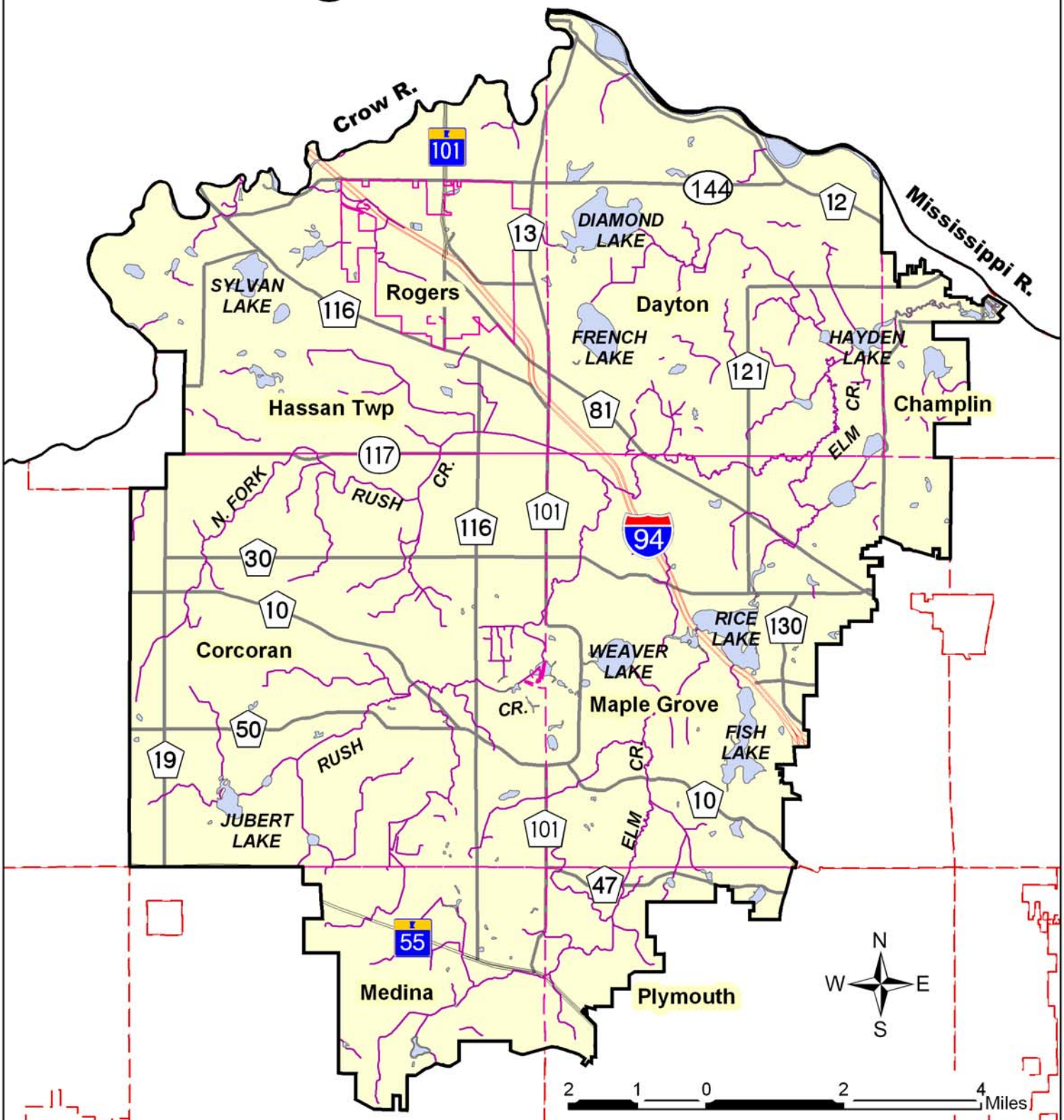
Elm Creek Watershed Management Commission



2003 Annual Report

Elm Creek Watershed Management Commission

2003 Annual Report

April 2004

This report was prepared
for the Elm Creek Watershed Management Commission
by Judie Anderson, JASS.

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Introduction.

The Elm Creek Watershed Management Commission (Commission) is a joint powers watershed organization formed as required under Minnesota Statutes 103B.201 through 103B.255 and Minnesota Rules Chapter 8410. The Commission was established in 1973 to protect and manage the natural resources of the Elm Creek Watershed. Its members are the cities of Champlin, Corcoran, Dayton, Maple Grove, Medina, Plymouth, and Rogers, and the Township of Hassan.

I. The Commission.

A. 2003 Board Members and Staff.

MEMBERS	ADDRESS	REPRESENTING/ RESPONSIBILITY	PHONE	E-MAIL
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* Water Quality Manager attends Commission meetings, providing valuable input on matters of water quality.

B. Business Planning Committee. Comprised of all board members.

C. Executive Committee. See Table above.

D. Technical Advisory Committee (TAC). See Table above.

II. 2003 Activities.

A. Plan Reviews.

The Commission reviewed 69 plans in 2003. A list of each project, location, and the critical areas reviewed is attached as *Appendix 1.* The Commission also adopted a revised fee schedule for reviewing projects to offset costs incurred by the Commission. It became effective on January 1, 2003.

The Commission anticipates reviewing 70-75 plans in 2004. These will include erosion and sediment control, wetland, floodplain, and stormwater management as well as DNR permits.

B. Lake Monitoring.

Water Quality.

The Commission has been monitoring lakes within the watershed since 1980. In 2003 the Commission monitored Fish and Weaver Lakes in cooperation with Three Rivers Park District. In addition, the Commission funded the monitoring of French Lake through the Metropolitan Council's Citizen Assisted Monitoring Program (CAMP). The volunteer who monitored the lake is Steve Fowler of Dayton. French Lake was monitored twice a month from April through October. A summary of the lake sampling history is shown in *Appendix 2.*

Fish and Weaver Lakes are listed in the Commission's Plan as Critical Lakes Category I. French Lake is a Category III lake. While Category I lakes are suitable for body contact recreation and fishing, Category III lakes are marginal fishing lakes and generally unsuitable for body contact recreation. Category I lakes are monitored more frequently than Category II and III Lakes. Under the Department of Natural Resources' (DNR) Shoreland Classification system Fish and Weaver Lakes are Recreational Development Lakes, and French Lake is a Natural Environmental Lake.

Lake and watershed characteristics of the lakes monitored in 2003 are shown in Table 1 below. Water quality data for 2003 is summarized below and listed in *Appendices 3 and 3a.* Water quality parameters for the lakes can be used to determine their Trophic State (state of nutrient enrichment) using Carlson's Trophic State Index (TSI). Table 2 on page 3 shows the summary of 2003 data.

Historical trend data are available for Fish and Weaver Lakes and listed in *Appendix 4.* The trend data includes samples from April through October for the entire monitoring period, and the summer means (May through September) since 1991. French Lake does not have long-term data from which to draw trend information.

Fish Lake.

The Three Rivers Park District and the Commission have established an in-lake phosphorus concentration goal for Fish Lake of 36 µg/L to support direct contact recreational use. Mean phosphorus concentrations for the summer season (May-September) have gradually increased from 39 µg/L in 2001 to 55 µg/L in 2003. The increase in phosphorus concentration in 2002 was due to an excessive amount of precipitation that produced increased phosphorus watershed loading.

Table 1. Lake and Watershed Characteristics

Lake	Size (acres)	Max Depth (feet)	Mean Depth (feet)	Watershed Size (acres)	Land Use Characteristics
Fish	244	48	19	1,990	Residential, commercial, park
Weaver	159	57	21	510	Residential, park
French	218*	6	3	870	Agricultural, rural residential, light

*Open water area

In 2003, above average precipitation conditions in May and June further contributed to high phosphorus concentrations ranging between 47 µg/L and 68 µg/L. The amount of precipitation for the remaining portion of the 2003 was considerably below average. However, phosphorus concentrations ranged between 40 µg/L and 94 µg/L from July through September. Although Fish Lake does not have an excessive curlyleaf pondweed problem in comparison to similar metropolitan lakes, the winter conditions in 2003 were conducive for curlyleaf pondweed growth. As a consequence of a high biomass of curlyleaf pondweed in 2003, there was a substantial amount of internal loading due to the plant senescence from the end of June to early July. The in-lake phosphorus concentration increased from 45 µg/L to 71 µg/L after the senescence of curlyleaf pondweed. The released nutrients from curlyleaf pondweed became available for algae up-take, and resulted in algae blooms that persisted throughout the summer. Chlorophyll-a concentrations increased from 32 µg/L to 53 µg/L shortly after the senescence of curlyleaf pondweed, and concentrations remained between 52 µg/L to 72 µg/L throughout the summer. Consequently, a decrease in water clarity occurred in response to the increased nutrient and chlorophyll-a concentrations.

Weaver Lake.

Weaver Lake has water quality conditions that potentially inhibit recreational use. The water quality for Weaver Lake has remained relatively constant since 1998. Phosphorus concentrations have been above 40 µg/L, which is the concentration recommended by the MPCA to support full recreational use. Since 1999, the five-year average phosphorus concentration was 45 µg/L.

Table 2. Carlson's Trophic State Index (R.E. Carlson)

Lake	TSI	Trophic Status	Expected Conditions
Fish	61.5	Eutrophic	Decreased transparency, anoxic hypolimnion during summer, macrophyte problems evident
Weaver	58.7	Eutrophic	Decreased transparency, anoxic hypolimnion during summer, macrophyte problems evident
French	75.4	Hypereutrophic	Heavy algal blooms possible throughout summer, dense macrophyte beds, but extent limited by light penetration

In 2003, the average phosphorus concentration was 49 µg/L, which is the highest phosphorus concentration observed since 1991. The high phosphorus concentrations can be partially attributed to the high density of curlyleaf pondweed within Weaver Lake. Weaver Lake has dense mats of curlyleaf pondweed that frequently grow to the surface. In 2003, the lack of snow cover created clear ice conditions that were excellent for curlyleaf pondweed growth. Consequently, there was a substantial amount of internal loading due to the plant senescence from the end of June to early July. The in-lake phosphorus concentration increased from 49 µg/L to 72 µg/L after the senescence of curlyleaf pondweed. The released nutrients from curlyleaf pondweed senescence contributed to a substantial algae bloom. Chlorophyll-a concentrations increased from 21 µg/L to 65 µg/L. After the senescence of curlyleaf pondweed, the phosphorus concentrations gradually decreased to concentrations as low as 35 µg/L. Despite the gradual decrease in phosphorus concentrations, the algae blooms persisted throughout the summer in which water clarity conditions did not exceed 1.0 m in depth as measured by a Secchi disk.

French Lake.

This was the third year that the French Lake, located within the boundaries of Dayton, has been monitored through CAMP. The lake has an open water area of 218 acres and covers 352 acres at the ordinary high water elevation. The lake has a maximum depth of 2.0 m (roughly 6 feet) with an average depth of 1.0 m. A search through the STORET nationwide water quality database for data on the lake provided limited data (just Secchi data in 1985). Therefore, the 2001-2003 CAMP data are the only known available nutrient water quality data for the lake.

The lake was monitored seven times from early-May to early-August, 2003. The dry mid- to late-summer conditions resulted in the lake becoming unnavigable. Results are presented in Appendix 3a. The summertime (May through September) means for the monitored parameters were: surface total phosphorus TP = 283.7 µg/L (with a range of 136 - 489 µg/L); surface chlorophyll-***a*** = 92.1 µg/L (with a range of 27.0 - 230.0 µg/L); Secchi transparency = 0.3 m (with a range of 0.20 - 0.55 m); and TKN = 2.74 mg/l (with a range of 1.70 - 4.80 mg/l). The lake's summer averages translate to water quality grades of F for TP, F for Chlorophyll-a, and F for Secchi transparency. These grades result in an overall water quality grade of F for French Lake in 2003 (similar to the overall grade recorded in 2002 and worse than that of 2002 [D]).

As mentioned earlier, there was little water quality data found for French Lake prior to the 2001 CAMP data. Therefore, it is not possible to determine any long-term or short-term trends. To better understand the lake's water quality and where it may be heading, more data are needed.

The last two graphs in *Appendix 3a*. show seasonal variation in the lake's perceived physical condition and recreational suitability. The average user perception rankings, on a 1-to-5 scale, were 3.7 for physical condition (between 3- "definite algae present" and 4-"high algal color"), and 4.3 for recreational suitability (between 4-"no swimming – boating ok" and 5-"no aesthetics possible").

If you notice any errors in the lake's data or physical information, or are aware of any additional or missing information, please contact Randy Anhorn of the Metropolitan Council at (651) 602-8743 or randy.anhorn@metc.state.mn.us.

As the Commission implements its second-generation management plan, the goals for these lakes will be constantly evaluated. The Commission will also consider a non-degradation policy to prevent further degradation of its water resources.

The Commission will monitor Fish, Weaver, Diamond and French Lakes in 2004. It is a goal of the Commission to contract with Three Rivers Park District to monitor the first three lakes and to again seek a volunteer to monitor French Lake through CAMP.

Lake Level Monitoring.

The Commission continued to operate and maintain an electronic lake level gauge at Mill Pond dam. The data are reported to the DNR. The gauge will be upgraded by a newer model this year. The City of Dayton staff monitors the gauge at Diamond Lake, near the boat launch. The 2003 data was incomplete because algae growth due to low lake levels obscured the gage. The French Lake staff gauge was inoperable in 2003 due to damage. Repairs will be done to bring the gauges back into service. The locations of the lake level monitoring sites are shown in *Appendix 5*.

C. Stream Monitoring.

The monitoring station in Champlin is operated with the cooperation of the United States Geological Survey (USGS). The Commission shares the costs of operating the station, which collects continuous flow data and periodic event and base water quality data, with the USGS. Both grab samples and storm runoff samples are collected and analyzed for various parameters. Analyses of the streamflow and water quality monitoring data for Elm Creek and its tributaries are summarized below. Real time data from this monitoring station may be viewed on the Internet at **http://webdmnspl.cr.usgs.gov/rt-cgi/gen_stn_pg?station=05287890**.

The gauging site is located at the Elm Creek Road crossing in the Elm Creek Park Reserve. Continuous flow monitoring, low flow, and storm event sampling are completed at the site. The watershed area above the gauging station is 86 square miles, or 81% of the watershed.

Flow Monitoring.

The average daily discharge for the 2003 Water Year (WY), October 1, 2002 through September 30, 2003, was 61.4 cubic feet per second (cfs). During the same period, the minimum and maximum observed average daily discharge values were 0.8 cfs and 651 cfs, respectively. The long-term average daily dis-charge at the station is 39.9 cfs (1979-2003).

In WY 2002 very high flow volumes were observed in Elm Creek and its tributaries. While the average flows were lower during WY 2003, a major storm event in June 2003 kept the 2003 WY flow volumes above the long-term average. The long-term flow volumes (calendar year and water year) are included in Appendix 6.

Table 3. Elm Creek Annual Instantaneous Peak Discharge Rates

Date	Peak Flow (cfs)	Date	Peak Flow (cfs)	Date	Peak Flow (cfs)	Date	Peak Flow (cfs)
4-Apr-1979	307	27-Mar-1986	**812***	22-Jun-1993	315	13-Jul-2000	112
25-Mar-1980	199	1-Aug-1987	185	30-Apr-1994	**669***	25-Apr-2001	**875***
15-Jun-1981	44	27-Mar-1988	39	17-Mar-1995	237	11-May-2002	554
3-Apr-1982	**471***	31-Mar-1989	159	19-Mar-1996	407	28-Jun-2003	**695**
9-Mar-1983	408	1-Aug-1990	225	1-Apr-1997	**511***		
25-Feb-1984	341	1-Jun-1991	371	5-Apr-1998	306		
18-Mar-1985	**579***	8-Mar-1992	380	15-May-1999	**538***		

* All-time instantaneous peak discharge.

