

05331000 MISSISSIPPI RIVER AT ST. PAUL, MN

LOCATION.--LAT 44°56'01", long 93°06'20", in NE¹/₄NE¹/₄ sec.13, T. 28 N., R. 22 W., Ramsey County, Hydrologic Unit 07010206, on left bank in St. Paul, 100 ft upstream from Smith Ave. Bridge, 4.8 mi downstream from Minnesota River, and at mile 840.5 upstream from Ohio River.

DRAINAGE AREA.--36,800 mi² (approximately).

PERIOD OF RECORD.--March 1892 to current year (prior to 1901, fragmentary during some winters). Records prior to March 1892, published in the 19th Annual Report, Part 4, have been found to be unreliable and should not be used. Monthly discharge only for some periods, published in WSP 1308. Gage-height records (winter records incomplete) collected at same site since 1866 are contained in reports of U.S. Weather Bureau, War Department and Mississippi River Commission.

REVISED RECORDS.--WSP 285: 1892-96. WSP 715: Drainage area. WSP 875: 1938. WSP 895: 1939. WSP 1308: 1867(M). WSP 1508: 1897, 1898(M). 1903(M), 1917-18(M). 1928(M), 1929. WRD MN-74: 1973.

GAGE.--Water-stage recorder. Datum of gage is 683.62 ft above sea level (NGVD of 1929). Prior to Mar. 18, 1925, nonrecording gage at several sites within 300 ft of each other and 1.2 miles downstream of present site at present datum. Mar. 19, 1925 to June 24, 1999, recording gage 1.2 miles downstream of present site at present datum. Since September 1938, auxiliary water-stage recorder 5.6 mi downstream.

REMARKS.--Records good except those for days when flow-routing techniques were used, which are fair to poor. Flow-routing techniques were used from Oct. 1 to May 27, and June 27 to Sept. 30. Routed discharges are considered fair to poor. Slight regulation, except during extreme floods, by reservoirs on headquarters and by power plants. Beginning July 20, 1939, effluent from Minneapolis and St. Paul, which formerly entered the river above station, was diverted to a wastewater treatment plant, thence to river about 4 miles below station. Daily-mean discharge figures do not include this diversion.

COOPERATION.--Records of discharge from the Metro Plant wastewater treatment plant were provided by the Metropolitan Council - Environmental Services.

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	e3,530	e3,890	e4,110	e3,850	e2,780	e3,590	e16,000	e10,200	31,700	e15,600	e7,800	e4,870
2	e3,190	e4,150	e4,430	e3,480	e2,960	e3,770	e16,000	e9,690	33,300	e14,400	e7,230	e5,100
3	e3,390	e4,150	e4,470	e3,690	e2,910	e4,010	e16,000	e9,350	34,500	e13,500	e6,880	e4,930
4	e3,230	e3,880	e4,420	e3,780	e2,680	e4,100	e16,100	e8,920	36,000	e13,300	e7,410	e4,430
5	e3,290	e4,230	e4,490	e3,470	e2,840	e4,310	e15,200	e8,710	37,500	e12,900	e7,210	e4,260
6	e3,190	e4,220	e4,320	e3,180	e3,050	e4,460	e14,400	e8,350	39,500	e13,500	e7,280	e4,780
7	e3,040	e4,440	e4,670	e2,920	e3,130	e4,540	e14,500	e8,100	40,200	e13,700	e7,660	e5,280
8	e3,100	e4,030	e4,450	e3,060	e3,110	e4,780	e13,800	e8,060	39,400	e15,200	e8,460	e6,730
9	e3,140	e3,460	e4,360	e3,470	e3,020	e4,350	e12,700	e7,440	40,800	e15,800	e8,870	e6,800
10	e3,130	e3,300	e4,550	e3,570	e3,060	e4,900	e12,400	e7,170	40,100	e16,100	e8,490	e6,020
11	e3,230	e3,400	e4,060	e3,700	e3,130	e4,840	e12,500	e6,820	40,400	e15,400	e8,040	e6,720
12	e3,170	e3,260	e2,390	e3,910	e3,140	e5,010	e12,100	e7,110	42,100	e16,200	e7,720	e7,220
13	e3,400	e3,830	e2,310	e3,840	e3,170	e4,930	e11,700	e6,480	43,700	e18,500	e7,290	e7,320
14	e3,260	e4,370	e2,710	e3,510	e3,180	e6,570	e11,600	e6,870	44,800	e20,500	e7,030	e6,790
15	e3,420	e4,440	e3,700	e3,420	e3,190	e7,680	e11,000	e6,420	46,000	e21,400	e7,050	e7,230
16	e3,330	e4,310	e4,410	e3,360	e3,020	e7,680	e10,900	e6,010	46,900	e21,300	e6,580	e7,790
17	e2,820	e4,020	e4,370	e3,430	e3,050	e7,970	e10,400	e6,080	46,800	e21,200	e6,160	e7,530
18	e2,690	e4,300	e3,670	e3,480	e3,060	e8,090	e9,880	e7,860	46,200	e19,300	e5,840	e10,500
19	e3,500	e4,630	e3,860	e3,040	e3,110	e7,180	e9,810	e8,470	45,600	e17,400	e5,790	e18,800
20	e3,540	e4,650	e3,920	e2,580	e3,280	e8,490	e10,000	e8,800	43,600	e15,600	e5,920	e21,300
21	e3,970	e4,710	e4,040	e2,740	e3,200	e8,940	e9,390	e9,070	41,600	e14,100	e5,890	e23,500
22	e3,990	e4,750	e4,210	e2,810	e3,040	e9,240	e10,100	e10,200	38,600	e12,800	e6,010	e25,200
23	e3,640	e4,560	e4,280	e2,940	e3,040	e9,530	e11,100	e10,500	35,800	e11,700	e5,560	e27,000
24	e3,360	e4,470	e4,280	e3,060	e3,210	e9,640	e11,600	e11,500	32,000	e11,200	e5,290	e28,200
25	e3,400	e4,170	e4,110	e3,110	e3,180	e9,720	e11,800	e14,100	27,500	e10,800	e5,340	e29,200
26	e3,140	e3,500	e3,980	e3,260	e3,160	e10,300	e12,100	e16,700	24,300	e10,800	e4,980	e28,700
27	e3,470	e3,060	e4,110	e3,240	e3,220	e10,400	e11,900	e17,900	e22,800	e9,960	e5,390	e27,900
28	e3,520	e3,240	e4,300	e3,390	e3,250	e11,300	e11,400	22,100	e20,800	e9,480	e5,840	e26,500
29	e3,520	e3,140	e4,540	e3,180	e3,390	e12,700	e10,900	23,600	e18,900	e9,090	e5,480	e24,100
30	e3,730	e3,880	e4,480	e2,790	---	e14,300	e10,600	25,200	e17,200	e8,500	e5,060	e22,300
31	e3,610	---	e4,070	e2,700	---	e15,500	---	28,600	---	e7,850	e4,980	---
TOTAL	103,940	120,440	126,070	101,960	89,560	232,820	367,880	346,380	1,098,600	447,080	204,530	417,000
MEAN	3,353	4,015	4,067	3,289	3,088	7,510	12,260	11,170	36,620	14,420	6,598	13,900
MAX	3,990	4,750	4,670	3,910	3,390	15,500	16,100	28,600	46,900	21,400	8,870	29,200
MIN	2,690	3,060	2,310	2,580	2,680	3,590	9,390	6,010	17,200	7,850	4,980	4,260
AC-FT	206,200	238,900	250,100	202,200	177,600	461,800	729,700	687,000	2,179,000	886,800	405,700	827,100
CFSM	0.09	0.11	0.11	0.09	0.08	0.20	0.33	0.30	1.00	0.39	0.18	0.38
IN.	0.11	0.12	0.13	0.10	0.09	0.24	0.37	0.35	1.11	0.45	0.21	0.42
+	331	324	309	307	310	327	348	359	365	365	351	341
±MEAN	3,680	4,340	4,380	3,600	3,400	7,840	12,600	11,500	37,000	14,800	6,950	14,200
±CFSM	0.10	0.12	0.12	0.10	0.09	0.21	0.34	0.31	1.01	0.40	0.19	0.39
±IN	0.12	0.13	0.14	0.11	0.10	0.25	0.38	0.36	1.12	0.46	0.22	0.43

