

05211000 MISSISSIPPI RIVER AT GRAND RAPIDS, MN

LOCATION.--Lat 47°13'56", long 93°31'48", in SW¹/₄NW¹/₄ sec. 27, T.55 N., R.25 W., Itasca County, Hydrologic Unit 07010103, on left bank, 650 ft downstream from Blandin Dam, 150 ft upstream from bridge on U.S. Highway 169, 2.5 mi upstream from Prairie River, and at mile 1,182 upstream from Ohio River.

DRAINAGE AREA.--3,370 mi² (approximately).

PERIOD OF RECORD.--October 1883 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,242.03 ft above sea level (NGVD of 1929). See WSP 1914 for history of changes prior to Jan. 17, 1951.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by Winnibigoshish Lake, Leech Lake, Pokegama Lake, Blandin Paper Mill (up to 16 ft³/s diverted for paper production), and occasionally at low flow by power plant at Blandin Dam. Backwater from Prairie River occurs at times in most years.

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	1,870	2,180	2,170	e1,980	e1,810	1,770	e1,240	1,720	2,170	e2,210	1,760	607
2	2,060	2,450	2,150	e1,980	e1,800	1,710	e1,260	1,560	2,240	e2,230	1,760	593
3	2,060	2,290	2,040	e1,980	e1,800	1,710	e1,270	1,180	2,240	e2,250	1,790	571
4	1,990	2,380	1,880	e1,980	e1,790	1,760	e1,320	1,230	2,290	e2,280	1,820	579
5	1,910	2,340	1,860	e1,980	e1,790	1,690	e1,330	974	2,300	2,300	1,600	619
6	1,980	2,320	1,690	e1,970	e1,770	1,680	e1,380	659	2,250	2,330	1,550	615
7	2,020	2,350	1,640	e1,970	e1,760	1,700	1,970	719	2,220	2,290	1,510	558
8	2,060	2,340	1,640	e1,970	e1,730	1,580	2,320	653	2,210	2,250	1,430	609
9	2,050	2,300	1,600	e1,980	e1,700	1,660	2,560	728	e2,200	2,340	1,310	547
10	2,010	2,280	1,660	e1,990	e1,740	1,580	e2,600	741	e2,170	2,370	1,340	595
11	1,990	2,290	1,770	e2,010	e1,740	1,640	e2,600	651	e2,160	2,320	1,120	611
12	2,060	2,250	1,860	e2,100	e1,740	1,650	e2,600	671	e2,160	2,290	1,000	592
13	2,130	2,270	e1,860	e2,060	e1,740	1,640	e2,580	706	e2,170	2,270	837	764
14	2,220	2,260	e1,870	e2,000	e1,730	1,630	2,530	755	e2,070	2,260	891	1,040
15	2,320	2,230	e1,870	e1,990	e1,700	1,640	2,500	721	e1,750	2,280	757	968
16	2,260	2,230	e1,860	e1,970	e1,650	1,610	2,530	709	e1,500	2,000	684	795
17	2,240	2,180	e1,850	e1,940	e1,650	1,590	2,510	862	e1,900	2,250	564	670
18	2,140	2,220	e1,850	e1,940	e1,660	1,610	2,490	936	e2,060	2,320	628	686
19	1,960	2,220	e1,840	e1,940	e1,670	1,580	2,390	966	e2,080	2,310	705	701
20	2,070	2,160	e1,830	e1,950	e1,690	1,570	2,260	1,010	e2,130	2,170	678	685
21	2,020	2,170	e1,830	e1,940	e1,700	1,530	2,220	994	2,230	2,090	572	647
22	2,090	2,230	e1,830	e1,920	e1,710	1,490	2,290	985	2,190	2,000	674	613
23	2,140	2,250	e1,830	e1,910	e1,710	1,510	2,270	1,030	2,190	2,040	658	610
24	2,170	2,200	e1,830	e1,900	e1,710	1,530	2,300	1,050	2,280	2,040	620	615
25	2,080	2,140	e1,830	e1,900	e1,710	1,550	2,310	1,060	2,290	2,050	621	619
26	2,060	2,120	e1,830	e1,880	e1,710	1,570	2,090	1,430	e2,300	2,050	704	528
27	2,070	2,170	e1,830	e1,870	e1,700	1,630	2,020	e1,600	e2,290	1,990	715	549
28	2,040	2,230	e1,830	e1,860	1,690	1,690	2,040	e1,620	e2,170	1,990	667	635
29	2,140	2,230	e1,820	e1,850	---	1,720	1,880	e1,600	e2,190	2,040	649	625
30	2,240	2,210	e1,900	e1,840	---	1,760	1,710	e1,680	e2,180	1,930	647	585
31	2,210	---	e1,990	e1,830	---	1,440	---	1,880	---	1,820	602	---
TOTAL	64,660	67,490	57,140	60,380	48,300	50,420	63,370	33,080	64,580	67,360	30,863	19,431
MEAN	2,086	2,250	1,843	1,948	1,725	1,626	2,112	1,067	2,153	2,173	996	648
MAX	2,320	2,450	2,170	2,100	1,810	1,770	2,600	1,880	2,300	2,370	1,820	1,040
MIN	1,870	2,120	1,600	1,830	1,650	1,440	1,240	651	1,500	1,820	564	528
AC-FT	128,300	133,900	113,300	119,800	95,800	100,000	125,700	65,610	128,100	133,600	61,220	38,540
CFSM	0.62	0.67	0.55	0.58	0.51	0.48	0.63	0.32	0.64	0.64	0.30	0.19
IN.	0.71	0.74	0.63	0.67	0.53	0.56	0.70	0.37	0.71	0.74	0.34	0.21

