

**MINNESOTA RIVER BASIN**

**05319500 WATONWAN RIVER NEAR GARDEN CITY, MN**

LOCATION.--Lat 44° 02'47", long 94° 11'43", in SW¼NE¼ sec. 28, T.107 N., R.28 W., Blue Earth County, Hydrologic Unit 07020010, on left bank 25 ft downstream from bridge on County Highway 13, 1.5 miles west of Garden City, 7.3 mi upstream from mouth, and 9.2 mi downstream from Perch Creek.

DRAINAGE AREA.--812 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1940 to September 1945, September 1976 to current year. 1953, 1960, 1961, and 1969 (one or more discharge measurements each year).

REVISED RECORDS.--WDR MN-78-2: 1977.

GAGE.--Water-stage recorder. Datum of gage is 905.05 ft above mean sea level. Prior to September 30, 1945, nonrecording gage at site 200 ft upstream and at datum 0.17 ft higher.

REMARKS.--Records good except those for the periods of estimated daily discharge, which are fair to poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 7, 1965, reached a stage of 18.89 ft at datum 0.17 ft higher, from floodmarks, discharge, 19,000 ft<sup>3</sup>/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft<sup>3</sup>/s and maximum (\*):

**DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997**

**DAILY MEAN VALUES**

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
JUL	AUG	SEP							
1	148	422	e620	e240	e172	e270	2210	563	e1190
2020	904	353							
2	139	372	e610	e250	e178	e310	1940	548	1070
2110	776	312							
3	123	344	e600	e252	e170	e370	1770	573	968
2270	666	270							
4	118	339	e595	e250	e165	e390	1640	697	879
2130	593	233							
5	114	353	e590	e245	e161	e385	1580	807	811
1730	532	211							
6	109	341	e560	e235	e159	e375	1820	824	753
1340	508	192							
7	101	330	e530	e220	e158	e355	2100	753	e667
1090	481	177							

8	98	316	e490	e215	e153	e360	2130	726	e634
1040	440	165							
9	98	299	e490	e208	e151	e500	1890	784	e580
1290	387	154							
0	97	276	e480	e210	e148	e800	1610	779	e544
1360	367	155							
11	92	242	e470	e203	e148	e1100	1470	711	e506
1360	344	144							
12	92	166	e450	e202	e141	e1500	1330	671	e459
1220	329	136							
13	91	210	e405	e192	e140	e1800	1240	630	416
1080	307	124							
14	88	239	e360	e190	e139	e1880	1160	585	395
1200	285	116							
15	83	257	e325	e190	e141	e1880	1090	554	367
1310	296	110							
16	80	296	e305	e189	e137	e1870	1040	e527	345
1150	290	110							
17	94	752	e303	e191	e132	e2000	978	537	322
1010	256	108							
18	238	1360	e290	e190	e136	e2300	924	e500	296
976	231	103							
19	486	1580	e285	e187	e140	e2600	904	e492	292
893	218	96							
20	573	1550	e280	e180	e142	e2850	876	464	289
771	320	92							
21	540	1350	e270	e178	e141	e3100	842	442	293
1100	728	88							
22	465	1140	e270	e179	e142	e3060	807	415	336
1940	722	85							
23	427	983	e260	e180	e142	e3210	770	387	705
2260	609	92							
24	456	838	e245	e180	e145	e3280	730	531	1640
2350	499	104							
25	519	658	e240	e180	e150	e3210	685	1210	1910
2390	400	106							
26	514	e630	e235	e181	e160	e3080	654	e1460	1940
2300	337	106							
27	473	e630	e230	e179	e185	e2980	631	e1400	1810
2170	297	103							
28	428	e635	e235	e175	e220	e2980	617	e1260	1560
1970	259	96							
29	396	e640	e235	e170	---	e2920	591	e1220	1440
1620	227	91							
30	398	e630	e236	e169	---	2830	572	e1290	1730
1300	250	88							
31	434	---	e239	e170	---	2500	---	e1300	---
1070	378	---							
TOTAL	8112	18178	11733	6180	4296	57045	36601	23640	25147
47820	13236	4320							
MEAN	262	606	378	199	153	1840	1220	763	838
1543	427	144							
MAX	573	1580	620	252	220	3280	2210	1460	1940

2390	904	353							
MIN	80	166	230	169	132	270	572	387	289
771	218	85							
AC-FT	16090	36060	23270	12260	8520	113100	72600	46890	49880
94850	26250	8570							
CFSM	.32	.75	.47	.25	.19	2.27	1.50	.94	1.03
1.90	.53	.18							

a Gage height is approximate.  
e Estimated

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1997, BY WATER YEAR (WY)**

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
JUL	AUG	SEP							
MEAN	207	254	152	74.4	105	627	864	619	896
481	260	212							
MAX	686	826	530	319	626	2105	2696	2025	4494
2389	1095	819							
(WY)	1993	1993	1992	1992	1983	1992	1993	1993	1993
1993	1979	1993							
MIN	5.37	7.69	3.76	2.70	2.39	19.3	33.7	16.1	17.3
8.27	6.56	3.63							
(WY)	1990	1977	1990	1977	1977	1940	1990	1940	1989
1940	1989	1976							

<i>SUMMARY STATISTICS</i>	<i>FOR 1996 CALENDAR YEAR</i>	<i>FOR 1997 WATER YEAR</i>	<i>WATER YEARS 1940 - 1997</i>
ANNUAL TOTAL		184337	256308
ANNUAL MEAN		504	702
HIGHEST ANNUAL MEAN			409
1330		1993	
LOWEST ANNUAL MEAN			
43.7		1989	
HIGHEST DAILY MEAN	4670	Jun 20	3280
20			Mar 24
1993			13400
Jun			Jun
LOWEST DAILY MEAN	55	Feb 5	80
24			Oct 16
1989			1.8
Dec			Dec
ANNUAL SEVEN-DAY MIN	57	Feb 3	89
20			Oct 11
1977			1.9
Jan			Jan
INSTANTANEOUS PEAK FLOW			3310a
20			Mar 24
1993			13900
Jun			Jun
INSTANTANEOUS PEAK STAGE			8.72b
20			Mar 14
1993			15.91
Jun			Jun
INSTANTANEOUS LOW FLOW			79
24			Oct 16
1989			1.8
Dec			Dec
ANNUAL RUNOFF (AC-FT)	365600		508400
			296500
ANNUAL RUNOFF (CFSM)	.62		.86
			.50
10 PERCENT EXCEEDS	952		1840
			1100
50 PERCENT EXCEEDS	372		422
			146
90 PERCENT EXCEEDS	88		137
			12

○ a Based on approximation of peak stage.

b Backwater from ice.