

Table 1.CW. Crow River (Rockford) Monitoring Station Information



Station Address: 8200 State Highway 55, Rockford, MN
County: Wright
Major Basin: Mississippi River Basin
Watershed: Crow River
Drainage Area: 2,620 square miles

Station Operator: Wright County Soil and Water Conservation District

Metropolitan Council Environmental Services Contact Information:

Contact Person: Leigh Harrod, P.G.
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Watershed District or Watershed Management Organization:

Crow River Organization of Water (CROW)

Station Overview: MCES, with funding provided by the Minnesota Legislature via a grant from the Minnesota Pollution Control Agency (MPCA), has supported water quality monitoring of the Crow River since 1999. The monitoring station is located in Rockford, Minnesota, 23.1 miles upstream from the river confluence with the Mississippi River. The Crow River flows through the following Minnesota counties: Pope, Stearns, Kandiyohi, Meeker, Renville, McCloud, Sibley, Carver, Wright and Hennepin. The Crow River has three major branches: the North, Middle, and South Forks. The North

and Middle Forks converge in Manannah, Minnesota, where the North Fork then continues downstream. The North and South Forks intersect about one mile upstream from the MCES monitoring station. Buffalo Creek is a major tributary of the South Fork. The eastern part of the Crow River Watershed is developing into exurban areas. Agriculture is the predominant land use in the remainder of the watershed.

MCES partners with the USGS to maintain the rating curve at this location. USGS has been monitoring flow at this location, station number 05280000, since 1906. USGS also intermittently collected water quality samples at this station during the 1952-1997 period.

2001 Monitoring Year: Snowmelt began during the third week of March 2001. Daily average flows were estimated prior to the ice out date, which occurred on approximately March 21, 2001. The peak daily average flow of 11,721 cfs, with a stage of 14.37 feet, occurred on April 29, 2001. This was the fifth highest peak flow on record, compared to the highest recorded daily average flow of 22,400 cfs, which occurred on April 16, 1965.

A significant runoff event occurred during the April 7-23, 2001 period, when the late spring snowmelt coincided with cumulative rainfall in excess of 5.8 inches at the station. Twenty-eight days of automated water quality sampling occurred at the station during the month of April due to the extremely high flows. Nine of the 13 composite samples collected during 2001 were obtained in April.

Twenty-five samples were collected for water quality analysis during 2001, including 13 composite samples and 12 grab samples. The MCES annual water quality monitoring plan includes 12 monthly baseflow (“non-event”) grab samples and approximately 10 to 15 flow-weighted composite samples collected during all runoff events in the open-water season (March-November). The 2001 sampling scheme met the goals of the MCES monitoring work plan.

For additional stream monitoring information and monitoring methods regarding this site, see www.metrocouncil.org/environment/RiversLakes.

