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Nos. 1, 2, 3, Original

IN THE

SUPREME COURT OF THE UNITED STATES

October Term 1966

STATES OF WISCONSIN, MINNESOTA, OHIO
and PENNSYLVANIA, *Complainants*

v.

STATE OF ILLINOIS and the METROPOLITAN
SANITARY DISTRICT OF GREATER CHICAGO,
Defendants
and
UNITED STATES OF AMERICA, *Intervenor*

STATE OF MICHIGAN, *Complainant*

v.

STATE OF ILLINOIS and the METROPOLITAN
SANITARY DISTRICT OF GREATER CHICAGO,
Defendants
and
UNITED STATES OF AMERICA, *Intervenor*

STATE OF NEW YORK, *Complainant*

v.

STATE OF ILLINOIS and the METROPOLITAN
SANITARY DISTRICT OF GREATER CHICAGO,
Defendants
and
UNITED STATES OF AMERICA, *Intervenor*

**REPORT OF ALBERT B. MARIS,
SPECIAL MASTER**

August 11, 1980

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REPORT OF ALBERT B. MARIS, SPECIAL MASTER

Prior Proceedings

The prior proceedings in these consolidated cases
culminated in a decree entered by the Court on June 12,

1967, 388 U.S. 426, which enjoined the State of Illinois and its municipalities, political subdivisions, agencies and instrumentalities from diverting waters of Lake Michigan and its watershed into the Illinois waterway, whether by way of domestic pumpage from the lake the sewage effluent from which reaches the waterway, or by way of storm runoff from the Lake Michigan watershed which is diverted into the Sanitary and Ship Canal, or by way of direct diversion from the lake into the canal, in excess of an average for all of them combined of 3,200 cubic feet per second. The decree provided in detail for the method of determining the amount of water actually diverted by the State of Illinois and its instrumentalities from the lake and as storm runoff from the Lake Michigan watershed. By the decree the Court retained jurisdiction of the suits for the purpose of making any order or direction or modification of the decree or any supplemental decree which it might deem at any time to be proper.

The Present Proceeding

On August 4, 1978, the State of Illinois filed a motion for leave to file a petition for modification of the decree, accompanied by the petition and a proposed decree. Responses to the motion were filed by each of the other parties to the litigation and by the United States as intervenor. On April 23, 1979, the Court entered an order appointing the undersigned, Albert B. Maris, special master in these cases with authority to fix the time and conditions for the filing of additional pleadings and to direct subsequent proceedings, summon witnesses, issue subpoenas, take evidence and submit such reports as he might deem appropriate. On the same day by a second order the Court referred to the special master the motion of the State of Illinois for leave to file its petition for modification of the decree.

The purpose of the petition of the State of Illinois

was to obtain a modification of certain of the provisions of the decree with respect to the method by which the amount of water diverted from Lake Michigan and its watershed was determined. The basic changes proposed by the amended decree which Illinois sought were to establish a fixed figure of 550 cfs to represent the storm runoff in the calculation of diverted water and to measure the water actually diverted from the lake at its various intakes rather than at its point of discharge into the Illinois waterway at Lockport. None of the parties in their responses objected to the basic proposal to calculate the amount of the diverted water at its points of inflow rather than at its point of outflow at Lockport, and to compute the annual runoff diverted from the Lake Michigan watershed at a fixed figure rather than by an annual estimate of actual runoff. Wisconsin, however, did object that the fixed figure of 550 cfs proposed by Illinois was too low and would, therefore, result in an increase in the 3,200 cfs average five years diversion which is the maximum permitted by the existing decree of the Court.

From my preliminary consideration of the motion and accompanying petition and amended decree it was my conclusion that the petition presented a question which merited consideration by the Court and I am, accordingly, recommending that the motion for leave to file the petition be granted and the merits of the petition be considered by the Court. It was also my belief that under these circumstances the two orders of the Court above mentioned, taken together, indicate that I should consider and report on the merits of the petition and I, accordingly, proceeded to its consideration.

