

# WATER USE IN WISCONSIN, 1995

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## INTRODUCTION

As part of the National Water-Use Information Program, the U.S. Geological Survey (USGS) stores water-use data in standardized format for different categories of water use. The data base (Site Specific Water Use Data System) is updated annually or as more current water-use information becomes available. Information about amounts of water withdrawn, sources of water, how the water was used, and how much water was returned is available to those involved in establishing water-resource policy and to those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. In 1978, the USGS entered into a cooperative program with the Wisconsin Department of Natural Resources (WDNR) to inventory water use in Wisconsin. Since that time, three reports summarizing water use have been published (Lawrence and Ellefson, 1982; Ellefson and others, 1987; Ellefson and others, 1993). Ellefson and others (1993) present 1990 water-use data in a map and graph format. Because water use changes with time, an update report is periodically required. This report presents 1995 data in the same format as the 1993 report.

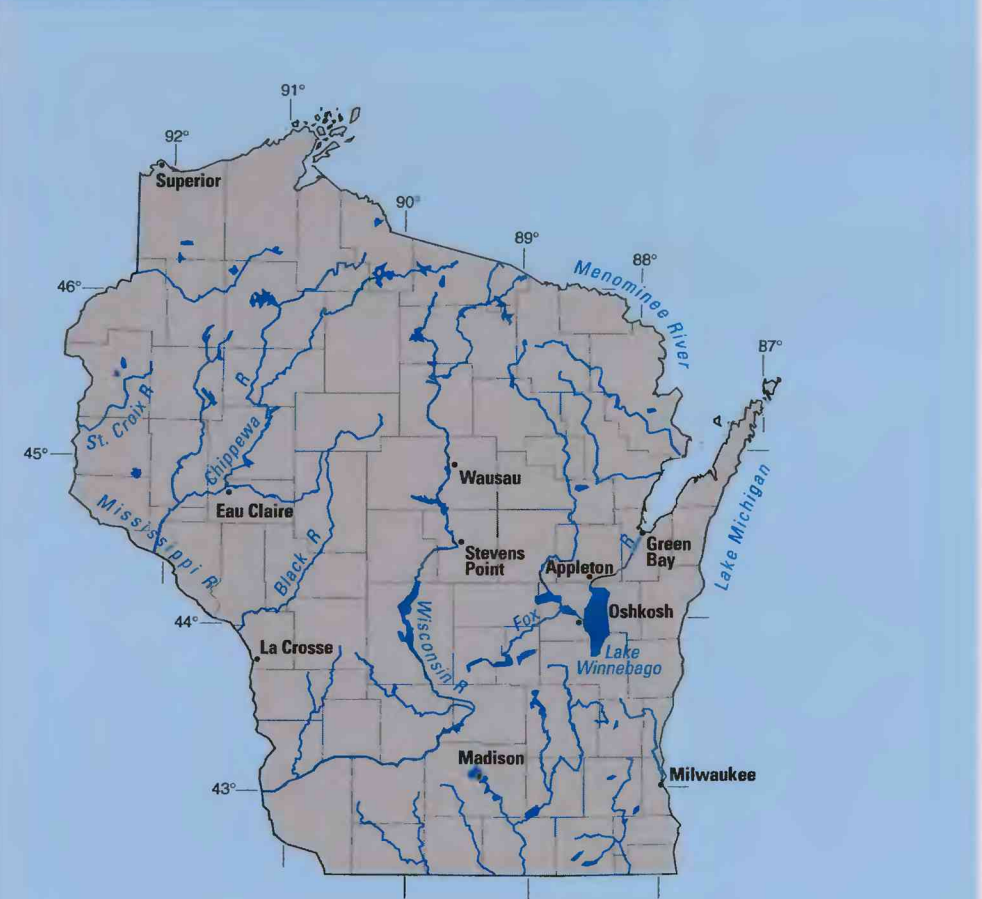
## DATA COLLECTION

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, industrial, irrigation, sewage treatment, and 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 USGS based on population and average consumptive-use rates for water-use categories for which data were not reported.

