommendation 11

The Commission should include within its Comprehensive Plan a statement of general policy that conservation measures in the Basin designed for implementation during drought periods shall be based upon the objective of reducing overall depletive use of fresh water by 15 percent.

Recommendation 12

Each State will prepare drought contingency plans for phased implementation during periods of drought warning and drought. Such plans should be coordinated with action by the Commission in announcing a drought warning and in declaring a drought emergency under the Compact, and should be designed to achieve a target 15 percent reduction in depletive use at drought stage. Contingency plans should be completed no later than December 31, 1983, and should include:

- Identification of those restrictions on non-essential water uses, such as car washing, lawn watering, et cetera, that can be effectively and practically applied; and outline procedures for coordinated initiation and termination of public controls over such uses as drought conditions develop and subside.
- Contingency plans by large water users that provide for phased reduction of use as drought conditions worsen.
- Proposed or existing legal authority to establish emergency conservation programs with enforcement powers, including fines and penalties.

- Effective and timely public information services concerning the drought and the necessity for conservation by all classes of water users.

If adequate legal authority does not exist to implement contingency plans, including the foregoing features, the parties should seek such authority prior to December 31, 1985.

SECTION V

DEPLETIVE WATER USE BUDGET

Realization of the year-2000 salinity objective recommended in section I of this report will require that depletive use in the Basin not be allowed to increase in the absence of offsetting storage capacity sufficient to maintain minimum streamflow objectives. In the absence of additional storage facilities, new depletive use coupled with increases in existing depletive use will steadily reduce the ability of existing storage facilities to maintain streamflows needed to realize salinity control objectives. The Basin cannot continue to authorize new depletive use and at the same time defer actions to create new storage capacity.

Recommendation 13

The Commission should develop a regulatory program to limit future depletive water use in such a way as to balance existing, new, or expanded depletive use with the availability of storage capacity required to meet salinity objectives. The principal features of such a program should be:

- The control area in which the regulatory program would operate would be that area of the basin downstream of the Montague gage and upstream of the Chesapeake and Delaware Canal.
- Water available for allocation to new or expanded depletive uses within the control area would be limited to that which is in excess of the flows needed to maintain the applicable salinity control objective during drought periods.
- Applications for new or expanded depletive water uses within the control area that would be in excess of the amount available for allocation would not be approved by the permitting agencies of the States or by the Commission unless new storage capacity is brought on line or existing uses are proportionately reduced by conservation or abandonment, or unless such new or expanded uses are offset by water imported from outside the Basin.
- Water available for allocation to new or expanded depletive uses would be allocated either among the States in proportion to the percentage of the control area within each State, or to the common pool for use without regard to political boundaries.

- If the Commission's regulatory program follows the State-by-State option, water available for allocation to a State would be increased (1) to reflect new storage capacity constructed and financed by that State, its agencies or subdivisions, or (2) to reflect that portion of new storage capacity constructed or financed by the Commission in accordance with agreements among the parties for each project.
- If the Commission's regulatory program follows the "common pool" option, allocations to the pool would be increased as new storage units are constructed and water becomes available for new or expanded uses in accordance with existing State and Commission permitting programs.

A depletive water use budget should be adopted and implemented by the Commission no later than December 31, 1985.

SECTION VI

CONSERVATION RELEASES NEW YORK CITY RESERVOIRS

Table 3 shows the program of augmented conservation releases from the New York City Delaware Basin reservoirs that has been in effect since 1977 on an experimental basis. The purpose of the releases is to protect and enhance the recreational use of waters affected by such releases.

TABLE 3

<u>Reservoir and Operative Dates</u>	<u>Basic Conservation Release</u>	<u>Augmented Conservation Release</u>
Neversink		
4/1 - 4/7	5 cfs	45 cfs
4/8 - 10/31	15	45
11/1 - 3/31	5	25
Pepacton		
4/1 - 4/7	6	70
4/8 - 10/31	19	70
11/1 - 3/31	6	50
Cannonsville		
4/1 - 4/15	8	45
4/16- 6/14	23	45
6/15- 8/15	23	325
8/16- 10/31	23	45
11/1 - 11/30	23	33
12/1 - 3/31	8	33

Recommendation 14

The Commission should amend docket D-77-20, as necessary to authorize on a permanent basis the augmented conservation release schedules at the three reservoirs, as shown in Table 3. The revised docket, a draft of which is attached as Appendix F, page 25, should reflect the following conditions:

- An additional quantity of water up to 6000 cfs-days should be provided for the relief of thermal stress on aquatic life in the river downstream of the reservoirs and on the mainstem of the Delaware River, designed to prevent to the extent practicable, any water temperature higher than 75°F or daily average water temperature higher than 72°F in the designated downstream areas as determined from measurements at Callicoon, Harvard, Woodbourne, and Hale Eddy gaging sites during the period May 1 to October 31, inclusive. Releases for this purpose should be at the direction of the New York State Department of Environmental Conservation. In order to conserve available water in storage, no thermal stress releases should be made when the reservoirs are in drought warning or drought condition.
- Whenever combined water storage conditions in the three reservoirs decline to drought warning or drought levels, as shown on the operation curves (page four), the augmented conservation releases should be reduced to the basic rate in effect prior to 1977 for each reservoir, except that larger volumes of water would be released during those periods when the River Master is directing releases to meet the Montague flow objectives. This reduction would be for the purpose of conserving available water in the reservoirs.
- Conservation releases should be returned to normal augmented levels when combined storage in the three reservoirs reaches 25 billion gallons above the drought warning level, as shown on the operation curves (page four), and remains at or above that level for 15 consecutive days.
- Increases in the augmented conservation release levels should be made only in accordance with the allowances provided for in the Stipulation of Discontinuance in The City of New York vs. The State of New York Department of Environmental Conservation, Index No. 5840-80, and should be subject to approval by the Commission.

