

Table 1.CA. Carver Creek Monitoring Station Information



Station Address: 14025^{1/2} Carver County Road 40, Carver, MN
County: Carver
Major Basin: Minnesota River Basin
Watershed: Carver Creek
Drainage Area: 83.5 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
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mike.ahlf@metc.state.mn.us

Watershed District or Watershed Management Organization:

Station Overview: MCES has conducted water quality monitoring of Carver Creek since 1989. The monitoring station is located in Carver, Minnesota, 1.7 miles upstream from the creek confluence with the Minnesota River. MCES staff maintain the rating curve at this station. There is no rain gage at this station.

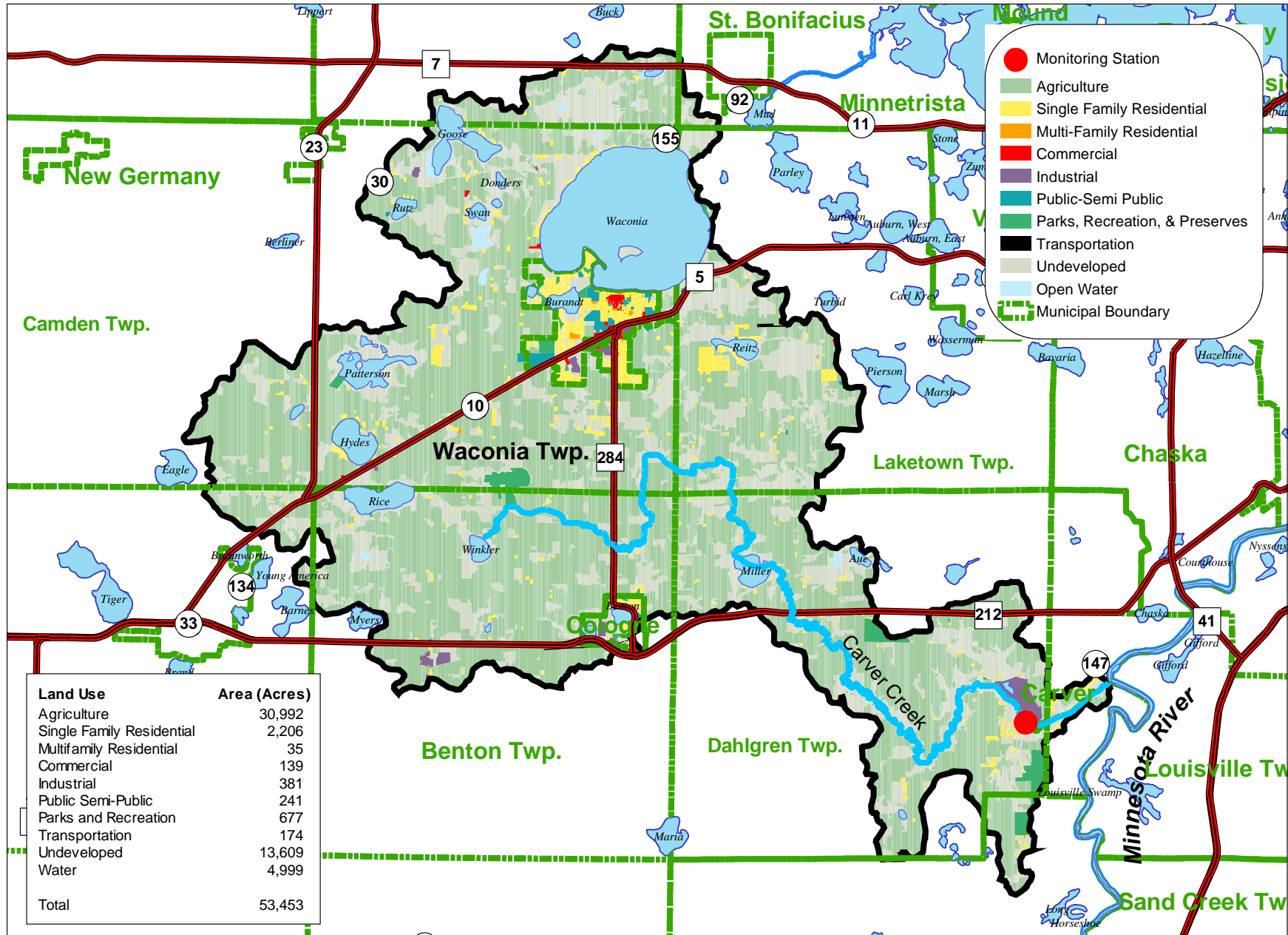
2001 Monitoring Year: Snowmelt began during the first week of April 2001. Daily average flows were estimated prior to the ice out date, which occurred on approximately March 13, 2001. The peak daily average flow of 306 cfs, with a stage of 2.30 feet, occurred on April 22, 2001.

