

CROW WING RIVER BASIN

05243725 STRAIGHT RIVER NEAR PARK RAPIDS, MN

LOCATION.--Lat 46° 52'30", long 95° 03'56", in NW1/4NE1/4 sec. 11, T. 139 N., R. 35 W., Hubbard County, Hydrologic Unit 07010106, upstream from culvert on U.S. Highway 71 3.2 mi south of Park Rapids.

DRAINAGE AREA.--53.2 mi².

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1970-71, 1973, 1975-76. October 1986 to current year (no winter records in 1987, 1990-91). Records of hourly water temperature, available in files of the Geological Survey.

GAGE.--Water-stage recorder. Datum of gage is 1,399.55 ft above mean sea level (levels by Minnesota Department of Natural Resources).

REMARKS.--Records good except those for estimated daily discharges, which are fair.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
JUL	AUG	SEP							
1	73	e88	e58	e60	e60	e62	79	92	71
105	62	74							
2	72	e80	e58	e60	e60	e62	93	78	78
107	61	74							
3	e61	e74	e59	e60	e61	e62	95	75	75
107	69	74							
4	e50	e71	e59	e60	e61	e62	103	78	73
105	70	73							
5	e52	e70	e59	e60	e61	e62	123	80	70
101	72	73							
6	e55	e70	e60	e60	e61	e62	144	80	67
96	76	73							
7	e55	e70	e60	e60	e61	e62	e125	80	64
93	74	72							
8	e55	e69	e60	e60	e61	e61	e120	78	63
94	73	75							
9	e57	e66	e60	e60	e61	e61	120	70	62
89	72	78							
10	e58	e65	e60	e60	e61	e61	112	67	60
85	71	80							
11	e55	e62	e61	e60	e61	e61	108	69	60
83	69	79							

12	e56	e61	e61	e60	e61	e60	101	71	58
83	70	77							
13	e55	e60	e61	e60	e61	e60	95	66	56
86	68	76							
14	e58	e60	e61	e60	e61	e60	95	69	55
88	66	75							
15	e58	e60	e62	e60	e61	e59	105	71	59
85	68	77							
16	e58	e61	e62	e60	e61	e59	105	68	59
81	67	81							
17	e81	e61	e62	e60	e61	e59	103	65	61
78	68	83							
18	e96	e60	e62	e60	e61	e58	103	66	62
77	67	82							
19	e81	e60	e62	e60	e61	e58	95	69	59
77	69	80							
20	e78	e60	e62	e60	e61	e58	82	69	65
74	70	78							
21	e74	e60	e62	e60	e62	e58	81	69	68
71	70	76							
22	e71	e60	e62	e60	e62	e58	98	70	65
69	70	75							
23	e68	e59	e62	e60	e62	e58	101	87	69
68	71	74							
24	e64	e59	e62	e60	e62	e58	102	96	83
67	72	75							
25	e62	e58	e62	e60	e62	e58	93	89	96
65	73	76							
26	e65	e58	e62	e60	e62	e58	85	83	92
66	73	75							
27	e77	e58	e62	e60	e62	e59	85	80	83
67	74	74							
28	e70	e57	e61	e60	e62	e60	84	76	85
68	75	77							
29	e81	e57	e61	e60	---	e62	91	73	86
67	75	78							
30	e114	e57	e61	e60	---	e66	94	71	107
63	73	78							
31	e96	---	e61	e60	---	e73	---	68	---
62	70	---							
TOTAL	2106	1911	1887	1860	1714	1877	3020	2323	2111
2527	2178	2292							
MEAN	67.9	63.7	60.9	60.0	61.2	60.5	101	74.9	70.4
81.5	70.3	76.4							
MAX	114	88	62	60	62	73	144	96	107
107	76	83							
MIN	50	57	58	60	60	58	79	65	55
62	61	72							
AC-FT	4180	3790	3740	3690	3400	3720	5990	4610	4190
5010	4320	4550							
CFSM	1.28	1.20	1.14	1.13	1.15	1.14	1.89	1.41	1.32

1.53	1.32	1.44							
IN.	1.47	1.34	1.32	1.30	1.20	1.31	2.11	1.62	1.48
1.77	1.52	1.60							

o e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1997, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
JUL	AUG	SEP							
MEAN	60.0	61.3	58.3	51.7	53.3	61.3	71.4	65.2	57.4
56.5	53.6	57.6							
MAX	83.1	74.6	74.5	64.3	64.6	76.8	101	82.1	70.4
81.5	74.7	76.4							
(WY)	1996	1996	1995	1995	1995	1995	1997	1996	1997
1997	1993	1997							
MIN	42.2	47.4	46.0	41.9	44.8	50.9	56.1	46.2	41.9
39.5	35.9	38.7							
(WY)	1993	1989	1989	1992	1992	1989	1991	1992	1992
1988	1990	1990							

<i>SUMMARY STATISTICS</i>	<i>FOR 1996 CALENDAR YEAR</i>	<i>FOR 1997 WATER YEAR</i>	<i>WATER YEARS 1987 - 1997</i>	
ANNUAL TOTAL	24156	25806		
ANNUAL MEAN	66.0	70.7		60.2
HIGHEST ANNUAL MEAN				
70.7		1997		
LOWEST ANNUAL MEAN				
48.0		1992		
HIGHEST DAILY MEAN	114	Oct 30	144	Apr 6
Apr 6 1997				
LOWEST DAILY MEAN	50	Jan 5	50	Oct 4
Jan 9 1992				
ANNUAL SEVEN-DAY MINIMUM	51	Feb 1	55	Oct 4
Aug 5 1990				
INSTANTANEOUS PEAK FLOW			149	Apr 6
Apr 6 1997				
INSTANTANEOUS PEAK STAGE			2.33a	Apr 6
Mar 6 1994				
INSTANTANEOUS LOW FLOW				25c
Jan 9 1992				
ANNUAL RUNOFF (AC-FT)	47910		51190	43610
ANNUAL RUNOFF (CFSM)	1.24		1.33	1.13
ANNUAL RUNOFF (INCHES)	16.89		18.04	15.37
10 PERCENT EXCEEDS	84		93	76
50 PERCENT EXCEEDS	62		66	58
90 PERCENT EXCEEDS	55		59	44

a Maximum observed.

b From floodmark, backwater from ice.

c Result of freezeup.