The 100-year flood discharge at this site is 2290

In late June (24th-25th), Elm Creek and its surrounding region experienced a severe rainstorm event, which dropped 4-6 inches of rain in less than a 24-hour period. Following this rain event, on June 28, the flow at the gauging station peaked at 695 cfs, the second highest peak flow recorded at the station. The all-time

peak instantaneous discharge was observed on April 25, 2001. Table 3 above shows the annual instantaneous peak discharge values at the gauging station for the period of record. The flow hydrograph for the 2003 WY and the provisional daily discharge and the summary information at the Elm Creek USGS gauging station are included in Appendices 7 and 7a, respectively.

Water Quality Monitoring.

Storm event samples were collected using an automatic sampler. Routine manual sampling also occurred approximately monthly. A spreadsheet of the data received to date is included in *Appendix 8*. Due to the high number of precipitation events in WY 2002, the Commission amended its 2003 contract with the USGS to provide for two additional automated samples in lieu of the manual samples. Automated "event" samples provide more comprehensive results by taking a composite sample of the entire event hydrograph but may cost more to analyze.

The Commission will continue to work with USGS staff to operate the gauging and water quality monitoring station on Elm Creek and make real-time adjustments to the sampling needs based on field and climate conditions.

D. Macroinvertebrate Monitoring (River Watch) Program.

The Elm Creek watershed is the largest watershed completely within Hennepin County boundaries. Located in the north central section of the county, it covers an area of 109 square miles. Elm Creek and its tributaries are 23 miles long. There are two tributaries in the watershed -- the North Fork of Rush Creek starts in Greenfield and flows through Corcoran, Rogers and Hassan; the South Fork of Rush Creek originates in Corcoran. The main stem begins in Medina and flows through Plymouth, Dayton and Champlin, where it discharges to the Mississippi River.

In 1995 the Commission worked with the Hennepin Conservation District (HCD) to initiate a benthic macroinvertebrate monitoring program. River Watch, as this program has come to be called, is used both for education and data collection. It is a goal of the Commission to sustain existing monitoring sites, gain water quality data, and promote river stewardship through teaching and project participation by students.

In 2003 this program came under the guidance of the Hennepin County Department of Environmental Services. Currently, students from seven schools monitor at seven locations in the Elm Creek watershed.

2003 Hennepin County River Watch Results, available from Hennepin County Department of Environmental Services, includes results from all the Hennepin County monitoring sites. A map showing the watershed macroinvertebrate monitoring sites is shown in *Appendix 9*; excerpts from the report on the sites in the Elm Creek watershed are found in *Appendix 10.*

E. Precipitation Gauge Network.

The Commission continued to operate and maintain eight precipitation gauges in the watershed. The locations of the gauges are at city halls, public buildings, private properties, and near the gauging station. The Commission also assists volunteers to set up and operate the gauges. One of the gauges operates year-round, collecting rain and snowmelt. An additional year-round rain gauge will be installed in Crow Hassan Park Reserve.

Data from these gauges are reported to the State Climatology Office and are available through the Internet. Locations of the current precipitation gauges are shown in *Appendix 5*.

F. Watershed Management Plan.

In 2000 the Commission received a grant from the Board of Water and Soil Resources (BWSR) to help fund the costs of development and production of its second watershed management generation plan. The Commission worked jointly with the Pioneer-Sarah Creek Watershed Management Commission and WSB & Associates to develop and write the plan.

A public meeting was held in October 2001, at which time citizens from both watersheds came together to discuss water resource issues within their communities. Topics discussed included education, water quality, non-degradation policy, shoreline protection, erosion, flooding, groundwater, wetlands, fish and wildlife, livestock/feedlots, population density/development, administration/leadership and funding.

In 2002, the Technical Advisory Committee (TAC) and representatives from various state agencies continued to review and develop policies, standards and rules. A preliminary draft plan was presented to Elm Creek residents at a second public meeting in April 2002. In October 2002 a public hearing was held where comments were received from the cities of Maple Grove and Plymouth and the DNR. Capital project funding was also discussed. The second required 45-day agency comment period ended February 10, 2003.

The Commission will submit the Plan and its amended and restated Joint Powers Agreement (JPA) to BWSR for final approval in 2004. The Commission will also begin identifying studies to assess the feasibility of future capital projects identified in the second generation plan. (See Section IV. of this report.)

G. Wetland Conservation Act (WCA).

The Commission serves as the local government unit (LGU) for the cities of Champlin and Corcoran, and Hassan Township. The Commission reviews exemption applications, replacement plans, banking applications, attends Technical Evaluation Panel (TEP) meetings, and fulfill other requirements of WCA.

The Commission received one wetland banking application and 37 projects involving wetlands in 2003. Projects reviewed for wetland issues are so indicated in *Appendix 1*. A similar level of activity is anticipated in 2004.

H. Status of Local Water Plans.

The table below outlines the status of local plan development by the member communities. In addition, Natural Resource Inventories have been undertaken by a number of the members.

Table 4

Community	In Progress	Submitted for Review	Approved by Commission**
Champlin			yes
Corcoran	no	no	no
Dayton	no	no	no
Hassan	yes*	no	no
Maple Grove			yes
Medina	no	no	no
Plymouth			yes
Rogers	yes	no	no

* Subwatershed plan

**May need to be amended to comply with the Commission's second generation Plan

I. Written Communication.

The Elm Creek Watershed Management Commission publishes a newsletter which is transmitted electronically to member municipalities for dissemination to their citizens. The 2003 newsletter was published in April 2003. The next edition will be available in the summer of 2004.

It is anticipated that future publications will appear on the Commission's website. Development work on the website will begin mid-year 2004.

J. Proposals for Service.

The required biennial solicitation for interest proposals for professional services occurred in 2002 and will be repeated in 2004.

K. Boundary Changes.

In past years the city of Greenfield, a non-voting/non-funding member, withdrew all of its land from the Elm Creek Commission and the city of Corcoran incorporated all of its land into the Elm Creek Commission. A 2002 review of watershed maps revealed a small area in Medina which was not under the jurisdiction of any water management organization. The City of Medina supported the Commission's action to petition for the non-designated land. As part of the second generation planning process, the Commission updated its watershed boundaries to reflect these changes.

L. Commission's Technical Advisor.

On April 8, 2003, the Hennepin County Board of Commissioners authorized the establishment of conservation services under County auspices (Resolution 03-226). Effective June 2003, the Hennepin County Department of Environmental Services (HCDES) began providing technical services to the Elm Creek Watershed Management Commission. The technical services include conservation engineering services related to hydrology and hydraulic analyses, the review of site development plans, and technical assistance regarding best management practices for stormwater management, erosion control and the protection of water quality. Prior to June 2003, technical services were provided by the Hennepin Conservation District (HCD).

III. Financial Report for 2003.

Appendices 11, 12 and 13, respectively, include the Commission's approved budget for 2003, a report of revenues and expenditures for 2003, and the 2003 Audit Report prepared by Julius and Associates, Ltd., Certified Public Accountants.

IV. Work Plan for 2004.

In addition to continuing the programs and activities described above, the Elm Creek Watershed Management Commission has developed a water resource management program that reflects the needs and concerns of the Commission, its member communities and residents. The implementation program will be reviewed annually by the Commission.

Studies and capital improvements identified in the Commission's second generation Watershed Management Plan may be completed entirely or partially by member communities, the Commission, or a joint effort. A list of current and possible future capital improvement projects can be found in the Commission's second generation Plan.

In the Plan, the Commission has determined that bank stabilization and erosion control is a very high priority issue. In 2004 the Commission will undertake a study of low flows to identify unstable areas within the main branch of Elm Creek.

Stream stability is usually defined as the ability of a stream to maintain its physical features (such as channel width, depth, slope, meander) over a long period of time, so that the stream system neither aggrades nor degrades. Geomorphology studies generally agree that channel development within a riverene system is influenced, in a large part, by "low flows". In stable streams this flow roughly corresponds to bank-full conditions. Due to its rapidly changing land use, low flows in Elm Creek are increasing and threatening the stability of the stream. The Commission wants to determine these flows at critical points along Elm Creek and to correlate them to current physical stream conditions. This should help in predicting the streams' stability at those points and in developing policies to prevent further degradation of the stream.

The Commission will use its 1999-2001 Stream Geomorphology study results to determine low flows that would be conveyed at bank-full conditions. These results will then be used in a hydrologic analysis to determine the frequency of storm events that correspond to these low flows. These "design" storm events, in conjunction with the recommendations made in the geomorphology study, will be the basis for establishing policies to stabilize and restore Elm Creek and its tributaries.

Appendix 1

2003 PROJECT REVIEWS

Project Number	Project Name	City	Erosion Control	Stormwater	Floodplain	Wet Ponds	WCA
2003-001	Waterstone	Maple Grove	x	x			
2003-002	City County Federal Credit Union	Maple Grove	x	x			
2003-003	Keinitz /Rogers Retail 2	Hassan Twp.					x
2003-004	Greg Ebert	Corcoran					x
2003-005	Marilyn Malecha	Corcoran					x
2003-006	Oaks of Savannah	Champlin					x
2003-006	Oaks of Savannah	Champlin	x	x	x	x	
2003-007	Rolling Green Business Center	Medina	x	x	x		
2003-008	Woodland Creek	Maple Grove	x	x	x		
2003-009	Weber Property	Hassan Twp.					x
2003-010	Rogers Retail 2nd Addition	Rogers	x	x			
2003-011	Delgany 3rd Addition	Maple Grove	x	x		x	
2003-012	Sunnyside Estates 6th Addition	Rogers	x				
2003-013	Vision Transportation Services	Hassan Twp.	x	x		x	
2003-014	Walgreens	Rogers	x	x		x	
2003-015	Rolling Green Country Club	Medina	x				x
2003-016	Joseph Berthiaume	Hassan Twp.					x
2003-017	Tom Picha	Corcoran					x
2003-018	Delgany 4th Addition	Maple Grove	x	x			x
2003-019	Fieldstone Phase III	Maple Grove	x	x		x	x
2003-020	Lot 1, Block 1 Rogers Industrial Park 6th Addn.	Rogers	x	x			x
2003-021	Three Rivers Park Pavement Management	Maple Grove	x				
2003-022	Three Rivers Park Winter Recreation Center	Maple Grove	x		x		
2003-023	Steve and Cindy Rust	Corcoran	x				x
2003-024	Kevin Hoppe	Corcoran	x				x
2003-025	Stan Zachman	Hassan Twp.					x
2003-026	Ernie Mayers	Corcoran					x
2003-027	Edward Scotts						
2003-028	C R O S S	Hassan Twp.	x				
2003-029	Grove Nursery	Corcoran	x				x
2003-030	Island View Estates Wetland Creation Site	Hassan Twp.					x
2003-031	Stormwater Improvements Rogers Retail Centre 2nd Addn	Rogers		x		x	
2003-032	Kemmetmueller	Hassan Twp.					x
2003-033	Immanuel United Methodist Church	Corcoran	x				x
2003-034	Rogers Retail Park - Tires Plus	Rogers	x				
2003-035	Wellstead Phase III	Rogers	x				
2003-036	Dairy Queen Chill and Grill	Rogers	x				
2003-037	James Nichols	Corcoran	x				x
2003-038	Shade Tree Cove	Rogers	x	x		x	

Appendix 1

2003 PROJECT REVIEWS

Project Number	Project Name	City	Erosion Control	Stormwater	Floodplain	Wet Ponds	WCA
2003-039	Linda Comb	Corcoran	x		x		x
2003-040	Woodland Creek North	Maple Grove	x	x			
2003-041	Dick Theis Floodplain	Corcoran			x		
2003-042	Rogers Office/Warehouse - First Choice Industrial Bldg	Rogers	x	x		x	
2003-043	Pulte Homes / Waterpoint	Maple Grove	x	x		x	
2003-044	Steve Dornsbach	Medina					
2003-045	Brendenberg Property-Quality Site Design	Corcoran					x
2003-046	Elm Creek Pedestrian Footbridge	Champlin	x		x		x
2003-047	Diamond Creek Culvert at S. Diamond Lake Rd	Dayton	x		x		
2003-048	Pond outlet to Elm Creek from Oaks of Savannah	Champlin	x				
2003-049	Canadian Pacific Railway Hamel culvert Replacement	Medina	x	x	x		
2003-050	Ed Kemna	Corcoran			x		x
2003-051	St Thomas Catholic church	Corcoran					x
2003-052	Joel Konkol	Hassan Twp.					x
2003-053	Richard Weber	Hassan Twp.					x
2003-054	Oaks of Elm Creek (formerly O of Savannah 2nd addn)	Champlin	x	x	x	x	x
2003-055	North Cowley Lake	Hassan Twp.					x
2003-056	Laurent	Medina		x			
2003-057	Medina Business Suites	Medina	x	x			
2003-058	Delgany II (combined II and IV)	Maple Grove					
2003-059	Robert Scherbing	Corcoran	x				x
2003-060	Goodyear Building	Rogers	x				
2003-061	Brian and Debbie Mackenzie	Corcoran					x
2003-062	Rogers HS stormwater pond outlet (2002-049)	Rogers		x		x	
2003-063	Burke and Hentges	Corcoran	x	x			x
2003-064	Trail Haven Road Site (Day Spring Dev)	Hassan Twp.					x
2003-065	Berthiaume Wetland Violation	Hassan Twp.					x
2003-066	Hassan Sand & Gravel	Hassan Twp.	x	x	x	x	x
2003-067	Fox Creek North 2nd Addition	Rogers	x				
2003-068	Acres of Hassan	Hassan Twp.					x
2003-069	The Reserve	Hassan Twp.	x		x		x

Appendix 2.