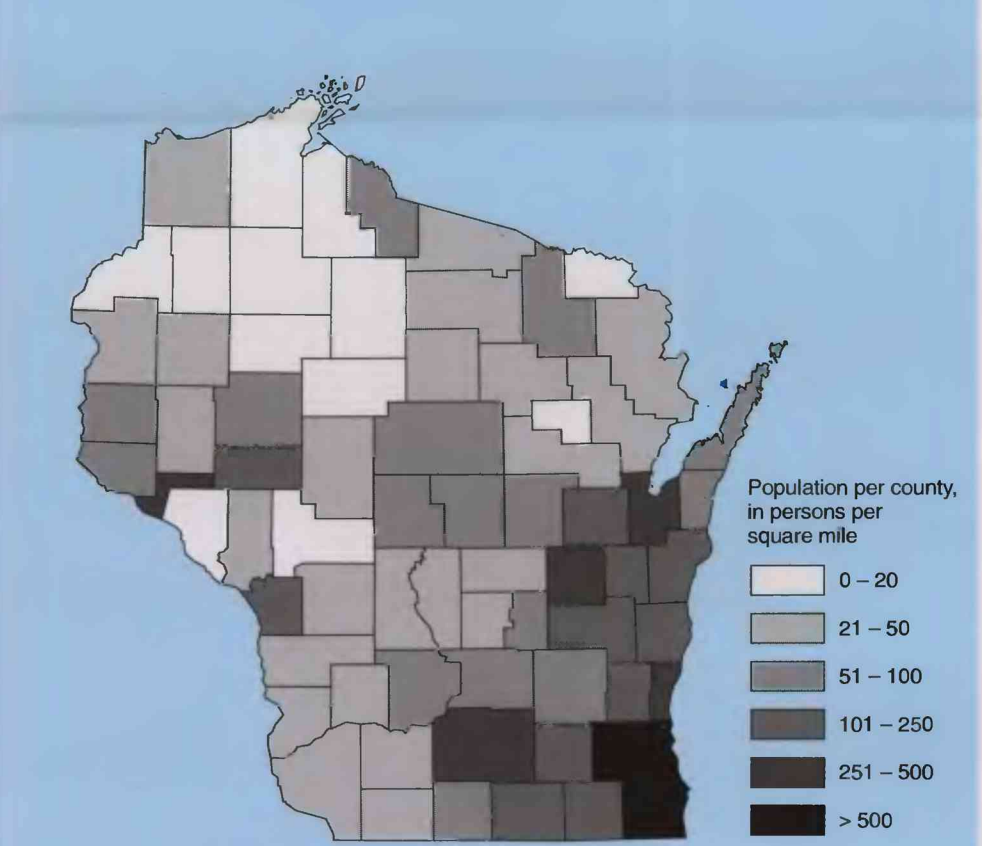
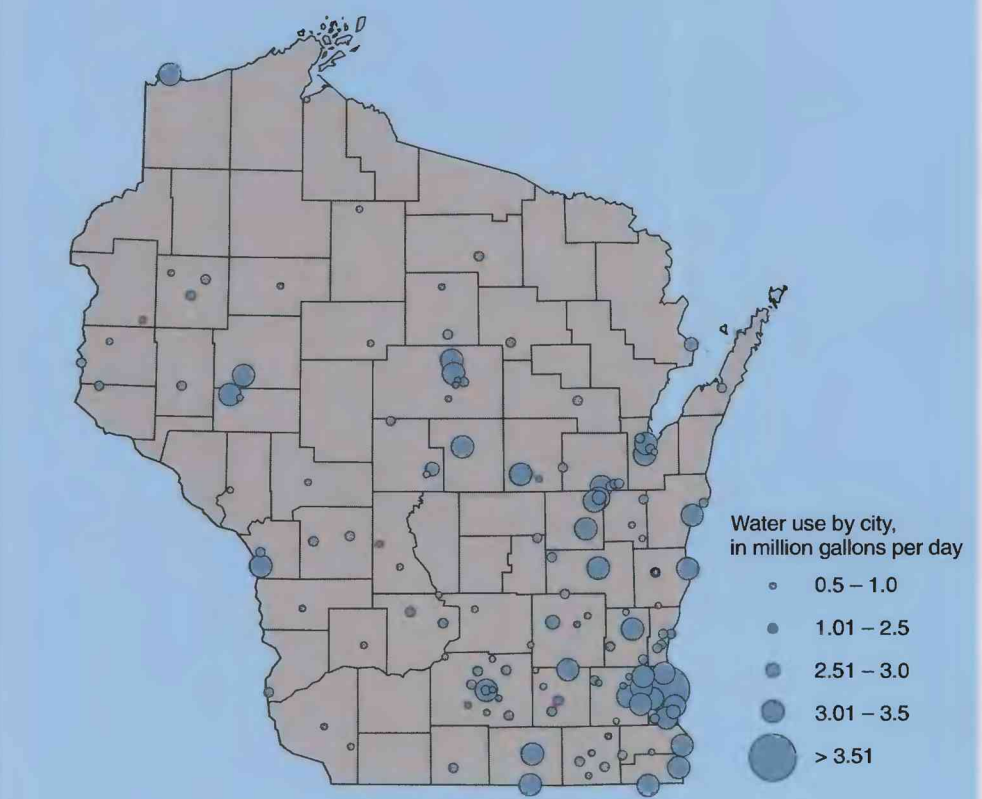
## SOURCES OF WATER

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, 1985). About two quadrillion (2 x 10<sup>15</sup>) gallons, or about one-third 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 dolomite, and sandstone aquifers—provide most of the ground water used in the State.

