

# WATER USE IN WISCONSIN, 1985

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## INTRODUCTION

An inventory of water use in Wisconsin is essential for appraising current and future water-resource needs of the State. The U.S. Geological Survey has collected and published national water-use data every 5 years since 1960. Sources of data in these reports have not always been well documented, and the methods for collecting and reporting the data were not the same for all States. Some planning and management needs of the State are not met by water-use information that is available only every fifth year.

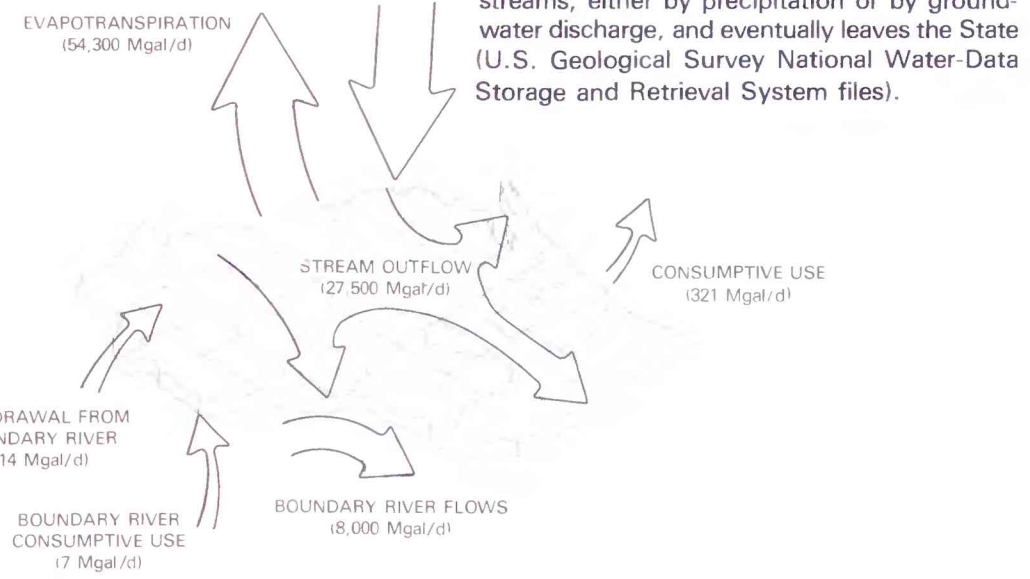
The U.S. Geological Survey entered into a cooperative program with the Wisconsin Department of Natural Resources (WDNR). The purpose of the program was to collect and compile reliable annual water-use data and to develop computerized water-use data systems at the State and national levels. Data in standardized format for different categories of water use are available in the State Water Use Data System. The data base is updated annually or when more current water-use information is available. Information about amounts of water withdrawn, source of water, how the water was used, and how much water was returned is available to those involved in establishing water-resource policy and to those managing water resources. The data contained in this report are a summary of the 1985 data-collection effort.

### DATA COLLECTION

Water-use data in Wisconsin are generally reported by major users to State agencies as part of State permit requirements. The WDNR collects water-use data for public supply, industrial, irrigation, sewage treatment, and some data on the amount of water used for power generation. The Wisconsin Public Service Commission collects information on how the public-supply water is used. Data in this report were obtained from these agencies. Estimates were made by the Survey based on population and average consumptive-use rates for water-use categories for which no data were reported.