SECTION VII

ENFORCEMENT

1. The Parties consider this agreement to be a whole. Each recommendation and provision of this agreement is considered material to the entire agreement, and failure to implement or adhere to any recommendation or provision may be considered a material breach.
2. Each of the Parties pledges to support implementation of all provisions of this agreement, and covenants that its officers and agencies will not hinder, impair, or prevent any other Party carrying out any provision or recommendation of this agreement.

3. In the event that any Party is substantially hindered or prevented from performing any obligation or implementing any provision under this agreement, by reasons of circumstances beyond the control of the Party (including Acts of God, natural disasters, labor disputes, judicial decrees, or legislative action of Congress), the Parties agree to meet and negotiate an appropriate modification of the applicable provisions of the agreement to reflect the effect of such force majeure. Such modifications may include extensions of applicable schedules and timetables, or agreements on substitute actions to fulfill the objectives and spirit of this agreement.
4. Desiring that this agreement be carried out in full, the Parties agree that disputes between the Parties regarding interpretation, application, and implementation of this agreement shall be settled, to the maximum extent possible, by negotiation and mediation.
 - a. If any Party believes another Party has violated or failed to carry out any provision of this agreement, it shall notify such Party, and all other Parties, in writing, specifying the alleged violation or failure.
 - b. Any Party alleged to have violated or failed to carry out any provision of this agreement (except for a provision relating to drought operations and construction actions) shall have 120 days from the receipt of notice as provided in paragraph (a) to correct such violation or failure. This period may be extended by the agreement of the Parties.
 - c. Within 30 days of notice provided under paragraph (a), all Parties will meet to discuss the alleged violation or failure, and to negotiate an appropriate settlement, including actions to correct such violation or failure. Such discussions and negotiations shall be pursued in good faith for not less than 120 days after original notice.
 - d. If the Parties are unable to reach agreement on a settlement, after good faith discussions and negotiations within the period provided in paragraph (c), any aggrieved Party may seek enforcement of this agreement as may be available at law or equity.
5. The Parties agree that performance of the obligation and implementation of the provisions contained in this agreement are necessary to the protection of the health, safety and general welfare of their respective citizens. Accordingly, the Parties agree that, to the maximum extent provided by law, any breach of the obligations or provisions of this agreement may be subject to specific enforcement at equity, or through appropriate proceedings before the Commission.

SECTION VIII

PERIODIC REVIEW

The Parties agree that water management in the Delaware River Basin requires continuing cooperation by the Parties and continued long-term planning studies

by the Commission. The Parties, in consultation with the Commission, will periodically review this agreement, and recommend such adjustments or modifications as may be required to respond to changing conditions.

STATE OF DELAWARE

The State of Delaware hereby approves the recommendations of the Parties to the U.S. Supreme Court Decree of 1954 herein submitted to the Delaware River Basin Commission pursuant to Commission Resolution No. 78-20.




Signature Governor

Date 12/1/54

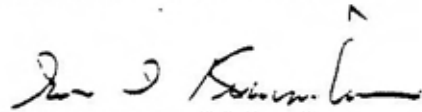
STATE OF NEW JERSEY

The State of New Jersey hereby approves the recommendations of the Parties to the U.S. Supreme Court Decree of 1954 herein submitted to the Delaware River Basin Commission pursuant to Commission Resolution No. 78-20.

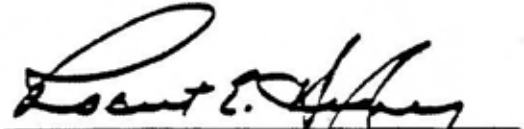


Dirk C. Hofman, P.E.
"Good Faith" Delegate

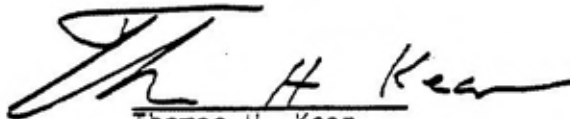
Approved as to form:



Irwin I. Kimmelman
Attorney General



Robert E. Hugney, Commissioner
Dept. of Environmental Protection



Thomas H. Kean
Governor

DATE: 12/27/82

STATE OF NEW YORK

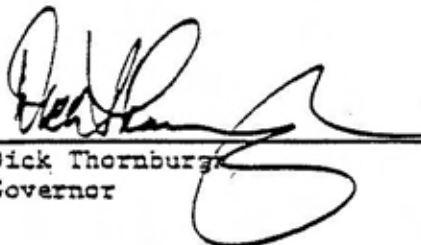
The State of New York hereby approves the recommendations of the Parties to the U.S. Supreme Court Decree of 1954 herein submitted to the Delaware River Basin Commission pursuant to Commission Resolution No. 78-20.