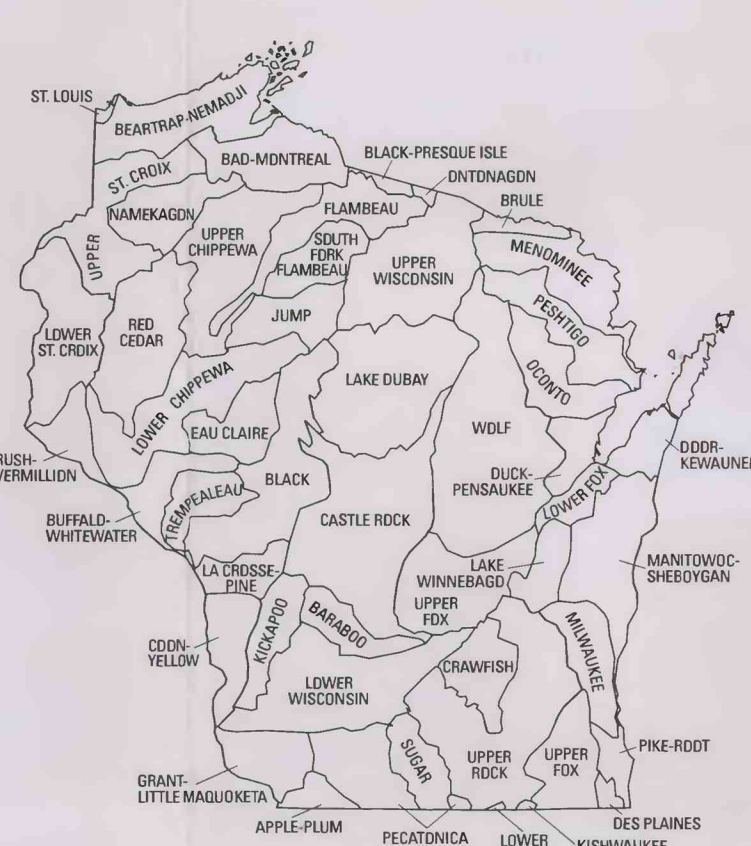
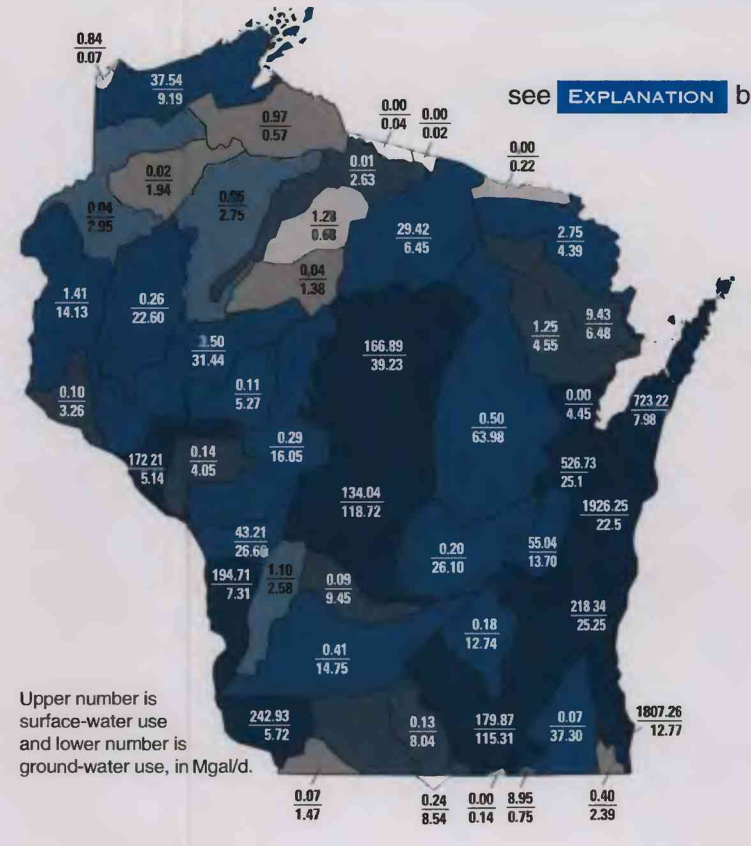
## WATER USE AND POPULATION



Areas of the state that use large amounts of water are coincident with population centers.



