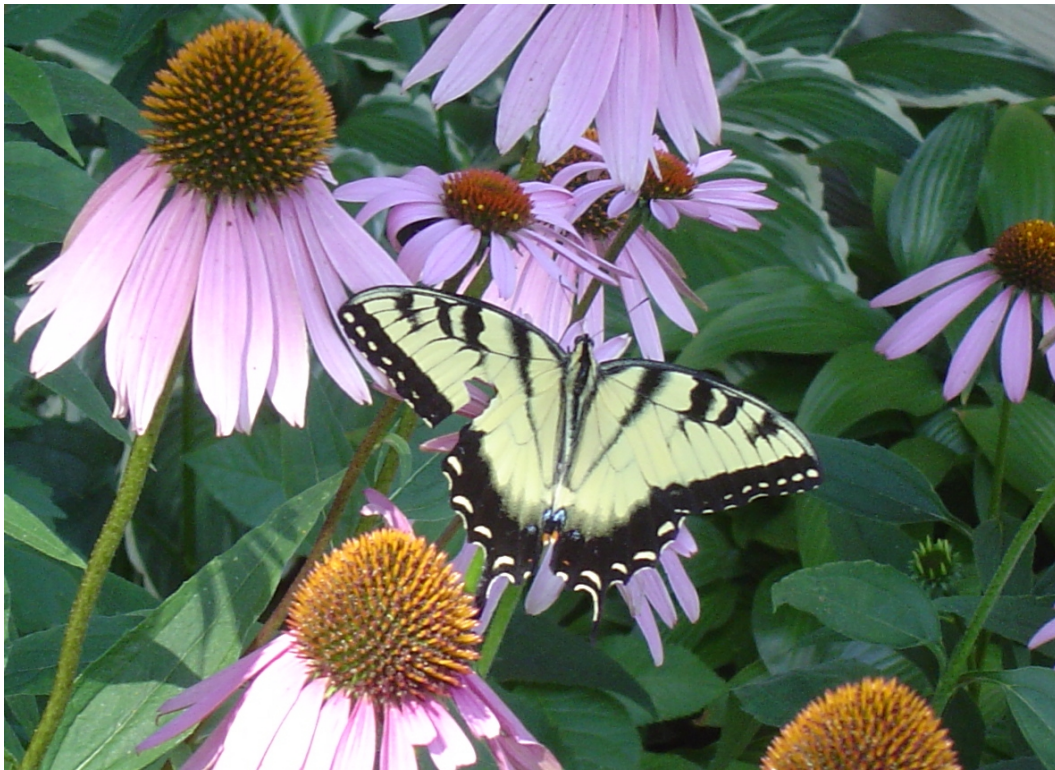


Elm Creek Watershed Management Commission



2004 Annual Report

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for the Elm Creek Watershed Management Commission
by Judie Anderson, JASS.

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2004 Annual Report

Table of Contents

	page
The Elm Creek Watershed Management Commission	1
History	1
The Watershed	1
Table 1. Area of Members within Watershed.....	1
The Commission	2
Table 2. Board Members and Staff.....	3
Second Generation Plan.....	2
Project Reviews	4
Water Quantity and Quality Monitoring	4
Lake Monitoring	4
Table 3. Lake and Watershed Characteristics	5
Table 4. Carlson's Trophic State Index	5
Stream Monitoring.....	6
Table 5. Elm Creek Annual Instantaneous Peak Discharge Rates	6
Flow Monitoring	6
Water Quality Monitoring	7
Macroinvertebrate Monitoring (River Watch)	7
Wetland Monitoring.....	7
Written Communication	8
Interest Proposals	8
Financial Reporting.....	8
2005 Work Plan	8

Appendices

	No.
Status of Local Plans.....	1
Project Reviews	2
Lake Monitoring Report	3
French Lake CAMP Results	4
Lake Sampling History	5
2004 Lake Water Quality Monitoring Data.....	6
2004 Lake Water Quality Monitoring Figures	7
Historical Lake Water Quality Monitoring Figures	8
Historical Flow Volumes at the USGS Gauging Station	9
Elm Creek Flow Hydrograph at the USGS Gauging Station	10
Elm Creek USGS Gauging Station Flow Data.....	11
Elm Creek Water Quality Data.....	12
River Watch Sites	13
River Watch Program	14
2004 Budget	15
2004 Treasurer's Report	16
2004 Financial Review	17



The Elm Creek Watershed Management Commission

The Elm Creek Watershed Management Commission was established to protect and manage the natural resources of the Elm Creek watershed. Its current members are the cities of Champlin, Corcoran, Dayton, Maple Grove, Medina, Plymouth, and Rogers, and the Township of Hassan.