On May 22, 1979, I held a prehearing conference with counsel for the parties in my chambers in Philadelphia. On May 30, 1979, I entered a prehearing order. On June 22, 1979, the State of Wisconsin submitted an amended response to the petition of Illinois accompanied by a motion for an order defining the scope of the

proceedings and a supporting memorandum. Thereafter the United States, the State of Michigan and the State of Illinois submitted memoranda with respect to the motion of the State of Wisconsin and on August 8, 1979, Illinois submitted a second amended proposed decree to me in conformity with its memorandum. Thereafter, on August 15, 1979, I entered a supplemental prehearing order which dealt with the issues raised by the pleadings and designated those issues which were to be heard and considered by me. The original prehearing order and supplemental prehearing order were lodged with the Clerk of the Court. They set forth the issues raised by the pleadings which, in view of the agreement of the parties hereinafter referred to, it is unnecessary to recount here in detail.

The basic issue remaining to be considered was as to the figure to be used in the diversion calculations to represent the estimated annual storm runoff from the Lake Michigan watershed, 550 cfs as proposed by Illinois or a higher figure as urged by Wisconsin. On October 16, 17 and 18, 1979, I held a hearing in Chicago at which witnesses offered by Illinois presented testimony on this subject. A second hearing was scheduled to commence on February 19, 1980, in Philadelphia for the purpose of the cross-examination of one of the Illinois witnesses and the presentation of testimony by witnesses on behalf of Wisconsin. Prior to that date, counsel for certain of the parties had suggested the possibility of reaching a compromise and on the afternoon of February 18, 1980, I held a conference with counsel in my chambers in Philadelphia at which this possibility was explored and its further exploration agreed upon. The commencement of the hearing scheduled for the next day was accordingly deferred and counsel and their technical advisers spent the next three days in conference on the subject. The result is that a wholly new proposal has been developed and agreed upon which abandons the proposed change of location from Lockport to

the lakefront for the measurement of the diverted water, thus eliminating the necessity for estimating storm runoff, and retains the system of measuring the diverted water at its point of discharge at Lockport. The new proposal introduces certain important modifications in the present system, however, notably, increasing from 5 to 40 years the period of time to be allowed for computing an average diversion of not more than the permitted 3,200 cfs and increasing from 10% to 15%, and in not more than two years in 40 20%, the amount by which the actual average diversion may exceed 3,200 cfs. The annual accounting year is to end on the last day of September rather than February, thus including the usually dry summer period at the end rather than at the beginning of the accounting year. More detailed provisions for measuring the diversion at Lockport are made and the Corps of Engineers of the United States Army is given greater responsibility in this regard. Moreover, the proposed amendments to the decree are not to take effect until October 1st following the enactment by the General Assembly of Illinois of an amendment to its Level of Lake Michigan Act to provide that water used for dilution for water quality purposes in the Sanitary and Ship Canal should not be increased above 320 cfs and that in allocations to new users of lake water priority should be given to allocations for domestic purposes and should be made to the extent practicable with the goal of reducing withdrawals from the Cambrian-Ordovician aquifer which underlies northeastern Illinois and is contiguous with the deep sandstone aquifer underlying southeastern Wisconsin, the two forming one continuous aquifer system from which both Illinois and Wisconsin withdraw water for domestic purposes.

I have filed with the Clerk of the Court the original stipulation, signed by the representatives of all the parties, together with the annexed proposed order amending by paragraphs A and B paragraphs 3 and 5 of the decree of June 12, 1967, so as to carry out the agreed

upon modifications, and by paragraph C making provision for filing with the Clerk a certified copy of the Act of the General Assembly of Illinois the enactment of which is to be a condition of the taking effect of the amendments. Also annexed to the stipulation is a statement of intent and the technical basis for the proposed amendments to the 1967 decree. Copies of all of the above papers are included in the appendix to this report.

Recommendation

I have given careful consideration to the amendments proposed by the parties to the decree of June 12, 1967, and which are included in the appendix to this report. I believe them to be in the public interest and fair to all the parties. While they involve the withdrawal by Illinois of its proposal to change the place of measuring the diversion of Lake Michigan water from the point of discharge at Lockport to the points of intake on the lakefront, they will nonetheless benefit Illinois by making it more nearly possible for the state to use all of the 3,200 cfs of diverted water permitted to it by the 1967 decree. This will be accomplished, *inter alia*, by changing the annual accounting period from the year ending the last day of February to the year ending the last day of September (the end rather than the beginning of the normally dry summer season), by increasing from 5 to 40 years the period of time permitted for achieving an average diversion of not more than 3,200 cfs, and by increasing from 10% to 15%, and in not more than 2 years in 40 20%, the amount by which the average annual diversion may exceed 3,200 cfs. In this connection, it is provided that for the first 39 years the cumulative algebraic sum of the annual departures from 3,200 cfs shall not exceed 2,000 cfs-years, one cfs-year being the volume of water resulting from an average flow of one cfs for a period of one year.

