Minnesota Water Resources Board
555 Wabasha Street
Room 206
St. Paul, Minnesota
55102

STATE OF MINNESOTA)
)ss AFFIDAVIT
COUNTY OF RAMSEY)

Mel Sinn, being first duly sworn on oath, deposes and says:

THAT HE IS the Executive Secretary for the Minnesota Water Resources Board; that he has compared the attached copy of an Order relating to the Carnelian-Marine Watershed District dated at Saint Paul, Minnesota, on the 22nd day of June 1981, with the original thereof on file in his official custody; and

THAT SAID COPY is a true and correct copy of said original and the whole thereof.

Mel Sinn

Subscribed and sworn to before me
this 23rd day of June 1981

Ellen M. Rothenbacher

STATE OF MINNESOTA
DEPARTMENT OF STATE
FILED
JUN 23 1981
Joan Anderson Growe
Secretary of State

#33465
O.D.

Minnesota Water Resources Board
555 Wabasha Street
Room 206
St. Paul, Minnesota
55102

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In the Matter of the Petition for the Establishment of the Carnelian-Marine Lakes Watershed District (Washington County).

FINDINGS OF FACT, CONCLUSIONS OF LAW, ORDER

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A nominating petition, initiated and signed by the County Board of Commissioners of Washington County, was filed with the Minnesota Water Resources Board on November 6, 1980. The petition requested the establishment of the Carnelian-Marine Lakes Watershed District, the appointment of a Board of Managers, and the fixing of a boundary for the district, all pursuant to Chapter 799, Laws of Minnesota 1955, as amended, also known as the Minnesota Watershed Act, Chapter 112. The purposes of the proposed watershed district as stated in the petition are to provide for the orderly management of water resources within the proposed district in order to prevent the recurring damage to life and property that results from uncontrolled flooding; to afford a means of protecting public and private improvements from needless damage and destruction; to provide a government entity charged with the orderly management of waters within the watershed for the beneficial use of the citizens of the State of Minnesota; and for the following additional purposes:

"(a) To control and alleviate flood water damage to homes and property within the proposed district;

(b) To improve stream, channel, marsh, and lake drainage within the proposed district;

(c) To regulate the flow of water and conserve the water of the watershed for beneficial purposes and prevent damage to roads, bridges, and other public and private improvements within the proposed district;

(d) To provide and conserve water for industrial, domestic, agricultural, and recreational uses;

(e) To provide for the maintenance of the proposed district's water resources in a manner consistent with public health and sanitation needs;

(f) To repair, improve, relocate, modify, consolidate, and abandon, in whole or in part, homes, structures, wells, sewage and drainage systems within the proposed district;

(g) To adopt preventative and remedial measures for the control of land and soil erosion and the siltation of water courses resulting therefrom;

(h) To regulate improvements by riparian landowners of the beds, banks, and shorelines of lakes, streams, marshes, and ditches through the issuance of permits or otherwise in order to preserve and regulate the beneficial use of the district's water resources;

(i) To provide for wildlife and recreational areas, such as parks, camps, and beaches, by controlling, preserving, and regulating the maintenance of water within, and the movement of water through the proposed district;

(j) To cause new artificial water storage sites to be constructed and existing natural storage sites to be maintained and restored within the proposed district;

(k) To arrange for the most economical system for the pumping of water out of the proposed watershed district and into areas having natural outflow during high water cycles to prevent the flooding of homes, businesses, farm acreage, and other land holdings, whose historical use and enjoyment has been premised upon the maintenance of water levels below those which have existed in the proposed district for the past decade;

(l) To do such other activities as are consistent with good water management principles and allowed by applicable law."

On December 12, 1980, the Minnesota Water Resources Board (Board) ordered a hearing to be held on the nominating petition on January 6, 1981, in the Auditorium of the Stillwater Senior High School, Stillwater, Minnesota 55082.

Appearing with the Board were Mr. Mel Sinn, Assistant Executive Secretary and Mr. Cooper S. Ashley, Special Assistant Attorney General. Appearing for the petitioner was Mr. Robert Kelly, Washington County Attorney. Mr. Ronald Gavelek represented "Save Carnelian Lakes Association", supporter of the petition. Mr. Robert Jensen represented the "Concerned Big Marine Lake Shore Owners Association", supporter of the petition. Mr. Willard Converse, Attorney, St. Paul, appeared on behalf of Mr. William Schwab and others in opposition to the petition. Mr. W. E. Jepsen, Attorney, Stillwater, appeared on behalf of the townships of New Scandia, May, and Stillwater in opposition to the petition. Mr. Franz X. Westermeier also appeared on behalf of the Township of New Scandia in opposition to the petition. Other persons appeared on behalf of or against the proposed watershed district.

The Board, having heard the testimony and evidence offered, having duly considered the same, and having considered the entire record of the proceeding, being cognizant of State Environmental Policy, Minnesota Statutes, Chapter 116D, makes the following Findings of Fact, Conclusions of Law, and Order:

FINDINGS OF FACT

I. The Proceeding

1. A duly executed nominating petition, signed by the Washington County Board of Commissioners, was filed with the Board on November 6, 1980. Filed with the nominating petition were the required proofs of service.
2. The Director of the Division of Waters of the Minnesota Department of Natural Resources (MDNR) filed with the Board on December 4, 1980, a written preliminary report in accordance with Section 112.37, Subd. 3. The Director recommended "...the establishment of the most appropriate vehicle for local implementation of water programs, such as the proposed Carnelian-Marine Lakes Watershed District."
3. The Board found the nominating petition sufficient; found that there was no suitable place within the proposed district for a hearing on the petition; and on December 12, 1980, ordered a hearing to be held on January 6, 1981, beginning at 1:30 p.m. in the Auditorium of the Stillwater Senior High School, Stillwater, Minnesota 55082.
4. The Board's Notice of Hearing was published in the Stillwater Weekly Gazette, a legal newspaper in Washington County, on December 18 and 25, 1980. Notices of Hearing were also mailed to the Washington County Auditor; to the Director of the Division of Waters of the Minnesota Department of Natural Resources; to the Commissioner of the Minnesota Department of Natural Resources; to the Mayor of the City of Hugo; to the Chairmen of the Townships of Grant, May, New Scandia, and Stillwater; and to other persons.
5. Arrangements were made by the Board to have Hearing Examiner Phyllis A. Reha of the Minnesota Office of Administrative Hearings conduct the hearing.
6. The hearing was held on January 6, 7, 8, 9,and 15, 1981, including evening sessions on January 6, 7, and 15, 1981. During the afternoon of January 8, 1981, the Hearing Examiner, four members of the Board, and representatives of the parties, personally viewed much of the proposed watershed district. Following the close of the testimony, the hearing record was held open by order of the Hearing Examiner until February 20, 1981, for the purpose of

allowing written comments by the public; of allowing submission of additional hearing exhibits not immediately available during the hearing; and of allowing amendment to the petition by the petitioners for submission of additional nominees. The Hearing Examiner also established a schedule for filing initial and reply briefs. Initial briefs were to be filed by March 5, 1981 and reply briefs by March 13, 1981.

7. The Report of the Hearing Examiner was filed with the Board on April 2, 1981.

8. Between April 9 and 24, 1981, written exceptions to the Report of the Hearing Examiner were filed in the office of the Board by Messrs. Gavelek, Kelly, Jepsen, Converse, and Jensen. On April 25, 1981, a majority of the members of the Board heard arguments by Messrs. Gavelek, Jepsen, and Westermeier on their exceptions to the Report of the Hearing Examiner. Also present were Mr. Richard Caldecott, representing Washington County; Mr. Robert Jensen, representing the Concerned Big Marine Lake Shore Owners Association; and others. On May 18, 1981, a majority of the members of the Board heard argument by Mr. Converse on his exceptions to the Hearing Examiner's Report. Also present were Mr. Robert Kelly, representing Washington County, and others.

II. The Watershed

9. The territory of the proposed watershed district is located wholly in northern Washington County, north of the City of Stillwater. The proposed area includes approximately 27,500 acres.

