Table 1.LBE. Lower Bevens Creek Monitoring Station Information

Station Address: 16183 Carver County Road 40, Carver, MN 55315
County: Carver
Major Basin: Minnesota River Basin
Watershed: Bevens Creek
Drainage Area: 130.9 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 Lower Bevens Creek since 1989. The monitoring station is located near Carver, Minnesota, 2.0 miles upstream from the creek confluence with the Minnesota River. MCES staff maintain the rating curve at this station.

2001 Monitoring Year: Snowmelt began during the last week of March 2001. Daily average flows were estimated prior to the ice out date, which occurred on approximately March 30, 2001. The peak daily average flow of 1,300 cfs, with a stage of 5.48 feet, occurred on April 24, 2001.

Runoff event-based composite sampling began in early April 2001 following the spring snowmelt and persistent rainfall. The highest total suspended solids (TSS) concentration for the entire year (928 mg/l) was measured on April 7, after 1.53 inches of rain fell over a two-day period when stream flow was already high (1,130 cfs) due to the spring snowmelt. Stream flow peaked after more than 4 inches of rain fell on April 21 and 22. Composite samples were collected again during runoff events in late May and early June.

Thirty-five samples were collected for water quality analysis during 2001, including 21 composite samples and 14 grab samples. Samples were obtained throughout the year during varying stream flow conditions to most accurately characterize Lower Bevens 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. LBE. Lower Bevens Creek Monitoring Station Location and Watershed Characteristics