Elm Creek Watershed Lake Sampling History

	Lakes											
	Cook	Diamond	Dubay	Fish	French	Henry	Jubert	Mill Pond	Mud	Rice	Sylvan	Weaver
1980		E		Z								
1981				Z								E
1982				E								
1983												E
1984												
1985				E			E	E				E
1986	E	E	E	E					E			E
1987				E			E					E
1988	E			E				E				
1989		E	E	E			E					E
1990	E			E								E
1991				E			E	E		M		E
1992	E	E		E						M		E
1993				E						M		E
1994		C		E						M		E
1995				E		C						E
1996				E							E	E
1997				E							E	E
1998		E		E								E
1999				E				E				E
2000				E			C					E
2001	E			E	C							E
2002				E	C			E				E
2003				E	C							E

M: Sampled by the City of Maple Grove
C: Sampled by the Met Council's CAMP program
E: Sampled by Elm Creek Commission

Appendix 3

2003 Lake Water Quality Summary

Fish Lake

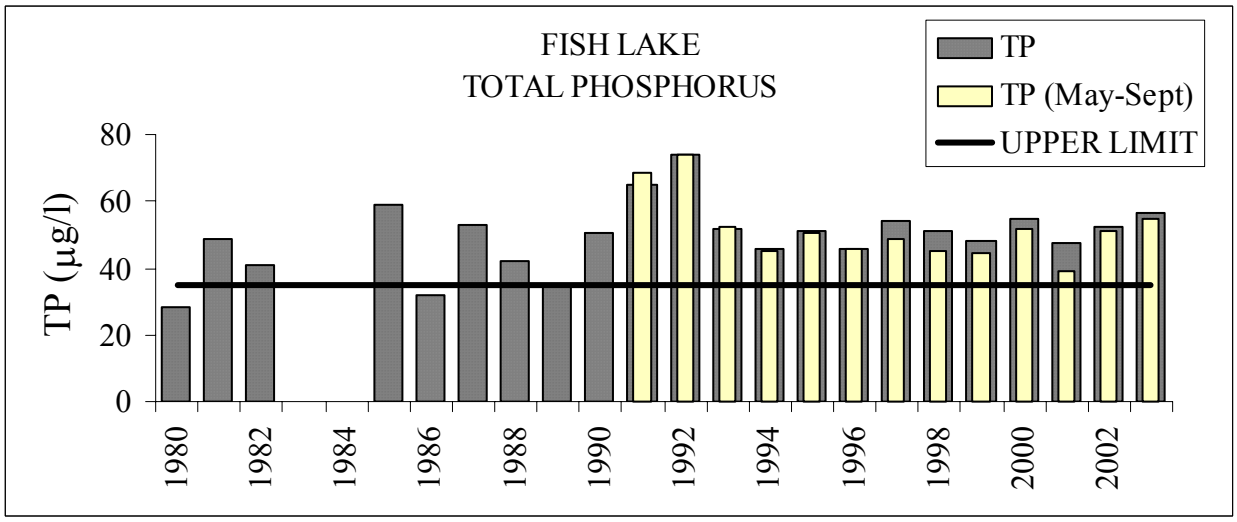
Sample Date	Secchi m	Temp °C	DO mg/L	DO %	Sp. Cond µS/cm	pH	TP µg/L	SRP µg/L	TN mg/L	Chl-a µg/L	Alkalinity mg/L
18-Apr-03	1.47	8.2	13.3	113	0.428	8.05	79		1.53	50.9	116
07-May-03	4.20	14.4	11.7	114	0.382	8.03	68		1.37	4.3	142
20-May-03	2.30	17.1	8.4	88	0.398	8.24	47	2.5	1.23	16.0	136
03-Jun-03	1.40	19.3	12.4	135	0.423	8.31	55		1.26	22.5	126
18-Jun-03	1.15	24.8	10.8	131	0.418	7.98	45	2.5	1.18	32.2	126
01-Jul-03	0.80	24.7	14.9	180	0.325	8.57	71	2.5	1.34	45.0	118
15-Jul-03	0.85	23.9	9.0	107	0.315	7.94	42	2.5	1.34	52.9	119
29-Jul-03	0.70	26.6	11.5	144	0.392	7.92	40	2.5	1.47	53.3	116
12-Aug-03	0.50	28.0	12.5	160	0.375	8.09	44	2.5	1.49	51.8	117
26-Aug-03	0.61	26.4	12.3	152	0.389	7.91	47	6.1	1.58	72.0	113
09-Sep-03	0.60	23.5	10.2	120	0.399	7.76	49	2.5	1.76	53.3	117
30-Sep-03	1.10	13.7	10.8	104	0.424	8.77	94	16.8	2.04	17.2	133
Mean	**1.31**		**11.5**	**129**	**0.389**	**8.13**	**57**	**4.5**	**1.46**	**39.3**	**123**
Std.Dev.	1.04		1.80	26.6	0.037	0.29	17.3	4.8	0.24	20.4	9.3
Summer Mean (May-Sept)	1.29		11.3	130.4	0.39	8.14	54.7	4.5	1.5	38.2	123.9

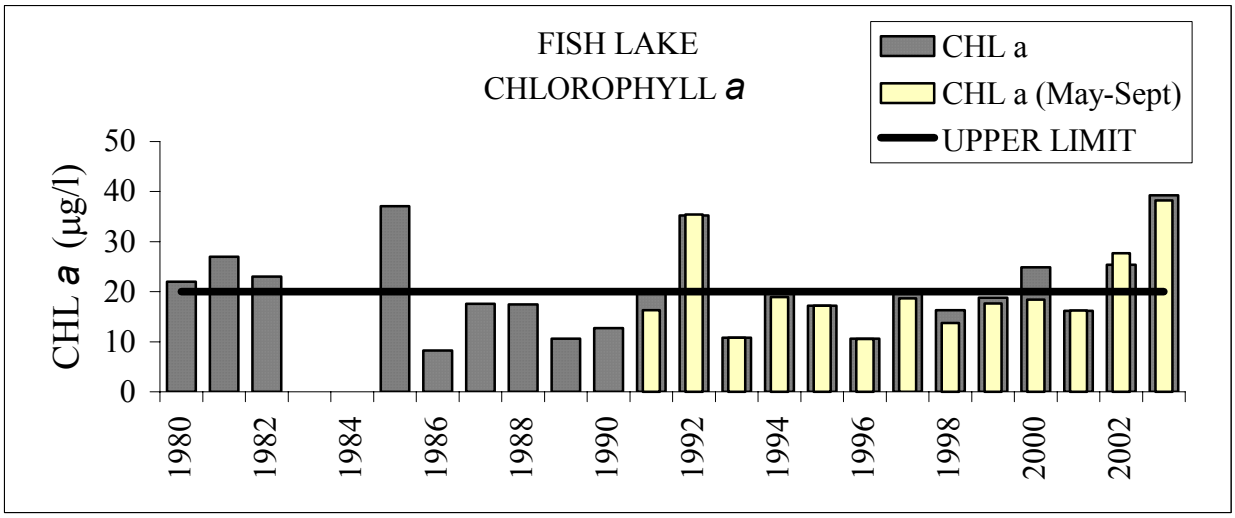
Weaver Lake

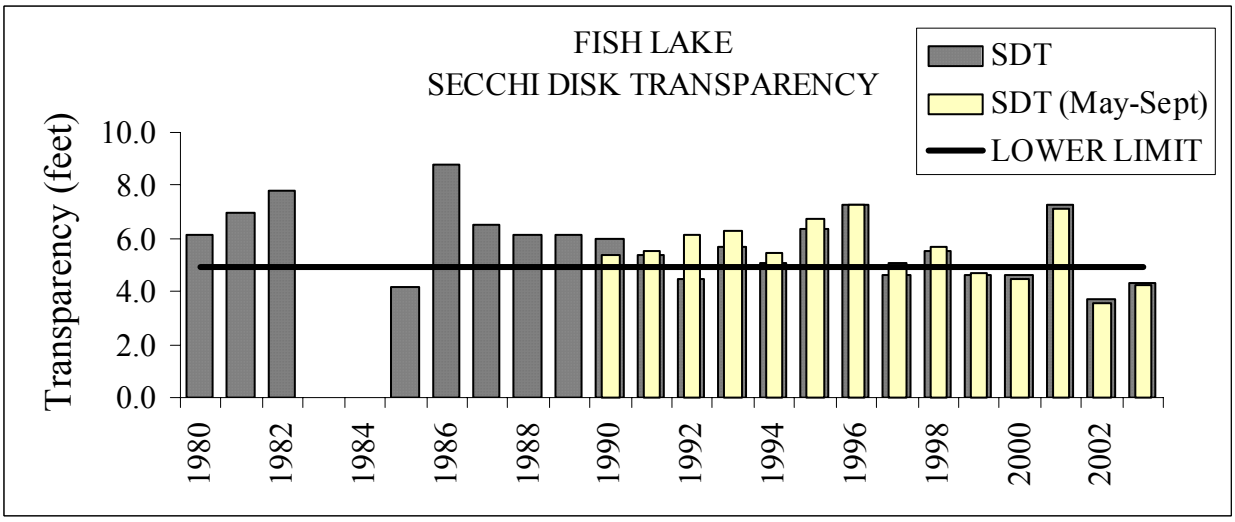
Sample Date	Secchi m	Temp °C	DO mg/L	DO %	Sp. Cond µS/cm	pH	TP µg/L	SRP µg/L	TN mg/L	Chl-a µg/L	Alkalinity mg/L
18-Apr-03	1.55	7.2	13.1	109	0.415	8.23	50		1.01	39.9	102
08-May-03	5.00	13.6	13.4	129	0.361	8.33		6.1	0.88	2.2	118
21-May-03	3.80	16.7	11.7	121	0.369	8.29	28	2.5	0.82	7.4	106
03-Jun-03	2.25	18.8	11.9	127	0.399	8.57	48		1.07	19.5	106
18-Jun-03	1.80	25.1	11.4	139	0.385	8.25	49	2.5	1.15	20.7	96
01-Jul-03	0.96	25.7	14.4	176	0.315	8.78	72	2.5	1.33	39.8	90
15-Jul-03	0.80	23.9	9.6	114	0.298	8.46	53	2.5	1.44	64.8	90
29-Jul-03	0.80	26.9	12.4	155	0.376	8.50	37	2.5	1.57	70.7	92
13-Aug-03	0.51	25.6	11.3	138	0.351	8.41	46	2.5	1.63	58.2	88
26-Aug-03	0.79	27.6	9.8	124	0.378	8.29	49	15.3	1.49	48.8	92
09-Sep-03	1.08	24.1	10.4	124	0.394	7.79	35	2.5	1.31	22.6	98
30-Sep-03	2.90	12.8	9.7	92	0.412	8.56	72	8.7	1.08	10.6	111
Mean	1.85		11.6	129	0.371	8.37	49	4.6	1.23	33.8	99
Std.Dev.	1.40		1.6	22	0.036	0.24	13.7	4.5	0.27	23.3	9.6
Summer Mean (May-Sept)	1.88		11.4	130.7	0.37	8.38	48.9	4.6	1.25	33.2	98.8

Secchi = Secchi Disc Transparency
Sp. Cond = Specific Conductivity
TP = Total Phosphorus
SRP = Soluble Reactive Phosphorus
TN = Total Nitrogen
Chl-a = Chlorophyl ***a***

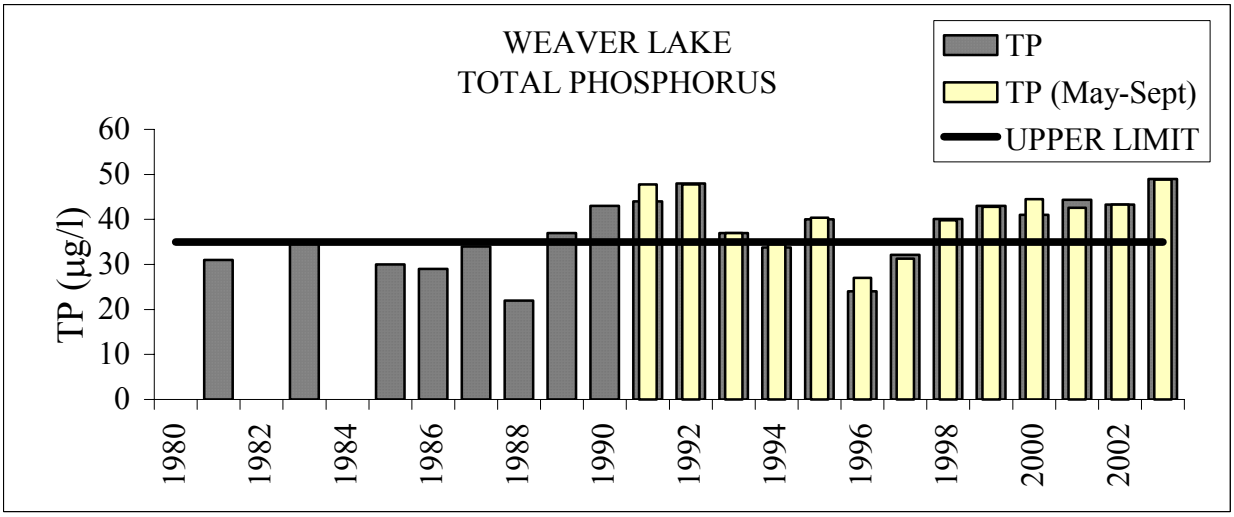
Appendix 4. **Historical Lake Water Quality Data.**