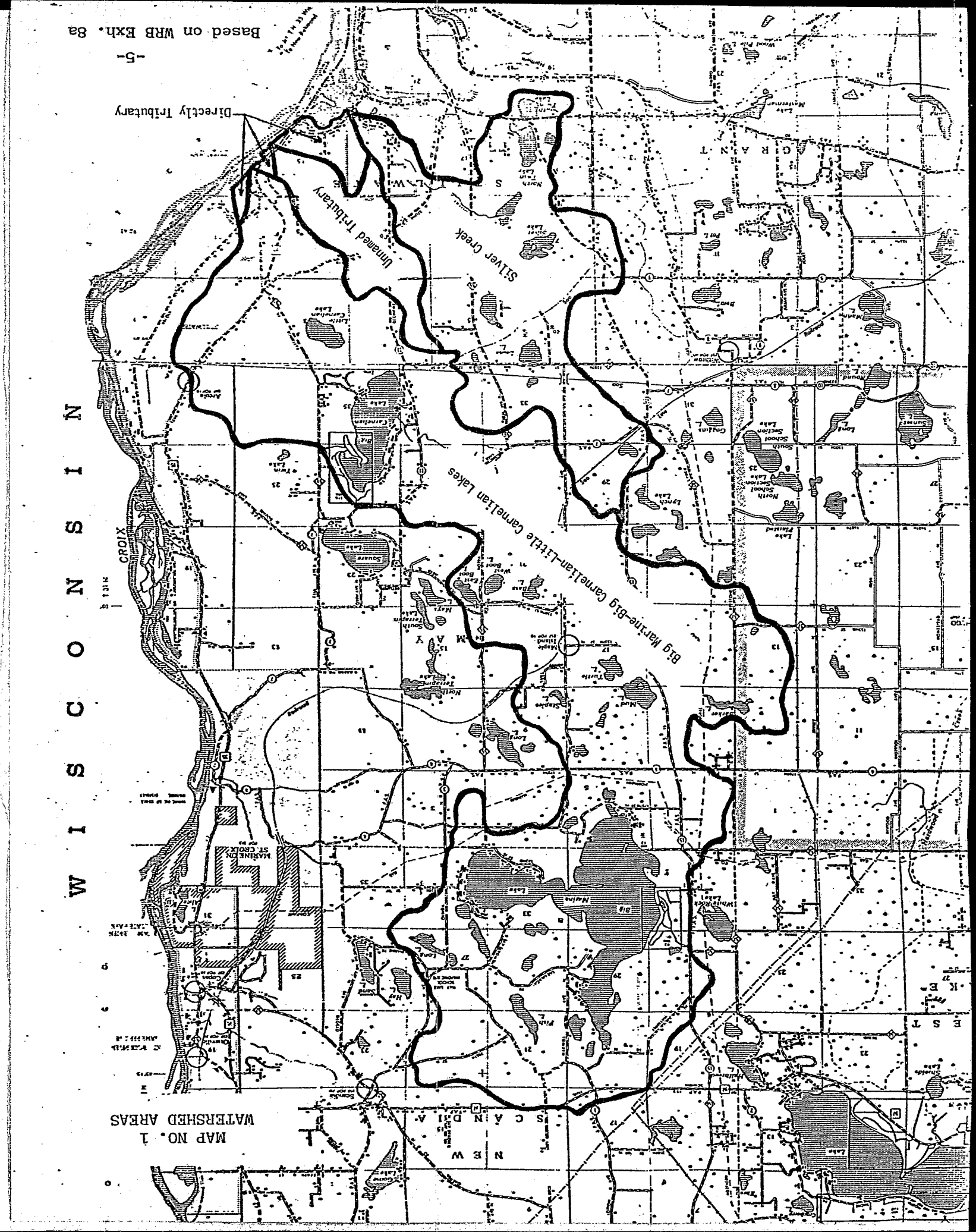
10. The territory of the proposed watershed district lies in parts of New Scandia, May, and Stillwater Townships; and in parts of the Cities of Hugo and Stillwater.

11. Part of the St. Croix River, west of the boundary of Washington County located in the St. Croix River, is in the territory of the proposed watershed district.

12. The proposed watershed district consists of the watersheds of: Big Marine Lake, Big Carnelian Lake, and Little Carnelian Lake; Silver Creek; and an unnamed tributary to the St. Croix River. The proposed district also includes lands that are directly tributary to the St. Croix River, located in Sections 11, 14, 15, and 16 of Township 30 North, Range 20 West, 4th Principal Meridian. See Map No. 1.

Note: Section, township, and range designations hereinafter refer to the 4th Principal Meridian.

Based on WRB Exh. 8a



MAP NO. 1
WATERSHED AREAS

13. On the northwest side of the proposed watershed district is the Rice Creek Watershed District whose runoff flows westerly to the Mississippi River. The Board established the Rice Creek Watershed District on January 18, 1972. On the westerly and southerly sides of the proposed watershed district, southerly of the Rice Creek Watershed District, is the watershed of Browns Creek, which outlets to the St. Croix River near the northeast corner of the City of Stillwater. Easterly of the proposed watershed district are lands directly tributary to the St. Croix River. Northerly of the proposed watershed district is the Sunrise River watershed, which outlets to the St. Croix River near the City of Sunrise.

14. All of the following watercourses outlet to the west side of the St. Croix River in Township 30 North, Range 20 West: Silver Creek near the southeast corner of Section 16; the unnamed tributary at the southeasterly edge of Section 15; and the watercourse from Little Carnelian Lake at the southeasterly edge of Government Lot 1 in Section 14, all in the State of Minnesota.

15. The proposed watershed district contains numerous depressions and marsh areas, a number of small unnamed lakes, and 17 named lakes.

16. The proposed watershed district contains two large lakes - Big Marine and Big Carnelian.

17. Big Marine Lake is located in the northern part of the proposed watershed district generally in Sections 20, 29, 31, 32, 33, and 34, Township 32 North, Range 20 West; and Section 5, Township 31 North, Range 20 West.

18. Big Carnelian Lake is situated in the southeasterly part of the proposed watershed district generally in Sections 26, 34, and 35, Township 31 North, Range 20 West.

19. Little Carnelian Lake lies about one-half mile southeasterly of Big Carnelian Lake in Section 3, Township 30 North, Range 20 West.

20. Big Marine and Big Carnelian Lakes each have a public access and are used by the public for fishing, swimming and boating. There are boat rental facilities for the public on both lakes.

21. Big Carnelian and Little Carnelian Lakes were meandered as one lake in 1847 by the Government Land Office. The combined lake was called "Carnelian Lake". Big Marine Lake was also meandered in 1847. Table I below provides area and elevation information about these lakes from the original Government Land Office Plat dated April 18, 1848, and from the Minnesota Conservation

Department's (now the MDNR) 1968 publication, "An Inventory of Minnesota Lakes", Division of Waters, Soils and Minerals, Bulletin No. 25. See Map No. 2.

TABLE I

Lake Name	1848 Plat		Bulletin No. 25 (1968)	
	Area (Acres)	Elevation*	Area (Acres)	Elevation
Big Marine Lake	2,254 (1)	942' (2)	1,577	(Not Given)
Big Carnelian Lake	-----	---	444	(Not Given)
Little Carnelian Lake	-----	---	85	(Not Given)
"Carnelian Lake"	847 (1)	880' (2)	-----	--------

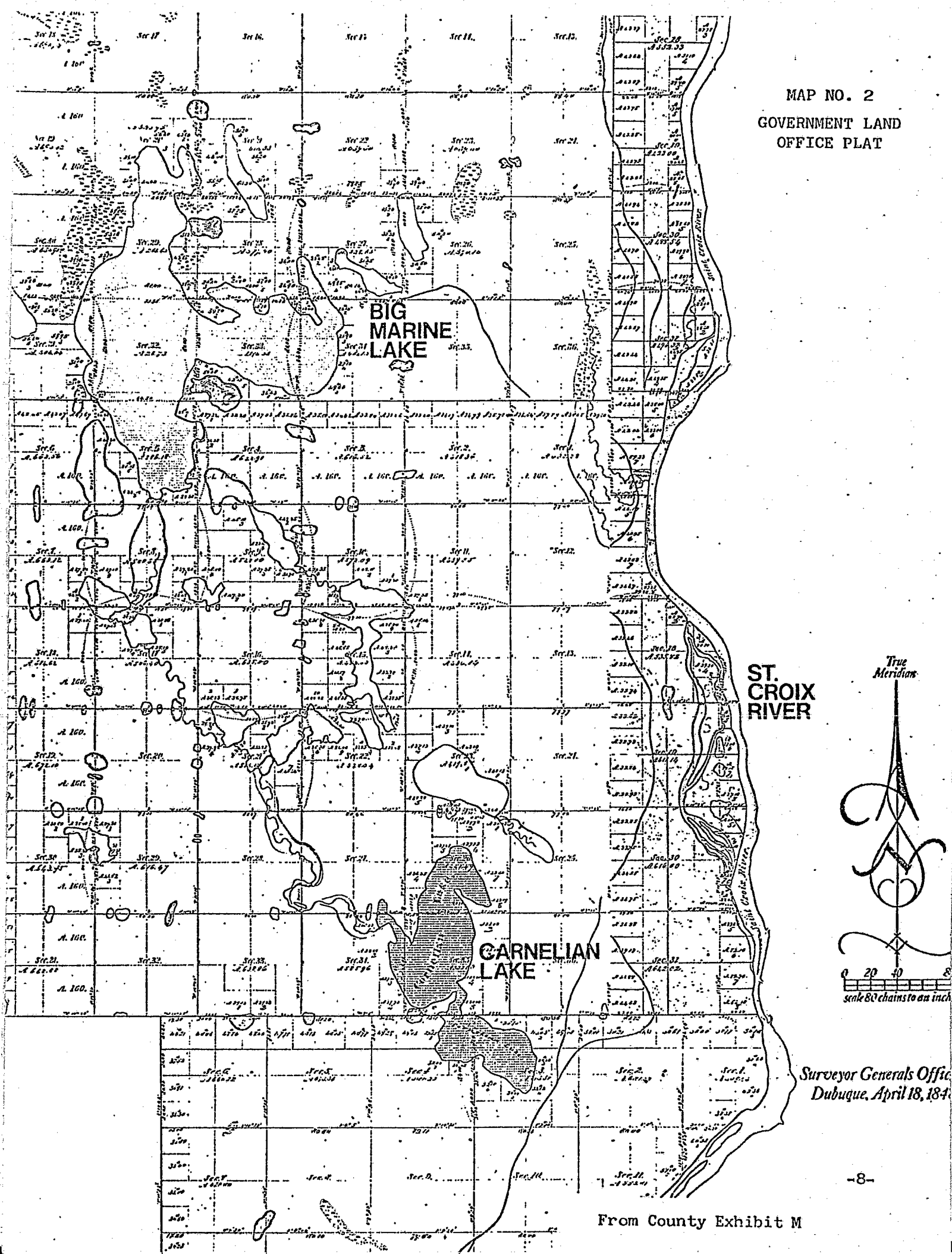
(1) From the Director's Report, Water Resources Board Exhibit No. 8.