James M. Lewis

COMMONWEALTH OF PENNSYLVANIA

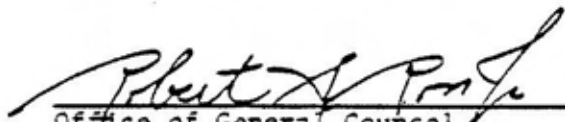
The Commonwealth of Pennsylvania hereby approves the recommendations of the Parties to the U.S. Supreme Court Decree of 1954 herein submitted to the Delaware River Basin Commission pursuant to Commission Resolution No. 78-20.

Date: January 4, 1983

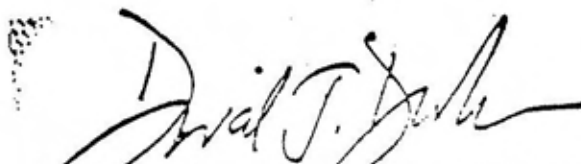


Dick Thornburg
Governor

Approved as to form and legality:



Office of General Counsel



Office of Attorney General

CITY OF NEW YORK

The City of New York hereby approves the recommendations of the Parties to the U.S. Supreme Court Decree of 1954 herein submitted to the Delaware River Basin Commission pursuant to Commission Resolution No. 78-20.

Edward A. Lisc

APPROVED AS TO FORM

Stephen P. Kramer
Acting Corporation Counsel

APPENDICES: COMPREHENSIVE PLAN DESCRIPTIONS

Proposed Revised Comprehensive Plan
Description of Francis E. Walter Project

Description

The Francis E. Walter project, completed in 1961 as a single-purpose flood control project (with incidental recreation use), will be modified for multiple-purpose development to provide supplies of water and recreational use, as well as the presently authorized flood control. The earth and rock fill dam is located on the Lehigh River 77 miles above its confluence with the Delaware River and about 5 miles north of White Haven, Pennsylvania. At this location the dam controls 288 square miles of drainage area.

The modifications to the existing dam, as originally proposed by the Corps of Engineers to make it serviceable for long-term storage in addition to the present flood control storage involve:

- (1) Moving and raising the spillway crest.
- (2) Raising the dam.
- (3) Adding a concrete conduit to the downstream end of the outlet tunnel.
- (4) Constructing new dikes and raising existing dikes north of the dam.
- (5) Clearing of reservoir land and relocating roads subject to inundation.

The modified dam will rise about 263 feet above the stream bed and have a length of about 3,500 feet. The spillway will be raised 31 feet and cut through rock to the north of the dam, and farther north a dike will fill a swale in the reservoir rim. Multi-level outlet works will be provided in the new project. The reservoir for long-term storage of 69,500 acre-feet of water would have a maximum depth of about 185 feet and would extend about 7.0 miles up the Lehigh River and about 4.0 miles up Bear Creek from the dam. Modification of this reservoir will necessitate the purchase of land to be inundated on which flood easements have already been taken and require the acquisition of additional flood easements at high elevations. No economically valuable mineral deposits would be flooded. Relocation of about five miles of Bear Creek Road would be required.

Functions

Supplies of Water. The modified project will augment the flow of the Delaware River at Trenton by 290 cfs on the basis of complete and uniform drawdown of flow augmentation storage (69,500 acre-feet) over a 120-day period.

Reduction of Flood Damages. The 108,000 acre-feet of existing short-term storage is effective in alleviating flooding in the upper reach of the Lehigh River, where damage is confined, primarily, to the Towns of Jim Thorpe, Lehigh, Weissport, Parryville, Palmerton, and Bowmanstown, Pennsylvania. Damage centers in the reach from Lehigh Gap to Allentown, Pennsylvania, include industrial and residential areas located in the vicinity of the towns of Northampton, Hokendauqua, Catasauqua, Allentown, Bethlehem, Freemansburg and Easton, Pennsylvania. The flood control storage will be preserved as previously authorized, and flood reduction benefits will be unaffected by the modifications.

Recreation. The modified Francis E. Walter project will provide for public ownership of the desirable shore area and provide space for development of recreation sites. Operation of the project will consider the downstream flow requirements for stream fisheries and the management of the impoundment for lake fisheries.

Schedule

Modification of the existing Francis E. Walter project is targeted for completion by December 31, 1990.

Proposed Revised Comprehensive Plan
Description of Prompton Project

Description

The Prompton project, a single-purpose flood control project (with incidental recreation use) completed in 1960, will be modified for multiple-purpose use to provide supplies of water and recreation benefits as well as the presently designed flood control function. The Prompton dam is located in the valley of the Lackawaxen River about one-half mile upstream of the confluence of Waymart Branch with the river, and about four miles west of Honesdale, Pennsylvania. The present dam controls 60 square miles of drainage area, and is 1,300 feet long and 140 feet high.

The long-term storage and operation for multiple-purposes will require the following additions or modifications to the existing structures:

- (1) A control tower with gates to control releases from the reservoir and a service bridge.
- (2) A blanket of impervious material on the valley wall and floor upstream of the dam.
- (3) Widening of the spillway.
- (4) Clearing of reservoir land and relocating roads subject to inundation.

The reservoir to be created by long-term storage will extend about 4.4 miles upstream of the dam.

Functions

Supplies of Water. The modified project will augment the flow of the Delaware River at Trenton by 130 cfs on the basis of complete and uniform drawdown of flow augmentation storage (30,900 acre-feet) over a 120-day period.