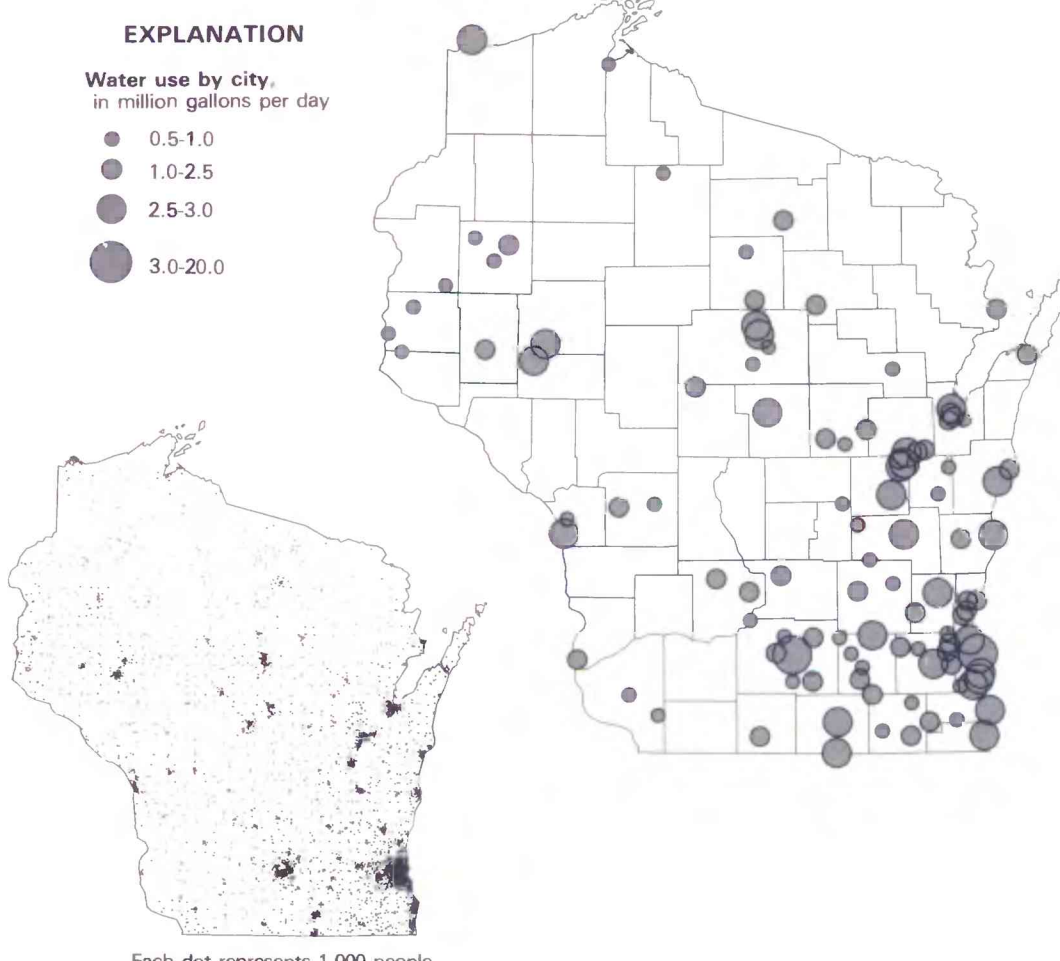
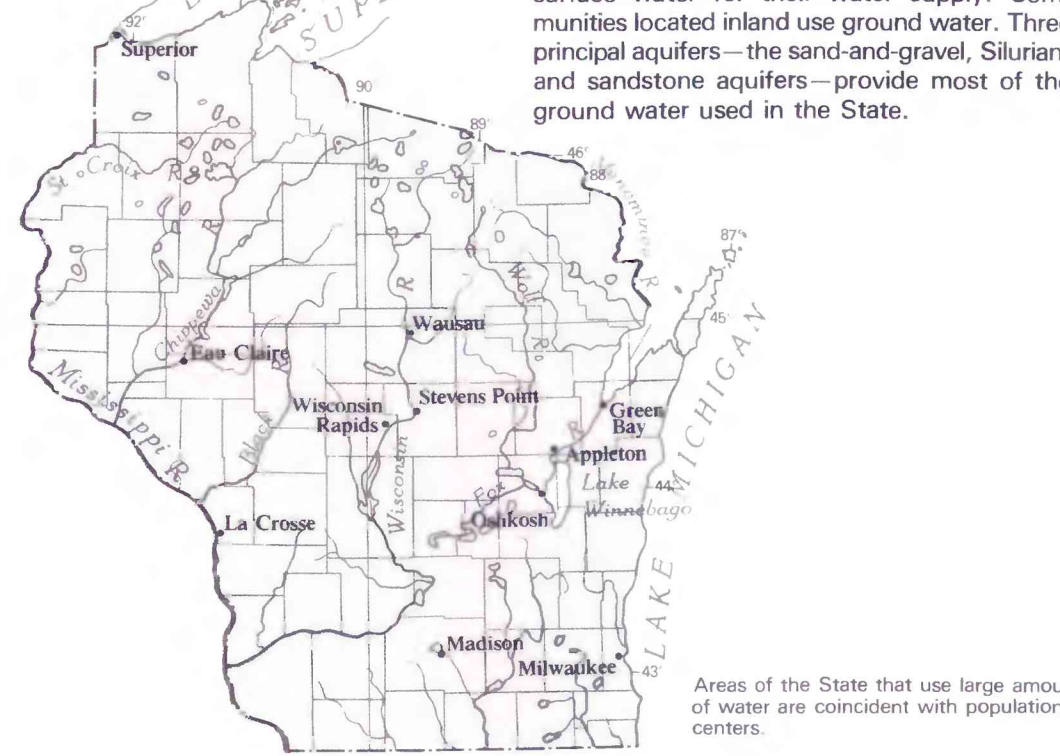
## WATER BUDGET

The water resources of Wisconsin are renewed continuously. Long-term average precipitation is 82,100 Mgal/d (million gallons per day), of which 321 Mgal/d is consumed, and 54,300 Mgal/d is returned to the atmosphere by evaporation or transpiration by plants. The remaining water (27,500 Mgal/d) finds its way to streams, either by precipitation or by ground-water discharge, and eventually leaves the State (U.S. Geological Survey National Water Data Storage and Retrieval System files).