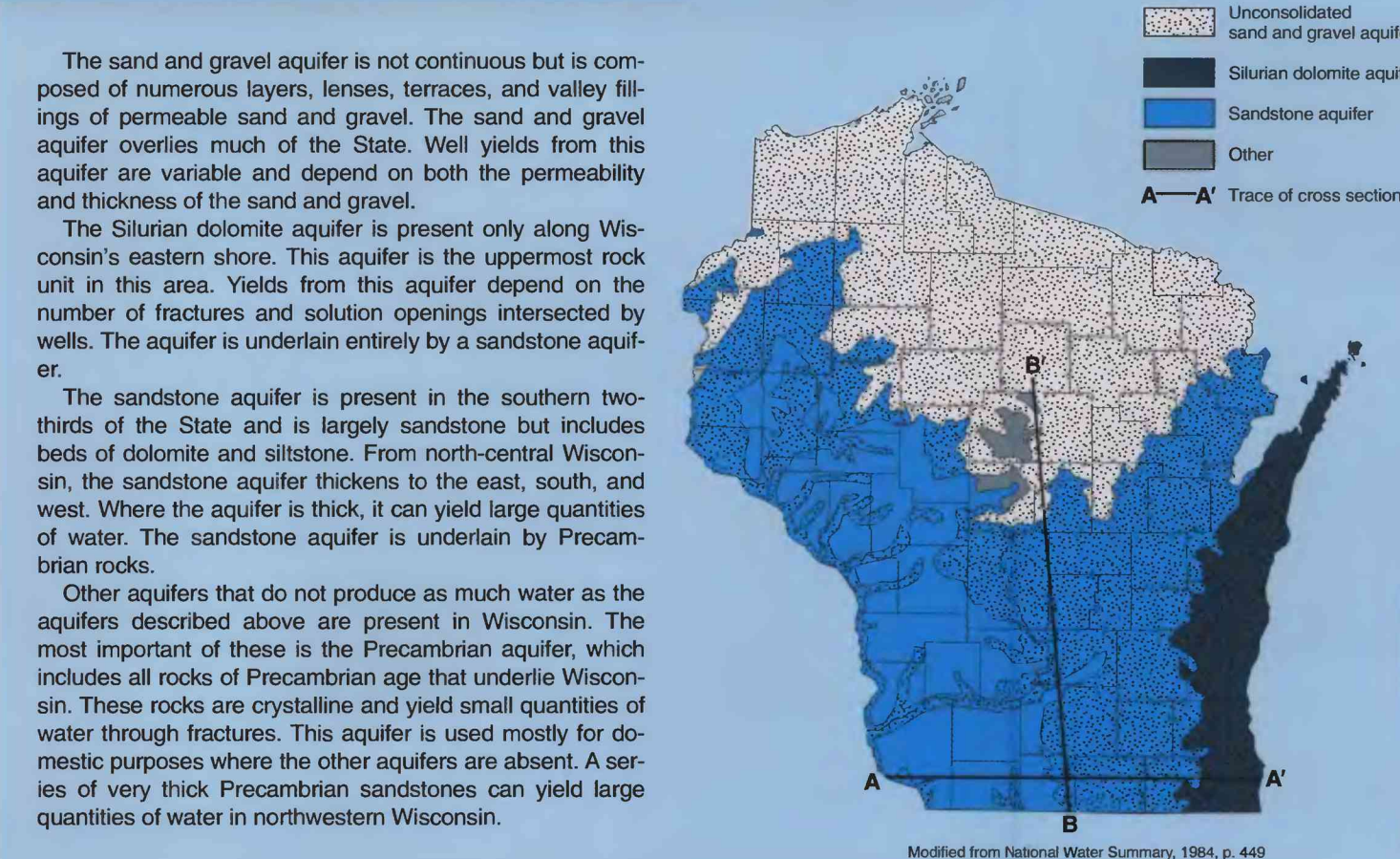
## TOTAL WATER USE, BY BASIN



WATER USE BY RIVER BASIN, 1995 in million gallons per day (Mgal/d)											
BASIN NAME	HYDROLOGIC UNIT CODE	DOMESTIC	AGRICULTURE	IRRIGATION	INDUSTRIAL	COMMERCIAL	THERMO-ELECTRIC	PUBLIC USE AND LOSSES	TOTAL		
St. Louis	04010001	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.89		
Beauregard-Nemadji	04010001	2.33	5.03	0.01	2.04	1.07	32.38	3.87	46.73		
Bad-Montreal	04010002	20.83	0.09	0.01	0.09	0.46	0.00	0.26	1.54		
Black-Presque Isle	04020101	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.04		
Ontonagon	04020102	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.02		
Manitowoc-Sheboygan	04030101	10.40	5.03	0.46	22.48	5.05	1899.23	5.47	1948.75		
Dodge-Kewaunee	04030102	2.74	1.18	0.22	0.60	1.86	723.23	0.00	731.20		
Duck-Pennsauke	04030103	3.74	0.00	0.00	0.14	0.39	0.00	0.18	4.45		
Oconto	04030104	1.55	0.65	1.31	1.84	0.22	0.00	0.23	5.80		
Peshigo	04030105	1.75	2.91	1.03	9.78	0.20	0.00	0.24	15.91		
Brule	04030106	0.06	0.02	0.01	0.00	0.06	0.00	0.07	0.22		
Menominee	04030108	1.22	0.26	0.88	3.83	0.26	0.00	0.09	7.14		
Upper Fox	04030201	6.38	1.95	11.24	5.91	1.40	0.00	0.02	26.90		
Wolf	04030202	8.81	4.93	32.18	14.60	2.06	0.00	1.90	64.48		
Lake Winnebago	04030203	7.12	1.39	0.01	47.22	3.33	0.00	9.67	68.74		
Lower Fox	04030204	17.03	1.12	0.04	116.36	8.82	398.66	9.70	551.83		
Pike-Rock	04040002	22.93	0.08	0.65	19.86	8.63	1758.95	8.93	1820.03		
Milwaukee	04040003	59.88	1.31	0.33	47.22	37.53	50.02	46.92	243.21		
Upper St. Croix	07030001	1.26	0.39	0.95	0.17	0.15	0.00	0.07	2.99		
Nemadji	07030002	0.71	0.15	0.60	0.06	0.22	0.00	0.20	1.96		
Lower St. Croix	07030005	6.04	1.94	0.58	3.72	1.13	0.00	2.13	15.54		
Rush-Vermilion	07040001	1.40	1.03	0.20	0.30	0.15	0.00	0.28	3.38		
Buffalo-Whitewater	07040003	0.87	1.07	1.44	0.59	0.33	172.62	0.43	173.35		