Reduction of Flood Damage. Flood heights on the Lackawaxen River are substantially reduced by the existing flood control storage of the Prompton project and the Edgar Jadwin dam and reservoir on Dyberry Creek, above Honesdale, Pennsylvania. The towns of Honesdale, located at the confluence of Dyberry Creek with the Lackawaxen River, and Hawley, located between the junctions of Middle Creek and Wallenpaupack Creek with the Lackawaxen River, and several villages and townships located on the lower reaches of the Lackawaxen River are protected. Conversion of the Prompton dam and reservoir to a multiple-purpose development will preserve the flood control function of this project as originally authorized, and flood reduction benefits will be unaffected by the proposed modification.

Recreation. Due to the lack of suitable terrain, recreation potential at this project is limited. However, lands suitable for day-use recreation may be included in the plan of improvement. Operation of the project will consider the downstream flow requirements for stream fisheries and the management of the impoundment for lake fisheries as a coordinated element for full realization of the recreational potential of the project.

Operating Policy

Releases from the project shall be coordinated with releases from the New York City reservoirs and accounted for at the Montague gaging station in accordance with the following policy:

- (1) When New York City is releasing from its reservoirs by direction of the River Master to meet Montague flow objectives--
 - (a) inflow to Prompton may be passed through the reservoir and released downstream with no change in the Montague flow objective, or stored in the reservoir with an equivalent reduction in the Montague flow objective;
 - (b) releases may be made from Prompton storage to meet Trenton flow requirements, and such releases will not be counted as part of the Montague objective.
- (2) When New York City is not releasing from its reservoirs to meet Montague flow objectives--
 - (a) inflow at Prompton may be stored (except for minimum conservation releases);
 - (b) releases may be made from Prompton storage to meet Trenton flow requirements, and such releases will not be counted as part of the Montague objective.

Schedule

Modification of the existing Prompton project is targeted for completion by December 31, 1995.

Proposed Comprehensive Plan
Description of Merrill Creek Project

Location

Merrill Creek Reservoir would be located on a tributary of Pohatcong Creek in Harmony Township, Warren County, New Jersey. The site, which includes an existing small dam and reservoir, is approximately 5.2 miles east-northeast of Phillipsburg, New Jersey. Merrill Creek begins on a small plateau about 1,200 feet above sea level some 3 miles east of the Delaware River. It flows in a southerly direction through a valley to a small existing reservoir. The channel narrows considerably below the existing reservoir and passes through a gap in Scotts Mountain about one mile long. Merrill Creek then enters the Pohatcong Valley and joins Pohatcong Creek four miles south of the existing dam. The stream north of the existing reservoir is 4.3 miles in length and has a drainage area of 3.1 square miles.

To create Merrill Creek Reservoir, a dam would be constructed in the Scotts Mountain gap just downstream of the existing dam. The drainage area above the new dam would be 3.2 square miles.

Functions

The primary function of the Merrill Creek project would be to replace water that is consumptively used by electric generating stations in the Basin, as required by the Commission. During severe drought periods, releases to the Delaware River would be made for this purpose. The project would also provide incidental recreation benefits, and a recreation area is planned for the northeast side of the reservoir. Floodwaters from the upper 3.2 square miles of the Merrill Creek drainage area would be contained in the reservoir. Flood peaks at the Route 57 crossing of Merrill Creek would be reduced by 70 percent, and at the Strawchurch Road crossing by 30 percent.

Description

The project layout is based on facilities necessary to obtain reservoir storage required for a yield of 200 cfs during critical drought periods, and provide for safe operation of the project under all conditions. The layout includes the main dam, saddle dikes, relief spillway, and construction of diversion and conservation outlets. As natural runoff from Merrill Creek is inadequate to refill the reservoir (drainage area 3.2 square miles), a tunnel/pipeline, an inlet/outlet tower, a one-way surge tank and a pumphouse at the Delaware River are provided to insure filling under all hydrologic conditions.

The reservoir is to be formed by placing a compacted earth and rock-fill dam across the Scotts Mountain gap. The maximum height of the main dam is approximately 260 feet. The embankment is approximately 2,450 feet in length along the crest. The width at the crest is 30 feet. Three saddle dikes, two on the northwest side and one on the southeast side, are needed to seal off low areas along the reservoir rim.

The probable maximum flood (PMF) can be stored in the reservoir above elevation 923.0 above mean sea level, the design operating level. In the unlikely event of additional inflow into the reservoir and that discharge through the tunnel/pipeline cannot be implemented, a relief spillway excavated in rock is to be provided to release excess water to Lopatcong Creek. The relief spillway will have a length of approximately 400 feet along the crest at elevation 929.0 on the reservoir upstream side, sloping down to elevation 923.0, a distance of 600 feet to the downstream end.

The inlet/outlet tower, having a hoist house at the top, is to be constructed at the upper end of the tunnel/pipeline running between the reservoir and the Delaware River to house piping, valves, and necessary equipment to admit and release required flows. This reinforced concrete sloping structure is to be located along the northwest rim of the reservoir near Northwest Saddle Dike 1, some 5,000 feet upstream of the main dam. This location will minimize the length of required tunnel through Scotts Mountain, which connects the tower to the pipeline.

The inlet/outlet tower will be approximately 300 feet long and will contain multiple inlet/outlet ports. Each port will be at a different level so that water can be released from that reservoir level at which water temperature and quality most nearly match that of the Delaware River. The hoist house is to contain all necessary controls for operation of the valves, other ancillary equipment, and water quality monitoring devices. The inlet/outlet tower will be unmanned except for maintenance purposes, but will be provided with a security system.

