

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 (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 31	0500	1,820	5.02	Sep 17	1100	1,250	4.03
Jun 10	1200	*3,230	*7.09	Sep 25	0300	1,820	5.02
Jul 15	0300	2,350	5.86				

Minimum discharge, 5.3 ft³/s, Oct. 3, gage height, 0.38 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.7	18	19	e14	e8.6	e23	198	91	1,740	217	259	72
2	8.8	20	21	e13	e8.8	e32	175	85	1,600	208	224	68
3	8.1	25	24	e13	e9.0	e53	156	78	1,210	239	208	63
4	6.9	23	23	e11	e9.1	e120	143	72	938	379	193	57
5	8.8	20	24	e10	e9.1	e135	129	68	762	391	229	56
6	9.9	20	24	e9.3	e9.2	e137	119	64	651	522	255	74
7	10	19	23	e9.0	e9.2	e143	110	59	569	645	243	79
8	9.9	16	23	e8.9	e9.2	e161	104	57	515	584	230	82
9	9.8	19	23	e8.9	e9.2	e180	97	51	1,890	510	220	74
10	7.3	21	e15	e9.3	e9.2	e185	90	59	3,090	442	195	65
11	9.4	19	e15	e9.6	e9.3	e183	86	55	2,520	875	173	58
12	11	20	e15	e10	e9.3	e182	79	50	2,010	1,900	156	53
13	9.7	18	e14	e10	e9.3	e177	75	52	1,620	2,260	141	47
14	9.5	22	e14	e11	e9.3	e183	73	49	1,300	2,310	128	71
15	14	18	e13	e11	e9.4	e203	68	46	e1,030	2,290	116	383
16	13	20	e13	e11	e9.5	e213	67	45	e871	2,040	158	992
17	12	20	e12	e10	e9.8	e214	68	53	e759	1,570	180	1,230
18	13	21	e12	e10	e10	e215	62	57	e661	1,170	172	1,200
19	14	19	e12	e9.8	e11	e215	66	58	590	916	150	1,130
20	14	21	e12	e9.7	e11	e210	69	60	529	739	139	1,000
21	15	22	e12	e9.7	e11	e199	80	68	486	621	129	891
22	14	21	e12	e9.6	e11	e185	89	160	444	647	117	1,120
23	14	21	e12	e9.4	e11	228	87	353	395	864	108	1,540
24	15	14	e12	e9.3	e12	228	82	537	362	801	102	1,730
25	16	21	e12	e9.2	e12	218	86	592	333	668	97	1,790
26	16	21	e13	e9.2	e12	209	95	551	305	585	94	1,710
27	16	18	e13	e9.1	e13	210	104	492	276	507	89	1,500
28	17	17	e14	e8.9	e15	234	107	433	258	428	86	1,260
29	17	15	e14	e8.7	e19	266	106	680	238	365	81	1,070
30	17	18	e14	e8.6	---	253	99	1,610	221	315	78	933
31	19	---	e14	e8.6	---	224	---	1,770	---	281	75	---
TOTAL	381.8	587	493	308.8	304.5	5,618	2,969	8,455	28,173	26,289	4,825	20,398
MEAN	12.3	19.6	15.9	9.96	10.5	181	99.0	273	939	848	156	680
MAX	19	25	24	14	19	266	198	1,770	3,090	2,310	259	1,790
MIN	6.7	14	12	8.6	8.6	23	62	45	221	208	75	47
AC-FT	757	1,160	978	613	604	11,140	5,890	16,770	55,880	52,140	9,570	40,460
CFSM	0.01	0.02	0.02	0.01	0.01	0.21	0.12	0.32	1.10	1.00	0.18	0.80
IN.	0.02	0.03	0.02	0.01	0.01	0.25	0.13	0.37	1.23	1.15	0.21	0.89

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2004, BY WATER YEAR (WY)

MEAN	178	220	133	65.8	98.7	539	918	621	855	477	232	195
MAX	686	826	530	319	626	2,105	4,411	2,025	4,494	2,389	1,095	819
(WY)	(1993)	(1993)	(1992)	(1992)	(1983)	(1992)	(2001)	(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)

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SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1940 - 2004	
ANNUAL TOTAL	68,648.0		98,802.1		388	
ANNUAL MEAN	188		270		1,330	
HIGHEST ANNUAL MEAN					43.7	
LOWEST ANNUAL MEAN					1989	
HIGHEST DAILY MEAN	1,240	May 22	3,090	Jun 10	13,400	Jun 20, 1993
LOWEST DAILY MEAN	5.2	Sep 9	6.7	Oct 1	1.8	Dec 24, 1989
ANNUAL SEVEN-DAY MINIMUM	6.1	Sep 4	8.5	Oct 1	1.9	Jan 20, 1977
MAXIMUM PEAK FLOW			3,290	Jun 10	13,900	Jun 20, 1993
MAXIMUM PEAK STAGE			7.09	Jun 10	15.91	Jun 20, 1993
INSTANTANEOUS LOW FLOW			5.3	Oct 3	1.8	Dec 24, 1989
ANNUAL RUNOFF (AC-FT)	136,200		196,000		280,800	
ANNUAL RUNOFF (CFSM)	0.221		0.317		0.456	
ANNUAL RUNOFF (INCHES)	3.00		4.32		6.19	
10 PERCENT EXCEEDS	609		880		1,040	
50 PERCENT EXCEEDS	23		68		135	
90 PERCENT EXCEEDS	12		9.5		14	

e Estimated.