Trempealeau	07040005	0.92	1.36	0.26	1.15	0.20	0.00	0.30	4.19		
La Crosse-Pine	07040006	5.89	4.27	0.01	8.63	4.74	41.29	0.00	69.87		
Black	07040007	3.20	2.94	0.11	2.02	0.60	0.00	0.67	9.54		
Upper Chippewa	07050001	1.06	0.53	0.83	0.18	0.06	0.00	0.14	2.80		
Flambeau	07050002	1.18	0.11	0.15	0.38	0.22	0.00	0.24	2.24		
South Fork Flambeau	07050003	0.32	0.10	0.04	1.41	0.08	0.00	0.02	1.96		
Jump	07050004	0.54	0.37	0.30	0.06	0.02	0.00	0.13	1.42		
Lower Chippewa	07050005	6.78	2.88	9.31	9.76	2.33	0.00	3.86	34.94		
Eau Claire	07050006	2.26	1.18	0.57	0.72	0.28	0.00	0.37	5.38		
Red Cedar	07050007	4.16	2.59	8.24	4.82	1.10	0.00	1.95	22.86		
Cotton-Wabigoon	07060001	1.87	3.01	0.01	1.10	0.58	194.70	0.74	203.02		
Grant-Little Maquoketa	07060003	1.55	2.08	0.01	1.12	0.46	242.78	0.65	248.65		
Apple-Plum	07060005	0.55	0.72	0.01	0.08	0.08	0.00	0.10	1.54		
Upper Wisconsin	07070001	3.30	0.15	0.15	30.50	0.72	0.00	1.05	35.87		
Lake Dubay	07070002	8.99	9.99	5.77	42.51	2.83	131.66	4.27	206.12		
Castle Rock	07070003	11.97	3.36	84.00	135.31	4.49	7.74	5.14	252.01		
Baraboo	07070004	2.19	0.85	0.87	3.86	1.17	0.00	0.60	9.54		
Lower Wisconsin	07070005	4.79	4.04	0.07	3.89	1.35	0.00	1.02	15.16		
Koshong	07070006	1.05	1.01	0.01	1.15	0.20	0.00	0.28	3.68		
Upper Rock	07080001	32.95	12.10	2.86	24.16	22.33	174.76	21.70	290.96		
Crawfish	07080002	3.76	1.79	0.15	3.96	1.21	0.00	2.05	12.92		
Pecatonica	07090003	2.61	2.39	0.37	1.06	0.84	0.00	1.51	8.78		
Sagin	07090004	3.99	1.33	0.68	0.93	0.80	0.00	0.65	8.17		
Lower Rock	07090005	0.01	0.02	0.05	0.05	0.01	0.00	0.00	0.14		
Kishwaukee	07090006	0.22	0.03	0.01	9.13	0.13	0.00	0.18	9.70		
Des Plaines	07100004	1.49	0.07	0.02	1.04	0.14	0.00	0.03	2.79		
Upper Fox	07120005	15.71	2.27	1.60	6.77	7.20	0.00	3.52	31.97		
TOTALS		281.29	92.07	168.72	592.40	128.49	5826.02	148.59	7239.58		

