

**05331000 MISSISSIPPI RIVER AT ST. PAUL, MN**

Upper Mississippi Basin  
Twin Cities Subbasin

LOCATION.--Lat 44°56'02", long 93°06'21" referenced to North American Datum of 1927, in NW ¼ NW ¼ sec.13, T.28 N., R.22 W., Ramsey County, MN, 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 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

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.

COOPERATION.--Records of discharge from the Metro Plant wastewater treatment plant were provided by the Metropolitan Council -Environmental Services. Records of water withdrawals used in routing computations were provided by the cities of Minneapolis and St. Paul water utilities.

REMARKS.--Records good to fair except those for estimated discharges and discharges less than 5,000 cfs which are fair to poor. Flow-routing techniques were used from Oct. 1 to Apr. 7 and May 9 to Sept. 30. Routed discharges are considered fair except where noted above. 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.

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**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008**  
**DAILY MEAN VALUES**

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	6,910	22,800	e5,740	e5,940	e4,620	e3,830	12,600	42,200	23,200	20,700	7,030	3,310
2	6,850	21,300	e4,930	e5,950	e4,590	e3,800	12,700	44,000	24,300	20,400	6,610	3,090
3	7,740	20,000	e5,410	e5,810	e4,560	e3,940	13,100	46,000	25,000	19,700	6,410	3,240
4	8,630	19,300	e6,470	e5,750	e4,500	e4,080	13,600	46,100	25,300	18,800	6,110	3,310
5	10,100	17,600	e7,270	e5,700	e4,500	e4,020	15,000	46,500	25,400	17,700	6,490	e3,440
6	12,800	16,400	e7,400	e5,750	e4,460	e4,000	15,500	46,800	26,900	16,200	5,950	e3,470
7	14,400	15,500	e7,240	e5,870	e4,400	e3,960	16,300	46,800	28,300	16,000	5,670	e3,360
8	15,600	14,700	e7,100	e5,940	e4,290	e4,110	17,300	46,900	30,000	14,700	5,640	e3,180
9	16,700	14,600	e6,870	e5,940	e4,260	e4,010	17,700	46,900	31,900	13,800	5,300	3,130
10	18,200	13,900	e6,840	e5,860	e4,290	e4,170	17,500	46,900	33,700	13,100	5,310	2,950
11	19,000	13,500	e6,710	e5,880	e4,270	e4,170	18,800	47,400	35,200	12,100	5,120	3,160
12	18,300	12,700	e6,700	e5,880	e4,190	e4,220	22,200	46,800	39,000	12,200	4,940	2,960
13	18,900	12,600	e6,760	e5,840	e4,170	e4,240	24,500	45,700	41,200	12,200	4,860	3,240
14	18,300	12,600	e6,830	e5,780	e4,280	e4,380	26,200	44,500	43,200	11,700	5,000	3,520
15	18,000	11,500	e6,730	e5,780	e4,210	e4,680	27,100	43,300	44,800	11,300	4,730	3,540
16	17,400	11,600	e6,640	e5,750	e4,210	e5,230	26,900	41,700	45,500	10,800	4,430	3,890
17	16,900	11,400	e6,600	e5,730	e4,150	e5,660	27,300	40,300	46,000	10,500	4,510	3,620
18	18,200	10,900	e6,610	e5,670	e4,090	e6,280	27,600	38,600	46,100	10,400	4,190	3,720
19	20,100	11,300	e6,650	e5,620	e4,150	6,880	27,700	36,900	46,000	10,500	3,940	3,800
20	24,300	10,600	e6,550	e5,600	e4,050	7,450	27,600	35,000	45,600	11,100	3,790	3,770
21	27,800	10,300	e6,630	e5,570	e4,020	8,640	28,900	33,100	44,200	11,100	3,720	3,600
22	30,100	10,200	e6,600	e5,520	e4,040	8,560	30,100	31,700	42,300	10,800	3,680	3,670
23	32,400	10,300	e6,460	e5,460	e4,040	8,920	30,400	29,800	39,400	10,600	3,430	e3,530
24	33,400	10,000	e6,340	e5,320	e4,050	8,950	31,600	28,000	35,300	10,200	3,450	3,850
25	34,500	9,420	e6,300	e5,250	e4,000	9,010	32,600	26,300	31,100	9,700	3,530	3,620
26	34,200	9,080	e6,230	e5,230	e3,940	9,680	33,500	25,500	28,000	9,520	3,360	3,660
27	32,300	8,820	e6,320	e4,980	e3,910	10,000	35,500	24,400	25,500	8,900	3,120	4,040
28	30,200	8,670	e6,240	e4,870	e3,730	10,300	37,500	23,100	24,400	8,210	3,740	3,860
29	27,500	e6,970	e6,300	e4,800	e3,810	10,600	39,400	22,300	22,600	8,040	4,130	e3,860
30	25,800	e6,780	e6,080	e4,710	---	11,300	40,800	22,400	21,400	7,710	4,270	e3,830
31	24,200	---	e6,070	e4,620	---	11,700	---	22,300	---	e7,520	3,530	---
<b>Total</b>	639,730	385,340	201,620	172,370	121,780	200,770	747,500	1,168,200	1,020,800	386,200	145,990	105,220
<b>Mean</b>	20,640	12,840	6,504	5,560	4,199	6,476	24,920	37,680	34,030	12,460	4,709	3,507
<b>Max</b>	34,500	22,800	7,400	5,950	4,620	11,700	40,800	47,400	46,100	20,700	7,030	4,040
<b>Min</b>	6,850	6,780	4,930	4,620	3,730	3,800	12,600	22,300	21,400	7,520	3,120	2,950
<b>Ac-ft</b>	1,269,000	764,300	399,900	341,900	241,600	398,200	1,483,000	2,317,000	2,025,000	766,000	289,600	208,700
<b>Cfs/m</b>	0.56	0.35	0.18	0.15	0.11	0.18	0.68	1.02	0.92	0.34	0.13	0.10
<b>In.</b>	0.65	0.39	0.20	0.17	0.12	0.20	0.76	1.18	1.03	0.39	0.15	0.11
<b>Diversion, in cubic feet per second, from wastewater treatment plant.</b>												
<b>+</b>	309	277	269	266	263	271	306	313	295	274	265	262
<b>‡Mean</b>	20949	13117	6773	5826	4462	6747	25226	37993	34325	12734	4974	3769
<b>‡Cfs/m</b>	0.57	0.36	0.18	0.16	0.12	0.18	0.69	1.03	0.93	0.35	0.14	0.10
<b>‡In.</b>	0.66	0.40	0.21	0.18	0.13	0.21	0.76	1.19	1.04	0.40	0.16	0.11