History

The Commission was formed in 1973 as a joint powers organization by the cities of Champlin, Corcoran, Dayton, Maple Grove, Medina, and Plymouth, and the Hennepin Conservation District, under the authority conferred to the member parties through Minnesota Statutes Sections 471.59 and 103B.211. In 1981 the Town of Hassan entered the agreement. The cities of Greenfield and Rogers, each with only small areas within the watershed, became non-voting, non-paying members of the Commission in 1982. In 2000, the City of Corcoran withdrew from the Pioneer-Sarah Creek Commission in order to include all of its area under the Elm Creek Commission. Likewise, Greenfield voted in 2001 to withdraw from the Elm Creek Commission and to include all of its area in the Pioneer-Sarah Creek Watershed Management Commission. Rogers became a full member of the Commission in 2000.

In 2003, the Hennepin County Board of Commissioners authorized the establishment of conservation services under County auspices. Effective in June 2003, the Hennepin County Department of Environmental Services (HCDES) began providing technical services to the Elm Creek Watershed Management Commission. These services include conservation engineering services related to hydrology and hydraulic analyses, the review of site development plans, and technical assistance regarding best management practices (BMPs) for stormwater management, erosion control and the protection of water quality. This necessitated an amendment to the Joint Powers Agreement since, prior to that time, technical services were provided by the Hennepin County Conservation District, a party of the original JPA.

The Watershed

The Elm Creek Watershed covers approximately 130.5 square miles and lies wholly within the north central part of Hennepin County. The Crow and Mississippi Rivers demarcate the northern boundary. Although some areas in the north drain to the Crow and Mississippi Rivers, they are within the legal boundaries of the Elm Creek watershed.

Table 1. Area of Members within Watershed

Local Government Unit	Area Within Watershed (Square Miles)	Percent of Watershed
Champlin	3.1	2%
Corcoran	36.1	28%
Dayton	25.0	19%
Maple Grove	26.3	20%
Medina	9.3	7%
Plymouth	4.5	3%
Hassan	21.4	16%
Rogers	4.9	4%



The Commission

A Board of Commissioners was established as the governing body of the Elm Creek Watershed Management Commission. The Board is comprised of representatives appointed by the member communities. The table on the following page shows the names of the Commissioners appointed to serve in 2004 and the Commission's administrative, legal and technical support staff. The Commission has no employees.

The duties of the Commissioners include:

1. Preparing and adopting a watershed management plan meeting the requirements of MN Rules Chapter 8410.
2. Reviewing and approving local water management plans as defined in MN Rules Chapter 8410.
3. Exercising the authority of a Watershed Management Organization under MN Statutes Chapter 103B to regulate the use and development of land when:
 - a. A local water management plan has not been approved and adopted, or
 - b. A local permit requires an amendment to or variance from the local water management plan, or
 - c. The Commission has been authorized by the local government to require permits for land use.
4. Exercising authority when the local government is not enforcing the policies of the Commission.

As noted above, a primary responsibility of the Commission is to prepare and adopt a watershed management plan that meets the requirements of MN Rules Chapter 8410. The purpose of the Elm Creek Watershed Management Plan is to:

1. Protect, preserve, and manage surface water and groundwater resources;
2. Minimize property damages and economic losses through water resource management;
3. Manage public expenditures needed to study, control, and/or correct flooding and water quality problems;
4. Educate and inform the public on pertinent water resource management issues and increase public participation in water management activities;
5. Identify and plan for means to effectively protect and improve surface and groundwater quality;
6. Establish more uniform local policies and official controls for surface and groundwater management;
7. Reduce erosion of soil into surface water systems;
8. Promote groundwater recharge;
9. Protect and enhance fish and wildlife habitat and water recreational facilities;
10. Reduce and control stream degradation through land protection measures, runoff restrictions, and pollutant restrictions.

