

## RED RIVER OF THE NORTH BASIN--Continued

05082500 RED RIVER OF THE NORTH AT GRAND FORKS, ND

LOCATION.--Lat 47°55'38", long 97°01'34", in sec.2, T.151 N., R.50 W., Grand Forks County, Hydrologic Unit 09020301, on right bank 200 ft upstream from the DeMers Avenue bridge, 0.4 mi downstream from Red Lake River, and at mile 297.6.

DRAINAGE AREA.--30,100 mi<sup>2</sup> (approximately), including 3,800 mi<sup>2</sup> in closed basins.

PERIOD OF RECORD.--April 1882 to current year. Prior to January 1904 monthly discharge only, published in WSP 1308.

REVISED RECORDS.--WSP 855: 1936(M). WSP 1115: 1942. WSP 1175: 1897(M). WSP 1388: 1904, 1914-15, 1917-19, 1921-22, 1927, 1950. WSP 1728: Drainage area. WRD-ND-81-1: 1882, 1897 (M).

GAGE.--Acoustic-doppler velocity meter and water-stage recorder. Datum of gage is 779.00 ft above sea level, National Geodetic Vertical Datum of 1929. Oct. 1, 1983, to Sept. 30, 1986, datum of gage was 780.00 ft at same site. Apr. 14, 1965, to Sept. 30, 1983, water-stage recorder 1.9 mi downstream at a datum of 778.35 ft. Nov. 3, 1933, to Apr. 13, 1965, water-stage recorder 0.3 mi upstream at 778.35 ft datum. See WSP 1728 or 1913 for history of changes prior to Nov. 3, 1933.

REMARKS.--Records good except for periods of estimated discharge, which are poor.

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	2040	2980	1960	2010	1890	2050	e3670	4490	4450	21300	7420	16600
2	1920	3130	1720	2000	1870	1940	e3810	4480	4530	19200	6880	17000
3	1820	3440	1630	1990	1880	1880	e3790	e4400	4450	16800	6270	16600
4	1810	3730	1950	1980	1810	1730	e3760	e4300	4360	14600	6060	14300
5	1730	3930	2310	1950	1700	e1710	e3700	e4310	4070	12900	5750	10600
6	1760	4030	2630	1980	1690	1710	3660	e4300	3700	11400	5410	7460
7	1760	3930	2740	1940	1700	1670	3480	e4300	3460	10200	5100	6200
8	1620	3860	2750	1970	1730	1670	3390	4360	3300	9240	5030	5580
9	1690	3670	2690	2160	e1750	1700	3390	4580	6310	9090	5030	5200
10	1790	3530	2740	2190	e1670	e1750	3740	5280	13200	14900	4790	4980
11	1640	3400	2690	2170	1720	e1670	4190	6330	20900	24700	4680	4780
12	1680	3460	2910	2170	1750	e1750	4660	6870	26500	33200	4690	4580
13	1860	3500	2770	2160	1750	1730	5640	6940	28700	36600	4420	4300
14	2110	3470	2760	2130	1770	1840	5880	6730	29100	37400	4210	4200
15	2260	3560	2820	2150	1740	2010	5600	6670	27100	36000	3910	3970
16	2210	3420	3120	2160	1710	2060	5180	6500	25100	32900	3740	3720
17	2180	3500	3290	2130	1710	2020	5170	6300	22000	29300	3590	3520
18	2360	3720	3320	2110	1710	e2200	5080	6020	18900	25100	3440	3390
19	2360	3960	3160	2060	1740	e2460	4760	5710	15800	21300	3370	3440
20	2370	3940	3020	2020	1840	e2580	4880	5400	12800	17500	3440	3140
21	2410	3910	2720	1960	1950	e2710	5000	5120	10900	14200	3660	3050
22	2110	3750	2530	1960	2000	e2760	e5200	4880	10700	11800	3710	2990
23	2310	3630	2230	1980	2060	e2750	e5100	4870	12000	e10600	3690	2950
24	2470	3430	2120	1950	2150	e2660	e4850	4730	15600	e9700	3710	2800
25	2580	3350	2030	1900	2270	e2500	e4690	4600	19500	9170	3700	2530
26	2620	3280	1860	1880	e2340	e2490	4590	4520	22200	8630	3700	2450
27	2560	3320	1920	1870	2340	e2480	4580	4390	24200	8700	3720	2380
28	2620	2550	2030	1970	2210	e2420	e4630	4210	25100	8910	5120	2320
29	2720	1900	2050	1960	---	e2540	4570	4040	24700	8890	8450	2230
30	2710	1910	2040	1920	---	e2940	4460	3970	22900	8610	13200	2270
31	2810	---	2010	1860	---	e3380	---	4110	---	7880	15600	---
TOTAL	68890	103190	76520	62640	52450	67760	135100	157710	466530	540720	165490	169530
MEAN	2158	3440	2468	2021	1873	2186	4503	5087	15550	17440	5338	5651
MAX	2810	4030	3320	2190	2340	3380	5880	6940	29100	37400	15600	17000
MIN	1620	1900	1630	1860	1670	1670	3390	3970	3300	7880	3370	2230
AC-FT	132700	204700	151800	124200	104000	134400	268000	312800	925400	1073000	328200	336300
CFSM	0.08	0.13	0.09	0.08	0.07	0.08	0.17	0.19	0.59	0.66	0.20	0.21
IN.	0.10	0.15	0.11	0.09	0.07	0.10	0.19	0.22	0.66	0.76	0.23	0.24

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 2002, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1496	1377	1080	894	875	2789	10290	5595	4307	3752	1898	1615
MAX	5127	9971	3832	2656	3520	15370	56210	36500	19250	25230	17050	11340
(WY)	1995	2001	2001	2001	1998	1995	1997	1950	1962	1975	1993	1999
MIN	12.1	30.5	17.8	18.8	2.87	42.1	954	373	151	88.5	30.6	20.3
(WY)	1937	1937	1937	1937	1937	1937	1938	1934	1934	1936	1934	1936

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1904 - 2002

ANNUAL TOTAL	2785830	2064530	
ANNUAL MEAN	7631	5656	2983
HIGHEST ANNUAL MEAN			10070
LOWEST ANNUAL MEAN			244
HIGHEST DAILY MEAN	57300	Apr 14	37400
LOWEST DAILY MEAN	1620	Oct 8	1620
ANNUAL SEVEN-DAY MINIMUM	1710	Oct 6	1700
MAXIMUM PEAK FLOW			38000a
MAXIMUM PEAK STAGE			38.67
ANNUAL RUNOFF (AC-FT)	5526000	4095000	2161000
ANNUAL RUNOFF (CFSM)	0.29	0.21	0.11
ANNUAL RUNOFF (INCHES)	3.94	2.92	1.51
10 PERCENT EXCEEDS	17400	14200	6500
50 PERCENT EXCEEDS	3340	3440	1440
90 PERCENT EXCEEDS	2240	1810	284

- a Gage height, 38.14 ft.
- b Maximum observed, affected by breakout flow from Red River of the North about 20 miles upstream of gage, that entered Red Lake River about 2 miles from the confluence with Red River of the North.
- c From floodmark.
- e Estimated.