The agreed upon amendments will at the same time benefit the other parties by providing more accurate measurement at Lockport of the amount of the diversion. They will specially benefit Wisconsin to the extent that they reduce the withdrawal of water by Illinois from the aquifer system which underlies both states and from which Wisconsin also withdraws water. This should result through providing that priority in allocations to new users of lake water, including that made available through limiting the amount of dilution water to 320 cfs, be given to use for domestic purposes and to the extent practicable with the goal of reducing withdrawals from that aquifer system.

I, accordingly, recommend

(a) that the petition of Illinois for leave to file its petition for modification of the decree of June 12, 1967, be granted, and

(b) that the order modifying the decree of June 12, 1967, as agreed to by the parties to these suits and annexed to their stipulation be adopted by the Court.

Respectfully submitted,

Albert B. Maris
Special Master

August 11, 1980

APPENDIX

A. STIPULATION

(Filed with the Special Master July 11, 1980)

IN THE
SUPREME COURT OF THE UNITED STATES
OCTOBER TERM, 1966

STATES OF WISCONSIN, MINNESOTA, OHIO and PENNSYLVANIA, <i>Complainants,</i> <i>vs.</i> STATE OF ILLINOIS and the METRO- POLITAN SANITARY DISTRICT OF GREATER CHICAGO, <i>Defendants,</i> UNITED STATES OF AMERICA, <i>Intervenor.</i>	}	No. 1 Original
STATE OF MICHIGAN, <i>Complainant,</i> <i>vs.</i> STATE OF ILLINOIS and the METRO- POLITAN SANITARY DISTRICT OF GREATER CHICAGO, <i>Defendants,</i> UNITED STATES OF AMERICA, <i>Intervenor.</i>	}	No. 2 Original
STATE OF NEW YORK, <i>Complainant,</i> <i>vs.</i> STATE OF ILLINOIS and the METRO- POLITAN SANITARY DISTRICT OF GREATER CHICAGO, <i>Defendants,</i> UNITED STATES OF AMERICA, <i>Intervenor.</i>	}	No. 3 Original

STIPULATION

It is hereby stipulated and agreed among the parties that the matters raised in the Petition of the State of Illinois dated August 4, 1978, are resolved by the attached proposed Order and attached stipulated Statement of Intent and Technical Basis for Proposed Amendments to the 1967 Decree entered by the Court in the above cases.