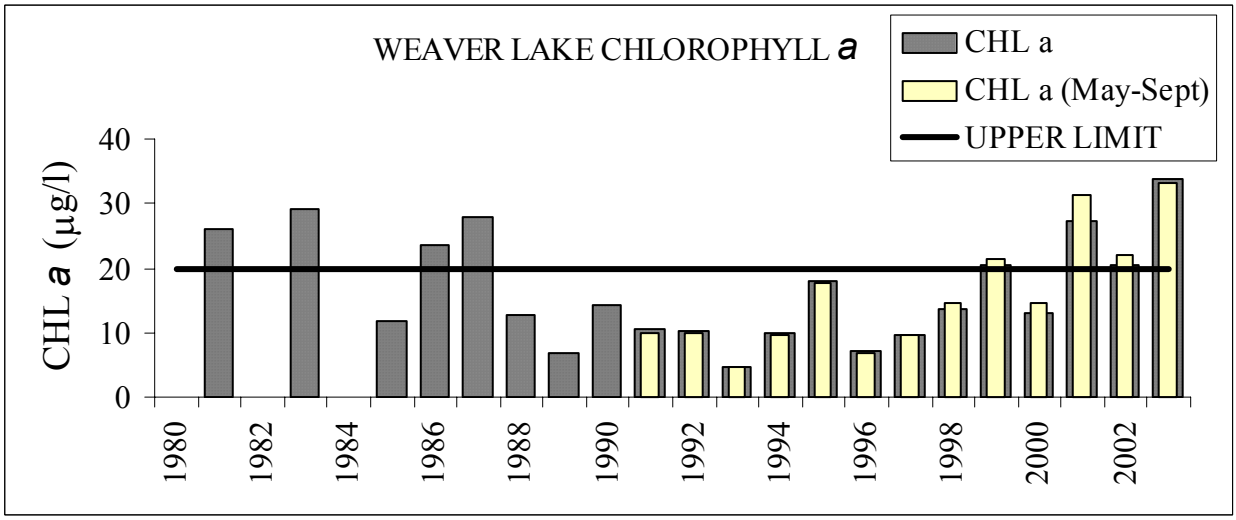


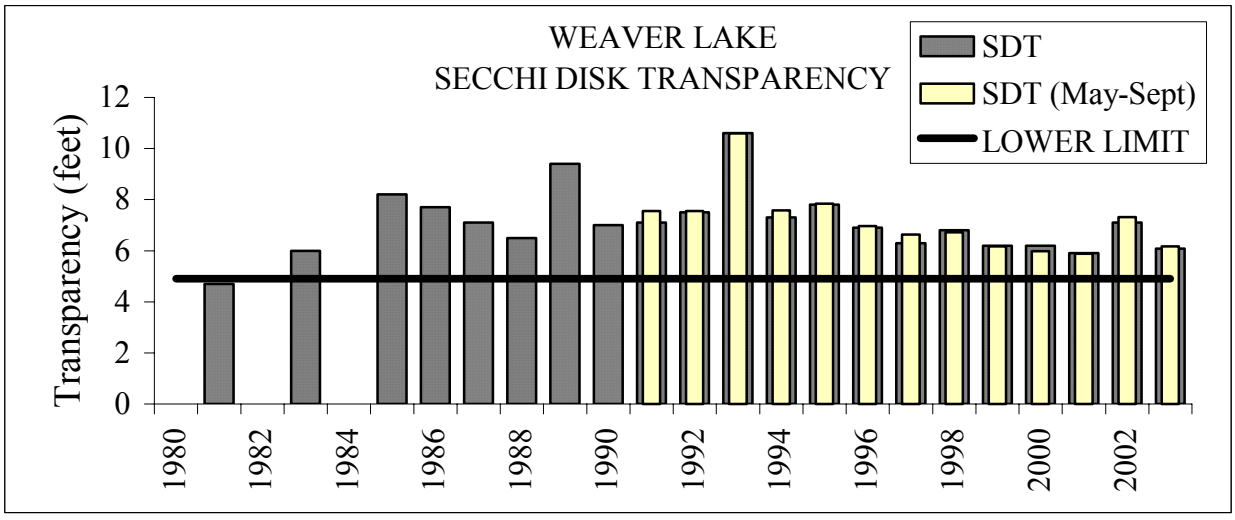




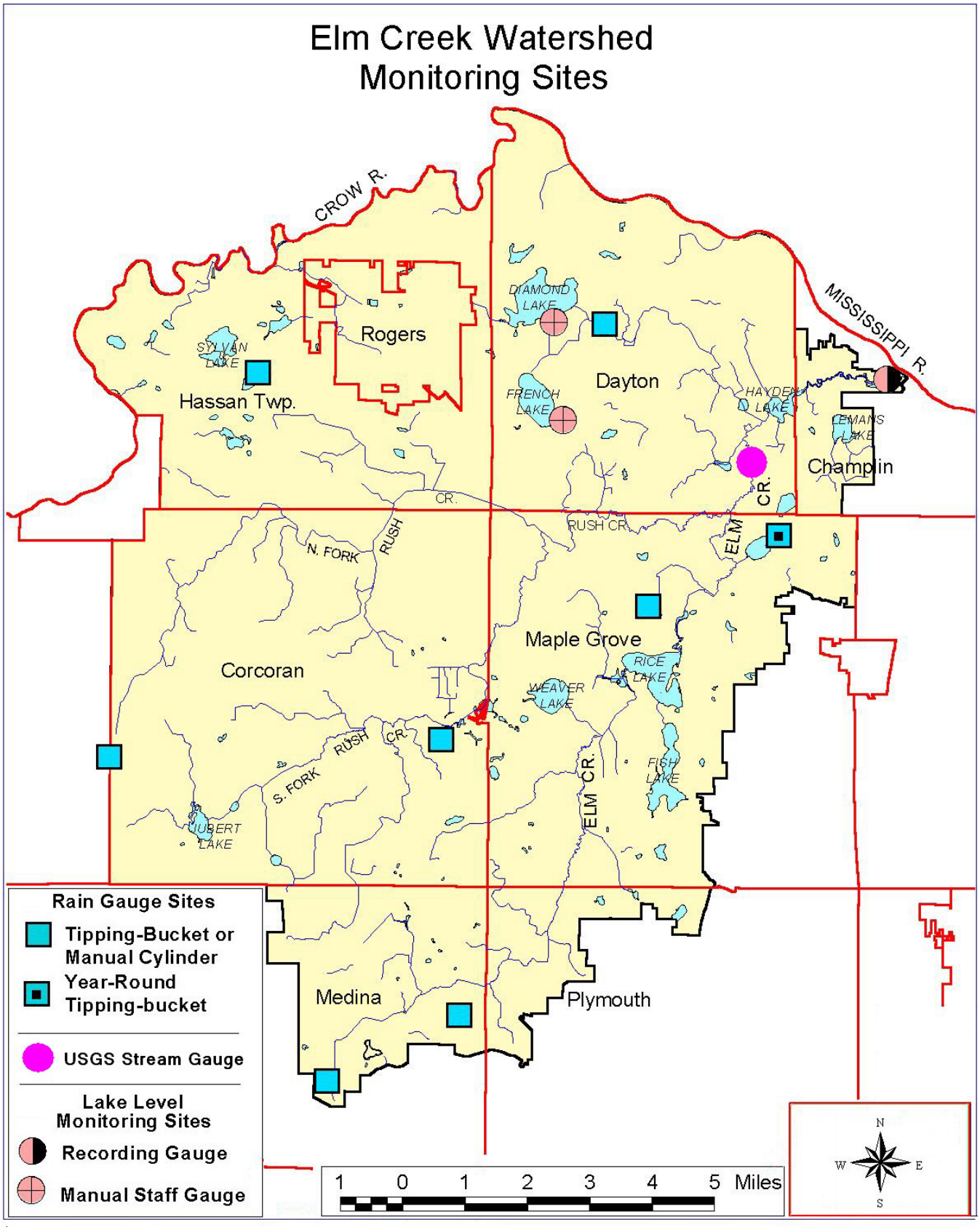
Appendix 4.


WEAVER LAKE
TOTAL PHOSPHORUS
TP
TP (May-Sept)
UPPER LIMIT
TP (µg/l)
60
50
40
30
20
10
0
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002

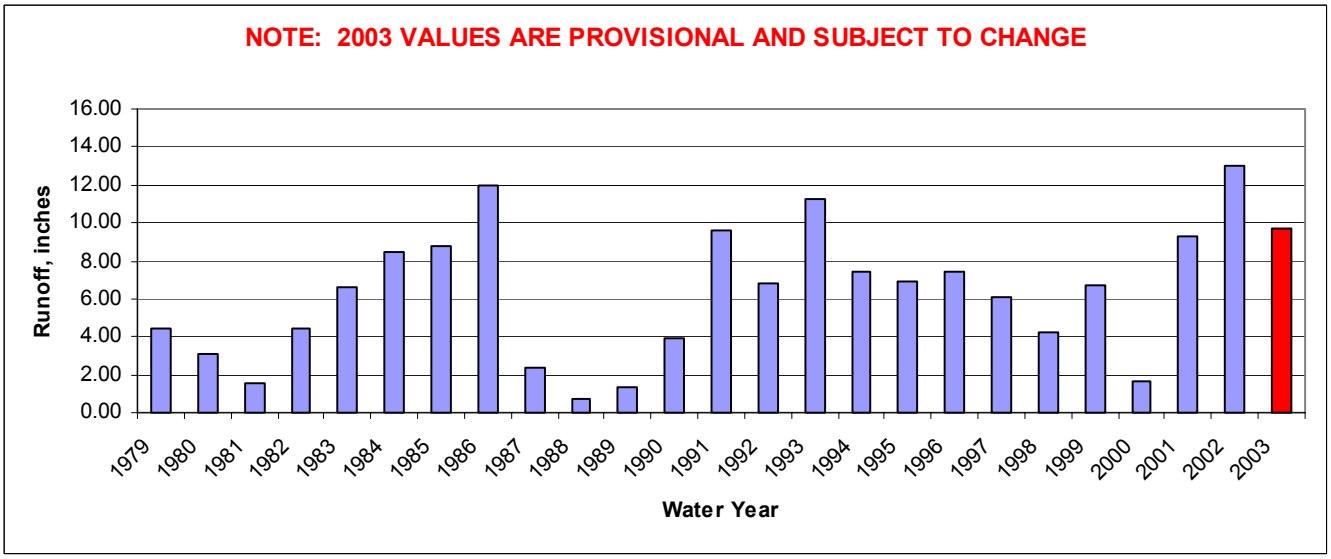

WEAVER LAKE CHLOROPHYLL a
CHL a
CHL a (May-Sept)
UPPER LIMIT
CHL a (µg/l)
40
30
20
10
0
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002

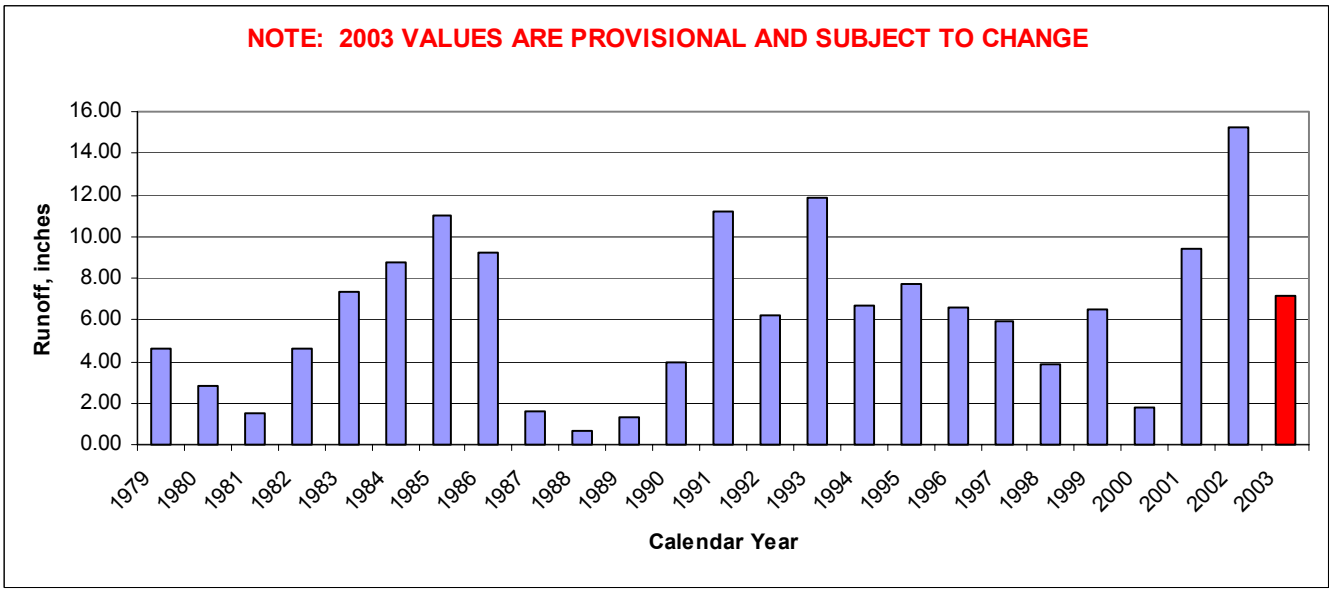

WEAVER LAKE
SECCHI DISK TRANSPARENCY
SDT
SDT (May-Sept)
LOWER LIMIT
Transparency (feet)
12
10
8
6
4
2
0
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002

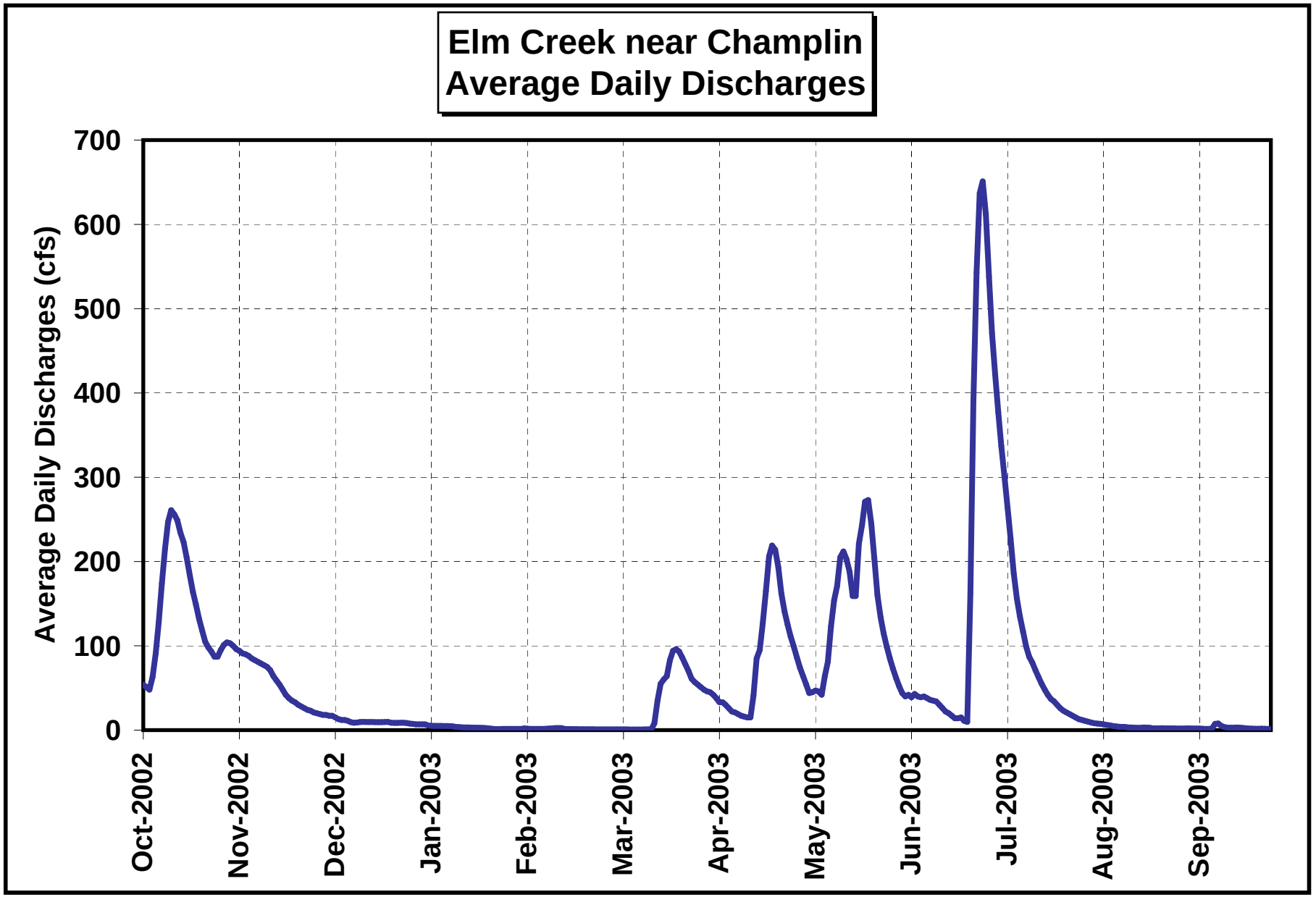
Appendix 5.


Elm Creek Watershed
Monitoring Sites
CROW R.
MISSISSIPPI R.
Rogers
Hassan Twp.
Dayton
Champlin
Corcoran
Maple Grove
Medina
Plymouth
DIAMOND LAKE
SYLVAN LAKE
FRENCH LAKE
HAYDEN LAKE
LEMANS LAKE
RICE LAKE
WEAVER LAKE
FISH LAKE
HUBERT LAKE
N. FORK RUSH CR.
S. FORK RUSH CR.
RUSH CR.
ELM CR.
ELM CR.
Rain Gauge Sites
Tipping-Bucket or Manual Cylinder
Year-Round Tipping-bucket
USGS Stream Gauge
Lake Level Monitoring Sites
Recording Gauge
Manual Staff Gauge
1 0 1 2 3 4 5 Miles
N
W
E
S

Appendix 6. **Historic Flow Volumes – USGS Station**






Elm Creek near Champlin
Average Daily Discharges
Average Daily Discharges (cfs)
700
600
500
400
300
200
100
0
Oct-2002
Nov-2002
Dec-2002
Jan-2003
Feb-2003
Mar-2003
Apr-2003
May-2003
Jun-2003
Jul-2003
Aug-2003
Sep-2003

Appendix 8.