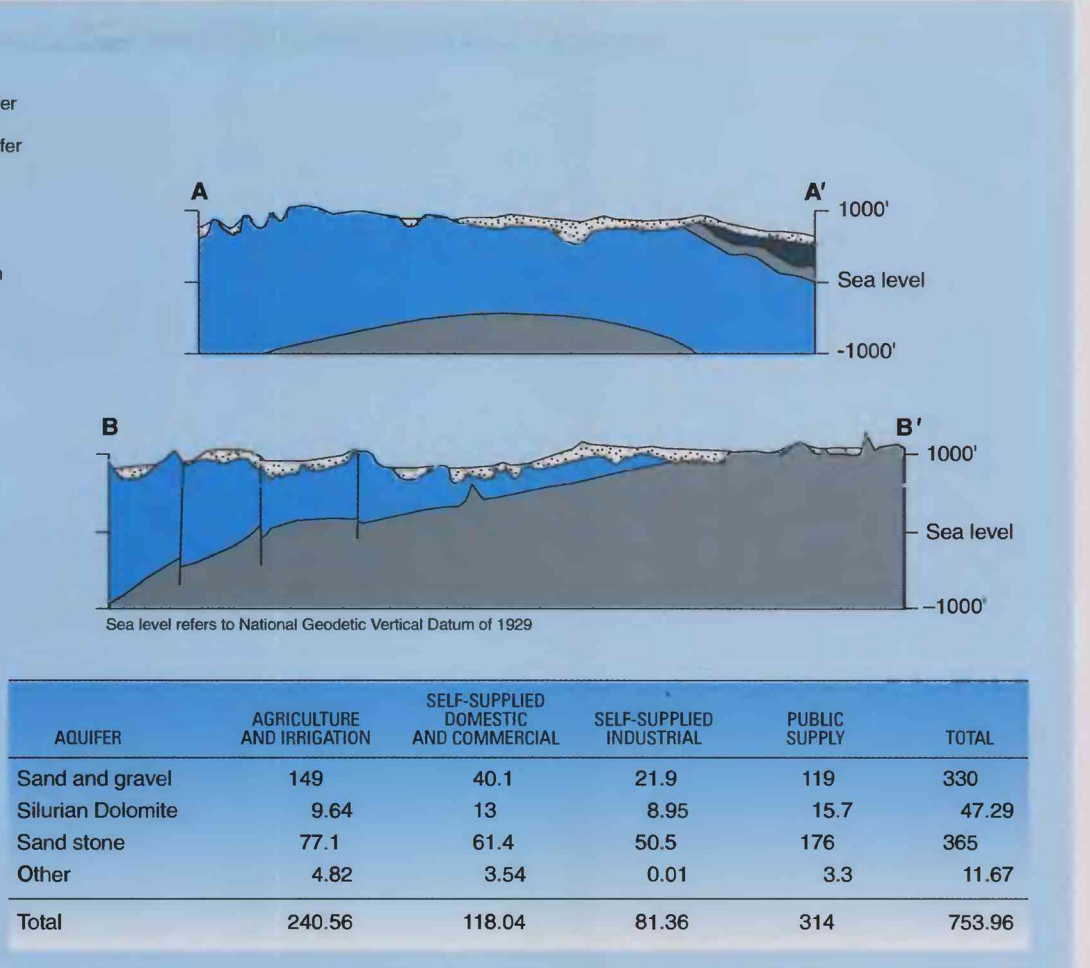
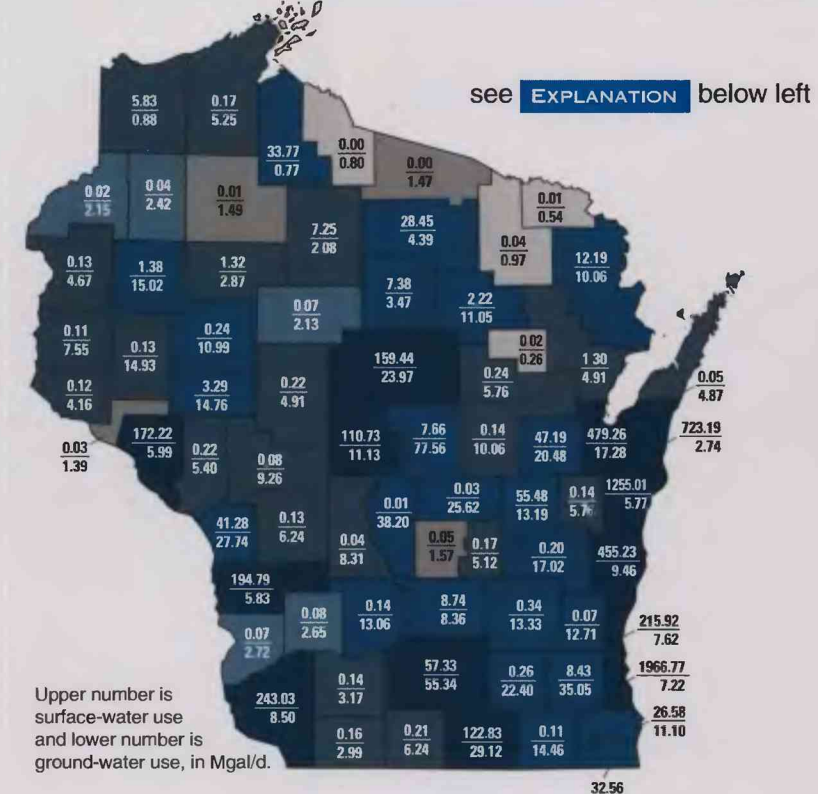
The largest total water use occurred in the Manitowoc-Sheboygan basin (04030101). Excluding thermoelectric-power water use, the largest amount of water was used in the Castle Rock basin (07070003), where withdrawals for industry and irrigation combined were 260 Mgal/d.