The existing Merrill Creek channel has insufficient capacity to carry all the released flows to the Delaware River. Therefore, a separate conduit is required to carry water between the reservoir and the river. Since a pipeline is also needed to carry the water pumped from the river to the reservoir, a single conduit to serve both purposes is provided.

The inlet/outlet tower is to be connected to the pumphouse by approximately 17,000 feet of pipeline, 1,400 feet of which will be installed in a tunnel. The tunnel will have a finished dimension of 96 inches. The pipe will have a diameter of 57 inches, and except in the tunnel, will be buried a minimum of six feet below the ground surface. The conduit is sized to carry the design pumping rate of 145 cfs to the reservoir and 200 cfs flow from the reservoir back to the river. A one-way surge tank will be installed along the pipeline route to prevent water column separation in the pipeline following motor-pump failure.

A pumphouse to enclose equipment needed to refill the reservoir will be located on the Delaware River (R.M. 192) near Keifer Island. The equipment will have the capacity, utilizing two pumps, to transmit water at the design pumping rate of 145 cfs from the river to Merrill Creek reservoir. Three pumps with electric motors will be provided, one as a stand-by. Each pump is equipped with shut-off and control valves. The pumphouse will have an ice barrier and fixed screens to prevent ice, fish and debris from entering the pump well. Adjacent to the pump chambers, energy dissipator chambers will be in operation during the release of water from the reservoir to the river. The manifold at the end of the water conduit is provided with two sleeve valves, which will control discharge of water to energy dissipating sumps. The sumps, in turn, release the water to the river through overflow weirs.

The gas pipeline that crosses the west edge of the reservoir will be relocated. Relocation will be coordinated with the pipeline owners.

Existing public access to the area will be maintained to the greatest extent feasible. The secondary road through the valley from Route 57 may be terminated near the dam site. Secondary roads from Phillipsburg and Harmony may be connected by a new secondary road along the west ridge of the reservoir. Relocation and termination of these roads will be subject to review and approval of local officials.

Schedule

The Merrill Creek project is targeted for completion by December 31, 1986.

Proposed Revised Comprehensive Plan
Description of Cannonsville Project

Cannonsville reservoir, part of the water supply system of the City of New York, is located on the West Branch of the Delaware River in Delaware County, New York, about four miles upstream of the Village of Deposit. It was financed and constructed by the City of New York and placed in operation in 1967.

Cannonsville dam is approximately 2,800 feet long (at the top) with a maximum height of about 175 feet above the original river channel. It has a top width of about 45 feet and is of the compacted (rolled) earth type. At its northerly contact with the valley wall there is a spillway. Spillage is directed into a channel, through a stilling basin, and into an outlet channel that guides the flow into the West Branch of the Delaware River.

Cannonsville reservoir covers roughly 4,800 acres at flow line elevation 1150 feet above mean sea level with a capacity above sill elevation 1027.5 of some 97 billion gallons, and impounds the runoff from a watershed of about 450 square miles. The yield therefrom is used for supplying water to the City of New York, for conservation releases to the West Branch Delaware River, and, together with releases obtainable from the Neversink and Pepacton reservoirs, for meeting the Montague formula of the Supreme Court Decree of 1954.

Cannonsville reservoir will be investigated for modification to increase the storage as described generally in a report of the Temporary Commission on the Water Supply Needs of Southeastern New York (Dec. 15, 1973). The reservoir level would be increased by the installation of gates in the existing spillway, if determined practicable by feasibility and environmental impact studies, which should be completed at the earliest possible date. Subject to the outcome of these studies construction should be completed by December 31, 1990.

Modification of Cannonsville would add approximately 13 billion gallons of additional storage capacity. Additional project yield would be used primarily to maintain conservation releases. Secondary purposes would be to support Montague flow objectives and diversions to New York City within the limits of the 1954 U.S. Supreme Court Decree.

Proposed Revised Comprehensive Plan
Description of Tocks Island

Description

The Tocks Island project would be for multiple-purpose development to provide water supplies, flood control, electric power, and recreation. The dam site is on the Delaware River about five miles upstream from the Delaware Water Gap, at the upstream end of Tocks Island. The contributing drainage area is 2,912 square miles, exclusive of 915 square miles that contribute to the Neversink, Pepacton, and Cannonsville reservoirs of the City of New York. The dam would contain about three and one-half million cubic yards of earth and rock, would be 3,000 feet long, and would rise 160 feet above the river bed to elevation 455. Consideration would be given to the development of hydroelectric power including pumped storage. Storage allocations, as determined from studies by the Corps of Engineers, indicate 96,300 acre-feet of inactive long-term storage to elevation 356; 425,600 acre-feet of active long-term storage for supplies of water, power, recreation, and other uses to elevation 410; and 323,500 acre-feet of short-term storage for flood control to elevation 432. The reservoir would extend approximately nine miles up Flat Brook and 37 miles up the Delaware River to Port Jervis, New York. It would necessitate the relocation of affected roads and Delaware Water Gap National Recreation Area facilities. The Town of Matamoras, Pennsylvania, at the upper end of the reservoir would be protected by a dike. The 37-mile section of the Delaware River that would be covered by the reservoir is a component of the National Wild and Scenic Rivers System.

Functions

Supplies of Water. Use of 425,600 acre-feet of active long-term storage at Tocks Island project would augment the flow of the Delaware River at Trenton by 1790 cfs on the basis of complete and uniform drawdown of flow augmentation storage over a 120-day period. Net yield at the site on a year-round basis would be about 980 cfs.