Elm Creek Near Champlin (USGS Station 05287890)

Manual Water Quality Samples for Water Year 2003

DATE	Sample Start Time	Disch Inst cfs	Water Temp. °C	Air Temp. °C	Barom Press mm Hg	DO mg/L	DO % Satur	COD mg/L	Sp cond µs/cm	pH
Oct 30, 2002	1030	100	4.5	5	748	9.3	74	20	438	7.7
Nov 14, 2002	10:30	52	1.6	-2	745	11	81	30	456	7.7
Dec 31, 2002	10:10	7	-0.2	6	743	11.1	78	20	686	7.7
Jan 16, 2003	9:30	6.9	-0.2	-8	749	8.9	62	20	734	7.4
Feb 13, 2003	10:55	2.5	-0.2	1	746	9.2	64	#	709	7.6
Mar 21, 2003	10:30	92	0.2	2	734	10.2	73	60	424	7.5
Apr 07, 2003	11:00	30	2	7	750	11.7	87	40	512	7.8
May 05, 2003	13:20	44	10.1	10	730	8.8	82	40	574	7.8
Jun 20, 2003	9:20	15	18	26	742	7	76	50	569	7.8
Jul 21, 2003	9:40	37	21.1	22	739	5.2	61	40	451	7.3
Aug 04, 2003	12:20	8.2	17.9	21	742	6.5	70	60	523	7.9
Sep 25, 2003	11:30	3.5	9.5	12	745	7.6	69		660	7.7

Broken bottle in shipping

DATE	Sample Start Time	TSS mg/L	Volatile Residue mg/L	Dissolve Chloride mg/L	Ammonia mg/L	Dissolved NO2+NO3 mg/L	Nitrite mg/L	Total Nitrogen mg/L	Dissolve P mg/L	Total P mg/L
Oct 30, 2002	1030	<10	<10	30.8	<.04	0.32	0.009	0.83	0.05	0.06
Nov 14, 2002	10:30	<10	<10	34.2	E.03	0.18	E.005	1	E.04	0.06
Dec 31, 2002	10:10	<10	<10	42.2	0.19	0.13	E.004	0.99	E.03	0.09
Jan 16, 2003	9:30	<10	<10	32	0.21	0.08	<.008	0.91	E.02	0.06
Feb 13, 2003	10:55	<10	<10	21.8	0.41	0.07	<.008	0.75	E.03	E.04
Mar 21, 2003	10:30	16	<10	57.7	1.51	1.54	0.086	4	0.35	0.51
Apr 07, 2003	11:00	15	<10	54.5	0.56	0.39	0.021	1.9	0.05	0.17
May 05, 2003	13:20	<10	<10	56	0.09	E.04	E.006	1.4	0.07	0.14
Jun 20, 2003	9:20	<10	<10	41.3	0.07	0.1	E.007	1.3	0.2	0.27
Jul 21, 2003	9:40	14	<10	30.1	E.04	0.17	0.034	1.4	0.22	0.34
Aug 04, 2003	12:20	<10	<10	27.1	<.04	<.06	<.008	1.1	0.17	0.23
Sep 25, 2003	11:30									

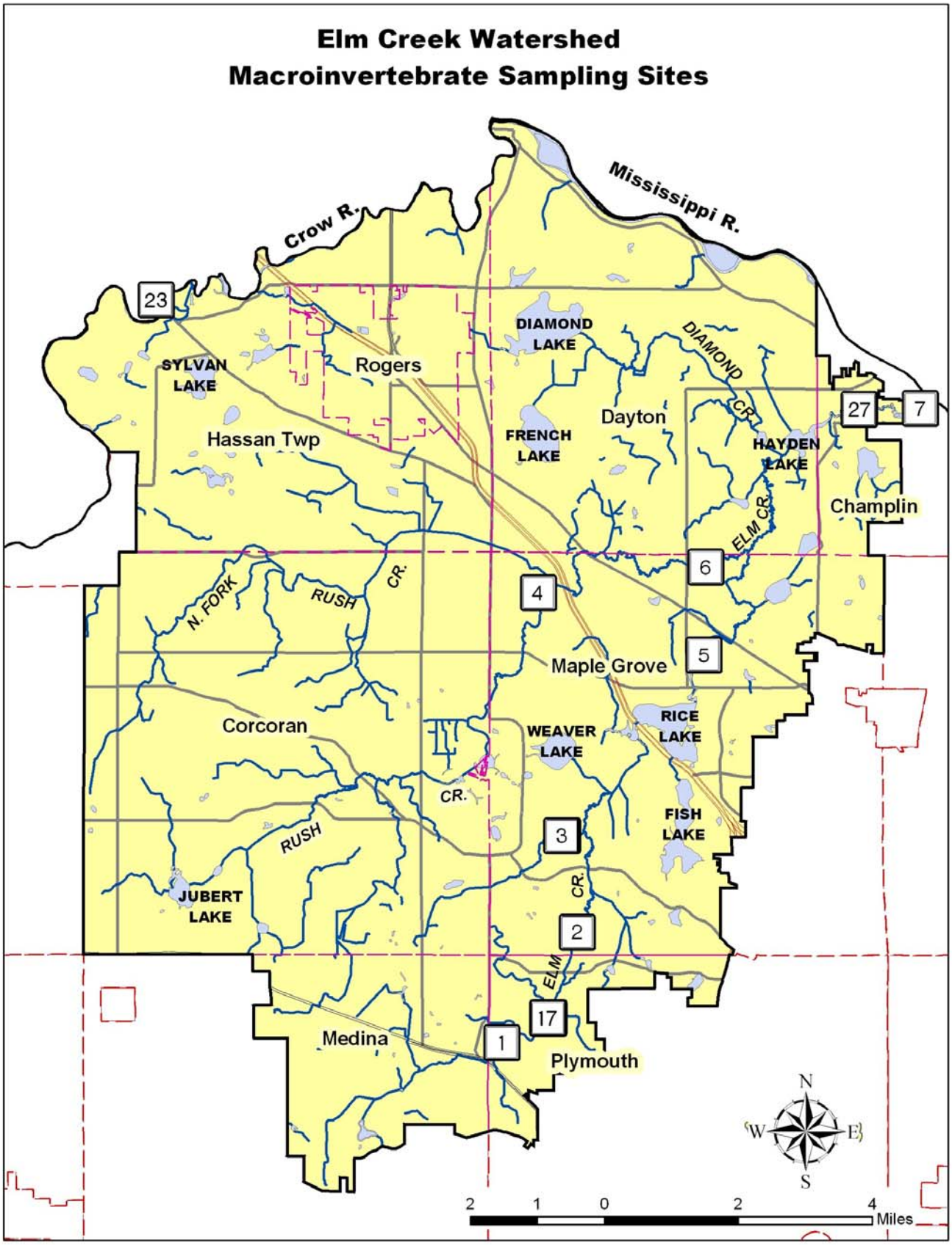
Data are provisional and are subject to change

Elm Creek Automatic Event Samples for Water Year 2003

Date and Time	Sp Cond µs/cm	pH	TSS mg/L	COD mg/L	Ammonia mg/L	Nitrite mg/L	Total N mg/L	Dissolved NO2+ NO3 mg/L	Total P mg/L	Dissolved P mg/L	Dissolved Chloride mg/L
April 16 1:23 to											
April 18 22:24	557	8.1	24	50	<.04	0.03	1.7	0.8	0.18	0.08	68.6
May 11 1:00 to											
May 12 10:00	526	7.2	29	50	E.04	0.013	1.4	0.49	0.16	0.08	59.8
June 25 1:00											
June 27 7:00	312	7.4	128	60	E.03	0.075	1.8	1.33	0.45	0.22	28.5

Sp Cond = Specific Conductivity
COD = Chemical Oxygen Demand
TSS = Total Suspended Sediments
TKN = Total Kjeldahl Nitrogen

Appendix 9.


Elm Creek Watershed
Macroinvertebrate Sampling Sites
Crow R.
Mississippi R.
23
SYLVAN LAKE
Rogers
DIAMOND LAKE
DIAMOND CR.
Dayton
FRENCH LAKE
Hassan Twp
HAYDEN LAKE
27
7
Champlin
ELM CR.
6
4
N. FORK
RUSH
CR.
5
Maple Grove
Corcoran
WEAVER LAKE
RICE LAKE
CR.
FISH LAKE
3
RUSH
JUBERT LAKE
CR.
2
ELM
17
Medina
1
Plymouth
N
W
E
S
2 1 0 2 4
Miles

Appendix 10.

Macroinvertebrate Monitoring (River Watch Program.)

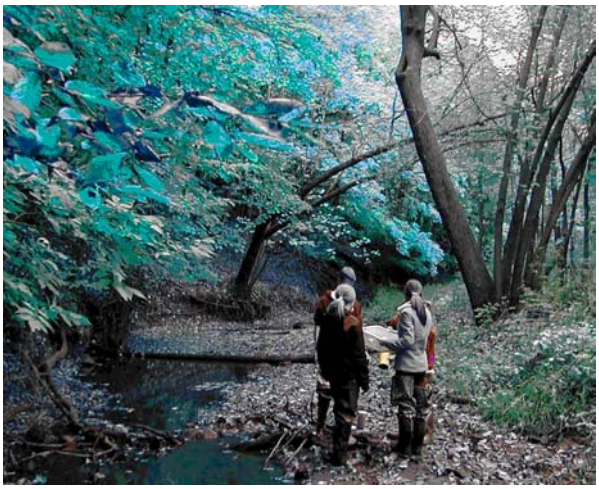
The Elm Creek watershed is managed by the Elm Creek Watershed Management Commission. While Elm Creek is a relatively low gradient stream with a high degree of sedimentation, an effort has been made to choose high quality habitat sites in the watershed. Higher gradient, rocky streambeds have better habitat for macroinvertebrates. The average habitat score for the sampling sites is 94. This is very close to the average of 95 for all the sites in the Hennepin County River Watch program. It is important to consider the quality of habitat when comparing water quality data from different sites and creeks. *Data from all the sites in the Elm Creek watershed are outlined in the table found at the end of this Appendix.*

Site 1

is the furthest upstream Elm Creek sample site. It is located at the border of Medina and Plymouth, near Wayzata High School. The water monitored at this site drains from the Medina area. Part of the creek is fed by storm sewers without holding ponds and part is fed by ditches. Most upstream areas of Elm Creek have little or no vegetated buffers to protect the creek. Land use is residential and agricultural. Cattle have access to the creek in at least one location. In 1999, a streambank stabilization and buffer planting project was completed near this site using bioengineering techniques. The 2001 reference habitat site score for this site was 61. (On a scale of 0-180) Due to class size and changes in school curriculum, Wayzata High School students were not able to monitor in 2003. River Watch staff are currently looking to find a replacement for 2004.

Site 1 was not monitored in fall '96, '98, and '00 due to low flow conditions. Some of the invertebrate families may not be able to withstand low water periods. Therefore this site may show less diversity than other sites with similar water quality. Prior to the 2001 sampling season, Site 1 always reported densities of less than 100 organisms. Therefore, the sampling area was moved downstream approximately 500 meters to an area with a more adequate substrate for macroinvertebrate habitat. Fall 2001 was the first season at this new location. Several factors reflect an impacted site including: the low density of macroinvertebrates, high Biotic Index, low EPT, and high percentage of midges in spring 1999. A higher number of families and higher EPT score in 2001 may indicate that the more accurate results with over 100 organisms will reflect slightly better water quality than previously indicated. The site was sampled in 2002, but the macroinvertebrate collection was not analyzed.

Site 1 during low flow.



Site 2, fall 2001

Metropolitan Mosquito Control District treats this area for black flies (Simuliidae). Treatment may temporarily reduce the number of black flies at this site. It may also change their relative proportion in the invertebrate community. This area was not treated in 2000 or 2001. It is not known if treatments occurred in 2002.

Appendix 10.

Site 2

is located between 68th Avenue and Elm Road in a wooded area that is part of a city forest reserve in Maple Grove. Land use in the surrounding area was changed drastically from agricultural to suburban residential in the last few years. In 1996, a bioengineering and education project was done to repair an eroded stream bank approximately 100 yards upstream from the sample site. The drainage area between upstream Site 1 and Site 2 consists of wetlands and residential land use. This drainage area is undergoing rapid development. The 2001 reference habitat site score for this site was 95. (On a scale of 0-180) Armstrong High School has been monitoring this site since the program started in 1995. Teacher Dan Hanka leads the monitoring effort.

When visiting this beautiful wooded stretch of Elm Creek, one might guess that it is a pristine and healthy stream. However, the water quality determined by the biotic index is fairly poor. The low EPT and low number of families also reflect an impacted site. In addition, this site commonly reports a high percentage of black fly larvae (Simuliidae), reflecting low diversity in the community. The site has had a wide variety in number of organisms identified. In the spring of 2002 the group began using the multi-habitat sampling method in an effort to improve the number of organisms collected. However, the number of organisms continues to be too low. A River Watch coordinator will assist the group again in 2004 to assess the problem.

Black flies, which are tolerant of pollution, are most often the dominant species at this site. MMCD treated for black flies (in 1998 and 1999) at the upstream and downstream Elm Creek sites, but not at this site. This site has many more Simuliidae (biotic index 6) than the treated sites. Site 2 was not monitored in fall '96, '98, and '00 due to low flow conditions. (Water levels were sufficient in fall 2001, but macroinvertebrate samples were not anaylzed.) Some of the invertebrate families may not be able to withstand low water periods. Therefore, this site may show less diversity than other sites with similar water quality.

Site 3

is a small tributary of Elm Creek located in a residential area. It drains the southern part of Corcoran and a small part of southwestern Maple Grove. During the summer of 1997 Lawndale Lane was widened and this site was impacted during the road construction. This site experiences great fluctuations in water levels. While it is typically too low to monitor in the fall, spring 2001 saw extremely high water levels at this site. The 2001 reference habitat site score for this site was 91. (On a scale of 0-180) Orono High School began monitoring this site in 1995. West Lutheran High School monitored the site in 1997, 1998 and again in 2003. In spring 2001 Girl Scout Troop 1506 from West-Tonka/Orono monitored Site 3. During the fall of 2002 HCD staff monitored the site with Providence Academy teacher, Dr. Yvonne Boldt, as a training exercise.

In 2003 the total number of organisms collected was below 100. The water quality determined by the biotic index is fairly poor up until fall 2002. The site had a below average biotic index, EPT score and a high percentage of pollution tolerant midge larva in spring 2001. However in fall 2002 the biotic index was good and the dominant mayfly family is less tolerant to organic pollution. Continued monitoring is necessary to determine the true biological characterization of the site. Five full years of data are necessary to make this determination.

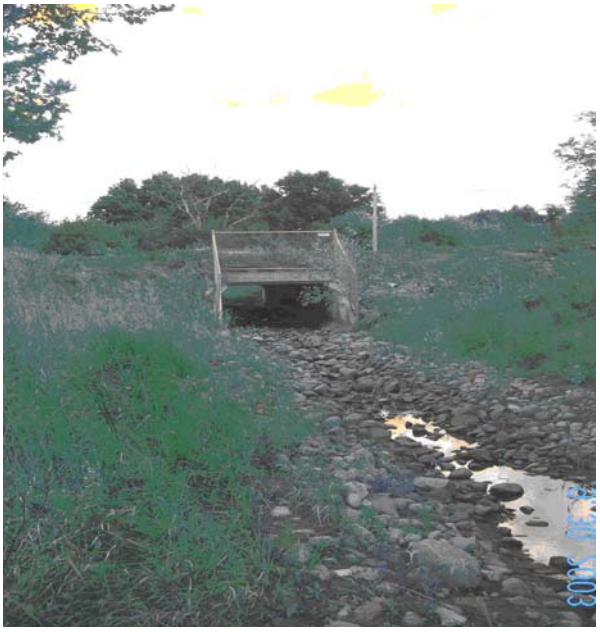
Site 3 was not monitored in fall '96, '98, '00, and '03 due to low flow conditions. Some of the invertebrate families may not be able to withstand low water periods. Therefore, this site may show less diversity than other sites with similar water quality. Road construction and a housing development disturbed this site and prevented monitoring during 1999 and spring 2000. Future monitoring at this site will give us the opportunity to see how the system recovers from riparian and aquatic habitat changes.

Site 4

is farthest upstream sample site on Rush Creek. Rush Creek is a tributary of Elm Creek, north of its main stem. This is the only site on the south fork of Rush Creek and the only grazed agricultural sample site in the River Watch program. Cattle are often present in or near the stream. Water draining from most of Corcoran and northern Maple Grove flows into this stretch of creek. The 2001 reference habitat site score for this site was 77. (On a scale of 0-180) Maple Grove High School students monitored this site from fall of 1997-2000. Both Rockford High School and Dolan Home School have sampled this site dating back to 1995. In fall 2001, Fortin Consulting monitored the site. Teacher Dr. Yvonne Boldt and her students adopted the site in fall 2002.