(2) Estimate made in the 1977 Toltz, King, Duvall, Anderson and Associates, Inc. Study.

*All elevations in this Order are in feet above mean sea level.

22. There is a watercourse which begins in the marshy area south of Big Marine Lake and extends southward to Turtle Lake. A natural elevation of about 942.2' just south of Turtle Lake controls the elevation of Big Marine Lake. The watercourse continues southeasterly to Bass Lake. The gradient between Big Marine Lake and Bass Lake is approximately two feet per mile. From Bass Lake the watercourse continues to the west shoreline of Big Carnelian Lake. The natural runout elevation of Big Carnelian Lake is about 866.4'. The watercourse continues southeasterly from the southeast shoreline of Big Carnelian Lake to the northwest corner of Little Carnelian Lake. The watercourse then continues from the east side of Little Carnelian Lake easterly and southerly to the west side of the St. Croix River. Runout of water from Little Carnelian Lake would begin at about 884.9'. See Figure No. 1.

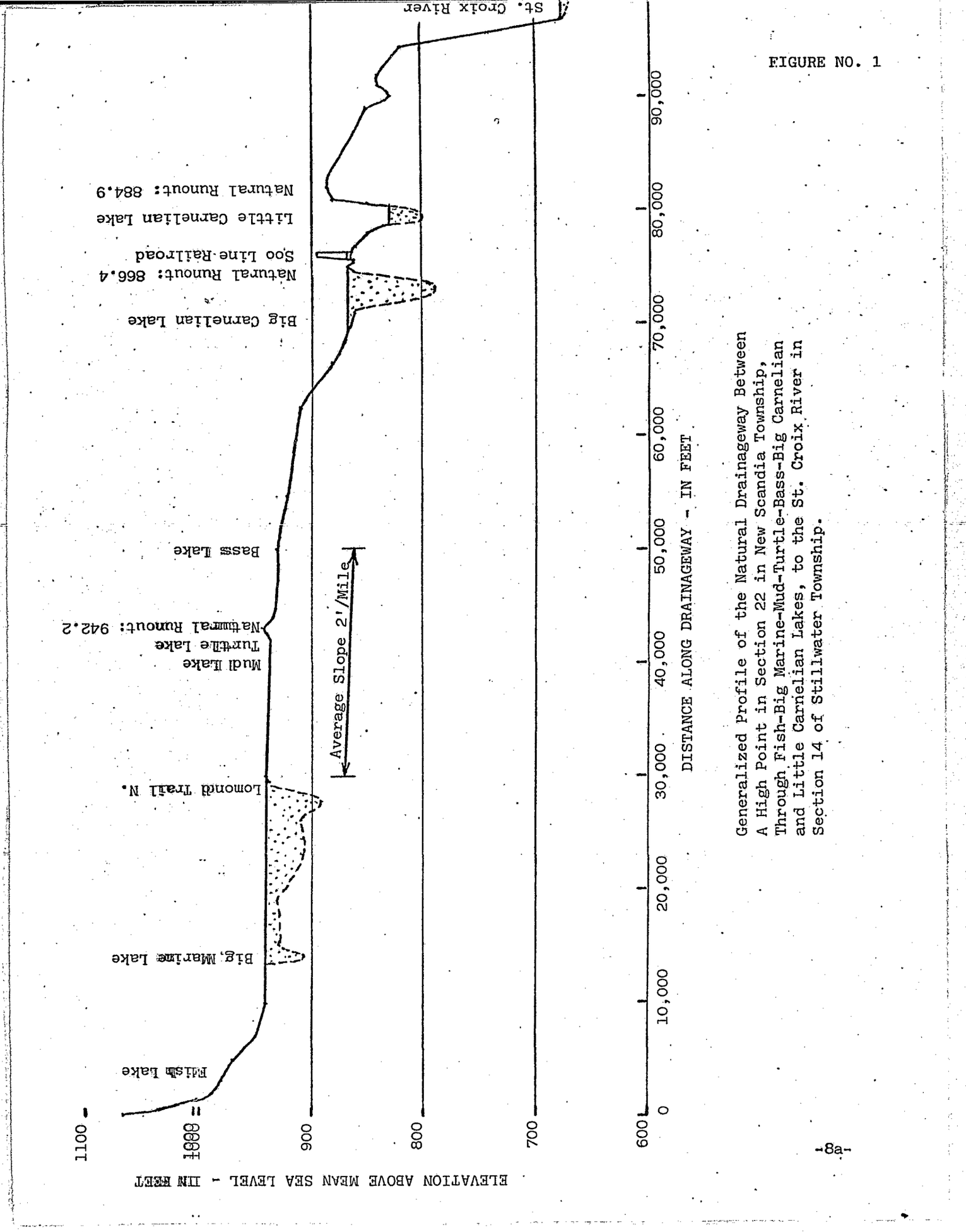
23. The Director writes that Big Marine Lake and Big Carnelian Lake historically have discharged runoff into their outlet watercourses only a small portion of the time, from about 1850 to the present, and Little Carnelian Lake may never have discharged into its outlet watercourse.



MAP NO. 2

GOVERNMENT LAND
OFFICE PLAT

From County Exhibit M



Generalized Profile of the Natural Drainageway Between A High Point in Section 22 in New Scandia Township, Through Fish-Big Marine-Mud-Turtle-Bass-Big Carnelian and Little Carnelian Lakes, to the St. Croix River in Section 14 of Stillwater Township.

FIGURE NO. 1

24. Though the record shows infrequent surface outflow from Big Marine, Big Carnelian, and Little Carnelian Lakes into their outlet watercourses, their watercourses do convey runoff from lands along and directly tributary to them.

25. At the time of the Board's hearing in January 1981, water was flowing southerly in the outlet watercourse of Big Marine Lake.

26. Big Marine Lake and Big Carnelian Lake levels are influenced by water table levels and Jordan aquifer potentiometric levels. Jordan aquifer levels fluctuate gradually over long periods of time.

27. Washington County topography is dominated by the Eastern St. Croix Moraine, which is characterized by steep hills interspersed with deep depressions. there are a few large lakes, but most depressions contain either small lakes, marshes, or unconsolidated material (largely undecomposed organic matter or peat). Near the center of the proposed watershed district islands of glacial till protrude through sandy deposits of the Anoka Sand Plain.

28. Most drainage, despite the proximity of the St. Croix River, is downward into the underlying sand, gravel, or bed rock; runoff travels short distances through swales, shallow watercourses, and indefinite valleys into lakes and depressions.

29. The highest elevation in the watershed is about 1,065' in Section 22, Township 32 North, Range 20 West. The lowest elevation is about 675' at the St. Croix River in Section 15, Township 30 North, Range 20 West.

30. The northern and southern portions of the watershed contain soils formed dominantly in outwash carried, sorted, and deposited by glacial melt water.

31. The dominant soil series formed in the glacial outwash are "Zimmerman" and "Antigo".

32. "Zimmerman" soils are coarse textured; level to steep; and either excessively, somewhat poorly, or very poorly drained. These soils are generally used for farming. Corn, soybeans, and small grains are the main crops on the farms. Some fields have been planted to coniferous trees for Christmas harvest. Other areas are used for livestock grazing, wildlife, and rural homes.

33. "Antigo" soils are steep to nearly level; well to excessively drained; and medium to coarse textured. These soils are generally used for cultivated crops or pasture on the farms. Corn, small grains, and alfalfa are the main crops. Many areas are in woodland and there are a number of rural homes.

33a. There is a hazard of ground water pollution if "Zimmerman" or "Antigo" soils are used for septic tank absorption fields.

