

# RED RIVER OF THE NORTH BASIN

## 05054000 RED RIVER OF THE NORTH AT FARGO, ND

LOCATION.--Lat 4651'40", long 9647'00", in NW 1 / 4 NE 1 / 4 sec. 18, T.139 N., R.48 W., Cass County, Hydrologic Unit 09020104, at water treatment plant on 4th St. S. in Fargo, 25 mi upstream from mouth of Sheyenne River, and at mile 453.

DRAINAGE AREA.--6,800 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--May 1901 to current year. Published as "at Moorhead, Minn.", 1901. Monthly discharge only for some periods, in WSP 1308.

REVISED RECORDS.--WSP 1308: 1902-4, 1906-7, 1910-14, 1916, 1918, 1924. WSP 1388: 1905-6, 1917-20(M), 1935(M), 1938-39(M), 1943.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 861.8 ft above sea level. Oct. 1, 1960 to Sept. 30, 1962, water-stage recorder at present site at datum 5.6 ft higher. See WSP 1728 or 1913 for history of changes prior to Oct. 1, 1960.

REMARKS.--Records poor. Flow regulated by Orwell Reservoir, capacity, 14,100 acre-ft at 1,070 ft above sea level, adjustment of 1912; Lake Traverse, capacity 137,000 acre-ft, available for flood control, other controlled lakes and ponds, and several power plants. Some small diversions for municipal supply. Figures of daily discharge do not include diversions to cities of Fargo, ND and Moorhead, MN, and from Sheyenne River.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 7, 1897, reached a stage of 39.1 ft present datum, discharge, 25,000 ft<sup>3</sup>/s at site 1.5 mi downstream.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

### DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	543	668	e650	e500	e510	7820	4900	1600	2740	5960	1770	967
2	539	619	e630	e490	e510	8210	4760	1570	2670	6110	1750	943
3	558	591	e610	e490	e510	8010	4200	1520	2460	5980	1720	927
4	549	584	e590	e490	e520	7150	3610	1470	2260	5160	1710	915
5	554	576	e560	e500	e530	5710	3540	1430	2070	4550	1680	913
6	526	601	e530	e500	e550	4010	3650	1390	1910	5660	1660	914
7	481	616	e450	e500	e550	2940	3600	1360	1790	6420	1610	897
8	467	613	e410	e490	e560	e2350	3430	1440	1640	6750	1470	876
9	493	648	e600	e490	e560	e1850	3270	1450	1500	6560	1300	862

10	475	691	e780	e480	e560	e1550	3100	1530	1430	6090	1320	840
11	476	703	e800	e480	e550	e1350	2930	1500	1480	5500	1340	812
12	523	613	e750	e480	e550	e1270	2790	2530	1430	4790	1350	775
13	699	601	e680	e480	e550	e1350	2660	3350	1360	4040	1360	839
14	710	582	e640	e480	e560	e1650	2550	3090	1310	3570	1370	700
15	853	e550	e720	e490	e570	e2100	2440	3270	1270	3380	1360	664
16	921	e530	e840	e500	e590	2410	2360	5860	1210	3220	1320	658
17	957	e510	e830	e520	e610	2050	2250	7650	1210	3020	1290	641
18	922	e500	e780	e520	e630	1870	2100	8380	1980	2890	1270	634
19	901	e500	728	e520	e650	1780	1990	8590	3200	2870	1250	587
20	856	e490	710	e520	e710	1920	1910	8440	3280	2830	1180	502
21	825	e480	696	e520	e800	2240	1850	7940	2680	2790	1100	567
22	808	e490	604	e520	e900	2850	1800	7150	2170	2750	1090	623
23	776	e500	471	e540	e1200	3060	1730	6120	1680	2660	837	560
24	732	e510	530	e540	e1900	3120	1670	4890	1290	2530	938	392
25	693	e530	664	e540	3260	e3010	1630	3720	1060	2340	1060	289
26	678	e550	662	e540	5030	3060	1580	3180	1200	1990	1080	339
27	671	e580	598	e540	6280	3110	1590	3060	3660	1850	1080	437
28	653	e630	564	e530	7180	3100	1630	3000	4740	1880	1080	509
29	654	e680	560	e530	---	3090	1640	2960	5240	1840	1070	539
30	669	e680	542	e530	---	3820	1620	2960	5680	1800	1030	583
31	691	---	e520	e520	---	4520	---	2860	---	1780	975	---
TOTAL	20853	17416	19699	15770	37880	102330	78780	115260	67600	119560	40420	20704
MEAN	673	581	635	509	1353	3301	2626	3718	2253	3857	1304	690
MAX	957	703	840	540	7180	8210	4900	8590	5680	6750	1770	967
MIN	467	480	410	480	510	1270	1580	1360	1060	1780	837	289
AC-FT	41360	34540	39070	31280	75130	203000	156300	228600	134100	237100	80170	41070
CFSM	.10	.09	.09	.07	.20	.49	.39	.55	.33	.57	.19	.10
IN.	.11	.10	.11	.09	.21	.56	.43	.63	.37	.65	.22	.11

e Estimated

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1901 - 1998, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	318	276	230	213	225	751	1936	1118	1050	891	425	322
MAX	1741	942	801	740	1353	4722	17920	5365	5120	5690	3293	2280
(WY)	1994	1907	1987	1986	1998	1995	1997	1997	1962	1962	1993	1993
MIN	.000	.000	.000	.000	.18	26.8	102	8.12	2.87	.000	.000	.000
(WY)	1935	1937	1938	1933	1933	1937	1934	1934	1936	1934	1932	1934

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1901 - 1998		
ANNUAL TOTAL	986800		656272				
ANNUAL MEAN	2704		1798		647		
HIGHEST ANNUAL MEAN					2619		1997
LOWEST ANNUAL MEAN					17.5		1934
HIGHEST DAILY MEAN	27800	Apr 17	8590	May 19	27800	Apr 17	1997
LOWEST DAILY MEAN	312	Jan 8	289	Sep 25	.00	Jul 25	1932
ANNUAL SEVEN-DAY MINIMUM	335	Jan 3	438	Sep 23	.00	Jul 25	1932
INSTANTANEOUS PEAK FLOW			8610	May 19	28000	Apr 17	1997
INSTANTANEOUS PEAK STAGE			24.87	May 19	39.72	Apr 18	1997
ANNUAL RUNOFF (AC-FT)	1957000		1302000		469000		
ANNUAL RUNOFF (CFSM)	.40		.26		.095		
ANNUAL RUNOFF (INCHES)	5.40		3.59		1.29		
10 PERCENT EXCEEDS	6250		4100		1400		

50 PERCENT EXCEEDS	840		1080		310		
90 PERCENT EXCEEDS	506		510		40		