This site appears to be impacted. The high biotic indexes reported at this site reveal that organic pollution is likely. These results could be due to many things, such as agricultural runoff or cattle in the creek. It is interesting to note that the number of families has varied widely, from two in '97 to eighteen in '01. Water levels were very high in fall 2002, making sampling difficult. This may explain the low number of organisms. Site 4 was not monitored in fall '96, '98, '00, and '03 due to low flow conditions. Some of the invertebrate families may not be able to withstand low water periods. Therefore, this site may show less diversity than other sites with similar water quality.

Metropolitan Mosquito Control District treats this area for black flies (Simuliidae). Treatment may temporarily reduce the number of black flies at this site. It may also change their relative proportion in the invertebrate community. This site was not treated in 2000 and 2001. It is not known if treatments were applied in 2002 or 2003.



Site 3 was dry in the fall of 2003.

Site 4 was also dry in the fall of 2003

Site 5

This Elm Creek sample site is directly downstream from Rice Lake. The site is located in a wooded natural area, but the riffles are typically small. The water flow here varies. Sometimes the water flows over the upstream dam, which oxygenates the water. At other times it runs through a bypass culvert and has more of the characteristics of lake water. The 2001 reference habitat site score for this site was 96. (On a scale of 0-180) Maple Grove High School teacher Gary Gerst started monitoring this site in the fall of 1995. Elm Creek runs directly behind the school, giving the students an excellent opportunity to learn about their local creek. Due to curriculum changes and increased class size students were unable to monitor in 2003.

As of fall 2001, Site 5 has the recommended five full years of data necessary to make a biological characterization of a site. The consistently high biotic index and relatively low EPT reflect an impacted site with fairly poor water quality and substantial organic pollution likely. Some families that are more common in lakes have been collected at this site. Perhaps some organisms are flowing over the dam during periods of high water. Rice Lake flows into this site and has very poor water quality. The water contains about five times the phosphorus of Fish Lake (also in the Elm Creek watershed). The lake contributes a large food source for filter feeding organisms in the creek, such as Simuliidae and Hydropsychidae.

This site identified less than 100 organisms during the fall 1996 sampling season. The family biotic index from fall '96 is the only value that does not fall between 5.9 and 7.0 for this site. The variance in results for this sample may validate the need for identifying more than 100 organisms per sample.

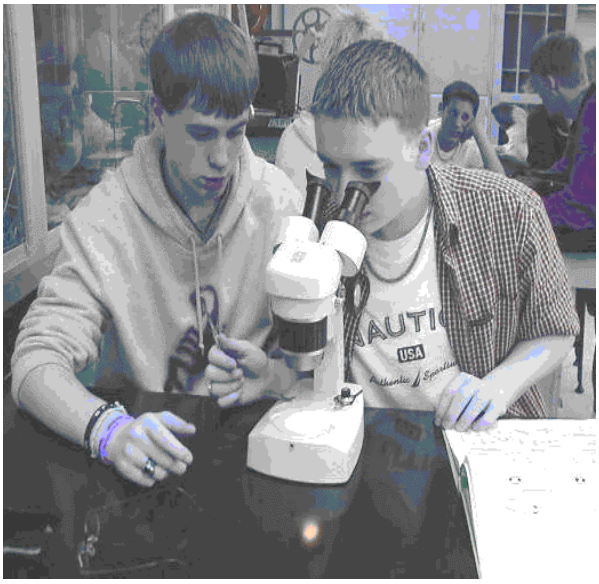
Appendix 10.

In the fall of 1998, students found thousands of dead minnows and a few larger species at this site. The exact cause of the fish kill is unknown. DNR analysis showed a very large number of parasites on the fish, although the water chemistry appeared normal. The site was sampled in spring 2001, but the macroinvertebrate collection was not analyzed.

Site 6

is on Rush Creek, which is a tributary to Elm Creek. Located in the Elm Creek Park Reserve, it has a naturally vegetated riparian zone. It is a slow-moving, meandering stream at this site. Just upstream from this site, the south fork of Rush Creek (sample site 4) joins the north fork of Rush Creek (no sample sites). The 2001 reference habitat site score for this site was 108. (On a scale of 0-180) In 1995, the Hennepin Conservation District monitored this site. Osseo High School has been monitoring this site since 1996. Teacher Jim Schultz leads the monitoring effort.

High water levels at Site 5



Students verify samples from Site 6

As of spring 2001, this site has the recommended five full years of data necessary to make a biological characterization of a site. When compared to other Elm Creek sites, this site usually shows a lower family biotic index, a higher EPT and larger number of families. These are all indicators of a relatively healthy stream with good water quality and some organic pollution probable. It is one of the few sites in our program with a naturally vegetated riparian zone. This situation probably helps maintain good water quality. Site 6 was not monitored in fall '00 due to low flow conditions.

Metropolitan Mosquito Control District treats this area for black flies (Simuliidae). Treatment may temporarily reduce the number of black flies at this site. It may also change their relative proportion in the invertebrate community. The site was not treated in 2000 or 2001. In is not known if treatments occurred in 2002 or 2003.

Site 7

This site, at the mouth of Elm Creek, was monitored by Champlin Park High School from 1996-2000. The high fluctuation in biotic index and EPT scores and the high diversity of organisms is probably a result of sampling organisms from the Mississippi River and for this reason the site was dropped from the River Watch program in 2001. It was replaced by site 26 approximately one mile upstream. Students from Champlin Park High School did return to monitor the site in spring 2002.

Site 17

is located on the Wayzata High School grounds just downstream from the school's storm water holding ponds. This site was an experiment with artificial samplers (mesh rock bags) for collecting organisms at this site. This site always reported less than 100 organisms and the data should not be compared to that of other sites. Due to the lack of organisms found at the site it is no longer in use.

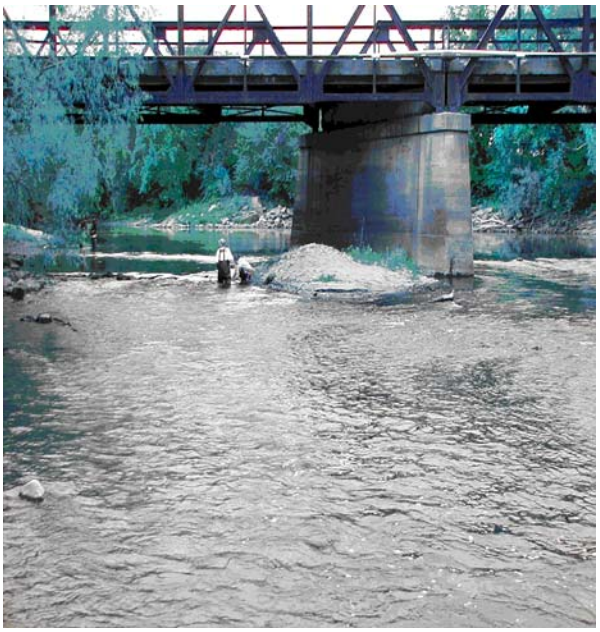
Appendix 10.

Site 23

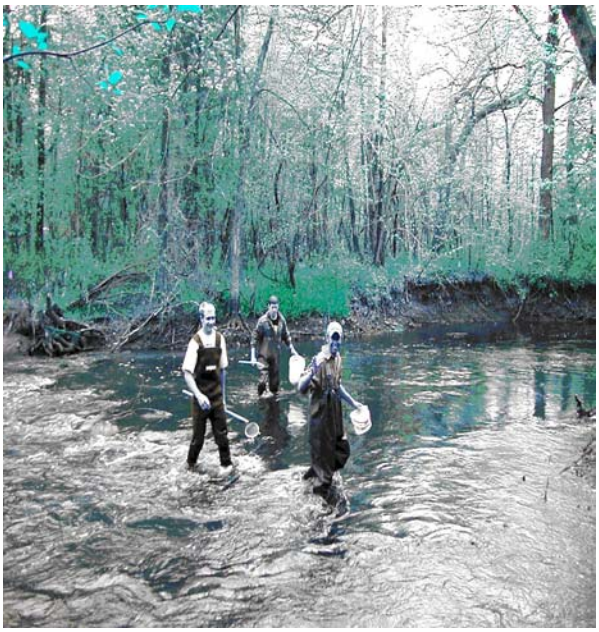
is on the Crow River at the western edge of Hennepin County. It is one of the program's two sites on a large river. The Crow River flows through the Crow-Hassan Park Reserve just before it is sampled at the old site of Bernning"s Mill near the town of St. Michael. There are many good riffle areas at this site, but it may be difficult to monitor during high water levels in the spring. It is located on the border of the Elm Creek Watershed Management Commission's jurisdictional boundary. However water quality at this site is far more dependent on land use activity in the Crow River watershed which extends through several counties in central Minnesota. Teacher Kay Nowell from St. Michael-Albertville High School began monitoring this site in fall of 2000.

Because this site is on a large river, the results are not directly comparable to the rest of our sites which are located on small creeks, except the other Crow River site (12). This site was not sampled in spring 2000, 2001, or 2002 due to high water levels. The two sets of data collected indicate a site with very good water quality and only a slight likelihood of organic pollution problems.

Metropolitan Mosquito Control District treats this area for black flies (Simuliidae). Treatment may temporarily reduce the number of black flies at this site. It may also change their relative proportion in the invertebrate community. The immediate area was not treated in 2000 or 2001.



Collecting at Site 23 in fall 2001



Champlin Park students monitoring at Site 26

Site 26

replaces site 7 as the most downstream site on Elm Creek. It is located in Joesphine Nunn Park in the city of Champlin between Hayden Lake and the Mill Pond. It is a forested stretch of river with high banks and several riffle areas. It should provide better macroinvertebrate collections than site 7. In 2001, Saint Paul Academy students monitored this site under the supervision of teacher Larry Nelson. Teacher Kim Kovich and his students from Champlin Park High School adopted the site in fall 2002.

It is concerning that the quality of Elm Creek at site 26 appears to be declining. In order to make a complete biological characterization it is recommended that data be collected for five years. Looking at the results over the past three years, there has been a definite decline in the number of families and the EPT. In addition the water quality extrapolated from the FBI has gone from *Good* in 2001 to *Very Poor* in 2003. The land use around site 27 has also changed significantly in the last year. Construction of a development is very near the site. This site showed very similar scores to the site on Rush Creek at the upstream end of the park. The physical parameters of the site are very similar and it should provide a good comparison to other sites on Elm Creek.

Appendix 10.

Site	Date	# Identified [1]	Fam. Biotic Index	Habitat Score [2]	EPT	No. of Families	Dominant Family	Dom. Family % Overall
1	10-12-95	< 100	6.5	0	3	8	Caenidae	34.0
1	5-8-97	<100	6.3	0	2	10	Chironomidae	50.0
1	10-1-97	<100	7.0	81	1	6	Chironomidae, red	31.0
1	5-6-98	<100	6.2	70	3	8	Pelecypoda	51.0
1	5-5-99	<100	6.0	93	2	6	Chironomidae	72.0
1	10-6-99	<100	5.8	0	2	7	Chironomidae	58.0
1	5-18-01	<100	5.3	79	3	7	Baetidae	44.0
1	10-11-01[3]	186	5.8	55	4	12	Heptageniidae	23.0
2	5-13-96	<70	6.6	0	0	4	Simuliidae	61.0
2	5-12-97	200+	6.0	0	3	5	Simuliidae	99.0
2	10-1-97	<70	6.2	93	2	9	Simuliidae	55.0
2	5-6-98	200+	5.8	99	4	6	Simuliidae	85.0
2	5-10-99	<70	6.0	100	2	5	Chironomidae	38.0
2	5-3-00	<70	6.0	81	3	8	Simuliidae	55.0
2	5-9-01	<70	6.6	103	3	9	Chironomidae	56.0
2	5-23-02	12	5.2	0	1	2	Chironomidae	83.3
2	10-2-02	76	5.9	27	2	8	Simuliidae	52.6
2	5-7-03	57	6.1	0	1	5	Chironomidae	70.2
3	5-7-97	<100	6.1	79	1	8	Simuliidae	71.0
3	10-1-97	<100	5.1	20	2	6	Hydropsychidae	33.0
3	5-6-98	<100	6.0	62	1	6	Simuliidae	47.0
3	5-4-01	471	6.0	93	0	5	Chironomidae	80.0
3	9-21-02	134	4.6	0	2	5	Baetidae	63.0
3	5-8-03	39	6.2	0	0	5	Simuliidae	69.0
4	5-7-97	$100	6.0	0	0	2	Simuliidae	98.0
4	10-1-97	$100	5.9	120	4	7	Simuliidae	77.0
4	5-5-98	$100	5.3	111	2	6	Baetidae	61.0
4	10-1-98	$100	7.9	113	2	9	Talitridae	90.0
4	5-11-99	$100	6.6	98	5	14	Simuliidae	43.0
4	10-6-99	$100	6.3	81	4	7	Talitridae	55.0
4	5-3-00	$100	5.5	0	6	10	Simuliidae	42.0
4	10-12-01	$100	6.5	68	5	18	Talitridae	34.0
4	10-7-02	72	6.9	0	2	11	Oligochaeta	46.0
5	5-15-96	$100	6.0	0	0	3	Simuliidae	86.0
5	9-25-96	<100	9.0	0	0	2	Hirudinea	67.0
5	5-8-97	$100	6.1	0	0	5	Simuliidae	92.0
5	10-1-97	$100	7.0	135	2	13	Talitridae	36.0
5	5-6-98	$100	6.6	58	2	12	Chironomidae	50.0
5	9-30-98	$100	6.4	0	2	11	Simuliidae	64.0
5	5-10-99	$100	6.3	0	1	10	Chironomidae	80.0
5	10-4-99	$100	5.9	89	1	13	Simuliidae	42.0
5	5-1-00	$100	6.1	115	3	8	Talitridae	30.0

Appendix 10.

Site	Date	# Identified [1]	Fam. Biotic Index	Habitat Score [2]	EPT	No. of Families	Dominant Family	Dom. Family % Overall
5	10-3-00	$100	6.7	68	1	8	Simuliidae	60.0
5	10-2-01	$100	6.5	94	1	8	Simuliidae	62.0
5	5-16-02	163	6.1	95	1	5	Simuliidae	81.6
5	10-4-02	263	6.8	0	2	11	Talitridae	47.9
6	10-11-95	$100	4.9	0	9	16	Hydropsychidae	23.0
6	5-13-96	$100	6.4	0	4	10	Chironomidae	52.0
6	10-8-96	$100	6.3	0	3	9	Talitridae	37.0
6	5-7-97	$100	6.1	0	3	11	Simuliidae	72.0
6	10-2-97	$100	4.3	127	4	11	Hydropsychidae	52.0
6	10-1-98	$100	4.2	112	6	15	Hydropsychidae	70.0
6	5-6-99	$100	5.8	0	7	15	Simuliidae	49.0
6	10-11-99	$100	4.7	89	5	14	Hydropsychidae	51.0
6	5-2-00	$100	5.5	111	5	12	Simuliidae	55.0
6	5-17-01	$100	4.1	145	6	10	Limnephilidae	24.0
6	10-3-01	$100	4.3	106	6	14	Hydropsychidae	64.0
6	5-7-02	259	5.9	116	5	12	Simuliidae	76.0
6	10-2-02	302	5.0	0	4	13	Hydropsychidae	50.7
6	5-6-03	258	5.9	0	5	12	Chironomidae	48.4
7	5-13-96	$100	6.6	0	3	12	Talitridae	38.0
7	9-22-96	$100	3.9	0	7	13	Hydropsychidae	84.0
7	5-8-97	$100	6.0	95	4	11	Chironomidae	61.0
7	10-1-97	$100	6.4	0	2	9	Chironomidae	63.0
7	5-6-98	$100	6.0	82	4	10	Simuliidae	74.0
7	10-9-98	$100	6.7	108	6	14	Chironomidae	47.0
7	5-5-99	$100	6.8	96	3	10	Chironomidae	53.0
7	10-8-99	$100	7.2	81	8	14	Talitridae	44.0
7	5-1-00	$100	6.6	88	3	8	Chironomidae	47.0
7	10-15-00	$100	6.2	0	5	13	Chironomidae	80.9
7	5-29-02	93	7.0	0	4	10	Talitridae	30.0
17	5-1-98	< 100	5.8	0	2	9	Caenidae	42.0
17	5-5-99	< 100	6.4	62	0	6	Chironomidae	39.0
23	11-2-00		4.6	129	9	15	Hydropsychidae	51.2
23	10-27-01		3.7	125	8	14	Hydropsychidae	66.0
26	10-9-01	$100	4.9	115	7	15	Hydropsychidae	63.0
26	10-7-02	167	6.1	0	4	12	Asellidae	38.0
26	5-16-03	246	6.9	0	5	11	Simuliidae	23.0
26	9-25-03	346	7.7	0	1	8	Asellidae	63.9

[1] State agencies recommend identifying at least 100 macroinvertebrates per sample for standard site characterization.