Second Generation Plan

In 2000 the Elm Creek Watershed Management Commission and the Pioneer-Sarah Creek Watershed Management Commission worked cooperatively with WSB & Associates to develop and write their *second generation* watershed management plans. In October 2001 citizens from both watersheds came together to discuss water resource issues within their communities. Topics discussed included education, water quality, non-degradation, shoreline protection, erosion, flooding, groundwater, wetlands, fish and wildlife, livestock/feedlots, population density/development, administration/ leadership, and capital funding.

In 2002, the Elm Creek Commission's Technical Advisory Committee (TAC) and representatives from various state agencies met to review and develop policies, standards and rules. Input from TAC meetings and the public meeting was used to create a preliminary draft plan that was presented to Elm Creek watershed residents at a second public meeting in April 2002. A public hearing was conducted on October 9, 2002, to receive comments. Written comments were also received from the cities of Maple Grove and Plymouth and the Department of Natural Resources. At the end of 2002 the revised draft plan underwent its second 45-day agency comment period.



Table 2. 2004 Board Members and Staff.

Member	Address	Representing/ Responsibility	Phone	e-mail
Deric Deuschle	11513 Sumter Ave. Champlin 55316	Champlin, Vice Chair, BPC Excom, TAC	651.490.2114	ddeuschle@sehinc.com
Elwyn Manthei	23700 Strehler Road Loretto 55357	Corcoran, BPC	763.498-5554	emanthei @lakedalelink.net
David Anderson	13591 N Diamond Lake Rd. Dayton 55327	Dayton, BPC	763.421.9246	
Danny Nadeau	20005 Highway 81 Maple Grove 55369	Hassan, BPC	763.428.3910	dnadeau@earthlink.net
Jim Merickel	9386 Magnolia Way Maple Grove 55369	Maple Grove, Chair, BPC, Excom, TAC	612.834.4434	jmerickel@comcast.net
Madeleine Linck	1762 Morgan Road Medina 55356	Medina, BPC	763.475.0485	m linck @threeriversparkdistrict .org
Fred Moore	1820 Ives Lane Plymouth 55441	Plymouth, Treasurer, BPC, Excom, TAC	763.475.0010	fmoore@srfconsulting.com
Scott Adams	13804 Mallard Trail Rogers 55374	Rogers, Secretary, BPC, Excom	612.381.5246	sadams@qwest.com
Ali Durgunoğlu	HCDES 417 N Fifth St Minneapolis 55401	Technical Advisor, BPC, TAC	612.596.1171	ali.durgunoglu @co.hennepin.mn.us
Judie Anderson	JASS 3235 Fernbrook Lane Plymouth 55447	Administrator, BPC, Excom, TAC	763.553.1144	judie@jass.biz
Matthew Foli	Campbell Knutson PA 1380 Corporate Center Curve Eagan 55121	Attorney, BPC	763.452.5000	mfoli@ck-law.com
John Barten	Three Rivers Park District 3800 County Road 24 Maple Plain 55359	Water Quality, BPC, TAC	763.694.7841	jbarten@threeriversparkdistrict .org

BPC = Business Planning Committee

Excom = Executive Committee

TAC = Technical Advisory Committee



In May 2004 the City of Rogers became the final signatory to the Commission's amended and restated Joint Powers Agreement, signaling the onset of BWSR's 60-day final review period. BWSR approved the *Elm Creek Watershed Management Commission Comprehensive Watershed Management Plan* on October 27, 2004, The Commission adopted the plan on December 8, 2004.

Every member community must prepare and adopt their own water management plans. Local plans must comply with MN Statutes, Sec. 103B.235 and MN Rules 8410.0160 and 8410.0170 regarding local plan content and the requirements of the Commission's Watershed Management Plan. Under the statutes, member cities are required to revise their plans to conform with the Commission's Plan within two years of Commission plan adoption, or by December 2006. Communities should also include in their updated plans any information that is important to their own water resources planning.

The Commission will continue to assist member communities with local plan development. Some member have not developed local plans, having expressed their intentions to wait until the Commission's second generation Watershed Management Plan was adopted. It is an option for these cities to adopt all or part of the Commission's plan as their local plans. The status of member communities' regulatory programs is found in *Appendix 1*. The cities will be asked to update this information in 2005.