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1892 - 2004, BY WATER YEAR (WY)

	8,555	7,913	5,762	4,654	4,598	11,070	26,380	21,330	18,680	14,720	8,982	8,120
MEAN	8,555	7,913	5,762	4,654	4,598	11,070	26,380	21,330	18,680	14,720	8,982	8,120
MAX	38,210	27,660	16,080	11,500	14,700	43,240	96,590	70,430	57,170	73,590	42,550	34,380
(WY)	(1987)	(1972)	(1983)	(1983)	(1966)	(1983)	(2001)	(2001)	(1993)	(1993)	(1993)	(1986)
MIN	1,289	1,348	1,277	1,097	1,300	1,757	3,421	3,085	1,980	1,272	864	1,143
(WY)	(1937)	(1937)	(1935)	(1935)	(1895)	(1940)	(1895)	(1934)	(1934)	(1934)	(1934)	(1934)

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SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1892 - 2004	
ANNUAL TOTAL	3,831,460 (‡3,941,840)		3,656,260 (‡3,762,350)			
ANNUAL MEAN	10,500 (‡10,800)		9,990 (‡10,280)		11,810	
HIGHEST ANNUAL MEAN					29,580 1986	
LOWEST ANNUAL MEAN					1,935 1934	
HIGHEST DAILY MEAN	37,800	Jul 1	46,900	Jun 16	171,000	Apr 16, 1965
LOWEST DAILY MEAN	2,310	Dec 13	2,310	Dec 13	632	Aug 26, 1934
ANNUAL SEVEN-DAY MINIMUM	3,140	Oct 6	2,810	Jan 30	741	Aug 26, 1934
MAXIMUM PEAK FLOW			47,200	Jun 16	171,000	Apr 16, 1965
MAXIMUM PEAK STAGE			9.94	Jun 16	26.01	Apr 16, 1965
ANNUAL RUNOFF (AC-FT)	7,600,000		7,252,000		8,556,000	
ANNUAL RUNOFF (CFSM)	0.285		0.271		0.321	
ANNUAL RUNOFF (INCHES)	3.87		3.70		4.36	
10 PERCENT EXCEEDS	27,300		23,800		27,400	
50 PERCENT EXCEEDS	4,980		5,860		7,160	
90 PERCENT EXCEEDS	3,400		3,130		2,710	

+ Diversion, in cubic feet per second, from wastewater treatment plant.
 ‡ Adjusted for discharges from wastewater treatment plant.