Reduction of Flood Damage. The 1955 flood damages in the reach from Tocks Island to Burlington, New Jersey, exceeded 85 percent of the total damages for the mainstem of the Delaware River, and occurred principally at the damage centers of Easton, Reigelsville, New Hope, and Yardley, Pennsylvania; and Belvidere, Phillipsburg, Trenton, and Burlington, New Jersey. Damages in this reach would be substantially reduced by system operation of the flood-control storage at Tocks Island with other projects in the Comprehensive Plan; the stage of the 1955 flood at Trenton would be reduced by six feet.

Power. The Tocks Island project was originally considered for a conventional hydropower installation of 46,000 kilowatts, a dependable capacity of 20,000 kilowatts, and an average production of 281.5 million kilowatt-hours. Reevaluation of conventional and pumped-storage power schemes resulted in deletion of the conventional hydropower installation from the Comprehensive Plan. In light of current and future uncertainties regarding energy supplies, a full reevaluation of power would be called for when the project is reconsidered after the year 2000.

Recreation. Recreation capacity and facilities of the existing Delaware Water Gap National Recreation Area, developed under P.L. 89-158, would be altered to an extent to be determined by future studies. Reservoir operation would consider fisheries within the impoundment and downstream of the dam. Passage for anadromous fisheries would be provided and consideration given to additional flow augmentation from this project in October and November for moving fish population through the zone of low dissolved oxygen in the estuary.

Schedule

The Tocks Island project is placed in reserve for development if needed for water supply after the year 2000.

DRAFT

DOCKET NO. D-77-20 CP (REVISED)

DELAWARE RIVER BASIN COMMISSION

MODIFICATION TO THE RELEASE SCHEDULES FROM
CANNONVILLE, PEPACTON, AND NEVERSINK RESERVOIRS
DELAWARE AND SULLIVAN COUNTIES, NEW YORK

Proceedings

The New York State Department of Environmental Conservation (NYDEC) adopted regulations in 1977 to modify the schedule of conservation releases from Cannonsville, Pepacton, and Neversink Reservoirs. The regulations provided for the new schedule of releases to be tried on a limited experimental basis.

The Delaware River Basin Commission (DRBC) approved the experimental release program on May 25, 1977, by Docket decision D-77-20 and extended that approval through May 31, 1983, by Resolution 82-7. Docket decision D-77-20 also directed the parties to the 1954 Decree to develop criteria defining the onset and stages of drought emergencies.

NYDEC proposes to amend the experimental regulations by removing the automatic termination date, deleting the relationship to the "excess quantity" as established by the U.S. Supreme Court Decree (347 U.S. 995 (1954)) and limiting releases according to a reservoir storage curve in time of drought warning and drought.

Research findings and comments from fishermen and recreationists indicate that the program has had a beneficial effect. The DRBC held a hearing on May 28, 1980, on the amended release regulations and a proposal that the Commission's approval of the schedule of augmented releases be made permanent.

Reservoir Release Program

A. New Conservation Releases

In place of the previous New York City schedule of conservation releases, a new conservation release schedule on a year-round basis has been tried as an experimental program and is proposed to be continued on a permanent basis. Under this schedule, the minimum releases from Cannonsville, Pepacton, and Neversink Reservoirs will be as follows:

	<u>April 1 - June 14</u> <u>Aug. 16 - Oct. 31</u>	<u>June 15 -</u> <u>Aug. 15</u>	<u>Nov. 1 -</u> <u>March 31</u>
Neversink	45 cfs*	45 cfs	25 cfs
Pepacton	70	70	50
Cannonsville	<u>45</u>	<u>325</u>	<u>33</u>
	160 cfs	440 cfs	108 cfs

*cubic feet per second

These total conservation releases break down as follows:

TABLE 1

<u>Reservoir and Operative Dates</u>	<u>Column 1 Basic Conservation Release</u>	+	<u>Column 2 Proposed Augmented Conservation Release</u>	=	<u>Column 3 Total New Conservation Release</u>
Neversink					
4/1 - 4/7	5 cfs		40 cfs		45 cfs
4/8 - 10/31	15		30		45
11/1 - 3/31	5		20		25
Pepacton					
4/1 - 4/7	6		64		70
4/8 - 10/31	19		51		70
11/1 - 3/31	6		44		50
Cannonsville					
4/1 - 4/15	8		37		45
4/16 - 6/14	23		22		45
6/15 - 8/15	23		302		325
8/16 - 10/31	23		22		45
11/1 - 11/30	23		10		33
12/1 - 3/31	8		25		33

B. Basic Montague Release

At all times, New York City would be required to make such releases as directed by the River Master designed to maintain a minimum basic flow of 1750 cfs at the Montague gaging station, or the excess release rate during the seasonal period, as already required by the Decree.

C. Special Thermal Stress Releases

Special releases may be made from one or more of the reservoirs in order to relieve thermal stress conditions which pose a threat to fisheries. The total volume of such releases shall not exceed 6,000 cfs-days from all reservoirs. Thermal releases, with a one-day lead time, would be made whenever the maximum water temperature in designated downstream areas as determined from measurements at Callicoon, Harvard, Woodbourne, or Hale Eddy is projected to exceed a maximum of 75°F, or a 72°F daily average. If the 6,000 cfs-days reserve is not used by October 31 of any year it will not be used thereafter. No releases for relieving thermal stress would be required from November 1 to April 30 of any year. Releases for purposes of relieving thermal stress shall be at the direction of NYDEC.