Project Reviews

Land use within the Elm Creek Watershed has been influenced by agricultural activities, rural residential, and higher density development pressure. Existing and projected land uses for areas within the Commission's boundaries are described in the member communities' Comprehensive Plans. The land use plans include residential, commercial, and industrial development; designated park and open space areas; and public recreational areas.

Under various authorities the Commission reviews local development plans for conformance with the standards outlined in their second generation Watershed Management Plan. Called project reviews, they are reviewed for erosion and sediment control, wetland, floodplain, and stormwater management as well as DNR permits. The Commission's technical staff performed 84 project reviews in 2004. A list of each project, its location, and the critical areas reviewed is attached as *Appendix 2*. The Commission anticipates the current rate of development in the Elm Creek watershed will continue in 2005.

Water Quality

The Commission conducts lake and stream monitoring programs to track water quality and quantity conditions. The Commission began monitoring Elm Creek and its tributaries in 1975 and the lakes within the watershed in 1980. The Commission conducts chemical physical and biological monitoring of the streams and physical and chemical monitoring of lakes. The Commission may periodically participate in special studies if a need is identified or in larger projects such as a diagnostic-feasibility study of a lake, as funding allows.

Lake Monitoring

In 2004 the Commission monitored Fish, Diamond and Weaver Lakes in cooperation with Three Rivers Park District. A summary of the Park District's 2004 lake sampling results is included in *Appendix 3*. In addition, the Commission funded the monitoring of French Lake through the Metropolitan Council's Citizen Assisted Monitoring Program (CAMP). The volun-



teer who monitored the lake was Steve Fowler of Dayton. French Lake was monitored twice a month from April through October. A summary from the 2004 CAMP report is shown in *Appendix 4*. A summary of the lake sampling history is found in *Appendix 5*.

Lake and watershed characteristics of the lakes monitored by Three Rivers Park District in 2004 are shown in Table 3. Water quality data for 2004 is shown in *Appendices 6 and 7*. 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 4 shows the summary of 2004 data.

Table 3. Lake and Watershed Characteristics

Lake	Size (acres)	Max Depth (feet)	Mean Depth (feet)	Watershed Size (acres)	Land Use Characteristics
Diamond	406	8	6.5	2,666	Agricultural, rural residential
Fish	244	48	19	1,990	Residential, commercial, park
French	218*	6	3	870	Agricultural, rural residential
Weaver	159	57	21	510	Residential, park

*Open water area

Historical trend data are available for Diamond, Fish and Weaver Lakes and are listed in *Appendix 8*. 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.

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.

Table 4. Carlson's Trophic State Index (R.E. Carlson)

Lake	TSI	Trophic Status	Expected Conditions
Diamond	72.9	Eutrophic	Severe algae blooms with decreased transparency, potential fish kills during summer and winter
Fish	55.4	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
Weaver	57.7	Eutrophic	Decreased transparency, anoxic hypolimnion during summer, macrophyte problems evident



Stream Monitoring

The Elm Creek Watershed contains several large depressions and drainageways. Water is generally directed from the south and west to the northeast via four main drainageways – Rush Creek, North Fork Rush Creek, Diamond Creek, and Elm Creek. These drainageways converge in the Elm Creek Regional Park and enter Hayden Lake. Water is eventually discharged to the Mississippi River near the Mill Pond in Champlin.

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://nwis.waterdata.usgs.gov/mn/nwis/uv?site_no=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.

Table 5. 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 [^]	03-Jun-2004	350
25-Feb-1984	341	1-Jun-1991	371	5-Apr-1998	306		
18-Mar-1985	579 [^]	8-Mar-1992	380	15-May-1999	538 [^]		

[^]These values have been revised based on the 2001 rating curve.

*All-time instantaneous peak discharge. The 100-year flood discharge at this site is 2290 cfs.