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1884 - 2005, BY WATER YEAR (WY)

MEAN	1,452	1,359	1,160	1,145	1,126	1,070	1,044	1,150	1,243	1,369	1,332	1,378
MAX	3,544	3,259	2,608	2,410	2,729	2,762	3,622	3,668	3,271	3,363	4,505	4,438
(WY)	(1902)	(1903)	(2000)	(1952)	(1945)	(1945)	(1901)	(1901)	(1962)	(1962)	(1905)	(1905)
MIN	103	122	150	165	155	129	106	32.5	185	125	88.3	89.2
(WY)	(1937)	(1937)	(1937)	(1937)	(1934)	(1937)	(1937)	(1949)	(1936)	(1961)	(1934)	(1934)

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SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1884 - 2005	
ANNUAL TOTAL	391,979		627,074			
ANNUAL MEAN	1,071		1,718		a1,244	
HIGHEST ANNUAL MEAN					2,429	1906
LOWEST ANNUAL MEAN					193	1934
HIGHEST DAILY MEAN	2,450	Nov 2	2,600	Apr 10-12	8,900	Sep 29, 1914
LOWEST DAILY MEAN	216	May 8	528	Sep 26	b0.00	Oct 2, 1948
ANNUAL SEVEN-DAY MINIMUM	267	Aug 29	585	Sep 3	24	May 9, 1949
MAXIMUM PEAK FLOW			2,830	Apr 12	c12,500	Sep 3, 1948
MAXIMUM PEAK STAGE			9.62	Apr 12	d15.20	Sep 3, 1948
INSTANTANEOUS LOW FLOW			f305	Sep 7	b0.00	Sep 3, 1948
ANNUAL RUNOFF (AC-FT)	777,500		1,244,000		901,600	
ANNUAL RUNOFF (CFSM)	0.318		0.510		0.369	
ANNUAL RUNOFF (INCHES)	4.33		6.92		5.02	
10 PERCENT EXCEEDS	2,150		2,290		2,350	
50 PERCENT EXCEEDS	795		1,860		1,150	
90 PERCENT EXCEEDS	370		671		313	

- a Median of annual mean discharges is 1,230 ft³/s.
- b Many days, several years.
- c From rating curve extended above 4,500 ft³/s; result of dam failure.
- d From floodmark; result of dam failure.
- e Estimated.
- f Result of regulation.