AGREED:
STATE OF ILLINOIS
William J. Scott
Attorney General

/s/ WILLIAM J. SCOTT

STATE OF WISCONSIN

/s/ BRONSON C. LAFOLLETTE

Bronson C. LaFollette
Attorney General

UNITED STATES OF AMERICA

Wade H. McCree, Jr.
Solicitor General

By /s/ LOUIS F. CLAIBORNE
Deputy Solicitor General

STATE OF MINNESOTA

Warren R. Spannaus
Attorney General

By /s/ PHILIP OLFELT
Philip Olfelt
Assistant Attorney General

STATE OF MICHIGAN

Frank Kelly
Attorney General

By /s/ STEWART H. FREEMAN
Stewart Freeman
Assistant Attorney General

STATE OF NEW YORK

Robert Abrams
Attorney General

By /s/ CYRIL H. MOORE, JR.
Cyril H. Moore
Assistant Attorney General

METROPOLITAN SANITARY
DISTRICT OF GREATER CHICAGO

 /s/ H. MCMILLAN
Hugh H. McMillan
General Superintendent

STATE OF OHIO

William J. Brown
Attorney General

By /s/ JOEL TAYLOR
 Joel Taylor
 Deputy Chief Counsel

STATE OF PENNSYLVANIA

Edward Biester
Attorney General

By /s/ JAMES ROCHOW
 James Rochow
 Assistant Attorney General

B. ORDER

IN THE
SUPREME COURT OF THE UNITED STATES
OCTOBER TERM, 1966

STATES OF WISCONSIN, MINNESOTA, OHIO and PENNSYLVANIA, <div style="text-align: right;"><i>Complainants,</i></div> <div style="text-align: center;"><i>vs.</i></div> STATE OF ILLINOIS and the METRO- POLITAN SANITARY DISTRICT OF GREATER CHICAGO, <div style="text-align: right;"><i>Defendants,</i></div> UNITED STATES OF AMERICA, <div style="text-align: right;"><i>Intervenor.</i></div>	}	No. 1 Original
STATE OF MICHIGAN, <div style="text-align: right;"><i>Complainant,</i></div> <div style="text-align: center;"><i>vs.</i></div> STATE OF ILLINOIS and the METRO- POLITAN SANITARY DISTRICT OF GREATER CHICAGO, <div style="text-align: right;"><i>Defendants,</i></div> UNITED STATES OF AMERICA, <div style="text-align: right;"><i>Intervenor.</i></div>	}	No. 2 Original
STATE OF NEW YORK, <div style="text-align: right;"><i>Complainant,</i></div> <div style="text-align: center;"><i>vs.</i></div> STATE OF ILLINOIS and the METRO- POLITAN SANITARY DISTRICT OF GREATER CHICAGO, <div style="text-align: right;"><i>Defendants,</i></div> UNITED STATES OF AMERICA, <div style="text-align: right;"><i>Intervenor.</i></div>	}	No. 3 Original

Ordered:

ORDER

A. Paragraph 3 of the Decree entered by the Court herein on June 12, 1967, is amended to read as follows:

3. For the purpose of determining whether the total amount of water diverted from Lake Michigan by the State of Illinois and its municipalities, political sub-divisions, agencies and instrumentalities is not in excess of the maximum amount permitted by this decree, the amounts of domestic pumpage from the lake by the State and its municipalities, political sub-divisions, agencies and instrumentalities the sewage and sewage effluent derived from which reaches the Illinois waterway, either above or below Lockport, shall be added to the amount of direct diversion into the canal from the lake and storm runoff reaching the canal from the Lake Michigan watershed computed as provided in Paragraph 2 of this decree. The annual accounting period shall consist of twelve months terminating on the last day of September. A period of forty (40) years, consisting of the current annual accounting period and the previous thirty-nine (39) such periods (all after the effective date of this decree), shall be permitted, when necessary, for achieving an average diversion which is not in excess of the maximum permitted amount; provided, however, that the average diversion in any annual accounting period shall not exceed 3680 cubic feet per second, except that in any two (2) annual accounting periods within a forty (40) year period, the average annual diversion may not exceed 3840 cubic feet per second as a result of extreme hydrologic conditions; and, that for the first thirty-nine (39) years the cumulative algebraic sum of each annual accounting period's average diversion minus 3200 cubic feet per second shall not exceed 2000 cubic feet per second-years. All measurements and computations required by this decree shall be made by the appropriate officers, agencies or instrumentalities of the State of Illinois, or the Corps of Engineers of the United States Army subject to agreement with and cost-sharing by the State of Illinois for all reasonable costs including equipment, using the best current engineering practice and scientific knowledge. If made by the State of Illinois, the

measurements and computations shall be conducted under the continuous supervision and direction of the Corps of Engineers of the United State Army in cooperation and consultation with the United States Geological Survey, including but not limited to periodic field investigation of measuring device calibration and data gathering. All measurements and computations made by the State of Illinois shall be subject to periodic audit by the Corps of Engineers. An annual report on the measurements and computations required by this decree shall be issued by the Corps of Engineers. Best current engineering practice and scientific knowledge shall be determined within six (6) months after implementation of the decree based upon a recommendation from a majority of the members of a three-member committee. The members of this committee shall be appointed by the Chief of Engineers of the United States Army Corps of Engineers. The members shall be selected on the basis of recognized experience and technical expertise in flow measurement or hydrology. None of the committee members shall be employees of the Corps of Engineers or employees or paid consultants of any of the parties to these proceedings other than the United States. The Corps of Engineers shall convene such a committee upon implementation of this decree and at least each five (5) years after implementation of this decree to review and report to the Corps of Engineers and the parties on the method of accounting and the operation of the accounting procedure. Reasonable notice of these meetings must be given to each of the parties. Each party to these proceedings shall have the right to attend committee meetings, inspect any and all measurement facilities and structures, have access to any data and reports and be permitted to take its own measurements.

B. Paragraph 5 of the said Decree entered by the Court herein is amended by adding thereto an additional sentence to read as follows:

The amendment to paragraph 3 of this Decree shall take effect on the first day of October following the passage into law by the General Assembly of the State of Illinois of an amendment to the Level of Lake Michigan Act providing that the amount used for dilution in the Sanitary and Ship Canal for water quality purposes shall not be increased above three hundred twenty (320) cubic feet per second, and that in allocations to new users of Lake Michigan water, allocations for domestic purposes be given priority and to the extent practicable allocations to new users of Lake Michigan water shall be made with the goal of reducing withdrawals from the Cambrian-Ordovician aquifer.