Flow Monitoring

The average daily discharge for the 2004 Water Year (WY), October 1, 2003 through September 30, 2004, was 31.04 cubic feet per second (cfs) or 4.91 inches. During the same period, the minimum and maximum observed average daily discharge values were 0.7 cfs and 346 cfs, respectively. The long-term average daily discharge at the station is 39.6 cfs or 6.25 inches (years 1979-2004). Long-term flow volumes (calendar and water years) are included in *Appendix 9*.



Table 5 shows the annual instantaneous peak discharge values at the gauging station for the period of record. The flow hydrograph for the 2004 WY and the daily discharge and the summary information at the Elm Creek USGS gauging station are included in *Appendices 10 and 11*, respectively.

Water Quality Monitoring

Storm event samples are collected using an automatic sampler. Routine manual sampling occurs approximately monthly. A spreadsheet of the data received in 2004 WY is included in *Appendix 12*. 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.

Macroinvertebrate Monitoring (River Watch)

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 is now 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.

2004 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 13*; excerpts from the report on the sites in the Elm Creek watershed are found in *Appendix 14*.

Wetland Monitoring

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

The Commission's goal is to assure that WCA rules are properly implemented, wetland violations are resolved and replacement plans are reviewed. In 2004 the Commission reviewed 29 plans involving wetlands and received two new wetland banking applications in 2004. They also participated in five TEPs. A similar level of activity is anticipated in 2005.



Two new potential Wetland Conservation Act violations were investigated within the watershed in 2004.

Three outside firms were approved to perform wetland consulting services for the Commission in 2003-2004. They are Kjolhaug Environmental Services, Short Elliott Hendrickson, and SRF Consulting Group.

Written Communications

Development work on the Commission's website www.elmcreekwatershed.org began in 2004. Future communications, including monthly meeting packets, project reviews, and the second generation Watershed Management Plan, will be posted on the website. www.pressnews.com serves as the Commission's official newspaper.

Interest Proposals

The required biennial solicitation for interest proposals for professional services will occur early in 2005. Solicitations for technical services, wetland consulting and to perform the Elm Creek Channel Study will be published in the *State Register*.

Financial Reporting

Appendices 15, 16 and 17, respectively, include the Commission's approved budget for 2004, a report of revenues and expenditures for 2004, and the 2004 Audit Report prepared by Johnson & Company, Ltd., Certified Public Accountants.

2005 Work Plan

In addition to continuing the programs and activities described above, in 2005 the Elm Creek Watershed Management Commission will focus on two areas.

Channel Study

In their second generation Watershed Management Plan, the Commission has determined that bank stabilization and erosion control is a very high priority issue. In 2005 the Commission will undertake a study to identify unstable areas of Elm Creek, Rush Creek, North Fork Rush Creek and Diamond Creek. Due to its rapidly changing land use, low flow regimes in Elm Creek are changing and threatening the stability of the stream. The Commission wants to determine these low flows at critical points along the Creek and stable stream configurations that can sustain these flows. This should help in developing policies at subwatershed level to prevent further degradation of the stream. The Commission will utilize the results from its 2001 Stream Geomorphology study.



Local Plan Development

The second concentration of effort in 2005 will be to assist member communities with local plan development. Some member have not developed local plans, while others need only to update sections of their plans to be in conformance with the Commission's Management Plan. Under the statutes, member communities are required to revise their plans to conform with the Commission's Plan by December 2006.



Status of Local Plans

Status of Member Communities' Regulatory Programs (2003)

