

UPPER MISSISSIPPI RIVER MAIN STEM--Continued

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.--Water year 1867-69, 1872-92 (annual maximums), 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 estimated days, which are fair to poor. Flow-routing techniques were used from Oct. 1, 2001 to April 11, 2002, April 28 to June 24, 2002 and July 19 to Sept. 30, 2002. 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 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4850	7370	7990	e6910	e6090	e6460	12200	20800	13600	41600	17900	18900
2	5120	6820	8540	e6890	e5970	e6240	14300	20500	13700	39800	17400	17800
3	5100	6900	9060	e6940	e6100	e6110	15400	e21200	14100	37900	17100	18500
4	4720	6610	9440	e7080	e5820	e6090	15500	20800	15100	34800	16900	18800
5	4680	6390	9810	e7170	e5890	e6160	15600	20400	18200	31200	21800	18000
6	4640	6780	9350	e7310	e5940	e6080	15400	20500	20800	28700	23300	17200
7	4680	6410	10000	e7380	e5880	e6010	16200	20000	21900	27000	23400	19900
8	4410	6580	10100	e7510	e5660	e6060	e17000	19300	21600	24600	24200	21500
9	4380	6480	10200	e7610	e5670	e5980	18000	19900	20300	23400	24700	20200
10	4830	6290	9400	e7680	e5630	e5950	18900	22600	18000	26400	24700	19100
11	5030	5750	9270	e7780	e5550	e5800	19800	22600	e17100	31200	23800	19300
12	5000	6200	9730	e7760	e5500	e6050	22600	24000	e15200	33600	22700	19100
13	5170	6290	10100	e7690	e5500	e6290	24400	25600	14700	34800	21200	18500
14	5510	6510	10200	e7650	e5500	e6370	26100	26500	15100	33300	19600	17500
15	5550	7130	9410	e7670	e5490	e6190	28600	27200	15900	32300	18400	17500
16	6200	6720	9720	e7610	e5490	e5860	30900	27900	15800	31600	17200	16600
17	6380	6300	9650	e7530	e5500	e5840	32000	28100	15200	30400	16500	15900
18	6540	6640	9570	e7150	e5500	6360	32500	27700	13900	29400	16100	15100
19	6540	6350	10300	e7050	e5670	6750	31900	27200	12600	e29400	16100	14000
20	6990	6700	10600	e6900	e5730	6910	30900	26100	12000	e27700	16100	13800
21	6670	6280	8970	e7030	e5840	7160	29800	25000	13200	e26400	15800	12500
22	6730	5980	8200	e7020	e5950	7220	28900	23400	e16400	24600	17500	11800
23	6750	6490	7920	e6870	e6010	e7160	27500	21500	e21000	22900	19200	10900
24	6630	6380	7600	e6620	e6140	e7160	26200	20300	e24300	21500	20300	10700
25	6940	6640	6610	e6540	e6330	e7350	24900	18700	31900	19500	21200	10000
26	7500	7130	e6380	e6500	e6400	e7210	23900	17400	34400	19300	22800	9850
27	6940	7230	e6320	e6290	e6360	e7130	23100	16600	37800	18100	24200	10100
28	6370	7830	e6140	e6350	e6380	e6960	22900	15700	41300	17300	22900	9600
29	6460	8090	e6170	e6380	---	7280	22700	14700	42800	18100	21700	9380
30	7150	8080	e6230	e6320	---	8330	21600	14000	43000	17900	20200	9610
31	7020	---	e6560	e6250	---	9910	---	14700	---	17600	19600	---
TOTAL	181480	201350	269540	219440	163490	206430	689700	670900	630900	852300	624500	461640
MEAN	5854	6712	8695	7079	5839	6659	22990	21640	21030	27490	20150	15390
MAX	7500	8090	10600	7780	6400	9910	32500	28100	43000	41600	24700	21500
MIN	4380	5750	6140	6250	5490	5800	12200	14000	12000	17300	15800	9380
AC-FT	360000	399400	534600	435300	324300	409500	1368000	1331000	1251000	1691000	1239000	915700
CFSM	0.16	0.18	0.24	0.19	0.16	0.18	0.62	0.59	0.57	0.75	0.55	0.42
IN.	0.18	0.20	0.27	0.22	0.17	0.21	0.70	0.68	0.64	0.86	0.63	0.47
+	303	293	265	293	286	294	320	340	368	376	391	347
‡MEAN	6160	7000	8960	7370	6160	6950	23200	22000	21400	27900	20500	15700
‡CFSM	0.17	0.19	0.24	0.20	0.17	0.19	0.63	0.60	0.58	0.76	0.56	0.43
‡IN	0.19	0.21	0.28	0.23	0.18	0.22	0.71	0.69	0.65	0.87	0.64	0.48

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1892 - 2002, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	8529	7911	5759	4656	4614	11140	26600	21380	18520	14640	9023	8107
MAX	38210	27660	16080	11500	14700	43240	96590	70430	57170	73590	42550	34380
(WY)	1987	1972	1983	1983	1966	1983	2001	2001	1993	1993	1993	1986
MIN	1289	1348	1277	1097	1300	1757	3421	3085	1980	1272	864	1143
(WY)	1937	1937	1935	1935	1895	1940	1895	1934	1934	1934	1934	1934

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1892 - 2002
ANNUAL TOTAL	8718520	5171670	
ANNUAL MEAN	23890	14170	11820
HIGHEST ANNUAL MEAN			29580
LOWEST ANNUAL MEAN			1935
HIGHEST DAILY MEAN	142000	43000	171000
LOWEST DAILY MEAN	4340	4380	632
ANNUAL SEVEN-DAY MINIMUM	4620	4620	741
MAXIMUM PEAK FLOW		43400	171000
MAXIMUM PEAK STAGE		9.52	26.01
ANNUAL RUNOFF (AC-FT)	17290000	10260000	8563000
ANNUAL RUNOFF (CFSM)	0.65	0.39	0.32
ANNUAL RUNOFF (INCHES)	8.81	5.23	4.36
10 PERCENT EXCEEDS	68300	27100	27400
50 PERCENT EXCEEDS	6940	10100	7150
90 PERCENT EXCEEDS	5300	5920	2700

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