Figure 1.CW. Crow River Monitoring Station Location and Watershed

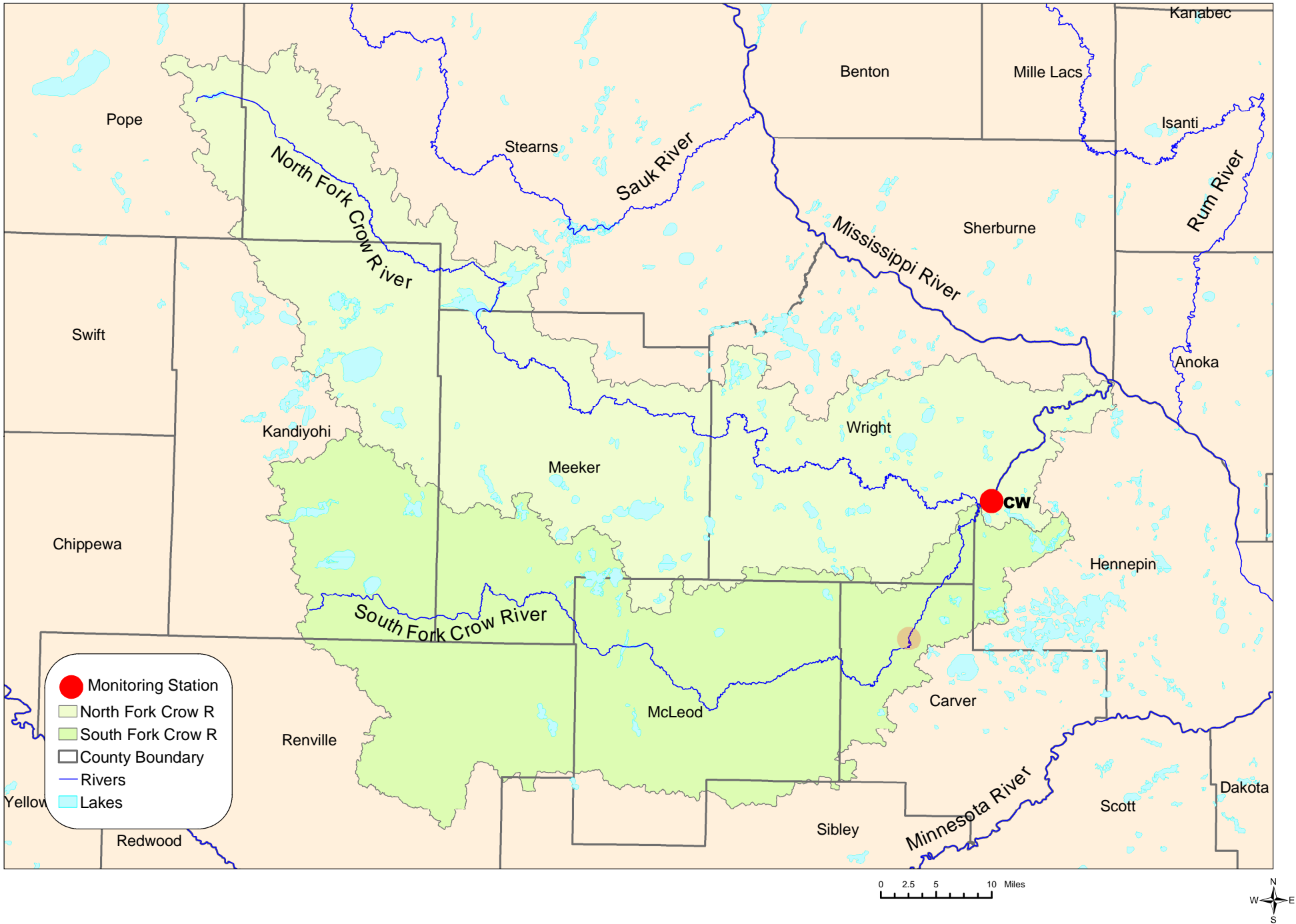


Figure 2.CR. Crow River 2001 Hydrograph with Rainfall and Sampling Information

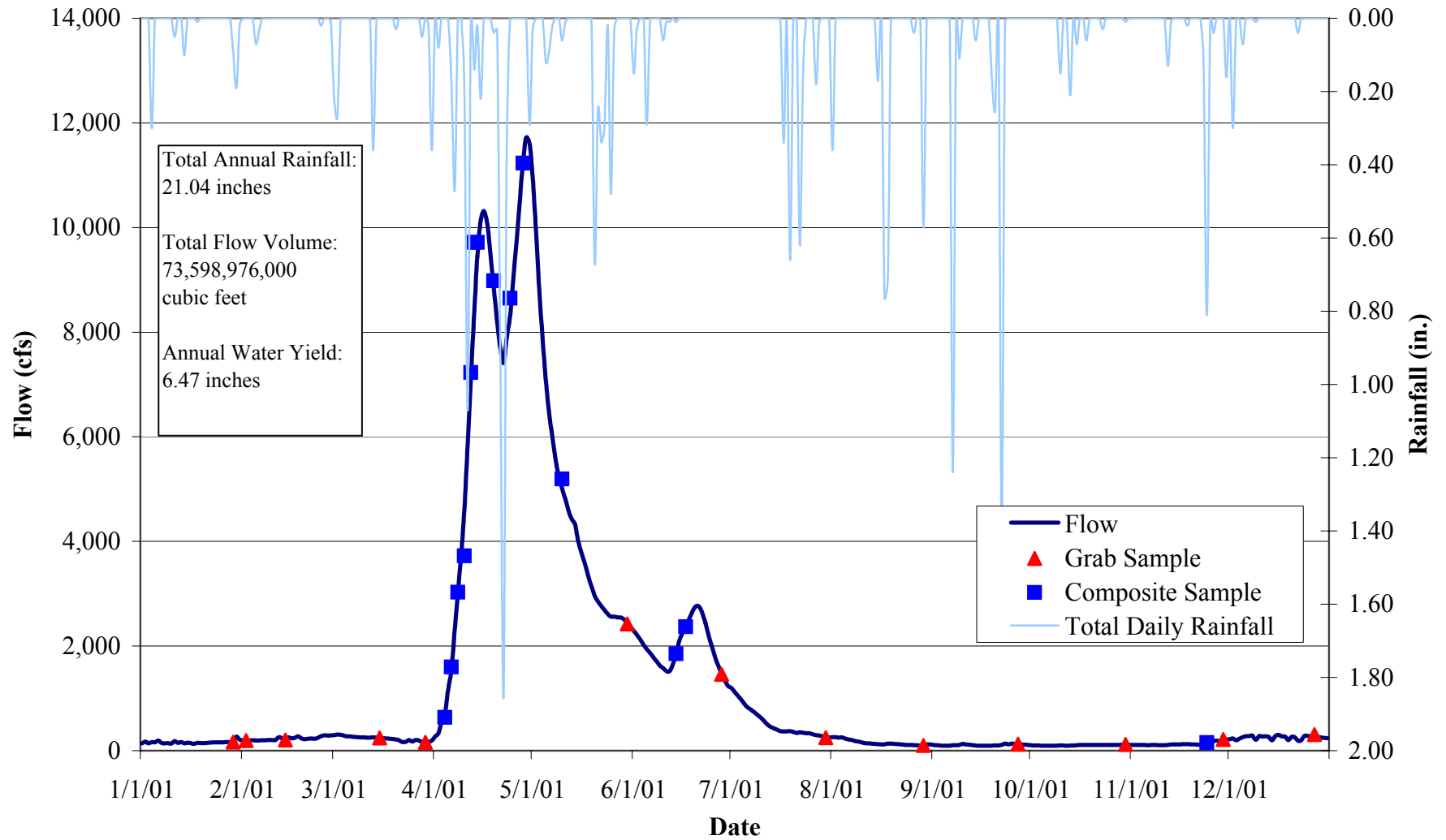


Table 2.CW. Crow River 2001 Water Chemistry Information

Variable	N	Mean	Median	Minimum	Maximum	25%	75%	STD
Chloride, mg/L	24	37	24	10	99	15	70	27
Hardness, mg/L	25	250	265	136	384	185	309	75
Cadmium, ug/L	25	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Chromium, ug/L	25	0.9	0.6	0.5	2.5	0.5	1.2	0.6
Copper, ug/L	25	3.8	3.5	2.0	6.8	2.6	4.7	1.3
Lead, ug/L	25	0.9	0.6	0.5	3.0	0.5	1.1	0.7
Nickel, ug/L	25	4.1	4.0	2.9	5.9	3.6	4.4	0.7
Zinc, ug/L	25	7.0	6.0	2.0	16.0	4.0	9.0	3.0
Nitrogen, Total Kjeldahl, mg/L	24	1.40	1.30	0.70	3.00	1.10	1.70	0.50
Nitrogen, Total Nitrate, mg/L	25	2.60	2.17	0.09	6.47	1.38	4.34	1.74
Phosphorus, Total, mg/L	24	0.42	0.41	0.11	0.85	0.25	0.56	0.19
Phosphorus, Total Dissolved, mg/L	21	0.27	0.30	0.07	0.75	0.16	0.34	0.15
Solids, Total Suspended, mg/L	25	47	27	2	190	14	63	51
Solids, Volatile Suspended, mg/L	25	9	7	2	25	4	10	6
Turbidity, NTU	11	10	6	3	28	4	16	8
Transparency Tube, cm	10	41	50	13	60	17	60	20

Table 3.CW. Crow River 2001 Annual Loading Information* for Suspended Solids and Nutrients

Variable	Annual Load (tons)	Annual Yield (lbs/acre)	Annual Normalized Yield (lbs/acre/in of water)	Flow Weighted Mean Concentration (mg/L)
Solids, Total Suspended	53,586	63	10	43
Phosphorus, Total	450.32	0.53	0.08	0.36
Phosphorus, Total Dissolved	327.29	0.39	0.06	0.26
Nitrogen, Total Nitrate	4,927.85	5.83	0.90	3.98

* 2001 Annual Loading Information is provisional and may be subject to minor revisions.