

05319500 WATONWAN RIVER NEAR GARDEN CITY, MN

LOCATION.--Lat 44°02'47", long 94°11'43", in SW¹/₄NE¹/₄ 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.--851 mi².

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. WRIR 97-4249: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 905.05 ft above sea level (NGVD of 1929). 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 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 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft³/s and maximum (*):

	Time	Discharge (ft ³ /s)	Gage height (ft)	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr 15	0100	2,220	5.56	1400	1,370	4.13
May 16	0800	3,100	6.84	0700	*5,450	*9.75
Jun 10	1100	1,270	3.93			

Minimum discharge, 25 ft³/s, Jan. 18, (estimated, daily-mean discharge).

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	825	266	e225	e87	e60	e77	954	490	657	358	117	260
2	726	262	e216	e88	e63	e76	750	467	622	336	102	223
3	661	252	e212	e85	e67	e76	603	446	596	325	89	192
4	610	246	212	e79	e73	e76	521	418	579	357	84	166
5	557	245	217	e72	e83	e78	485	396	702	372	82	146
6	520	238	198	e66	e92	e86	471	403	1,090	338	72	147
7	488	235	200	e61	e93	e99	476	452	1,100	306	68	151
8	474	224	198	e59	e90	e115	480	597	1,110	279	61	170
9	463	214	194	e55	e90	e115	475	1,090	1,190	287	64	220
10	445	214	194	e54	e89	e126	455	1,360	1,260	278	63	304
11	424	221	190	e52	e89	e112	492	1,530	1,260	261	57	323
12	403	212	186	e51	e91	e98	1,100	1,770	1,230	248	56	321
13	390	207	e148	e51	e99	e88	1,880	2,280	1,190	253	55	306
14	392	193	e69	e46	e116	e104	2,150	2,800	1,100	229	51	287
15	381	189	e101	e39	e136	e100	2,190	2,980	1,030	205	47	263
16	374	193	e124	e32	e149	e95	2,030	3,040	943	181	45	255
17	351	194	e126	e27	e152	e87	1,900	2,760	863	160	45	248
18	333	190	e121	e25	e150	e79	1,890	2,350	793	152	167	232
19	318	198	e109	e28	e137	e78	1,830	1,970	677	137	779	225
20	307	222	e101	e30	e127	e81	1,680	1,680	639	125	1,180	240
21	296	254	e98	e33	e116	e83	1,500	1,510	870	130	1,340	229
22	291	263	e85	e36	e107	e85	1,320	1,360	894	195	1,230	217
23	294	271	e71	e41	e99	e89	1,150	1,270	810	186	994	209
24	298	269	e51	e47	e93	e98	974	1,180	684	151	711	213
25	286	254	e53	e54	e89	e116	853	1,060	578	136	513	1,160
26	280	245	e58	e55	e84	e148	783	1,010	513	152	458	2,510
27	270	251	e60	e55	e81	e194	715	976	463	204	409	4,020
28	261	246	e66	e55	e80	e417	635	935	425	193	352	5,030
29	260	228	e73	e55	---	e793	572	865	394	174	343	5,330
30	276	e216	e87	e55	---	1,090	527	785	365	158	340	4,570
31	282	---	e84	e57	---	1,110	---	715	---	138	306	---
TOTAL	12,536	6,912	4,127	1,630	2,795	6,069	31,841	40,945	24,627	7,004	10,280	28,167
MEAN	404	230	133	52.6	99.8	196	1,061	1,321	821	226	332	939
MAX	825	271	225	88	152	1,110	2,190	3,040	1,260	372	1,340	5,330
MIN	260	189	51	25	60	76	455	396	365	125	45	146
AC-FT	24,870	13,710	8,190	3,230	5,540	12,040	63,160	81,210	48,850	13,890	20,390	55,870
CFSM	0.48	0.27	0.16	0.06	0.12	0.23	1.25	1.55	0.96	0.27	0.39	1.10
IN.	0.55	0.30	0.18	0.07	0.12	0.27	1.39	1.79	1.08	0.31	0.45	1.23

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2005, BY WATER YEAR (WY)

MEAN	184	220	133	65.4	98.8	530	922	641	854	470	235	215
MAX	686	826	530	319	626	2,105	4,411	2,025	4,494	2,389	1,095	939
(WY)	(1993)	(1993)	(1992)	(1992)	(1983)	(1992)	(2001)	(1993)	(1993)	(1993)	(1979)	(2005)
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)

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SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1940 - 2005	
ANNUAL TOTAL	120,915.3		176,933			
ANNUAL MEAN	330		485		391	
HIGHEST ANNUAL MEAN					1,330	1993
LOWEST ANNUAL MEAN					43.7	1989
HIGHEST DAILY MEAN	3,090	Jun 10	5,330	Sep 29	13,400	Jun 20, 1993
LOWEST DAILY MEAN	8.6	Jan 30	25	Jan 18	1.8	Dec 24, 25 1989
ANNUAL SEVEN-DAY MINIMUM	8.7	Jan 28	30	Jan 16	1.9	Jan 20, 1977
MAXIMUM PEAK FLOW			5,450	Sep 29	13,900	Jun 20, 1993
MAXIMUM PEAK STAGE			9.75	Sep 29	15.91	Jun 20, 1993
INSTANTANEOUS LOW FLOW			a25	Jan 18	b1.8	Dec 24, 1989
ANNUAL RUNOFF (AC-FT)	239,800		350,900		282,900	
ANNUAL RUNOFF (CFSM)	0.388		0.570		0.459	
ANNUAL RUNOFF (INCHES)	5.29		7.73		6.23	
10 PERCENT EXCEEDS	880		1,180		1,050	
50 PERCENT EXCEEDS	190		235		140	
90 PERCENT EXCEEDS	9.9		61		14	

- a Estimated daily-mean discharge.
- b Minimum daily-mean discharge, backwater from ice.
- e Estimated.

