

**Table 1.CR. Credit River Monitoring Station Information**



**Station Address:** 4975 126th Street, Savage, MN 55378  
**County:** Scott  
**Major Basin:** Minnesota River Basin  
**Watershed:** Credit River  
**Drainage Area:** 51.4 square miles

**Station Operator:** Metropolitan Council Environmental Services

**Metropolitan Council Environmental Services Contact Information:**

**Contact Person:** Tim Pattock or Mike Ahlf  
**Address:** 2400 Childs Road  
St. Paul, MN 55106  
**Phone:** 651-602-8084 (Tim) or 651-602-8082 (Mike)  
**E-mail:** timothy.pattock@metc.state.mn.us  
mike.ahlf@metc.state.mn.us

**Watershed District or Watershed Management Organization:**

**Station Overview:** MCES has conducted water quality monitoring of the Credit River since 1989. The monitoring station is located in Savage, Minnesota, 0.9 mile upstream from the river confluence with the Minnesota River. Due to site logistical problems, the monitoring station was moved in 2000, from the former site at Credit River Mile 0.6 to the current location at Mile 0.9. MCES staff maintain the rating curve at this station. There is no rain gauge at this station. A number of monitoring equipment problems persisted at this site for most of the 2002 monitoring year. Due to the lack of accurate

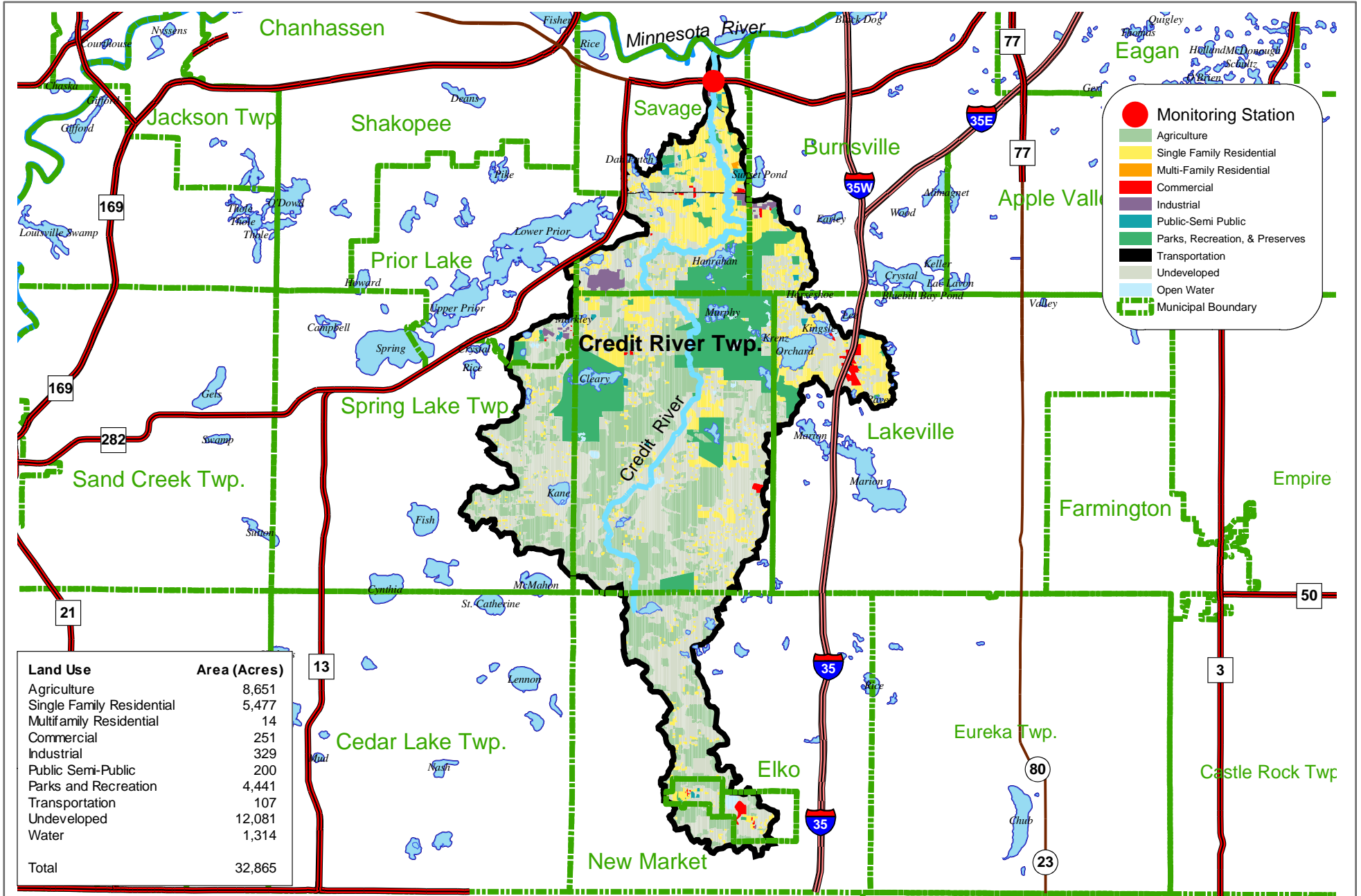
flow records for the majority of 2002, data included in this report are limited to water chemistry and biological (macroinvertebrate) information.