Runoff event-based composite sampling began in early April 2001 and continued into early May, as high water conditions persisted throughout this time period. Composite samples were collected again in late May and mid-June. A runoff event which began on June 13 reached a peak daily average flow of 127 cfs. This event produced the highest total suspended solids (TSS) and total phosphorus (TP) concentrations (2,720 mg/l and 2.50 mg/l respectively) recorded at this station for the entire year.

Thirty-three samples were collected for water quality analysis during 2001, including 16 composite samples and 17 grab samples. Samples were obtained throughout the year during varying stream flow conditions to most accurately characterize Carver Creek 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). 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.CA. Carver Creek Monitoring Station Location and Watershed Characteristics



0 1 2 4 Miles



Figure 2.CA. Carver Creek 2001 Hydrograph with Sampling Information

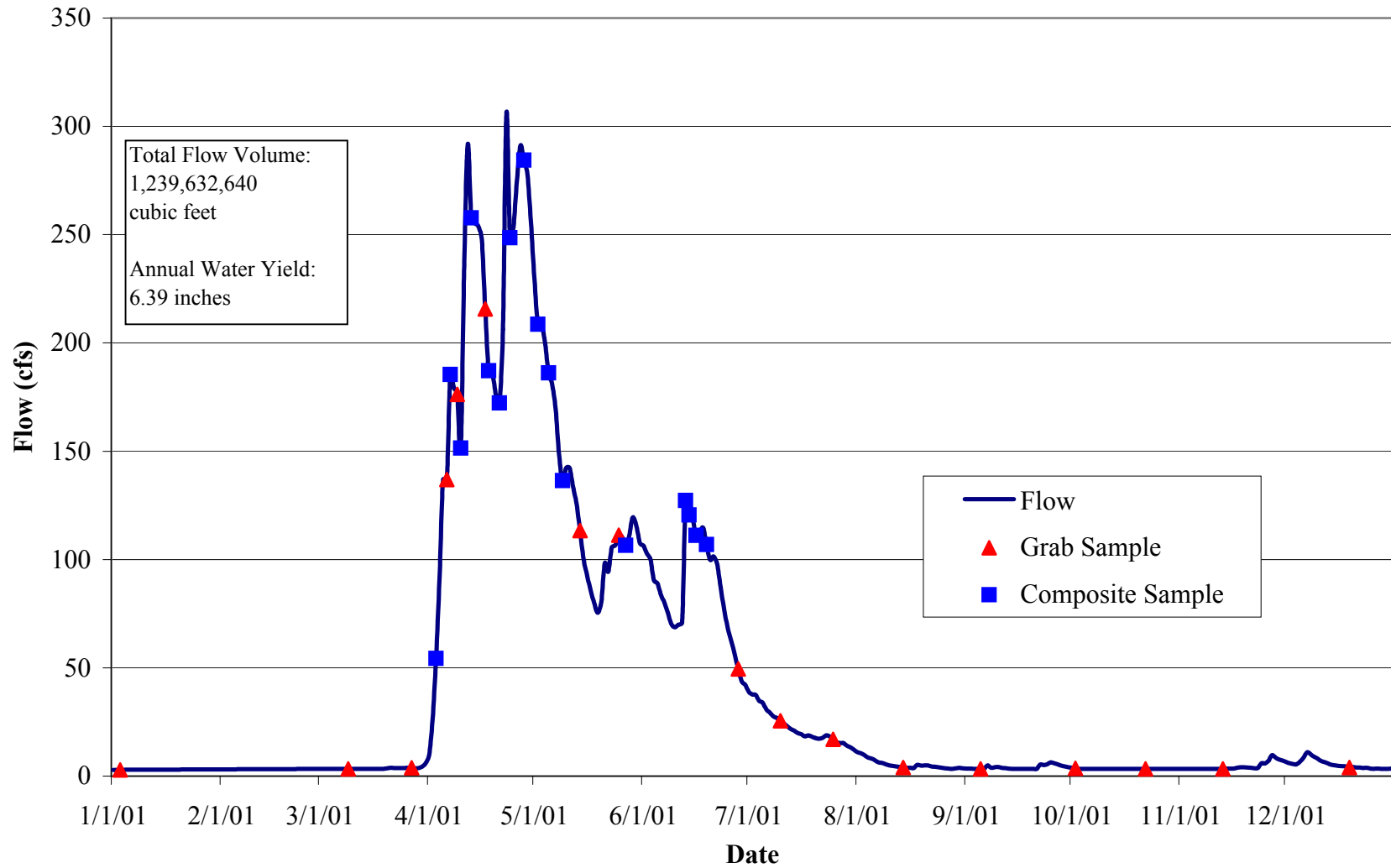


Table 2.CA. Carver Creek 2001 Water Chemistry Information

Variable	N	Mean	Median	Minimum	Maximum	25%	75%	STD
Chloride, mg/L	33	37	33	22	65	31	43	10
Hardness, mg/L	6	263	243	216	370	230	333	55
Cadmium, ug/L	6	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Chromium, ug/L	6	0.5	0.5	0.5	0.6	0.5	0.6	0.0
Copper, ug/L	6	2.8	2.7	1.5	4.7	1.7	4.3	1.2
Lead, ug/L	6	0.6	0.5	0.5	0.9	0.5	0.8	0.2
Nickel, ug/L	6	4.0	3.9	3.7	4.3	3.8	4.3	0.2
Zinc, ug/L	6	4.0	3.0	2.0	8.0	2.0	7.0	2.0