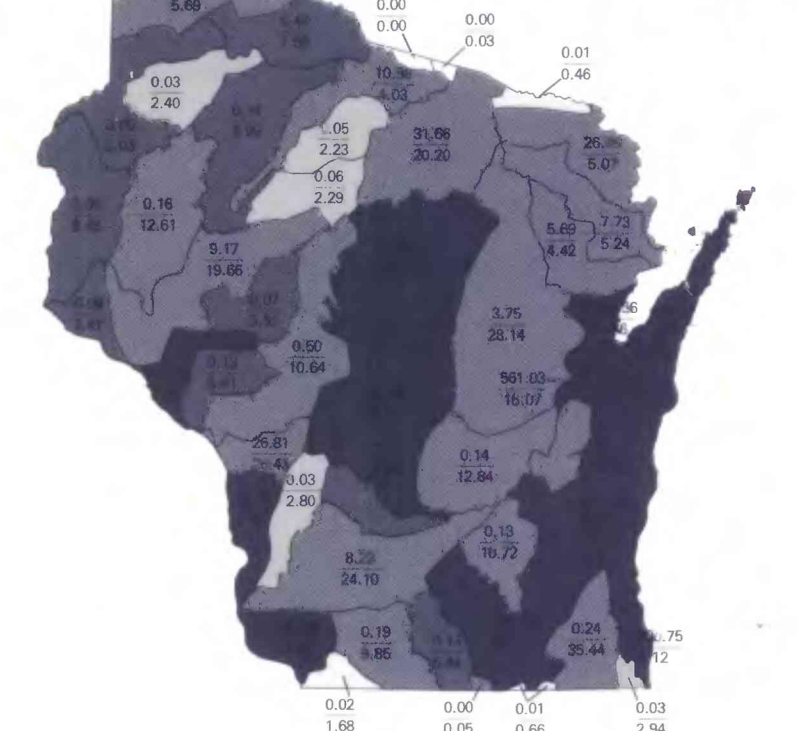


## SOURCES OF WATER

Wisconsin has an abundant supply of water. Surface water is found in 33,000 mi (miles) of streams and 15,000 lakes (U.S. Geological Survey, 1985b). About two quadrillion (2 x 10<sup>15</sup>) gallons, or about 1/3 the volume of Lake Superior, is stored in the State as ground water. Communities located on the shores of the Great Lakes and Lake Winnebago generally use surface water for their water supply. Communities located inland use ground water. Three principal aquifers—the sand-and-gravel, Silurian, and sandstone aquifers—provide most of the ground water used in the State.



## TOTAL WATER USE, BY BASIN



The largest industrial use occurred in the Lower Fox basin and was 173 Mgal/d; most of this was surface water used by paper mills.

Table 2.—Surface-water use, by river basin, 1985.

Basin	Hydrologic unit code	Domestic	Agriculture	Irrigation	Industrial	Commercial	Thermo electric	Other	Total
St. Louis	04010201	0.00	0.03	0.00	0.00	0.00	0.00	0.01	0.04
Neenah	04010202	1.47	.95	.00	6.21	.83	13.20	1.39	24.04
Black-Fresque Lake	04020101	.06	.00	.01	.00	.00	.00	.00	.07
Manitowish-Sheboygan	04030101	9.57	3.60	23	18.01	2.88	6,80.05	4.77	1,722.63
Duck-Peasakee	04030103	.99	.89	.45	.07	.15	.00	.24	2.79
Upper St. Croix	07030001	1.48	1.29	.04	.05	.00	.21	10.11	13.17
Lower St. Croix	07030002	2.94	1.40	.45	1.51	1.00	1.23	8.53	13.56
Upper Fox	04030202	9.11	6.09	5.67	8.37	3.30	.00	44.35	76.50
Lower Fox	04030203	1.12	.89	.05	8.75	2.39	.00	7.92	27.02
Pike-Root	04040002	16.54	.00	.13	27.41	4.29	1,701.00	7.23	1,806.87
Upper Wisconsin	07050001	1.41	.67	.03	173.26	4.52	377.40	89	571.64
Upper St. Croix	07050001	1.48	1.29	.04	.05	.00	.21	10.11	13.17
Upper Wisconsin	07050002	1.50	1.46	.07	9.05	1.4	.00	25	12.97
Lower Wisconsin	07050003	5.43	2.18	1.30	14.95	2.20	2.82	28.88	49.76
Upper Wisconsin	07050004	1.77	1.00	.00	1.13	.00	.28	5.54	8.54
Upper Wisconsin	07050005	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050006	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050007	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050008	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050009	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050010	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050011	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050012	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050013	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050014	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050015	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050016	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050017	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050018	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050019	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050020	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050021	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050022	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050023	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050024	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050025	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050026	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050027	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050028	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050029	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050030	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050031	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050032	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050033	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050034	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050035	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050036	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050037	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050038	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050039	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050040	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050041	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050042	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050043	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050044	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050045	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050046	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050047	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050048	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050049	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050050	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050051	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050052	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050053	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050054	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050055	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050056	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050057	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050058	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050059	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050060	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050061	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050062	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050063	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050064	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050065	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050066	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050067	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050068	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050069	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050070	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050071	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050072	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050073	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050074	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050075	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050076	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050077	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050078	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050079	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050080	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050081	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050082	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050083	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050084	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050085	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050086	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050087	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050088	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050089	1.43	2.19	.05	.93	.40	136.44	59	142.03
Upper Wisconsin	07050090	1.77	2.08	.00	.54	.36	190.19	19	170.00
Upper Wisconsin	07050091	1.43	2.19	.05	.93	.40	136.44		