[2] A Habitat score of 0 indicates habitat was not scored using the River Watch Newtwork Habitat Assessment field sheet.

[3] Sampling site was moved 500 m. downstream.

Appendix 11

Elm Creek Watershed Management Commission
Year 2003 Budget
Approved April 10, 2002

	A	B	C	D	E
1		2001	2002	2003	
2		Actual	Budget	Budget	
3	**General Expenses**				
4	Administrative	(54,516)	(42,000)	(54,000)	
5	Website	0	0	(1,500)	
6	Legal/Audit Services	(9,213)	(8,500)	(15,000)	
7	Insurance	(2,496)	(2,100)	(3,200)	
8	Contingency	0	0	0	
9	*Sub Total*	(66,225)	(52,600)	(73,700)	
10	**Project Reviews**				
11	Revenue	0	10,000	9,000	
12	Expenses	(10,000)	(10,000)	(10,500)	
13	*Sub Total*	(10,000)	0	(1,500)	
14	**Water Monitoring Programs**				
15	Water Monitoring - Henn Pks share	1,851	2,700	3,000	
16	Stream Monitoring	(14,354)	(17,000)	(17,000)	
17	Gauging Station - Elec Bill	(105)	(140)	(130)	
18	Lake Monitoring	(3,040)	(3,200)	(3,400)	
19	*Sub Total*	(15,648)	(17,640)	(17,530)	
20	**BMP Implementation**	40,918	0	0	
21	BMP Implementation	(10,116)	0	0	
22	*Sub Total*	30,802	0	0	
23	**Wetland Conservation Act**				
24	Revenue	1,000	0	0	
25	WCA Fees	1,700	6,800	4,450	
26	WCA Escrows - Received	0	37,500	30,000	
27	WCA Escrows - Returned/Utilized	0	(7,000)	(20,000)	
28	WCA Expense - HCD	(5,004)	(12,000)	(5,250)	
29	WCA Expense - Legal	(1,842)		(3,000)	
30	WCA Expense - Admin	(4,290)		(5,750)	
31	*Sub Total*	(8,436)	25,300	6,200	
32	**Second Generation Management Plan**				
33	BWSR Grant	0	0	0	
34	Hennepin Parks	0	12,500	0	
35	HCD	0	(12,500)	(12,500)	
36	Plan Development (WSB)	(17,430)	(14,715)	(11,733)	
37	Admin. Support	(13,264)	(8,270)	(7,500)	
38	*Sub Total*	(30,694)	(22,985)	(31,733)	
39	**Metro Greenways Project**				
40	Greenways Grant	5,000	0	0	
41	Greenways Project	(10,639)	0	0	
42	*Sub Total*	(5,639)	0	0	
43	**Special Projects**				
44	Macroinvertebrate Monitoring	(4,000)	(4,000)	(4,000)	
45	Engineering, Consulting	0	0	0	
46	Database Development	0	0	0	
47	Education/Training	(50)	(2,000)	(2,000)	
48	Special Projects	0	(1,000)	(1,000)	
49	Contingency	0	(1,000)	(1,000)	
50	*Sub Total*	(4,050)	(8,000)	(8,000)	
51	**Surplus (-Deficit) All Activities**	(109,890)	(75,925)	(126,263)	
52					
53	**General Revenue**				
54	Membership Dues	75,000	96,500	115,000	
55	Interest Income	4,149	3,000	2,500	
56	Miscellaneous Income	128	0	0	
57	*Total General Revenue*	79,277	99,500	117,500	
58					
59	**BALANCE**	(30,613)	23,575	(8,763)	
60	**Ending Fund Balance**	49,325	72,900	64,137	
61					
62	**Encumbered Funds - WCA (accum) (cash)**	18,668	49,168	59,168	
63	**Encumbered Funds - BMPs (carryover from TCWQI funding)**	8,607		0	
64					
65	**Unencumbered Funds**	22,050	23,732	4,969	
66					

Appendix 11

Elm Creek
Member Assessments
2003 Budget
Approved April 10, 2002

	A	B	C	D	E	F	G	H	I
1	**2001**	**99 Tax Capacity**	**Member**	**2001 Budget Share**		**2001 Overall**		**% incr**	**$ incr**
2		**Elm Creek Basin**	**Fee**	**%age**	**Amount**	**%age**	**Amount**	**Prev Year**	**Prev Year**
3									
4	Champlin	2,096,853	1,000	3.73%	2,498.21	4.66%	**3,498.21**	9.26%	296.36
5	Corcoran	4,008,749	1,000	7.13%	4,776.06	7.70%	**5,776.06**	2.76%	155.07
6	Dayton	3,384,413	1,000	6.02%	4,032.22	6.71%	**5,032.22**	1.69%	83.43
7	Hassan	2,515,832	1,000	4.47%	2,997.38	5.33%	**3,997.38**	-6.02%	-255.84
8	Maple Grove	33,129,000	1,000	58.91%	39,470.17	53.96%	**40,470.17**	8.44%	3,150.53
9	Medina	4,137,068	1,000	7.36%	4,928.94	7.91%	**5,928.94**	6.03%	337.15
10	Plymouth	2,218,071	1,000	3.94%	2,642.63	4.86%	**3,642.63**	8.56%	287.16
11	Rogers	4,745,973	1,000	8.44%	5,654.39	8.87%	**6,654.39**	16.57%	946.14
12									
13		56,235,959	8,000	100.00%	67,000.00	100.00%	**75,000.00**	7.14%	5,000.00
14									
15	**2002**	**00 Tax Capacity**	**Member**	**2002 Budget Share**		**2002 Overall**		**% incr**	**$ incr**
16		**Elm Creek Basin**	**Fee**	**%age**	**Amount**	**%age**	**Amount**	**Prev Year**	**Prev Year**
17									
18	Champlin	2,791,245	1,000	4.13%	3,656.39	4.83%	**4,656.39**	33.11%	1,158.18
19	Corcoran	4,764,475	1,000	7.05%	6,241.22	7.50%	**7,241.22**	25.37%	1,465.16
20	Dayton	3,701,397	1,000	5.48%	4,848.64	6.06%	**5,848.64**	16.22%	816.42
21	Hassan	3,303,355	1,000	4.89%	4,327.23	5.52%	**5,327.23**	33.27%	1,329.84
22	Maple Grove	39,093,982	1,000	57.87%	51,211.11	54.10%	**52,211.11**	29.01%	11,740.94
23	Medina	4,432,419	1,000	6.56%	5,806.24	7.05%	**6,806.24**	14.80%	877.30
24	Plymouth	2,739,169	1,000	4.05%	3,588.17	4.75%	**4,588.17**	25.96%	945.54
25	Rogers	6,733,852	1,000	9.97%	8,821.00	10.18%	**9,821.00**	47.59%	3,166.61
26									
27		67,559,894	8,000	100.00%	88,500.00	100.00%	**96,500.00**	28.67%	21,500.00
28									
29	**2003**	**01 Tax Capacity**	**Member**	**2003 Budget Share**		**2003 Overall**		**% incr**	**$ incr**
30		**Elm Creek Basin**	**Fee**	**%age**	**Amount**	**%age**	**Amount**	**Prev Year**	**Prev Year**
31									
32	Champlin	2,788,331	1,000	5.04%	5,391.03	5.56%	**6,391.03**	37.25%	1,734.65
33	Corcoran	3,915,621	1,000	7.08%	7,570.57	7.45%	**8,570.57**	18.36%	1,329.35
34	Dayton	2,953,944	1,000	5.34%	5,711.23	5.84%	**6,711.23**	14.75%	862.59
35	Hassan	2,641,623	1,000	4.77%	5,107.38	5.31%	**6,107.38**	14.64%	780.16
36	Maple Grove	31,586,132	1,000	57.07%	61,069.47	53.97%	**62,069.47**	18.88%	9,858.36
37	Medina	3,346,090	1,000	6.05%	6,469.42	6.50%	**7,469.42**	9.74%	663.18
38	Plymouth	2,314,091	1,000	4.18%	4,474.13	4.76%	**5,474.13**	19.31%	885.95
39	Rogers	5,796,323	1,000	10.47%	11,206.77	10.61%	**12,206.77**	24.29%	2,385.76
40									
41		55,342,155	8,000	100.00%	107,000.00	100.00%	**115,000.00**	19.17%	18,500.00

Appendix 12

ELM CREEK WATERSHED MANAGEMENT COMMISSION
Treasurer's Report - 2003 Year-End (unaudited)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1			Encumbered at FYE 2002	A/P and A/R 12/31/2002	BUDGET	Jan 08%	Feb - 17%	Mar - 25%	Apr -33%	May - 42%	Jun - 50%	Jul - 58%	Aug - 67%	Sep - 75%	Oct - 83%	Nov - 92%	Dec - 100%	A/P and A/R 12/31/2003	Calendar Year 2003 (F thru Q)	Budget Yr '03 (G thru R minus encumbered)	Unrealized Budget Year 2003 (E minus T)	Encumbered FYE2003	
2	**EXPENSES**																						
3	Administrative			*5,127.73*	54,000.00	*5,127.73*	5,278.07	6,435.03	6,243.42	5,794.19	5,272.67	4,937.44	4,613.96	4,605.22	4,761.10	5,186.86	4,808.79	4,393.20	63,064.48	62,329.95	-8,329.95		
4	Legal/Audit Services			*1,231.64*	13,000.00	*1,231.64*	1,210.27	0.00	1,220.40	1,750.00	262.50	362.50	100.00	75.00	117.06	206.16	0.00	137.50	6,535.53	5,441.39	7,558.61		
5	Insurance			*115.00*	3,200.00	*115.00*	2,516.00	0.00	218.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		2,849.00	2,734.00	466.00		
6	Stream Monitoring		3,908.00		15,000.00	0.00	**3,098.00**	0.00	0.00	0.00	0.00	***810.00***	10,237.00	0.00	0.00	3,413.00	0.00		17,558.00	13,650.00	1,350.00		
7	Rain Gauge			*7.99*	130.00	*7.99*	7.99	7.99	7.99	8.22	8.77	9.41	10.20	10.03	10.39	9.01	7.18	8.07	105.17	105.25	24.75		
8	Lakes Monitoring			*2,490.00*	3,400.00	*2,490.00*	0.00	0.00	0.00	0.00	550.00	0.00	0.00	0.00	0.00	0.00	1,660.00		4,700.00	2,210.00	1,190.00		
9	TCWQI (BMPs)			*1,906.33*	0.00	*1,906.33*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		1,906.33	0.00	0.00		
10	Invertebrate Monitoring				4,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00		4,000.00	4,000.00	0.00		
11	Second Genera Plan (WSB)		3,408.00	*1,680.00*	13,733.00	1,680.00	849.00	72.00	62.00	488.00	1,799.00	0.00	0.00	0.00	0.00	0.00	0.00		4,950.00	3,270.00	10,463.00	138.00	
12	Extras (WSB)			*759.00*	0.00	*759.00*	1,033.50	360.00	442.00	-10.00	216.00	0.00	0.00	0.00	0.00	0.00	0.00		2,800.50	2,041.50	-2,041.50		
13	Admin - 2d Genera Plan			*646.26*	7,500.00	*646.26*	228.30	158.26	222.90	181.85	250.52	24.14	92.40	0.12	0.00	339.90	93.60	137.73	2,238.25	1,729.72	5,770.28	5,770.28	
14	Legal - 2d Genera Plan				12,500.00	0.00	0.00	0.00	1,773.70	1,971.37	675.00	675.00	0.00	0.00	62.50	25.00	0.00		5,182.57	5,182.57	7,317.43		
15	Technical - 2d Genera Plan					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00		
16	Contingency				1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	637.31	0.00		637.31	637.31	362.69		
17	Education				2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	2,000.00	2,000.00	
18	Project Reviews			*2,500.00*	20,500.00	*2,500.00*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		2,500.00	0.00	20,500.00		
19	Project Reviews - Admin			*84.40*		*84.40*	1,084.79	305.41	469.08	446.79	370.16	966.63	876.80	703.55	870.37	1,239.35	1,438.06	1,447.65	8,855.39	10,218.64	-10,218.64		
20	WCA - Technical			*1,250.00*	5,250.00	*1,250.00*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		1,250.00	0.00	5,250.00		
21	WCA - Administrative			*28.60*	5,750.00	*28.60*	374.75	298.80	448.30	168.80	47.92	13.20	546.68	307.22	324.55	256.70	296.10	316.10	3,111.62	3,399.12	2,350.88		
22	WCA - Legal				3,000.00	0.00	0.00	0.00	0.00	0.00	0.00	25.00	0.00	0.00	0.00	125.00	0.00	443.50	150.00	593.50	2,406.50		
23	WCA Escrow Refund		17,667.52		20,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	20,000.00	15,411.86	See Line 53
24	Wetland Monitoring			*763.11*		302.02	0.00	0.00	0.00	0.00	0.00	0.00	324.87	1,000.00	366.93	261.84	0.00		2,255.66	1,953.64	-1,953.64		
25	Special Projects				1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	1,000.00		
26	Website				1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	1,500.00	1,500.00	
27	Misc. Expense				0.00	0.00	0.00	0.00	0.00	0.00	0.00	70.06	0.00	0.00	794.00	5.00	5.00		874.06	874.06	-874.06		
28	**TOTAL-Month**					**18,128.97**	**15,680.67**	**7,637.49**	**11,107.79**	**10,799.22**	**9,452.54**	**7,893.38**	**20,801.91**	**6,701.14**	**7,306.90**	**11,705.13**	**8,308.73**	**6,883.75**	135,523.87				
29	**TOTAL-Year**		**24,983.52**	**18,590.06**	**186,463.00**	**18,128.97**	**33,809.64**	**41,447.13**	**52,554.92**	**63,354.14**	**72,806.68**	**80,700.06**	**101,501.97**	**108,203.11**	**115,510.01**	**127,215.14**	**135,523.87**	**142,407.62**	135,523.87	120,370.65	66,092.35	24,820.14	
30																							
31	**INCOME**																						
32	From Fund Balance				6,513.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	6,513.00		
33	Member Dues				115,000.00	16,849.74	21,651.49	0.00	0.00	31,034.74	0.00	42,108.42	0.00	3,355.61	0.00	0.00	0.00		115,000.00	115,000.00	0.00		
34	Water Qlty Monitoring			2,073.64	3,000.00	2,073.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2,932.01	2,073.64	2,932.01	67.99		
35	TCWQI				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00		
36	Misc Income				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	397.00	0.00	225.00		622.00	622.00	-622.00		
37	Project Reviews				24,000.00	0.00	1,200.00	5,400.00	11,900.00	3,360.00	5,200.00	2,800.00	2,950.00	4,931.20	4,800.00	440.00	900.00		43,881.20	43,881.20	-19,881.20		
38	WCA Fees				5,950.00	50.00	100.00	250.00	0.00	50.00	50.00	250.00	250.00	500.00	1,500.00	450.00	250.00		3,700.00	3,700.00	2,250.00		
39	WCA Escrows				30,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	30,000.00		
40	Investment Income - Interest				2,000.00	0.00	0.00	0.00	30.95	0.00	47.05	0.00	0.00	55.63	0.00	0.00	55.11	verified	188.74	188.74	1,811.26		
41	Portfolio Income - Interest					28.47	24.22	6.62	12.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		72.05	72.05	-72.05		
42	**TOTAL-Month**					**19,001.85**	**22,975.71**	**5,656.62**	**11,943.69**	**34,444.74**	**5,297.05**	**45,158.42**	**3,200.00**	**8,842.44**	**6,697.00**	**890.00**	**1,430.11**	**2,932.01**	165,537.63	166,317.53	**20,925.37**	**0.00**	
43	**TOTAL-Year**			**2,073.64**	**186,463.00**	**19,001.85**	**41,977.56**	**47,634.18**	**59,577.87**	**94,022.61**	**99,319.66**	**144,478.08**	**147,678.08**	**156,520.52**	**163,217.52**	**164,107.52**	**165,537.63**	**168,469.64**	**165,537.63**	**166,396.00**			
44																							
45	**CASH SUMMARY**				**Bal Fwd**																		
46	Checking				14,751.69	15,596.10	22,866.92	20,879.43	21,671.64	45,317.16	41,114.62	78,379.66	60,777.75	62,863.42	62,253.52	51,438.39	44,504.66	verified					
47	FBS Fund				33,051.79	33,080.26	33,104.48	33,111.10	33,154.79	33,154.79	33,201.84	33,201.84	33,201.84	33,257.47	33,257.47	33,257.47	33,312.58	verified					
50	**Cash on Hand**				**47,803.48**	**48,676.36**	**55,971.40**	**53,990.53**	**54,826.43**	**78,471.95**	**74,316.46**	**111,581.50**	**93,979.59**	**96,120.89**	**95,510.99**	**84,695.86**	**77,817.24**	**0.00**					
51																							
52																							
53	A/P 12/31/02	In Audit Report, overstated by $461.09 for WCA Monitoring for invoice not approved and understated by $3,908.00 for stream monitoring not billed until January.																					
54	A/R 12/31/02	Includes invoice to Three Rivers Park for Water Quality Monitoring.																					