**2002 Monitoring Year:** Snowmelt had a limited impact on Credit River flow during the spring of 2002. The ice out date occurred sometime between March 7 and 13, 2002.

Thirty samples were collected for water quality analysis during 2002, including 9 composite samples and 21 grab samples. Samples were obtained throughout the year during varying stream flow conditions to most accurately characterize Credit River water quality. 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). Due to problems with flow monitoring equipment at the Credit River station during 2002, flow-weighted composite samples were not collected during all runoff events, as stipulated by the MCES monitoring work plan. However, when composite sampling was not possible, grab samples were obtained instead.

**For additional stream monitoring information and monitoring methods regarding this site, see [www.metrocouncil.org/environment/RiversLakes](http://www.metrocouncil.org/environment/RiversLakes).**

**Figure 1.CR. Credit River Monitoring Station Location and Watershed Characteristics**



0 1 2 4 Miles



**Table 2.CR. Credit River 2002 Water Chemistry Information**

Variable	N	Mean	Median	Minimum	Maximum	25%	75%	STD
Chloride, mg/L	30	43	na	14	220	25	50	37
Hardness, mg/L	5	188	na	112	300	na	na	na
Cadmium, ug/L	4	0.1	na	<0.1	0.1	na	na	na
Chromium, ug/L	4	1.3	na	0.3	2.4	na	na	na
Copper, ug/L	4	2.9	na	1.6	4.6	na	na	na
Lead, ug/L	4	1.1	na	0.1	2.1	na	na	na
Nickel, ug/L	4	3.8	na	3.3	4.3	na	na	na
Zinc, ug/L	4	8.4	na	2.1	12.2	na	na	na
Nitrogen, Total Kjeldahl, mg/L	30	1.04	1.04	0.19	2.20	0.70	1.30	0.53
Nitrogen, Total Nitrate, mg/L	30	0.92	0.83	0.16	2.81	0.54	1.05	0.57
Phosphorus, Total, mg/L	30	0.22	0.22	0.01	0.49	0.12	0.34	0.14
Phosphorus, Total Dissolved, mg/L	29	0.12	0.09	0.01	0.34	0.05	0.16	0.09
Solids, Total Suspended, mg/L	29	135	26	1	1860	6	84	355
Solids, Volatile Suspended, mg/L	29	14	7	1	120	2	14	23
Turbidity, NTU	30	12	7	2	70	3	17	14

na: Data are insufficient to calculate these statistics.

N: Sample Count

25%, 75%: 25th and 75th Percentiles

STD: Standard Deviation

**Table 3.CR. Credit River 2002 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	na	na	na	na
Phosphorus, Total	na	na	na	na
Phosphorus, Total Dissolved	na	na	na	na
Nitrogen, Total Nitrate	na	na	na	na

na: Data are insufficient to calculate these statistics.