## TOTAL WATER USE, BY AQUIFER



Modified from National Water Summary, 1984, p. 449

## TOTAL WATER USE, BY COUNTY



WATER USE BY COUNTY, 1995 in million gallons per day (Mgal/d)								
COUNTY	DOMESTIC	AGRICULTURE	IRRIGATION	INDUSTRIAL	COMMERCIAL	THERMO-ELECTRIC	PUBLIC USE AND LOSSES	TOTAL
Adams	0.96	0.12	36.67	0.21	0.15	0.00	0.10	38.21
Ashland	0.80	0.09	0.00	0.07	0.31	32.38	0.89	34.54
Bayfield	0.83	3.62	0.01	0.17	0.60	0.00	0.19	5.82
Brown	12.22	1.46	0.14	74.83	6.76	396.16	4.97	496.54
Buffalo	0.70	1.06	0.11	0.06	0.10	174.10	0.08	178.21
Burlington	0.70	1.46	0.18	0.85	0.19	0.10	0.09	2.17
Calumet	1.98	1.44	0.04	2.30	0.19	0.00	0.05	5.90
Chippewa	2.78	1.68	1.86	3.03	0.51	0.00	1.37	11.23
Clark	1.73	2.24	0.01	0.47	0.27	0.00	0.41	5.13
Columbia	0.62	0.96	0.11	2.91	1.34	8.32	0.84	17.10
Crawford	0.85	0.67	0.03	0.56	0.29	0.00	0.39	2.79
Dane	19.89	2.68	0.16	7.16	14.12	52.20	12.14	108.35
Dodge	3.80	2.78	0.06	3.89	0.81	0.00	2.33	13.67
Door	1.48	0.38	0.23	0.42	1.72	0.00	0.69	4.92
Douglas	1.58	1.51	0.01	1.88	0.73	0.00	0.60	5.67
Dunn	1.81	1.22	8.76	1.91	0.39	0.00	0.97	17.06
Eau Claire	4.76	0.64	0.74	7.37	1.98	0.00	2.56	18.05
Florence	0.33	0.04	0.05	0.00	0.06	0.00	0.07	0.55
Green	1.43	2.02	0.02	2.83	1.41	0.00	0.61	17.22
Forest	0.57	0.08	0.13	0.01	0.07	0.00	0.15	1.01
Fond du Lac	0.32	3.11	0.01	1.41	0.07	242.77	0.87	251.53
Green	1.73	1.49	0.62	0.83	0.80	0.00	0.98	6.45
Green Lake	1.01	0.00	0.35	1.88	0.90	0.00	0.15	5.29
Iowa	1.11	1.38	0.09	0.07	0.17	0.00	0.49	3.31
Jackson	0.38	0.02	0.00	0.00	0.08	0.00	0.32	0.80
Jefferson	0.97	0.57	0.07	0.43	0.22	0.00	0.31	2.54
Iron	4.12	7.32	0.81	7.46	1.48	0.00	1.47	22.66
Juniata	1.20	0.42	0.56	0.32	0.31	0.00	0.54	3.35
Kenosha	7.75	0.19	0.05	3.22	3.05	17.30	3.53	35.09
Kewaunee	1.02	0.91	0.01	0.28	0.13	723.53	0.35	725.95
La Crosse	6.03	4.17	0.06	8.08	4.66	41.81	4.11	69.02
Lafayette	0.90	1.63	0.01	0.10	0.10	0.00	0.41	3.15
Lake	0.76	0.18	7.19	0.09	0.05	0.04	0.42	12.63