33b. The middle part of the watershed area consists of "Santiago" soils made up of glacial till. Its relief is undulating to steep upland and is susceptible to erosion. These soils produce corn, soybeans, and alfalfa on the farms. The steeper slopes are in pasture and woodland. Some areas are used for rural homes, recreation, and wildlife. These soils are suitable for residential development, though steep slopes limit use as building sites.

33c. The seasonal high water table is usually below a depth of six feet in the "Zimmerman", "Antigo", and "Santiago" soils.

33d. At the outlet area of the watershed into the St. Croix River are shallow soils on steep-sloping bedrock. The "Mahtomedi variant" soils, now in woodland, have limitations as to building sites, sanitary facilities, and crops.

34. During the afternoon of January 8, 1981, the Board travelled from the City of Stillwater through the watershed to and around Big Marine Lake, thence to the east side of Big Carnelian Lake, thence to the west side of Little Carnelian Lake, and thence back to the City of Stillwater. It was a winter day with ice on the lakes and little snow on the ground.

35. The Board observed the land use in the watershed on its tour. It is predominantly covered with grasses and trees. In the northern and southern parts of the watershed there are plowed and cropped fields. Such fields are not numerous. Sites of operating farmsteads are few. Many residences located on small acreages are scattered along the thoroughfares. A few plantings of coniferous trees were seen. Occasional land development (platted) areas were visible. Low areas and very small depressions are

scattered throughout the watershed. There are a few moderately-sized low areas. The Board saw dead trees standing in these areas. Evidently, such areas had been dry, allowing tree growth, but upon the return of standing water for a number of seasons the trees had died. Many summer cottages and year-around homes, some of which were mentioned in the testimony, were observed close to Big Marine Lake and Big Carnelian Lake.

36. There is a network of county, township, and private roads in the proposed watershed district.

37. There are two operating railroad lines crossing the proposed watershed district. One Soo Line railroad bed crosses from east to west practically along the north line of Township 30 North, Range 20 West (Stillwater). Another Soo Line railroad bed takes an "S" form across Township 31 North, Range 20 West (May).

III. Water Related Problems

A. Encroachment Upon the Beds of Big Marine and Big Carnelian Lakes

38. The earliest instance, cited in the record, of encroachment upon the beds of the lakes is the platting of the so-called "Bliss Addition" on the western side of Big Marine Lake. In 1950 Mr. E. A. Bliss platted and filled lots which township and state officials believed were on lake bed, although no formal determination of Big Marine's normal ordinary high water (NOHW) level had been made. At that time New Scandia Township refused to approve Mr. Bliss' first plat. The State Conservation Department tagged Mr. Bliss for working in the bed of a meandered lake without a permit, for which he subsequently received a small fine from a Court. Despite these attempts to prevent the development it was completed. In the later 1950's and in the 1960's several other areas that included lake bed were platted on Big Marine and Big Carnelian Lakes. Lots were subsequently sold and developed, primarily for seasonal lake cabins and cottages.

39. The platting, filling, grading, and development of lots on the beds of Big Marine and Big Carnelian Lakes exploited valuable natural resources that properly belong in the public domain as natural basins for public waters.

40. Several witnesses testified that the people whose homes were inundated had built on lake bed.

41. If the NOHW levels established by the Commissioner of the MDNR on October 13, 1978, are used to define the beds of these lakes, then structures built below 942.5' on Big Marine Lake, below 867.7' on Big Carnelian Lake, and below 854.4' on Little Carnelian Lake were built on lake bed.

42. The petition for establishment of the proposed watershed district, along with several witnesses, referred to "flooding" of property on the lakes. Inundation of property which is situated below the NOHW level of a lake cannot properly be described as "flooding", in a technical sense.

43. The 1972 MDNR Report entitled "Big Marine Lake - A Summary and Evaluation of Water Level Problems" appraised 248 dwellings around the lake in June and July of 1972, when the level of Big Marine Lake was about 939'. Two dwellings were found in water; four had water up to their foundations; 89 were 0-2 feet above water; 38 were 2-4 feet above water; and 115 were over 4 feet above water. According to this information, well over a hundred dwellings must have been below the presently established NOHW level of 942.5'.

44. The 1975 Orr-Schelen-Mayeron and Associates, Inc. (OSM) Water Level Study of Big Marine Lake found 31 homes below 942', and 162 homes below 945' on Big Marine Lake.

45. The 1977 Toltz, King, Duvall, Anderson and Associates, Inc. (TKDA) Water Management Study found 23 homes below 942', and 89 homes below 945' on Big Marine Lake.

46. Over 75 homes situated below 942' were, therefore, raised or removed sometime between 1972 and 1977, according to the figures given in the 1972 MDNR Report and the 1977 TKDA Study.

47. The 1977 TKDA Study found eight dwellings below 862', 53 below 867', and 82 below 869' on Big Carnelian Lake.

B. Damage to Properties on Big Marine and Big Carnelian Lakes

48. Waters of Big Marine Lake have damaged roads, including Lomond Trail North; several roads in the "Bliss Addition"; Mayberry Trail North; 188th Street North; and 182nd Street North.

49. Intervening Townships' Exhibit C documents damage that has occurred to 28 properties inundated by the waters of Big Marine Lake as of the winter of 1979 and spring of 1980. Several of these structures have been abandoned in the lake. Damage shown includes inundation of septic systems; inundation of landscaped lots; inundation of trees; and inundation of, and physical damage to, cottages, garages, and other buildings.

50. Some lakeshore owners on Big Marine Lake testified to the damages to property by rising lake levels. For example, Mr. Harold Johnson testified that other Big Marine lakeshore owners have raised their homes, put in new foundations, placed fill, and relocated drainfields.

51. Intervening Associations' Exhibit 1 contains 21 photographs illustrating damage to numerous properties on Big Carnelian Lake. Damage shown or described includes inundated basements; entirely inundated lots containing abandoned septic systems and homes; homes that have been raised and that are facing inundation again; homes with lakewater up to their foundations; and inundated boat houses, trees, and outbuildings.

52. Several Big Carnelian lakeshore owners testified to the damage that rising lake levels have had on beaches, septic systems, yards, boathouses, outbuildings, foundations, and homes. For example, Mr. Louis Langer testified that he started building a home in March 1975, with the necessary permits, and that by the time he had the home substantially completed in July 1975, "...water was lapping at my doorstep." He built a retaining wall and filled in his lot behind it to protect his home. Water began seeping into his first level, so he put in a draintile and sump-pump system. He operated the pump for over a year before deciding to raise the home eight feet.

53. Many damaged and endangered homes are the owners' major asset, and represent life time investments.

54. The 1975 OSM Study found that the values of Big Marine lakeshore properties were depressed because of the lack of adequate sewage disposal and lake level control.

55. Mr. Vincent Anderson quoted the May Township Assessor as saying, on January 6 or 7, 1981, that there is currently in excess of $1 million of lost assessed valuation, within May Township alone, as a result of the high water area.

C. Pollution and Public Health Hazards

56. On July 31 and August 3, 1972, the MDNR took a total of seven water samples from Big Marine Lake to test for water quality. Coliform counts ranged between 20 to 170 per 100 milliliters (ml), and all samples showed less than 20 per 100 ml of fecal waste. Nitrogen and phosphorus compounds, as well as algae, were found in low concentrations. Secchi disc readings ranged from 7 to 10 feet. The MDNR concluded that the water quality of Big Marine Lake was good. However, they also concluded that many individual sewage systems were inundated and that if that condition persisted for a prolonged period "...effluent could migrate into the shallow wells and into the lake, creating health problems."

57. In 1974 Mr. Duane Shodeen, Acting Regional Fisheries Manager for the MDNR, stated that high water levels, which would cause septic tanks and drain fields to fail on Big Marine Lake, would make the lake more fertile and more favorable for rough fish populations.

58. In 1974 the Minnesota Department of Health (MDH) took eight water samples from Big Marine Lake, seven of which were taken 20 to 40 feet off the "Bliss Addition". Three of the samples showed "...abnormally high levels of coliform group organisms present in proper ratio to indicate pollution by human sewage." At the same time the MDH tested several wells in the "Bliss Addition" and found coliform group organisms in one well.

59. Dr. Richard Caldecott, Dean of the College of Biological Sciences of the University of Minnesota, testified that there were about 20 homes inundated by the waters of Big Carnelian Lake, and that the potential public health hazards associated with inadequate drainfields were one of his biggest concerns. He testified that "There is no doubt that there are many septic systems in the water. There is no doubt that many other septic systems are, in effect, leaking into the water, percolating into the water because of inadequate drainfields." He also testified that "There is a genuine hazard of seepage from the lake itself getting down into the aquifers from which we draw drinking water. That is perhaps as big a hazard as one can run into."

60. Mr. Robert Lockyear, Washington County Planner, testified that there are a number of septic systems on Big Marine and Big Carnelian Lakes, which are, because of inundation, not in conformance with present codes, and that these systems pose potential health problems. In addition, he testified to the potential health hazard associated with contamination of the underlying aquifers from discharge of lake water into abandoned wells on both lakes.