D. Drought Warning and Drought Conditions

The augmented conservation release will be reduced to the basic conservation release (shown in Table 1) during drought warning and drought periods as defined by the attached reservoir storage curves marked "Operation Curves for Cannonsville, Pepacton, and Neversink Reservoirs" (page 29) except that when the Delaware River Master directs releases according to the provisions in the 1954 U.S. Supreme Court Decree, New York City shall make such releases from Cannonsville, Pepacton, and Neversink Reservoirs as are necessary and sufficient to maintain the constant minimum flows specified in "A" above on the West Branch Delaware River, East Branch Delaware River, and the Neversink River, and provided that the total amount of water released from the three reservoirs does not exceed the amount directed by the Delaware River Master. If the amount of directed releases by the River Master is not sufficient to maintain the augmented releases from all three reservoirs, the releases from each reservoir will be determined at the discretion of NYDEC and New York City -- Department of Environmental Protection (NYC - DEP).

Conservation releases shall be returned to normal augmented levels following a drought. Return to normal augmented levels shall not be made unless and until combined storage in the three reservoirs reaches 25 billion gallons above the drought warning level, as shown by the attached reservoir storage curves (page 29), and remains at or above that level for 15 consecutive days.

Findings

The NYDEC's Amended Part 671 Regulations entitled, Reservoir Release Regulations: Cannonsville, Pepacton, and Neversink Reservoirs adopted May 2, 1980, are consistent with this proposed action.

The Monitoring and Evaluation Program during the experimental reservoir release period has been reported in two performance reports by NYDEC. One for the year July 1, 1977, through June 30, 1978, and a second for the July 1, 1978 through December 31, 1979 period. These evaluations indicate that the conservation release program has been very effective and beneficial and should be continued. The report includes an estimate that an additional 52,500 -- 65,500 angler-trips annually could result from the release program. The economic value of these additional angler trips could range from \$1,650,000 to \$2,066,000 annually.

The project does not conflict with nor adversely affect the Comprehensive Plan. It provides beneficial use of the water resources and does not adversely influence the present or future use and development of the water resources of the Basin.

Decision

I. The project, as described above, with modifications specified hereinafter, is hereby added to the Comprehensive Plan.

II. The project is approved pursuant to Section 3.8 of the Compact, subject to the following conditions:

- a. Approval is subject to all conditions imposed by NYDEC.

b. Monthly summaries of reservoir operations submitted by NYC-DEP to NYDEC shall also be submitted to the DRBC.

c. Detailed operational records of each reservoir, maintained by both the City and State Reservoir Release Managers, shall be available to the DRBC upon request.

d. The provisions of the reservoir release program approved herein shall not be applicable to any action taken by NYC-DEP or NYDEC with regard to the operation of the Cannonsville, Pepacton, or Neversink Reservoirs in any emergency situation where there is a threat to the continued existence or safe operation of the dams or tunnels or to any appurtenant structures or to the public health or safety. Any emergency action shall continue only for such time as is necessary to avert the threat and is subject to the approval of the Executive Director of the DRBC.

e. Increases in the augmented conservation release levels may not be made except in accordance with the allowances provided for in the Stipulation of Discontinuance in The City of New York vs. The State of New York Department of Environmental Conservation, Index No. 5840-80, and shall be subject to approval by the DRBC.