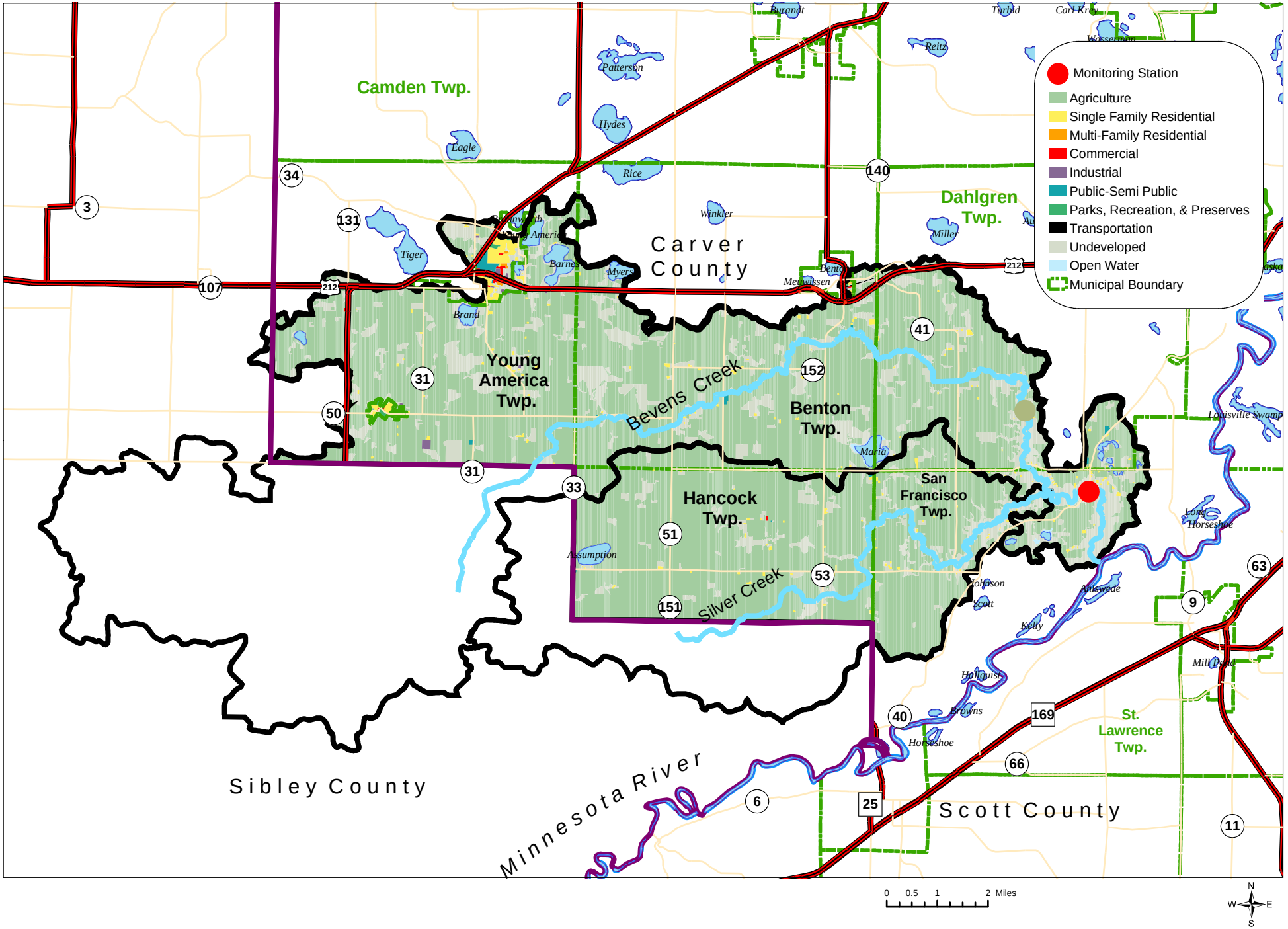

Figure 2.LBE. Lower Bevens Creek 2001 Hydrograph with Rainfall and Sampling Information