61. A number of non-lakeshore owners, as well as lakeshore owners, testified that they have observed the water quality in Big Marine and Big Carnelian Lakes deteriorating over the last few years. For example, Mr. William Ruddy, who farms north of Big Marine Lake, testified that the inundated septic systems are "...ruining these lakes." Mr. Vincent Anderson, who lives off the lakes in Stillwater Township, testified that Big Carnelian Lake used to be "crystal clear" but that now the "...water is cloudy and continues to deteriorate." Marlene Blomberg testified that she saw green scum covering Big Carnelian Lake two or three times during the summer of

1980. Dr. Richard Caldecott testified that in the summer of 1980 he observed evidence of a blue-green algae bloom on Big Carnelian Lake for the first time since building a lake home there in 1968.

62. Several witnesses testified to the existence of inadequate or inundated septic tanks, drainfields, and uncapped wells around Big Marine and Big Carnelian Lakes. Some testified regarding the potential health hazards present. With outflow from Big Carnelian Lake the problem is transferred to Little Carnelian Lake. With seepage from the lakes into the underlying aquifers, the problem can be transferred to a much larger area; possibly including the Jordan aquifer and the St. Croix River. The Jordan aquifer extends under most of the Twin Cities Basin, and is the water source for many drinking-water wells. The 1977 TKDA Study reported that the MDNR believes that there may be a Jordan outcrop in the bed of Big Carnelian Lake directly recharging the aquifer.

63. There is an occupied structure (Lot 24, Block 1, Holiday Beach) with its main floor elevation below the present level of Big Marine Lake, which is being kept from inundation by dikes and sump-pumps. The occupants face a constant threat of dike failure, which could be triggered by severe weather conditions.

D. Hazards to Recreational Users of The Lakes

64. Considerable debris from abandoned structures has been found floating in Big Marine and Big Carnelian Lakes and on their shorelines. Mr. Robert Jensen described hauling a nine-foot long railroad tie onto his shore. Mrs. Patricia Arons, a lakeshore owner on Big Carnelian Lake, testified that "We have collected enough wood on our shoreline - it seems to follow the northwest shoreline - we have collected enough wood there that we could build a house. Now, this is plywood or joists, all big pieces of lumber."

65. The record contains testimony from several witnesses who describe the problems in Big Marine and Big Carnelian Lakes caused by the inundation and destruction of many large trees around the lakeshores. Mr. Robert Jensen described an 80 year old tree in Mr. Marvin Erickson's yard that was killed by recent high water levels on Big Marine Lake. Inundated trees are often cut off by the action of ice. The resulting stumps, often left just below the water line, are a hazard to people using the lake for recreation. Also a hazard are the tops of the cut-off trees which, if not removed from the lakes, become water-logged and can float just below the water line.

E. Potential Flooding of Property

66. The meandered elevation of Big Marine Lake is 942', or about one-half foot below its established NOHW level of 942.5'.

67. The meander line of Big Marine Lake is shown on Intervening Townships' Exhibit E as a dashed line. A large number of platted lakeshore lots are shown lying completely within, or substantially within, the meander line, primarily in the following plats: Bliss Plat - First Division, Holiday Beach, Holiday Beach - 2nd Plat, Bimer's Lakeshore, Big Lake Addition, and Erickson 2nd Addition. Portions of the following streets are also shown platted within the meander line: Langly Court North, Layton Court North, 192nd Street, North Mayberry Trail, Newgate Avenue North, 180th Street North, and Lomond Trail North.

68. Big Marine Lake is seldom reported as being as high as it was when meandered in 1847. Big Marine Lake is reported as reaching 943.5' in 1906; 941.0' in 1920; and has been above 940' every year since 1972. At the time of the hearing Big Marine Lake was discharging into its outlet watercourse; so it was above its natural outlet elevation of 942.2'.

69. The highest possible long term (2-3 months) level of Big Marine Lake would be about 943'. High intensity runoffs could cause short term fluctuations above 943'.

70. The meandered elevation of Big Carnelian Lake is 880', or about 12.3 feet above its established NOHW level of 867.7'.

71. The meander line of Big Carnelian Lake is shown on Intervening Associations' Exhibits 4(a) - (f), as a dashed line, highlighted in orange. About 125 lakeshore lots are shown lying entirely within the meander line in the following plats: Cresent Beach, Rearr. of Moonlight Bay 2nd Addition, Oak Ridge May Township, and Carnelian Hills. Portions of the following streets are also shown platted within the meander line: Lake Shore Road, Ozark Trail North, 130th Street Lane North, Panorama Avenue North, Oak Lane, and Indian Road.

72. There is no evidence in the record, after 1847, of Big Carnelian Lake rising above 860' until it reached about 861.8' in 1975; about 864.5' in 1976; and about 863.3' in 1977. At the time of the hearing in January 1981 it was approaching its natural runout elevation of 866.4'.

73. Above 866.4' Big Carnelian Lake begins draining into Little Carnelian Lake. Because Big Carnelian Lake is approximately five times larger than Little Carnelian Lake, one foot of water on Big Carnelian Lake roughly equates to five feet of water on Little Carnelian Lake. If Big Carnelian Lake reached

866.4' and stayed that high, or higher, for a prolonged period, runout from Big Carnelian Lake would fill Little Carnelian Lake and the two lakes would become one body of water, as they are shown on the Government Land Office plat of 1848. Before outletting to the St. Croix River the lakes would have to reach 884.9', which is 4.9 feet above the meander line. The 1977 TKDA Study refers to "reports" of Little Carnelian Lake outflowing to the St. Croix River in the past and found that the chance of this reoccurring was rare, but possible.

74. There is a possibility that Big Carnelian Lake and Little Carnelian Lake could rise high enough to naturally overflow to the St. Croix River at an elevation of 884.9' or higher. Return of Big Carnelian Lake to its meander line of 880', or to higher elevations, would result in tremendous damages to properties situated around the lake.

F. Potential Soil Erosion

75. The Board, on its tour of the area of the proposed watershed district, observed light, sandy, drought-prone topsoils throughout the watershed. However, the overall percentage of cultivated fields was low, and the area contained many pastures, woodlands, and depressions, all serving to trap sediments. Generally, the Board observed good soil conservation practices in the watershed and did not observe any excessive erosion.

76. The watershed is potentially very susceptible to excessive soil losses, however. Because of the sandy soils and abundant groundwater, future developers may see irrigation as a way to make these soils highly productive. Clearing of wooded tracts, land leveling, and irrigation, by a speculative land developer, could create extreme soil erosion problems in the watershed. Mr. John Baird testified that there is at least one center pivot irrigation system in the proposed watershed district, and some traveling guns.

77. Commercial and residential development in the watershed needs to be properly managed, so that serious erosion of the light soils does not occur, when land is first opened up for the laying in of utilities and associated infrastructure.

IV. Water Management to Date

A. Citizens

78. Since the early 1970's, when serious property damage from rising water levels on Big Marine Lake began, lakeshore owners have sought direction, technical aid, and financial assistance from township, county, and state

governments. Mr. Robert Jensen, Chairman of the Concerned Big Marine Lake Shore Owners Association, testified that "We've spent thousands of hours at meetings of our local government, various government agencies, associations, trying to secure leadership and help with the terrible problem, but all to this point at no avail."

79. Individual lakeshore property owners damaged by high water levels have, in efforts to protect their properties: relocated septic systems; built retaining walls; filled in their lots; raised their homes; and installed drain tile and sump-pump systems. Other property owners have abandoned structures in the lakes.

80. Eleven hundred and seventeen people signed a petition, received by the MDNR on May 24, 1972, objecting to any construction of a drainage channel or ditch that would interfere with the natural fluctuation of water levels in Big Marine Lake.

81. Citizens ditched along the outlet channel of Big Carnelian Lake twice during 1980 to move water out of Big Carnelian Lake. The first ditching was done in the spring and was filled in by Washington County. The second ditching occurred in September and was filled in by the MDNR.

B. Townships

82. On July 12, 1950, the New Scandia Town Board refused to approve the first plat drawn in the "Bliss Addition" on the west side of Big Marine Lake, and also refused to do any road work for the proposed development. Landowners subsequently petitioned the township to take over the access road to the development. On November 15, 1954, the township agreed to maintain the access road.

83. At the time of the Board's hearing, New Scandia Township was in the process of developing a comprehensive plan, which would include zoning regulations at least as restrictive as Washington County's.

84. Mr. John Baird, Chairman of the May Township Planning Commission, testified that May Township has done nothing to remove inundated structures, cap wells, or correct existing sewage problems on Big Marine and Big Carnelian Lakes.

85. Recently New Scandia Township investigated the possibilities of a joint powers agreement with May and Stillwater Townships and Washington County to deal with the problems on Big Marine and Big Carnelian Lakes.

86. New Scandia Township is cooperating with Washington County staff on its "Wastewater Treatment Facilities Study for On-site Sewage Systems in Washington County", commonly referred to as the "201 Study".