ELM CREEK
WATERSHED MANAGEMENT COMMISSION

PLYMOUTH, MINNESOTA

FINANCIAL STATEMENT

DECEMBER 31, 2003

ELM CREEK WATERSHED MANAGEMENT COMMISSION

December 31, 2003

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JULIUS & ASSOCIATES LTD.
CERTIFIED PUBLIC ACCOUNTANTS

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Orlin L. Julius, C.P.A.
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March 22, 2004

To the Members of the Commission
ELM CREEK WATERSHED MANAGEMENT COMMISSION
3235 Fernbrook Lane North
Plymouth, MN 55447

We have reviewed the accompanying Balance Sheet of **ELM CREEK WATERSHED MANAGEMENT COMMISSION** (a public agency) as of December 31, 2003 and 2002 and the related Statements of Revenues and Expenditures and Changes in Fund Balance for the years then ended and the Statement of Cash Flows for the year ended December 31, 2003 in accordance with Statements on Standards for Accounting and Review Services issued by the American Institute of Certified Public Accountants. All information included in these financial statements is the representation of the members of Elm Creek Watershed Management Commission.

A review consists principally of inquiries of the Commission personnel and analytical procedures applied to financial data. It is substantially less in scope than an audit in accordance with generally accepted auditing standards, the objective of which is the expression of an opinion regarding the financial statements taken as a whole. Accordingly, we do not express such an opinion.

Based on our review, we are not aware of any material modifications that should be made to the accompanying financial statements in order for them to be in conformity with the cash basis of accounting.

Respectfully submitted,

JULIUS & ASSOCIATES, LTD.
Certified Public Accountants

ELM CREEK WATERSHED MGT COMMISSION

BALANCE SHEET

As of December 31, 2003

(With comparative totals for December 31, 2002)

ASSETS

	As of Dec. 31, 2003	As of Dec. 31, 2002
CURRENT ASSETS		
Cash and Cash Equivalents		
Cash in Bank - Checking	$ 44,504.66	$ 14,751.69
Total Cash and Cash Equivalents	44,504.66	14,751.69
Other Current Assets		
US Bancorp/Piper Jaffray Investment	33,312.58	33,051.79
Accounts Receivable	2,932.01	2,073.64
Total Current Assets	80,749.25	49,877.12
TOTAL ASSETS	$ 80,749.25	$ 49,877.12

LIABILITIES

CURRENT LIABILITIES		
Accounts Payable	$ 6,883.75	$ 18,590.06
Total Current Liabilities	6,883.75	18,590.06
TOTAL LIABILITIES	6,883.75	18,590.06

FUND EQUITY

FUND EQUITY		
Reserved Fund Balance-Financial Guarantee	500.00	500.00
Reserved Fund Balance-Monitoring	14,911.86	17,167.52
Fund Balance-Unreserved	58,453.64	13,619.54
TOTAL FUND EQUITY	73,865.50	31,287.06
TOTAL LIABILITIES AND FUND EQUITY	$ 80,749.25	$ 49,877.12

See accompanying notes to financial statements and accountant's report

ELM CREEK WATERSHED MGT COMMISSION
STATEMENT OF REVENUES AND EXPENDITURES AND
CHANGES IN FUND BALANCE
Cash Basis
For the 12 Months Ended December 31, 2003
(With comparative totals for twelve months ended December 31, 2002)

	12 Months Ended Dec. 31, 2003	12 Months Ended Dec. 31, 2002
REVENUE		
Membership Dues	$ 115,000.00	$ 96,500.00
WCA Administration Fees	3,700.00	1,860.00
Miscellaneous Income	622.00	185.00
Project Reviews	43,881.20	22,750.00
2nd Generation - Cooperative Fund	0.00	12,500.00
Water Monitoring - Lakes	2,932.01	4,761.13
Interest/Dividend Income	260.79	775.68
Total Revenue	166,396.00	139,331.81
EXPENDITURES		
Invertebrate Monitoring	4,000.00	4,000.00
Lakes Monitoring	2,210.00	3,190.00
Rain Gauge	105.25	131.89
Wetlands Monitoring	(763.11)	1,798.23
TCWQI	0.00	7,543.33
Project Reviews	10,218.64	11,281.60
Contingency	637.31	0.00
Watershed Management Plan	5,311.50	25,956.50
WCA - Administration	3,399.12	3,180.95
Stream Monitoring	17,558.00	9,627.00
Administration	62,329.95	57,481.27
Insurance	2,734.00	2,641.00
WCA - Technical Services	0.00	5,000.00
WCA - Legal	593.50	1,462.50
Legal/Audit Services	5,441.39	6,273.72
2nd Generation Plan	6,912.29	9,145.73
2nd Generation - Technical	0.00	7,548.16
Miscellaneous Expense	874.06	108.25
Total Expenditures	121,561.90	156,370.13
INCREASE/(DECREASE) IN FUND BALANCE	44,834.10	(17,038.32)
INCR/(DECR) IN RESERVED FUNDS	(2,255.66)	(1,000.00)
FUND BALANCE - BEGINNING OF YEAR	31,287.06	49,325.38
FUND BALANCE - END OF YEAR	$ 73,865.50	$ 31,287.06

See accompanying notes to financial statements and accountant's report

ELM CREEK WATERSHED MGT COMMISSION
STATEMENT OF REVENUES AND EXPENDITURES AND
CHANGES IN FUND BALANCE
Actual and Budget
For the 12 Months Ended December 31, 2003

	12 Months Ended Dec. 31, 2003 Actual	12 Months Ended Dec. 31, 2003 Budget	Variance
REVENUE			
Membership Dues	$ 115,000.00	$ 115,000.00	$ 0.00
WCA Administration Fees	3,700.00	5,950.00	(2,250.00)
Miscellaneous Income	622.00	0.00	622.00
Project Reviews	43,881.20	24,000.00	19,881.20
Water Monitoring - Lakes	2,932.01	3,000.00	(67.99)
Interest/Dividend Income	260.79	2,000.00	(1,739.21)
Total Revenue	166,396.00	149,950.00	16,446.00
EXPENDITURES			
Invertebrate Monitoring	4,000.00	4,000.00	0.00
Lakes Monitoring	2,210.00	3,400.00	(1,190.00)
Rain Gauge	105.25	130.00	(24.75)
Wetlands Monitoring	(763.11)	0.00	(763.11)
Project Reviews	10,218.64	20,500.00	(10,281.36)
Contingency	637.31	1,000.00	(362.69)
Education	0.00	2,000.00	(2,000.00)
Special Projects	0.00	1,000.00	(1,000.00)
Watershed Management Plan	5,311.50	0.00	5,311.50
WCA - Administration	3,399.12	5,750.00	(2,350.88)
Stream Monitoring	17,558.00	15,000.00	2,558.00
Administration	62,329.95	54,000.00	8,329.95
Insurance	2,734.00	3,200.00	(466.00)
WCA - Technical Services	0.00	5,250.00	(5,250.00)
WCA - Legal	593.50	3,000.00	(2,406.50)
Legal/Audit Services	5,441.39	13,000.00	(7,558.61)
2nd Generation Plan	6,912.29	33,733.00	(26,820.71)
Miscellaneous Expense	874.06	1,500.00	(625.94)
Total Expenditures	121,561.90	166,463.00	(44,901.10)
INCREASE/(DECREASE) IN FUND BALANCE	44,834.10	(16,513.00)	61,347.10
INCR/(DECR) IN RESERVED FUNDS	(2,255.66)	10,000.00	(12,255.66)
FUND BALANCE - BEGINNING OF YEAR	31,287.06	31,287.06	0.00
FUND BALANCE - END OF YEAR	$ 73,865.50	$ 24,774.06	$ 49,091.44

See accompanying notes to financial statements and accountant's report

ELM CREEK WATERSHED MGT COMMISSION

Statement of Cash Flows

For the 12 months Ended December 31, 2003

	2003
CASH FLOWS FROM OPERATING ACTIVITIES	
Net Income/(Loss)	$ 44,834.10
Adjustments to reconcile Net Income	
Decrease/(Increase) in Operating Assets:	
Investments	(260.79)
Accounts Receivable	(858.37)
Increase/(Decrease) in Operating Liabilities:	
Accounts Payable	(11,706.31)
Accrued Liabilities	0.00
Total Adjustments	(12,825.47)
Net Cash Provided By/(Used in) Operating Activities	32,008.63
CASH FLOWS FROM FUND EQUITY	
Increase/(Decrease) in Reserved Funds	(2,255.66)
NET INCREASE/(DECREASE) IN CASH AND CASH EQUIVALENT	29,752.97
CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR	14,751.69
CASH AND CASH EQUIVALENTS AT END OF YEAR	$ 44,504.66

See accompanying notes to financial statements and accountant's report

ELM CREEK WATERSHED MANAGEMENT COMMISSION

NOTES TO THE FINANCIAL STATEMENTS
December 31, 2003

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

A. Organization

The Elm Creek Watershed Management Commission is formed under a Joint Powers Agreement, as amended according to Minnesota Statutes Sections 103B.201 through 103B.255 and Minnesota Rules Chapter 8410 relating to Metropolitan Area Local Water Management and its reporting requirements. Elm Creek Watershed Management Commission was established in February 1973 to protect and manage the natural resources of the Elm Creek Watershed.

B. Basis of Accounting

The accounting policies of the Commission conform to generally accepted accounting principles as applicable to governmental units.

The Commission accounts for receipts and disbursements on the cash basis, with accruals recorded at year-end for expenses budgeted and incurred in the current year, yet not approved and paid until the month following year-end.

C. Budgets

Annual budgets are adopted by the Commission and are to be consistent with the reporting of actual financial information.

Budget data is presented for financial analysis purposes only. This information does not present financial position, results of operations or changes in financial position in conformity with generally accepted accounting principles.

D. Cash and Cash Equivalents

In accordance with Minnesota Statutes, the Commission maintains deposits at depositories authorized by the Commission. Minnesota Statutes require that all deposits held by the Commission be protected by insurance, surety bond or collateral.

E. Members' Contributions

Members' contributions are calculated based on a formula which factors in the net tax capacity of all property within boundaries of the watershed each year compared to the total area in the watershed district.

ELM CREEK WATERSHED MANAGEMENT COMMISSION

NOTES TO THE FINANCIAL STATEMENTS (cont.)
December 31, 2003

NOTE 2 - CASH AND CASH EQUIVALENTS

Excess cash receipts over disbursements are deposited into the checking account or savings accounts maintained by the Commission. These accounts are held at its depository bank as authorized by the Commission.

In accordance wtih Minnesota Statutes, these deposits are fully insured as of December 31, 2003.

Balances at December 31, 2003:

	Per Books	Per Bank
Checking Acct - US Bank	$ 44,504.66	$ 46,164.66

NOTE 3 - INVESTMENTS

The Commission also invest funds in fully-insured investments and are recorded at cost. These investments are held in the name of the Commission.

Balance at December 31, 2003:

1st Am Govt Obligation - Piper Jaffray	$ 33,312.58

NOTE 4 - ACCOUNTS RECEIVABLE

Accounts Receivable is recorded at the amount the Commission expects to receive on balances outstanding at year-end. The Commission closely monitors outstanding balances to accurately reflect collectible receivables.

NOTE 5 - ACCOUNTS PAYABLE

Accounts payable include expenses incurred during the current year. They are approved by the Commission and paid in January of the following year.

NOTE 6 - RESTRICTED AND UNRESTRICTED FUNDS

Unrestricted Fund Balance - These funds are received and available for use in the normal operations of this Commission.

Restricted Fund Balance - Monitoring Guarantee are funds received for wetland mitigation projects. The initial monitoring fee is set by the commission per project and is to be reduced equally over a five-year period provided the project meets the requirements of the mitigation.

Restricted Fund Balance - Financial Guarantee are funds received as a guarantee that the mitigation will perform as required. Upon completion and the project meets the qualified plan requirements, these financial guarantees are refunded.

NOTE 7 - LETTERS OF CREDIT

Letters of credit have been obtained as replacement plan/monitoring guarantees for the following projects:

Lake Jubert Estates - Project 2000-001	$ 15,000.00
Greg Ebert - Project 98-076	13,000.00
Preserve - Hidden Oaks - Project 2001-013	75,000.00

NOTE 8 - MEMBERS' CONTRIBUTIONS

For the year ended December 31, 2003, members' contributions were as follows:

Member	Total Received	Percentage
Champlin	$ 6,391.03	5.56
Corcoran	8,570.57	7.45
Dayton	6,711.23	5.84
Hassan	6,107.38	5.31
Maple Grove	62,069.47	53.97
Medina	7,469.42	6.50
Plymouth	5,474.13	4.76
Rogers	12,206.77	10.61
Total Members' Contributions	$ 115,000.00	100.00