Regulatory Program	Champlin	Corcoran	Dayton	Maple Grove	Medina	Plymouth	Hassan	Rogers
Adoption of approved Local Stormwater Management Plan	1999*	No	No	1996*	No	2000*	No	No
Adoption of floodplain management ordinance in conformance with Commission policies standards.	Yes*	No	No	Yes*	Yes*	Yes*	Yes*	No
Adoption of the Minnesota Pollution Control Agency's Best Management Practices.	Yes	No	Yes	Yes	No	Yes	No	No
Adoption of a shoreland ordinance in compliance with the Minnesota Department of Natural Resources (encouraged).	Yes	No - City on DNR low priority list	Yes*	Yes	Yes	Yes	Yes*. Update on low DNR priority list	No - City on DNR low priority list
Adoption of erosion and sedimentation control policies in conformance with Commission policies and standards.	Yes	No	No	Yes*	Yes*	Yes*	Yes*	No
Adoption and approval of a stormwater system maintenance plan which meets or exceeds the requirements as described in the policies and standards of this Plan.	No	No	No	No	No	Yes*	No	No
Acceptance of the local government unit role in the implementation of the 1991 Wetland Conservation Act, if a member community so chooses. Member communities can choose to have the Commission act as the local government unit for WCA.	No - City has designated the Commission to be the LGU	No	No	Yes	Yes	Yes	No	No
Adoption of policies that require major stormwater storage facilities to accommodate the 100-year critical duration event.	Yes	No	No	No	No	No	No	No
Adoption of policies that require new storm sewer systems to accommodate discharge rates for a 10-year event.	No	No	No	No	No	No	No	No
Adoption of policies that maintain existing discharge rates during 2-, 10-, and 100-year storm events.	Yes	No	No	No	No	Yes	No	No
Adoption of policy to maintain pre-development flow rates in Elm, Diamond, and Rush Creek Stream Channels by limiting the discharge rates from new development and redevelopment to equal to or less than the existing discharge rates.	No	No	No	No	No	No	No	No
Adoption of policies that require pretreatment of stormwater runoff to the Nationwide Urban Runoff Program (NURP) recommendations or MPCA guidelines in the design and construction of new or modifications to existing stormwater conveyance systems wherever possible and feasible.	Yes	No	Yes	Yes	No	Yes	No	No info provided
Adoption of policies that require removal of floating debris for a 2-year event for new or redeveloped treatment pond outlets.	No	No	No	No	No	No	No	No



Status of Local Plans

Regulatory Program	Champlin	Corcoran	Dayton	Maple Grove	Medina	Plymouth	Hassan	Rogers
Adoption of policies that maintain existing phosphorus levels upon development or redevelopment on a site-by-site basis and/or a regional basis.	Yes	No	No	Yes	No	No	No	No
Adoption of the water quality goals outlined within the Commission's Plan and for water bodies within the City's boundaries.	No	No	No	Yes*	No	Yes*	No	No
Development and adoption of a Wetland Management Plan	No	No	No	Yes	No	Yes	No	No
Adoption of waterbody buffer requirements	No	No	No	No	No	Yes	No	No
Adoption of policies that require a 50-foot buffer from Elm Creek, Rush Creek, North Fork Rush Creek, and Diamond Creek for new development	No	No	No	No	No	No	No	No
Cooperation with the Department of Health to properly seal abandoned wells	No	No	No	No	No	Yes	No	No
Recognition of and plan to address problem areas outlined in the Commission's Plan in local plan	No	No	No	No	No	Yes*	No	No
Adoption of policy to remove deadfall within creek channels provided the deadfall is no longer attached to the land.	No	No	No	No	No	No	No	No
Encouragement of infiltration as part of local policies	No	No	No	No	No	Yes	No	No