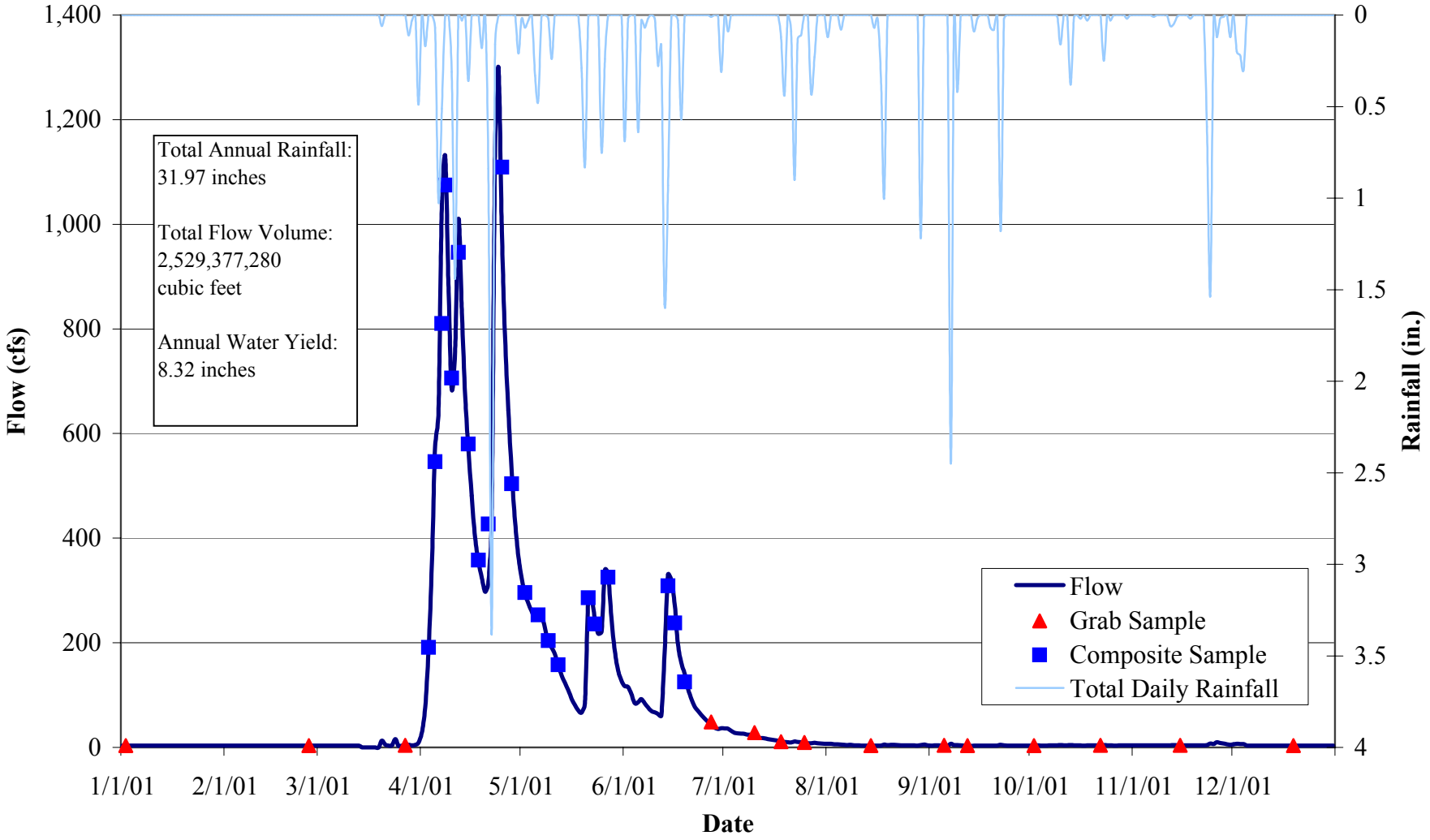

Table 2.LBE. Lower Bevens Creek 2001 Water Chemistry Information

Variable	N	Mean	Median	Minimum	Maximum	25%	75%	STD
Chloride, mg/L	35	26	24	14	54	21	30	8
Hardness, mg/L	4	348	na	314	408	na	na	na
Cadmium, ug/L	4	0.1	na	0.0	0.1	na	na	na
Chromium, ug/L	4	0.5	na	0.5	0.5	na	na	na
Copper, ug/L	4	2.1	na	1.3	2.5	na	na	na
Lead, ug/L	4	0.5	na	0.5	0.5	na	na	na
Nickel, ug/L	4	3.8	na	3.4	4.2	na	na	na
Zinc, ug/L	4	1.0	na	1.0	1.0	na	na	na
Nitrogen, Total Kjeldahl, mg/L	35	1.80	2.00	0.20	4.60	0.30	2.80	1.20
Nitrogen, Total Nitrate, mg/L	34	9.45	9.48	0.38	19.80	0.87	17.13	7.33
Phosphorus, Total, mg/L	35	0.43	0.34	0.01	1.40	0.07	0.70	0.38
Phosphorus, Total Dissolved, mg/L	34	0.27	0.28	0.01	0.59	0.12	0.43	0.18
Solids, Total Suspended, mg/L	35	165	62	1	928	3	236	241
Solids, Volatile Suspended, mg/L	35	16	7	1	66	2	26	19
Turbidity, NTU	35	32	16	1	140	2	57	39

na: Data are insufficient to calculate these statistics.

Table 3.LBE. Lower Bevens 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	20,220	483	58	255
Phosphorus, Total	54.66	1.30	0.16	0.69
Phosphorus, Total Dissolved	29.52	0.70	0.08	0.37
Nitrogen, Total Nitrate	1,136.69	27.14	3.26	14.34

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

Table 4.LBE. Lower Bevens Creek 2001 Macroinvertebrate Monitoring Results and Metrics

Monitoring Date 06/07/01

Class	Order	Family	Common Name	Life Stage	Organism Count
Crustacea	Amphipoda		Scuds		1
Insecta	Diptera	Chironomidae	Midges	Larvae	2
Insecta	Diptera	Simuliidae	Black Flies	Larvae	5
Insecta	Ephemeroptera	Baetidae	Small Minnow Mayflies	Larvae	48
Insecta	Ephemeroptera	Heptageniidae	Flatheaded Mayflies	Larvae	3
Insecta	Hemiptera	Pleidae	Pygmy Backswimmer	Adult	3
Insecta	Plecoptera	Perlidae	Comon Stoneflies	Larvae	1
Insecta	Trichoptera	Limnephilidae	Northern Case Makers	Larvae	2

Macroinvertebrate Taxa Metrics

Total Taxa	8
EPT Taxa	4
% EPT Taxa	50
Diptera Taxa	2
% Diptera Taxa	25
Mean Tolerance Value	4.33

Macroinvertebrate Organism Metrics

Total Organisms	65
EPT Individuals	51
% EPT Individuals	78
Diptera Individuals	7
% Diptera Individuals	11
Chironomidae Individuals	2
% Chironomidae Individuals	3