C. A certified copy of the above legislation shall be served upon the parties and filed with the Clerk of the Supreme Court by the State of Illinois. If no party raises an objection to the adequacy of the legislation within 30 days of service, Illinois will have complied with the requirements of the amendment made by this Order to paragraph 5 of the Decree entered by the Court herein on June 12, 1967. Any such objection shall be raised in the manner set forth in paragraph 7 of said Decree.

C.

**STATEMENT OF INTENT AND TECHNICAL BASIS
FOR PROPOSED AMENDMENTS TO 1967 DECREE**

This statement sets forth the intent of the parties and the technical basis for the revisions to certain of the provisions of paragraphs 3 and 5 of the 1967 Decree.

The proposed change in the 1967 Decree has been designed to alter in part the provisions of the existing Decree that prevent Illinois from effectively utilizing and managing the 3200 cubic feet per second (cfs) of Lake Michigan water which Illinois was allocated.

Under the existing system, increasing amounts of impervious areas and increasing demand by domestic users elevate the risk that the language of the decree will be violated in any one or five year period if additional allocations are made by the State to domestic users for a period of years consistent with good management practice.

The proposed change accomplishes the following:

1. Increases the period for determining compliance with the 3200 cfs limit from a five year running average to a forty year running average;
2. During the first thirty-nine years of the decree, allows Illinois to exceed the 3200 cfs limit by 2000 cfs-years in the aggregate (one cfs-year is the volume of water resulting from an average flow of one cfs for a period of one year);
3. Limits the average diversion in any one accounting period to 115% of 3200 cfs, but in two years of any forty year period permits the average diversion to reach 120% of 3200 cfs, to allow for extreme hydrologic conditions.

The lengthening of the averaging period from five to forty years reduces the variability of the averaged figure,

thus decreasing the amount of water that needs to be held in reserve for storm water runoff and increasing the amount of water that may be allocated for domestic purposes to reduce in part the pumpage from the Cambrian-Ordovician aquifer.

The lengthening of the averaging period also allows an increase in the planning period to a period of time that is more compatible with the life of certain types of water supply facilities, thus permitting more efficient use of the available diversion without increasing the total allowable diversion, and permitting better management of all the water resources of the region.

In establishing the limits of paragraph three of the amended decree, the available data and uncertainties as to the behavior of and interactions between the various elements of the hydrologic regime under current and future conditions were limiting factors.

To estimate maximum hydrologic variations that must be considered in the allocation accounting process, the forty-four year precipitation and runoff data contained in "Water Yield, Urbanization, and the North Branch of the Chicago River", a report by the Northeastern Illinois Planning Commission and Hydrocomp, Inc., dated October 14, 1976, were used. These data assumed a 30% imperviousness factor and were used by the parties to approximate the conditions of the entire Lake Michigan diversion watershed at the present time.

These data indicate that the maximum departure above the mean annual stormwater flow is 59%. Assuming, therefore, that the mean annual stormwater flow is 683 cfs, the maximum departure is 405 cfs. This could result in a diversion of 13% above the allowable 3200 cfs maximum. Give the relatively short period of record and the likelihood of increased runoff resulting from urbanization, it was agreed that a 15% exceedance, to a maximum of 3680 cfs, would be allowed in any year to accommodate high stormflows and that in any two years of

the 40 year accounting period the diversion may be increased by 20%, to a maximum of 3840 cfs, to accommodate extraordinary hydrologic conditions.

Because of year-to-year variations in storm runoff there will be series of years when the average annual diversion will need to exceed 3200 cfs for best management, and some years when the diversion will be less than the 3200 cfs average. Calculations of the cumulative sum of the annual departures show that the maximum cumulative exceedance of 3200 cfs would be slightly below 1500 cfs-years as indicated by the forty-four years of data that were used. The possibility exists that in the initial forty year period the cumulative exceedance may be greater than 1500 cfs-years. Since the record used is relatively short and urbanization is likely to increase runoff, the maximum cumulative exceedance has been established at 2000 cfs-years.

The goal of this amended Decree is to maintain the long-term average annual diversion of water from Lake Michigan at or below 3200 cfs.