Nitrogen, Total Kjeldahl, mg/L	32	2.20	2.00	0.20	6.20	1.40	3.00	1.40
Nitrogen, Total Nitrate, mg/L	33	4.13	3.32	0.05	9.04	2.13	6.41	2.77
Phosphorus, Total, mg/L	32	0.43	0.34	0.03	2.50	0.13	0.62	0.45
Phosphorus, Total Dissolved, mg/L	33	0.26	0.24	0.01	1.60	0.08	0.34	0.28
Solids, Total Suspended, mg/L	32	180	44	4	2720	20	162	481
Solids, Volatile Suspended, mg/L	32	20	8	1	280	4	18	49
Turbidity, NTU	33	45	14	3	600	6	39	105

Table 3.CA. Carver Creek 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	8,383	314	49	216
Phosphorus, Total	20.90	0.78	0.12	0.54
Phosphorus, Total Dissolved	10.00	0.38	0.06	0.26
Nitrogen, Total Nitrate	186.00	6.96	1.09	4.80

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

Table 4.CA. Carver Creek 2001 Macroinvertebrate Monitoring Results and Metrics

Monitoring Date 06/18/01

Class	Order	Family	Common Name	Life Stage	Organism Count
Crustacea	Amphipoda		Scuds		1
Insecta	Coleoptera	Elmidae	Riffle Beetles	Adult	2
Insecta	Ephemeroptera	Caenidae	Small Squaregills	Larvae	3
Insecta	Ephemeroptera	Heptageniidae	Flatheaded Mayflies	Larvae	12
Insecta	Odonata	Coenagrionidae	Narrowwinged Damselflies	Larvae	1
Insecta	Trichoptera	Limnephilidae	Northern Case Makers	Larvae	12

Macroinvertebrate Taxa Metrics

Total Taxa	6
EPT Taxa	3
% EPT Taxa	50
Diptera Taxa	0
% Diptera Taxa	0
Mean Tolerance Value	4.85

Macroinvertebrate Organism Metrics

Total Organisms	31
EPT Individuals	27
% EPT Individuals	87
Diptera Individuals	0
% Diptera Individuals	0
Chironomidae Individuals	0
% Chironomidae Individuals	0