Lincoln	1.47	0.26	0.02	8.77	0.32	0.00	0.51	10.85
Manitowoc	4.87	1.29	0.02	6.92	1.62	1244.72	0.18	1260.78
Marathon	7.06	2.78	0.74	35.03	1.67	132.88	3.25	183.41
Marquette	2.37	0.05	1.82	1.83	0.60	0.00	0.80	62.25
Menasha	0.31	0.18	0.08	0.37	0.10	0.00	0.12	0.97
Menominee	0.34	0.00	0.02	0.00	0.00	0.00	0.02	0.38
Milwaukee	56.76	0.02	0.39	48.52	35.69	1789.19	43.52	1974.05
Monroe	2.20	1.19	0.06	0.84	1.22	0.00	1.08	6.33
Nebraska	1.65	0.77	1.65	1.63	0.03	0.00	0.23	6.23
Oconto	2.02	0.02	0.07	29.44	0.43	0.00	0.88	32.84
Ogishkemuncie	0.57	1.77	0.01	49.36	2.96	0.00	5.01	67.67
Oneida	0.35	0.31	0.02	2.30	0.24	0.00	0.42	3.64
Pepin	0.38	0.33	0.51	0.01	0.07	0.00	1.12	1.42
Pierce	1.17	1.24	0.11	0.08	0.45	0.00	0.63	4.48
Polk	1.89	1.06	0.06	0.90	0.41	0.00	0.48	4.80
Portage	3.34	0.56	57.55	18.05	2.32	0.00	2.75	84.47
Racine	0.57	0.02	0.17	7.49	0.17	0.00	0.51	8.24
Richland	0.05	0.05	1.45	14.15	0.30	0.00	5.84	37.68
Richmond	0.96	0.82	0.02	0.97	0.20	0.00	0.24	2.73
Rusk	6.45	0.84	2.61	7.39	4.57	122.80	1.41	151.95
Saginaw	0.81	0.11	1.17	3.55	0.10	0.00	0.12	4.22
St. Croix	2.86	0.00	0.20	2.30	0.59	0.00	0.65	7.66
Sauk	2.76	1.38	0.15	5.99	1.77	0.00	1.13	13.50
Sawyer	0.18	0.11	0.10	0.12	0.17	0.00	0.17	0.75
Shawano	2.22	1.91	0.01	0.87	0.39	0.00	0.60	6.00
Sheboygan	6.21	1.17	0.24	10.59	2.73	440.10	3.65	464.69
Taylor	1.04	0.93	0.01	0.19	0.10	0.00	0.13	2.20
Trempealeau	1.38	1.73	0.20	1.31	0.31	0.00	0.49	5.62
Union	0.07	3.25	0.02	0.01	0.35	1565.21	0.29	2020.93
Vilas	1.12	0.02	0.02	0.02	0.16	0.00	0.13	1.47
Walworth	4.32	2.17	0.28	1.69	0.34	0.00	2.97	14.53
Washington	0.80	0.11	0.02	0.01	0.01	0.00	0.43	2.46
Waukesha	0.76	0.64	1.03	2.10	1.69	0.00	2.18	5.40
Waushara	15.29	0.29	1.62	14.38	7.40	0.00	4.50	43.48
Wausau	2.70	1.36	0.63	3.67	0.65	0.00	0.89	10.20
Winnebago	1.13	0.59	24.02	0.01	0.17	0.00	0.52	26.52
Winneago	8.38	0.58	0.10	50.26	3.20	0.50	0.65	68.67
Wood	0.53	1.78	1.29	11.29	1.40	0.00	1.57	121.86
TOTAL	281.29	92.07	168.72	592.40	128.49	5828.02	148.59	7239.56