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1892 - 2008, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	8,821	8,034	5,844	4,746	4,679	11,140	26,700	21,680	18,930	14,570	8,848	8,041
<b>Max</b>	38,210	27,660	16,080	12,770	14,700	43,240	96,590	70,430	57,170	73,590	42,550	34,380
<b>(WY)</b>	(1987)	(1972)	(1983)	(2006)	(1966)	(1983)	(2001)	(2001)	(1993)	(1993)	(1993)	(1986)
<b>Min</b>	1,289	1,348	1,277	1,097	1,300	1,757	3,421	3,085	1,980	1,272	864	1,143
<b>(WY)</b>	(1937)	(1937)	(1935)	(1935)	(1895)	(1940)	(1895)	(1934)	(1934)	(1934)	(1934)	(1934)

SUMMARY STATISTICS

	Calendar Year 2007		Water Year 2008		Water Years 1892 - 2008	
<b>Annual total</b>	4,760,640		5,295,520			
<b>Annual mean</b>	13,040		14,470		11,920	
<b>Highest annual mean</b>					29,580	
<b>Lowest annual mean</b>					1,935	
<b>Highest daily mean</b>	48,700		Apr 5	47,400	May 11	171,000
<b>Lowest daily mean</b>	2,230		Feb 18	2,950	Sep 10	632
<b>Annual seven-day minimum</b>	2,360		Feb 15	3,140	Sep 7	741
<b>Maximum peak flow</b>			47,600		May 11	171,000
<b>Maximum peak stage</b>			10.01		May 11	26.01
<b>Annual runoff (ac-ft)</b>	9,443,000		10,500,000		8,634,000	
<b>Annual runoff (cfsm)</b>	0.354		0.393		0.324	
<b>Annual runoff (inches)</b>	4.81		5.35		4.40	
<b>10 percent exceeds</b>	32,100		35,200		27,800	
<b>50 percent exceeds</b>	6,970		8,640		7,220	
<b>90 percent exceeds</b>	2,930		3,810		2,760	

+ Diversion, in cubic feet per second, from wastewater treatment plant.

‡ Adjusted for discharges from wastewater treatment plant.