87. New Scandia Township has appealed to the Washington County Board of Commissioners since the mid-seventies to take action to remove hazardous structures from Big Marine Lake.

C. Washington County

88. Washington County hired the consulting firm of Orr-Schelen-Mayeron and Associates, Inc. to study the Big Marine Lake situation and make recommendations on lake level control. In February 1975 they issued a report concluding that: 1) artificial control between 937.5' and 939.2' was feasible and desirable; 2) pumping excess water westerly to Forest Lake was the most economical way to control Big Marine Lake; 3) deep wells were the most economical method of supporting a minimum lake level, and 4) sewage disposal be provided by a common sewer line and treatment system. No actions to implement their recommendations were taken.

89. By 1977 high water levels on Big Carnelian Lake were also causing problems, and the County responded by hiring the consulting firm of Toltz, King, Duvall, Anderson and Associates, Inc. to study Big Marine, Big Carnelian, and Little Carnelian Lakes, and to recommend appropriate means to control lake levels. Their report was issued in September 1977 and, among other things, recommended: 1) three alternative projects to control lake elevations; 2) construction of public sanitary sewer facilities; 3) that the County request the MDNR to establish lake level control elevations; and 4) that the County establish a Lake Improvement District. The County did request the MDNR to establish control elevations for Big Marine and Big Carnelian Lakes. The County did not act to implement any lake level control project or sanitary sewer project.

90. Washington County hired the TKDA firm to report on a method of field testing and monitoring seepage from Little Carnelian Lake to determine the feasibility of its serving as an outlet for water from Big Carnelian Lake. Their report was issued on November 30, 1978, and recommended: 1) construction of a gravity outlet from Big Carnelian Lake to Little Carnelian Lake that could be used as a permanent lake level control structure and 2) establishment of a monitoring program to determine seepage from Little Carnelian Lake.

91. On November 6, 1980, the County petitioned the Water Resources Board for establishment of the Carnelian-Marine Lakes Watershed District.

92. Mr. Wesley Scheel, Washington County Commissioner since January 1973, testified at the Board's hearing that "In the past eight years that I've been on the County Board there's no other item that we've spent as much time

on as we have on the lakes issue to the north, and the frustrating part of it is that all we have done is spent time and money and accomplished nothing." He also testified that he believed county expenditures on Big Marine Lake and Big Carnelian Lake problems represent "double taxation" for those county residents living in the three existing watershed districts in the county, who are being taxed for solutions to their own water management problems. (The three watershed districts with part of their territory in Washington County are: Valley Branch, Rice Creek and Ramsey-Washington Metro Watershed Districts).

D. State Agencies

93. During the same period that New Scandia Township was refusing to approve the first plat in the "Bliss Addition" in 1950, the Minnesota Conservation Department brought Mr. E. A. Bliss into Court for working in the bed of Big Marine Lake. Mr. Bliss received a small fine from a Court.

94. In 1958 the Minnesota Conservation Department hired Mr. Adolph Meyer, a consulting hydrologist, to investigate the natural ordinary high water level of Big Marine Lake. In 1958 Mr. Meyer reported an "earlier" NOHW level of between 941.5' and 942.0' and a more recent NOHW level of 938.8'.

95. In response to Big Marine lakeshore owners' complaints in the spring of 1972, the MDNR conducted a study of the high water problems, and subsequently authorized lakeshore owners to fill any lakeshore property that had an existing elevation no lower than 938.8'.

96. In 1976 the MDNR conducted their own investigation of the NOHW level of Big Marine Lake and found it to be 942.5'.

97. In 1977 the MDNR held a public hearing on the establishment of NOHW levels and minimum control levels for Big Marine, Big Carnelian, and Little Carnelian Lakes. On August 15, 1978, the Commissioner of the MDNR ordered NOHW levels of 942.5', 867.7', and 854.4', respectively, for the three lakes; and on October 13, 1978, ordered minimum control elevations of 940.8' for Big Marine Lake, and 862.0' for Big Carnelian Lake.

98. The MDNR requested a $500,000 appropriation from the Legislative Commission on Minnesota Resources in its 1982-83 biennial budget to help finance a solution to the Big Marine-Big Carnelian Lakes high water problem.

99. The higher head of water on Little Carnelian Lake caused by the citizen ditching in 1980 provided an opportunity to test seepage rates from the lake. The MDNR has observation wells on Little Carnelian Lake and is presently

monitoring them along with lake levels to determine Little Carnelian Lake's capability to serve as an outlet for waters from Big Carnelian Lake.

V. Need for Coordinated Management

100. No existing local governmental unit, state or federal agency, or combination thereof has demonstrated the capability and willingness to develop a coordinated overall plan, or to implement programs necessary to: protect the lakes and underlying aquifers from degradation; properly manage improvements by riparian landowners of the beds, banks and shores of the lakes; and restore the lakes to a condition where the lakeshore owners and others can live in harmony with their environment.

101. The record shows the need for coordinated water management within the proposed watershed district and the conservation of the natural resources for the provident use of the natural resources.

102. The proposed watershed district would be able to coordinate water management decisions within its boundary and would be able to serve all the purposes of the Watershed Act as codified under Minnesota Statutes Section 112.36.

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103. The proposed watershed district will be for the public welfare and in the public interest and the purposes of the Minnesota Watershed Act will be subserved by the establishment of the watershed district.

104. Petitioner requested that the proposed watershed district be managed by five managers.

105. Petitioner requested that the proposed watershed district be named the "Carnelian-Marine Lakes Watershed District".

CONCLUSIONS OF LAW

106. The Board has jurisdiction in the matter of establishment of the proposed Carnelian-Marine Lakes Watershed District.

107. The testimony and exhibits of this proceeding provide evidence and data establishing the necessity for a watershed district.

108. A watershed district can coordinate water management through its leaders working in concert with affected parties towards resolution of common problems. The Watershed Act assigns to managers executive functions and responsibilities for results in order that they may plan, organize, coordinate, direct, control, regulate, supervise, and secure finances for orderly management of the water within a watershed district.

109. Establishment of the proposed watershed district will subserve the purposes of Minnesota Statutes 116D, the State Environmental Policy.

110. The public welfare and the public interest will be served by the establishment of the proposed watershed district and the purpose of the Minnesota Watershed Act will be subserved by the establishment of the proposed watershed district.

IT IS THEREFORE ORDERED THAT

111. The Carnelian-Marine Lakes Watershed District be and is hereby established and given the corporate name of Carnelian-Marine Watershed District, by which name it shall hereafter be known.

112. This watershed district shall have all authorities, powers, duties, and purposes provided by law.

113. The approximate area of the Carnelian-Marine Watershed District is 41 square miles.

114. The territory of the Carnelian-Marine Watershed District includes all of the tracts of land described below, including all bodies of water therein, which may be: quarter-quarter tracts of land, some of which may be fractional or less than 40 acres or part thereof; government lots or part thereof; and lots within platted areas or part thereof. The land of the Carnelian-Marine Watershed District is hereby described below:

A. Washington County 4th Principal Meridian

1. Township 31 North, Range 21 West (City of Hugo)

SE¼	Section	12
NE¼	"	13
N½ of SE¼	"	13
SE¼ of SE¼	"	13
NE¼ of NE¼	"	24.

2. Township 30 North, Range 21 West (Grant)

SE¼ of SE¼	Section	1
E½ of NE¼	"	12
NE¼ of SE¼	"	12.

3. Township 32 North, Range 20 West (New Scandia)

S½ of S½	Section	16
S½ of SE¼	"	17
SE¼ of NE¼	"	19
NE¼ of SE¼	"	19
S½ of SE¼	"	19
All of Sections	Sections	20, 21

3. Township 32 North, Range 20 West (New Scandia) (Cont.)

NW¼ of NW¼	Section	22
S½ of NE¼	"	22
W½	"	22
N½ of SE¼	"	22
SW¼ of SW¼	"	26
W½ of NE¼	"	27
W½	"	27
SE¼	"	27
All of Sections	Sections	28, 29
NE¼	Section	30
SE¼ of NW¼	"	30
SE¼	"	30
E½	"	31
All of Sections	Sections	32, 33
N½ of NE¼	Section	34
SW¼ of NE¼	"	34
W½	"	34.