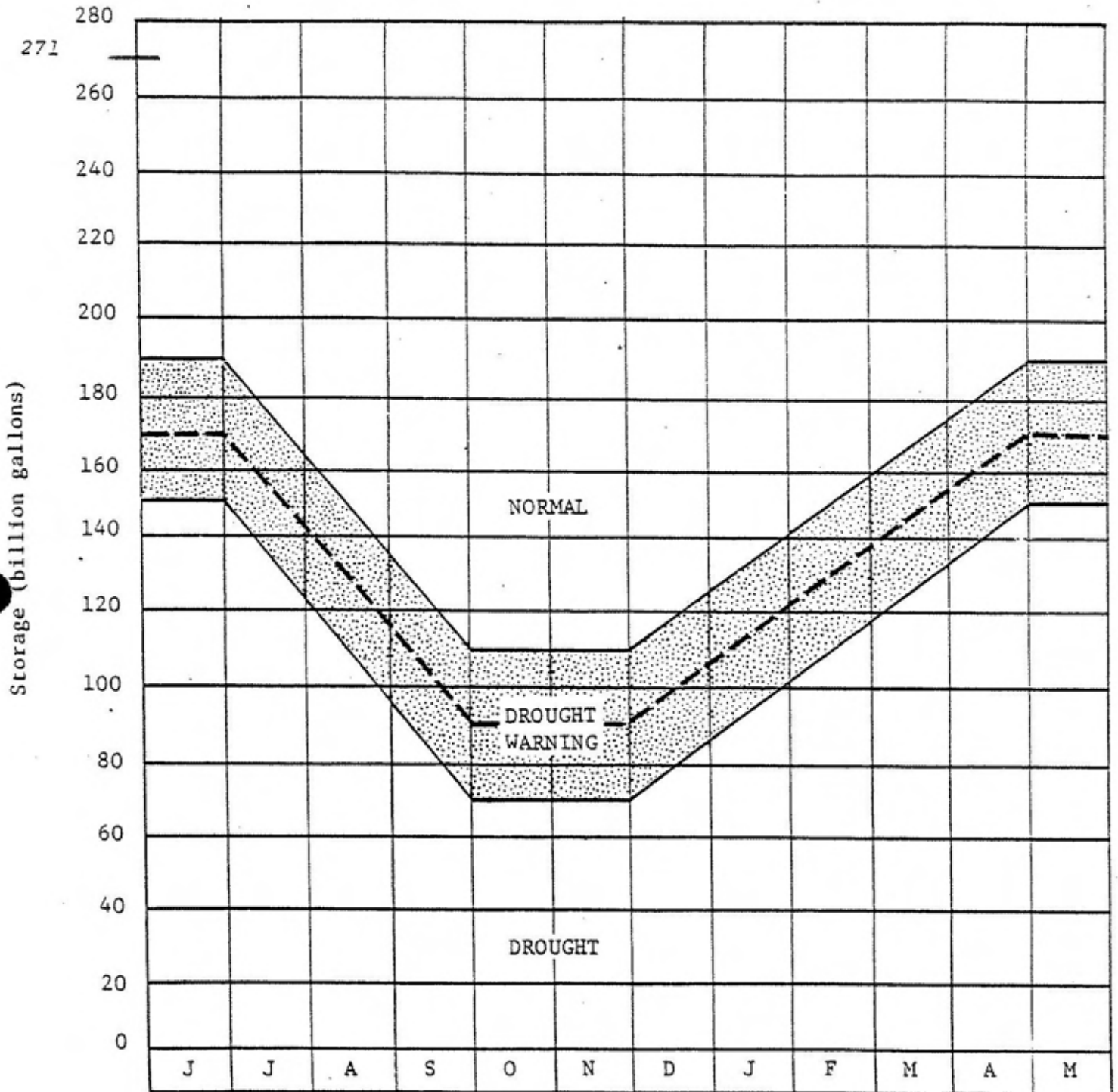
f. Releases under emergency conditions. The Commission retains its power under Section 3.3(a) and Article 10 of the Compact to declare a drought emergency after consultation with the River Master, in order to conserve the waters in the Delaware River and its tributaries and in the reservoirs of the Upper Delaware River Basin, in order to protect water supply, health, and safety of the residents of the Delaware River Basin and its service area. The River Master retains all of his powers under the Decree including the powers under Article VII, B.1 of the 1954 Decree to conserve the waters in the river, its tributaries, and in reservoirs owned by the City of New York, or in reservoirs developed by other parties to the Decree after 1954.

BY THE COMMISSION

DATED:

FIGURE 1

OPERATION CURVES FOR
CANNONSVILLE, PEPACTION AND NEVERSINK RESERVOIRS



BE IT RESOLVED by the Delaware River Basin Commission:

1. The Commission invites each of the parties to the 1954 Supreme Court Decree in their individual capacities to enter into serious good faith discussions to establish the arrangements, procedures, and criteria for management of the waters of the Delaware Basin consistent with the Compact.

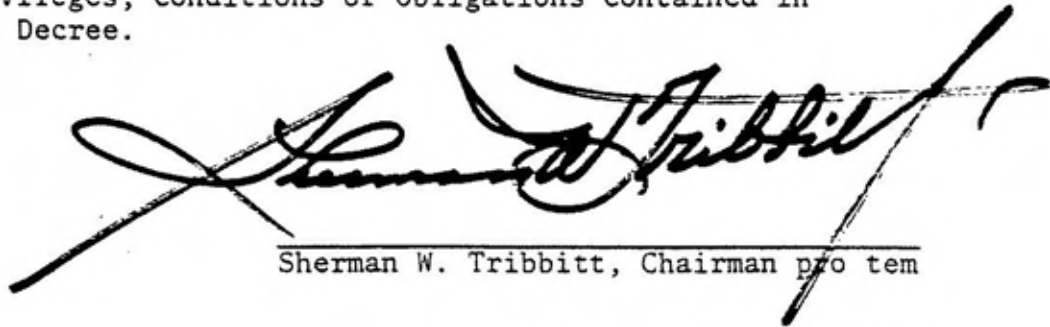
The Commission also invites the participation or assistance of the United States to the extent it shall be requested by the parties.

2. To assist the parties, the Commission staff shall provide technical information as requested by the parties.

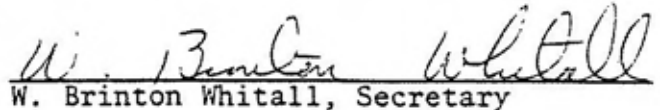
3. The Commission urges the parties to undertake these discussions promptly with the view of concluding by October 1, 1979, unless extended by the agreement of the parties. At the conclusion of the discussions, the Commission invites the parties to submit any agreement reached to the Commission for approval pursuant to the Compact.

4. The Commission requests the chief executive and legal officers of the respective parties to the 1954 Decree to exchange letters agreeing to enter into good faith discussions consistent with this Resolution by December 31, 1978.

5. Each of the parties participating in these discussions preserves any rights, claims or defenses which exist as of the date of this Resolution. This Resolution shall not be deemed an action which shall alter, impair, diminish or adversely affect the rights, powers, privileges, conditions or obligations contained in the Compact or 1954 Decree.



Sherman W. Tribbitt, Chairman pro tem



W. Brinton Whitall, Secretary

ADOPTED: December 13, 1978