\* 2002 Annual Loading Information is not available.

**Table 4.CR. Credit River: Comparison of 2001-2002 Hydrology and Water Chemistry**

	<b>2001</b>	<b>2002</b>
<b>Hydrology</b>		
<b>Total Precipitation (in)</b>	34.23	38.28
<b>Water Yield (in)</b>	6.0	insufficient data
<b>Total Volume (cf)</b>	7.1E+08	insufficient data
<b>Annual Load (tons)</b>		
<b>Total Suspended Solids</b>	1,300	insufficient data
<b>Total Phosphorus</b>	4.88	insufficient data
<b>Total Dissolved Phosphorus</b>	2.49	insufficient data
<b>Total Nitrate Nitrogen</b>	36.5	insufficient data
<b>Annual Yield (lbs/acre)</b>		
<b>Total Suspended Solids</b>	79	insufficient data
<b>Total Phosphorus</b>	0.30	insufficient data
<b>Total Dissolved Phosphorus</b>	0.15	insufficient data
<b>Total Nitrate Nitrogen</b>	2.22	insufficient data
<b>Annual Normalized Yield (lbs/acre/in of water)</b>		
<b>Total Suspended Solids</b>	13	insufficient data
<b>Total Phosphorus</b>	0.05	insufficient data
<b>Total Dissolved Phosphorus</b>	0.03	insufficient data
<b>Total Nitrate Nitrogen</b>	0.37	insufficient data
<b>Flow-Weighted Mean Concentration (mg/L)</b>		
<b>Total Suspended Solids</b>	58	insufficient data
<b>Total Phosphorus</b>	0.22	insufficient data
<b>Total Dissolved Phosphorus</b>	0.11	insufficient data
<b>Total Nitrate Nitrogen</b>	1.64	insufficient data

**Table 5.CR. Credit River 2002 Macroinvertebrate Monitoring Results and Metrics**

**Monitoring Date 6/20/2002**

<b>Class</b>	<b>Order</b>	<b>Family</b>	<b>Common Name</b>	<b>Life Stage</b>	<b>Organism Count</b>
Crustacea	Amphipoda		Scuds	Adult	9
Crustacea	Decapoda		Crayfish	Adult	1
Crustacea	Isopoda		Sowbugs	Adult	4
Hirudinea			Leeches	Adult	1
Insecta	Coleoptera	Elmidae	Riffle Beetles	Larvae	84
Insecta	Coleoptera	Elmidae	Riffle Beetles	Adult	15
Insecta	Diptera	Athericidae	Watersnipe Flies	Larvae	13
Insecta	Diptera	Chironomidae	Midges	Larvae	169
Insecta	Diptera	Simuliidae	Black Flies	Larvae	79
Insecta	Diptera	Tipulidae	Crane Flies	Larvae	1
Insecta	Diptera		True Flies	Pupa	1
Insecta	Ephemeroptera	Baetidae	Small Minnow Mayflies	Larvae	42
Insecta	Ephemeroptera	Heptageniidae	Flatheaded Mayflies	Larvae	2
Insecta	Odonata	Aeshnidae	Darners	Larvae	2
Insecta	Odonata	Calopterygidae	Broadwinged Damselflies	Larvae	7
Insecta	Trichoptera	Hydropsychidae	Common Netspinners	Larvae	29
Insecta	Trichoptera	Phryganeidae	Giant Case Makers	Larvae	1

**Macroinvertebrate Taxa Metrics**

Total Taxa	16
EPT Taxa	4
% EPT Taxa	25
Diptera Taxa	4
% Diptera Taxa	25
Mean Tolerance Value	4.9

**Macroinvertebrate Organism Metrics**

Total Organisms	460
EPT Individuals	74
% EPT Individuals	16
Diptera Individuals	262
% Diptera Individuals	57
Chironomidae Individuals	169
% Chironomidae Individuals	37

**Water Quality**

**Degree of Organic Pollution**

<b>Family-Level Biotic Index</b>	5.1	Fair	Fairly substantial pollution likely
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