4. Township 31 North, Range 20 West (May)

N½ of NW¼	Section	3
SW¼ of NW¼	"	3
NW¼ of SW¼	"	3
N½ of N½	"	4
SW¼ of NW¼	"	4
All of Sections	Sections	5, 6
NE¼	Section	7
S½	"	7
All of Section	"	8
SW¼ of NW¼	"	9
SW¼	"	9
SW¼ of SE¼	"	9
W½ of SW¼	"	15
NW¼	"	16
S½	"	16
All of Sections	Sections	17, 18
NE¼	Section	19
N½ of NW¼	"	19
SE¼ of NW¼	"	19
N½	"	20
E½ of SW¼	"	20
SE¼	"	20
All of Section	"	21

4. Township 31 North, Range 20 West (May) (Cont.)

All of that part of the NW¼ lying west of a line beginning at the SE¼ corner of the NW¼ of Section 22; thence north on the east line of Government Lot No. 5 to its intersection with the centerline of Oldfield Road North; thence northwesterly on the centerline of Oldfield Road North to the north line of Section 22.	Section	22
W½ of SW¼	"	22
SW¼ of NE¼	"	26
S½ of NW¼	"	26
S½	"	26
All of Sections	Sections	27, 28
NE¼	Section	29
E½ of NW¼	"	29
S½	"	29
SE¼ of SE¼	"	30
NE¼	"	32
N½ of NW¼	"	32
SE¼ of NW¼	"	32
N½ of SE¼	"	32
SE¼ of SE¼	"	32
All of Section	"	33
All of Section 34; except that part lying east of the centerline of Otchipwe Avenue North, and south of the centerline of the Soo Line Railroad tracks.	"	34
All of Section 35; except that part lying south of the centerline of the Soo Line Railroad tracks.	"	35
All of Section 36; except that part lying south of the centerline of the Soo Line Railroad tracks.	"	36.

5. Township 31 North, Range 20 West (Stillwater)

All of that part of the SE¼ of SE¼ of Section 34 lying south of the centerline of the Soo Line Railroad tracks and east of the centerline of Otchipwe Avenue North.	Section	34
All of that part of the S½ of Section 35 lying south of the centerline of the Soo Line Railroad tracks.	"	35
All of that part of the S½ of Section 36 lying south of the centerline of the Soo Line Railroad tracks.	"	36.

6. Township 30 North, Range 20 West (Stillwater)

N½; except that part of the N½ lying north of the centerline of the Soo Line Railroad tracks.	Section	2
SW¼	"	2
W½ of SE¼	"	2
All of Sections	Sections	3, 4, and 5
NE¼	Section	6
E½ of NW¼	"	6
NE¼ of SW¼	"	6
S½ of SW¼	"	6
SE¼	"	6
N½	"	7
N½ of SW¼	"	7
SE¼	"	7
All of Sections	Sections	8, 9, and 10
N½ of NW¼	Section	11
SW¼ of NW¼	"	11
W½ of SW¼	"	11
All of Section 14 in the township in the State of Minnesota	"	14*
All of Section 15 in the township in the State of Minnesota	"	15*

*Note: Part of the boundary of the watershed district is along the thread of the St. Croix River. Part of the boundary commences at the northeast corner of the NW¼ of the NW¼ of Section 14; thence easterly along the north line of Section 14 and its easterly extension to the point of intersection with the east boundary of Washington County in the St. Croix River; thence southwesterly along this east boundary of Washington County to the point of intersection with the easterly extension of the south line of Section 15; thence westerly on the extension of the south line of Section 15 to the southwest corner of Section 15.

6. Township 30 North, Range 20 West (Stillwater) (Cont.)

N½	Section	16
NE¼ of SW¼	"	16
SE¼	"	16
N½ of N½	"	17
S½ of NW¼	"	17
N½ of SW¼	"	17
SW¼ of SW¼	"	17
E½	"	18
N½ of NE¼	"	19
NE¼ of NW¼	"	19.

7. Township 30 North, Range 20 West (May)

All of that part of the N½ of Section 2 lying north of the centerline of the Soo Line Railroad tracks. Section 2.

8. Township 31 North, Range 19 West (May)

S½ of NW¼ Section 31

SW¼; except that portion lying south of the centerline of the Soo Line Railroad tracks. " 31.

9. Township 31 North, Range 19 West (Stillwater)

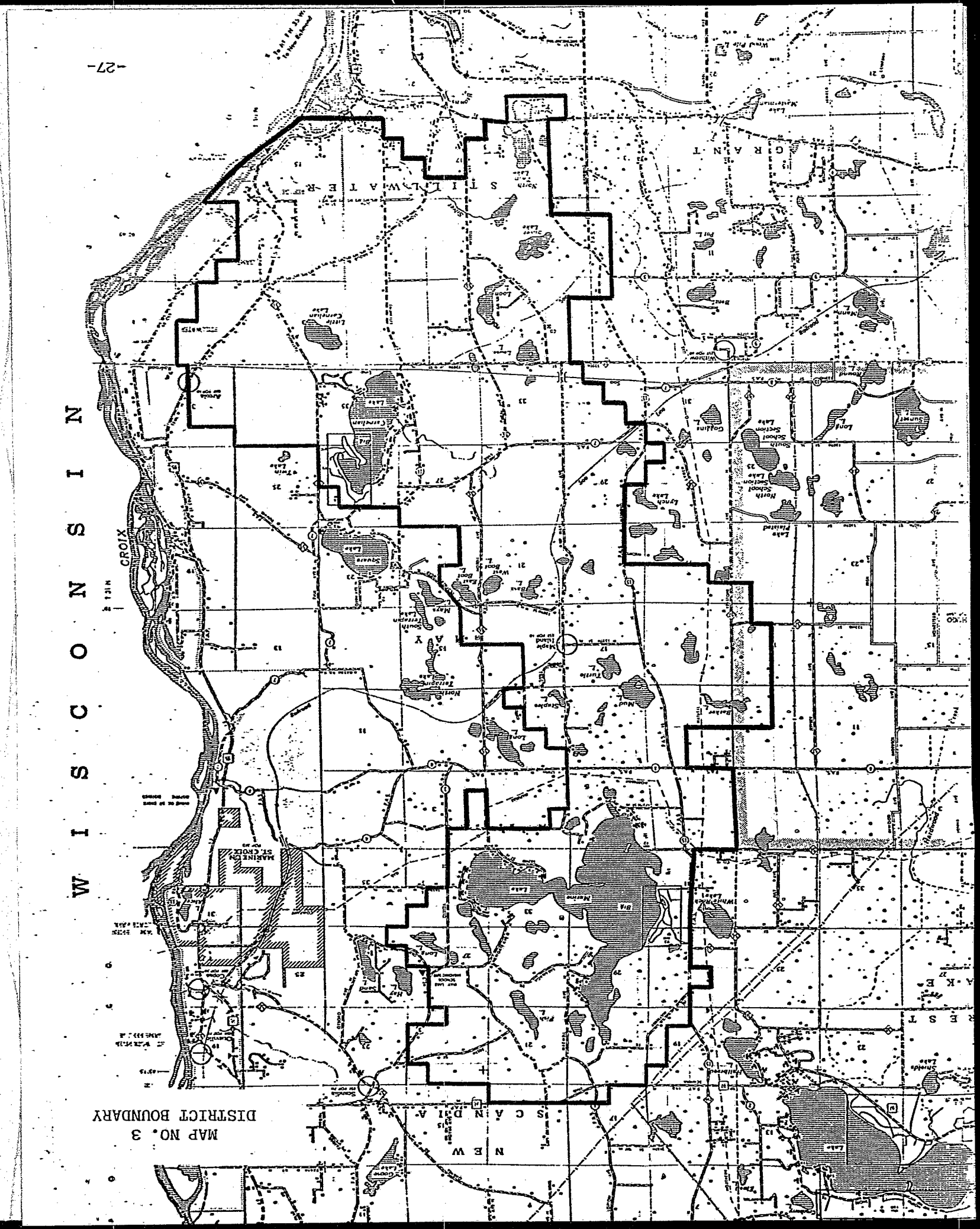
All of that portion of the SW¼ lying south of the centerline of the Soo Line Railroad tracks. Section 31.

115. The boundary of the Carnelian-Marine Watershed District is hereby determined and defined as the perimeter of the whole land area described in Paragraph 114 above; and shown on Map No. 3.

116. The Board of Managers of the Carnelian-Marine Watershed District shall consist of five managers, as requested by the petitioners. They shall be residents of the watershed district and none shall be a public officer of the county, state, or federal government.

117. When the managers of the first Board of Managers of the Carnelian-Marine Watershed District have served their initial one-year term, the succeeding managers shall be appointed by the Board of Commissioners of Washington County for terms, as follows:

One Manager's Term - For one year
Two Managers' Terms - Each for two years
Two Managers' Terms - Each for three years


WISCONSIN
ST. CROIX
GRANT
MARINETTE
ST. CROIX
DISTRICT BOUNDARY

MAP NO. 3

118. Upon expiration of the terms of the Managers cited in Paragraph 117 above, the succeeding terms of each manager shall be for three years.

119. The following nominees are named as the first Board of Managers of the Carnelian-Marine Watershed District. Their terms of office shall be for one year, effective the date of this Order, and they shall serve for one year and until their successors are appointed and qualified:

1.	Vincent J. Anderson	15720 - 100th Street North Stillwater, Minnesota 55082;
2.	Ronald E. Gavelek	14671 Square Lake Trail North Stillwater, Minnesota 55082;
3.	Kenneth R. Ostlund	19120 Larkspur Avenue North Marine, Minnesota 55047;
4.	Dennis R. Sanders	14998 - 130th Street Lane North Stillwater, Minnesota 55082;
5.	Melvin D. Vietor	14097 Manning Trail North Stillwater, Minnesota 55082.

120. The principal place of business of the Carnelian-Marine Watershed District shall be located in the City of Stillwater, Minnesota 55082.

Dated at Saint Paul, Minnesota 55102, this 22nd day of June 1981.

MINNESOTA WATER RESOURCES BOARD

Duane R. Ekman
Chairman

STATE OF MINNESOTA
DEPARTMENT OF STATE
FILED
JUN 23 1981
Joan Anderson Growe
Secretary of State

Minnesota Water Resources Board
555 Wabasha Street
Room 206
St. Paul, Minnesota
55102

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In the Matter of the Petition for
the Establishment of the Carnelian-
Marine Lakes Watershed District
(Washington County).

MEMORANDUM

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The Water Resources Board (Board) is a duly authorized agency of the State of Minnesota. Minnesota Statutes Section 105.71. As such, the Board is responsible for acting upon nominating petitions submitted by parties seeking the establishment of a particular watershed district. The Board may establish such districts if "...any one of the purposes enumerated in Section 112.36 will support the creation..." of the district. Markwardt v. State Water Resources Board, 254 N.W.2d 371 at 374 (1977).

The considerable evidence presented at the public hearing conducted by the hearing examiner in Stillwater, Minnesota, and attended by the Board, supports the Board's establishment of the Carnelian-Marine Watershed District. Indeed, the Board finds that the establishment of this watershed district will subserve numerous conservation purposes codified in Minnesota Statutes Section 112.36.

However, the Board is in disagreement with both the petitioners and the hearing examiner with regard to the subject of flooding within the Carnelian-Marine Watershed District. The Board therefore submits this Memorandum as a part of its final Order, its purpose being to set forth the conservation purposes subserved by the formation of this watershed district. This Memorandum is in no way intended to direct or limit the future legal authority or course of conduct of the Carnelian-Marine Watershed District.

I. It has been clear from the outset of this proceeding that the petitioners and many of the lakeshore dwellers have perceived the rise in lake levels on Big Marine and Big Carnelian Lakes to constitute flooding. Thus, the damage resulting from these higher lake levels has been consistently characterized as flood damage. The nominating petition filed with the Board by Washington County states, in relevant part, that the district is to be:

> For the general purpose of providing for the orderly management of water resources within the proposed district so as to prevent recurring damage to life and property which results from uncontrolled flooding;...

Throughout the hearing, evidence was presented, by the County and property owners, concerning the flooding of homes around Big Marine and Big Carnelian Lakes. The nominating petition and the introduction of this evidence led the Hearing Examiner to make the following finding of fact:

> The primary impetus for the petition for the establishment of the Carnelian-Marine Lakes Watershed District is the rises in the levels of Big Marine and Big Carnelian Lakes in the last decade. Due to the rising waters, the proposed Watershed District has experienced flood damage to homes and property, primarily to the homes and property immediately around Big Marine and Big Carnelian Lakes.

Report of the Hearing Examiner, at p. 11-12, Finding No. 46.

Additional findings made by the Hearing Examiner which reference flooding and flood problems include numbers 59, 78, and 82.

Upon close examination of the facts as they exist in this case and of the relevant law, however, the Board concludes that flooding, in its technical sense, was not, at the time of the hearing, the cause of the obvious and substantial water damage occurring in the watershed.

II. The Board's finding is based upon (a) the legal significance of the normal ordinary high water (NOHW) level and (b) the elevations of the inundated homes around Big Marine and Big Carnelian Lakes.

(a) The Legal Significance of the NOHW

It is clear that all floods necessarily denote the fact of rising water. It is not so clear as to when rising water denotes flooding. The state law which comes closest to defining "flood" is the Flood Plain Management Act, Minnesota Statutes Chapter 104. Minnesota Statutes Section 104.01, Subd. 2(a) states, in relevant part:

> A large portion of the state's land resources is subject to recurrent flooding by overflow of streams and other watercourses causing losses of life and property...[and] unsanitary conditions...

It would appear that since Big Carnelian Lake is below its NOHW level, it is not "overflowing". Big Marine Lake rose 0.3 feet above its NOHW level in 1976, and has fluctuated near its NOHW level since. In November 1980 it was reported at 942.6 feet. Thus, despite the fact that the water levels have caused loss of property and unsanitary conditions, those problems cannot be attributed to any significant degree to "overflow". The overwhelming majority of the existing damage stems from structures situated on the lakes' beds.

In Stover v. U.S., 204 F.Supp. 477 (N.D. Cal. 1962), affd. C.A. 332 F.2d 204, cert. den., 379 U.S. 922 (1964), the District Court defined flood:

> A "flood" is water which inundates an area of the surface of the earth where it ordinarily would not be expected to be.

204 F.Supp. at 485.

This definition of flood supports the conclusion that there is little flooding on Big Marine Lake and no flooding on Big Carnelian Lake, since one would ordinarily expect water to exist on the lake bed below, and up to, the NOHW level.

The common law rule in Minnesota governing riparian landowner rights reflects and provides for naturally occurring lake level fluctuations confined below the NOHW level. In Mitchell v. City of St. Paul, 225 Minn. 390 (1948) a case brought against the City of St. Paul by a riparian landowner claiming damage to his land by a rising reservoir, the Court denied the damage claim and reiterated the riparian rights rule:

> While the title of a riparian owner in navigable or public waters extends to ordinary low-water mark, his title is not absolute except to ordinary high-water mark. As to the intervening space his title is limited or qualified by the right of the public to use the same for purpose of navigation or other public purpose. The state may use it for any such public purpose, and to that end may reclaim it during periods of low water, and protect it from any use, even by the riparian owner, that would interfere with its present or prospective public use, without compensation.

225 Minn. at 397.

This rule anticipates water level fluctuations below the NOHW level. It also indicates that navigable waters, i.e., public waters, extend to the NOHW level. Thus, any lake level up to and including the NOHW level does not constitute a flood.

(b) The Elevation of the Inundated Homes on Big Marine and Big Carnelian Lakes

The evidence adduced at the hearing establishes that the structures inundated by Big Marine and Big Carnelian Lakes are situated upon the respective lake beds.

During the initial development of the "Bliss Addition" on Big Marine Lake in the early 1950's, local and state officials determined that platting of the lake bed was taking place. Indeed, the State Conservation Department ticketed Mr. Bliss for working on the bed of a meandered lake without a permit and he was subsequently fined by a Court.

Numerous homes currently are situated on Big Marine Lake below the NOHW level of 942.5 feet and on Big Carnelian Lake below the NOHW level of 867.7 feet. The 1977 Toltz, King, Duvall, Anderson and Associates, Inc. Study found at least 23 such homes on Big Marine Lake and 53 more on Big Carnelian Lake. Inundated homes below the NOHW levels are not flooded, they are situated on the beds of these lakes.[1/]

III. Conservation Purposes

Despite the Board's finding that the structures in Big Marine and Big Carnelian Lakes below the NOHW level are not technically flooded, the Board finds overwhelming evidence in support of the establishment of this watershed district.

As evidenced by the existence of numerous homes on the lake beds, as well as numerous other homes below the meander lines, it is clear to the Board that development of the beds, banks and shores of Big Marine and Big Carnelian Lakes is endangering the beneficial use of these lakes, the watershed as a whole and the underlying aquifer. Regulation of this development is sorely needed.

1/ It has been brought to the Board's attention that the lake levels in question have been steadily rising since the close of the hearing on this matter. This fact has had no bearing on the Board's deliberations or decision. However, the Board acknowledges that significant flooding may occur in the future. Indeed, potential flooding is addressed in the Board's Order. The Board leaves the characterization and solutions of future problems to the Carnelian-Marine Watershed District Board of Managers and makes no findings or decisions regarding lake levels existing after the close of the hearing.

In addition, considerable evidence exists on the record which more than supports the existence of and dangers surrounding the numerous uncapped wells and on-site septic sewer systems within the district which are seeping into the lakes, the groundwater, and the aquifer.

Thus, the Board finds, at a minimum, that the establishment of the Carnelian-Marine Watershed District will clearly subserve the following conservation purposes codified in Minnesota Statutes Section 112.36 (this is not to say that other conservation purposes would not be subserved):

(a) Minnesota Statutes Section 112.36 (11), which states:

> "(11) Regulating improvements by riparian landowners of the beds, banks, and shores of lakes, streams, and marshes by permit or otherwise in order to preserve the same for beneficial use."

(b) Minnesota Statutes Section 112.36 (8), which states:

> "(8) Providing for sanitation and public health and regulating the use of streams, ditches, or watercourses for the purpose of disposing of waste;"

(c) Minnesota Statutes Section 112.36 (7), which states:

> "(7) Providing and conserving water supply for domestic, industrial, recreational, agricultural, or other public use;"

This Memorandum is hereby attached to, and made a part of, the above Order.

Dated at Saint Paul, Minnesota 55102, this 22nd day of June 1981.

MINNESOTA WATER RESOURCES BOARD

Duane R. Ekman
Chairman