* May need to be updated



Project Reviews

Project Reviews 2004

Project Number	Project Name	City	Erosion Control	Stormwater	Floodplain	Wet Ponds	WCA
2004-01	Three Rivers Estates	Hassan Twp.	X	X			X
2004-02	Kuehn's Farm	Corcoran	X				X
2004-03	Fieldstone 4th	Maple Grove	X	X			
2004-04	Applebee's	Rogers	X	X			
2004-05	Thorpe Distributing	Rogers	X	X			
2004-06	Hisco Office/Warehouse	Hassan Twp.	X	X			
2004-07	Heritage Place	Rogers	X	X			
2004-08	Landcor Fin Cntr/Bell Tower W	Maple Grove	X	X			
2004-09	Maynard Restaurant	Rogers	X	X			
2004-10	Rush Creek Villas	Maple Grove	X	X			
2004-11	Hassan Sand and Gravel II	Hassan Twp.	X	X	X		X
2004-12	Territorial View II	Rogers	X	X			
2004-13	Rogers Distribution Center II	Rogers	X	X			
2004-14	Rogers Retail Centre III	Rogers	X	X			
2004-15	Bike/Hike Trail Reclamation & Rehabilitation Three Rivers Park	MG, Dayton	X	X			
2004-16	Eastman Nature Center Pavement Reconstruction Elm Creek Park Reserve	Dayton	X	X			
2004-17	Colebank Farms	Corcoran	NO	REVIEW	REQUIRED		
2004-18	Diamond Lake Indl Center	Rogers	X	X			
2004-19	SummerHill	Corcoran	X	X	X		X
2004-20	CSAH10 Remediation	Maple Grove	X	X			
2004-21	Hindu Temple of MN	Maple Grove	X	X	X		
2004-22	Meadow Creek - Jim Uzzell	Corcoran	X	X	X		X
2004-23	Flame Metals Addn	Rogers	NO	REVIEW	REQUIRED		
2004-24	Natures Crossing - MTD	Dayton	X	X			
2004-25	Coldwell Banker, Burnet Realty	Maple Grove	X	X			
2004-26	CSAH 116	Hassan Twp.	X	X	X		X
2004-27	Fletcher Hills (Innovative II)	Rogers	X	X	X		
2004-28	Dayspring Estates	Hassan Twp.	X	X	X		X
2004-29	Hassan Elementary School	Rogers	X	X		X	
2004-30	Old Rockford Road Town Offices	Plymouth	RESUBMITTED AS 2004-51				
2004-31	Touch'em All Car Wash	Rogers	X	X			
2004-32	Pioneer Lane Farm 2nd Addn	Corcoran	X				X
2004-33	Robb Norling	Corcoran	X				X
2004-34	Elm Creek Valley Trail	Maple Grove	X		X		
2004-35	John & Michelle Garbarini	Hassan Twp.	X				X
2004-36	Wally McCarthy Hummer	Rogers	X				
2004-37	Roger Masica Greenhouse	Corcoran	X				X
2004-38	Speak the Word Church	Plymouth	X	X			
2004-39	Mill Pond Townhomes	Champlin	X	X	X		X
2004-40	Diamond Lake Woods	Dayton	X	X	X		
2004-41	Windmill Ponds - Wenner	Corcoran	X	X			X
2004-42	Northdale Blvd/James Road	Hassan Twp.	X	X			X



Project Reviews

Project Number	Project Name	City	Erosion Control	Stormwater	Floodplain	Wet Ponds	WCA
2004-43	Bridgewater - Charles Cudd	Medina	X	X	X		
2004-44	Kaleidoscope Charter School	Rogers	X	X			
2004-45	Archway III	Rogers	X	X			
2004-46	Maple Creek Restoration	Maple Grove	X				
2004-47	Reimer Subdivision	Rogers	X	X			
2004-48	Rogers Professional Building	Rogers	X	X			
2004-49	Medina Retail	Medina	X	X			
2004-50	Walgreen's	Maple Grove	WITHDRAWN				
2004-51	Plymouth Office Plaza	Plymouth	X	X			
2004-52	North Cowley Lake	Hassan Township	X	X	X		X
2004-53	Crystal Pierz Marine	Rogers	x	x			
2004-54	City County Federal Credit Union	Maple Grove	X	X			
2004-55	Lee Cornelius	Corcoran					X
2004-56	Christopher Rains	Corcoran					X
2004-57	TH101 and CSAHs 36-37-30 and 42	St. Michael /Ostego	COURTESY REVIEW				
2004-58	Manley 115 acre Development	Rogers/Hassan					X
2004-59	Hydrology French, Grass, Diamond Lakes	Dayton		X	X		
2004-60	Boyer Trucks Parking Lot Expan	Rogers	X	X			
2004-61	Creekview Townhomes	Medina	X	X	X		
2004-62	Bruce Gust	Corcoran	X				X
2004-63	Red Oak Hills	Maple Grove	X	X			
2004-64	CSAH19 Reconstruction	Corcoran/Medina	X	X	X		X
2004-65	Thunder Addition	Hassan Township	X	X			X
2004-66	Steig Road	Corcoran					X
2004-67	CEMSTONE AUAR	Dayton	X	X			
2004-68	Scheber Property	Hassan Township					X
2004-69	MG Medical Campus & Retail Center	Maple Grove	X	X			
2004-70	Discount Tire	Rogers	X	X			
2004-71	CSAH81 and TH610 Extension	Maple Grove	X	X	X		
2004-72	Serenity Estates	Hassan Township	X	X			X
2004-73	Maple Creek Estates	Maple Grove	X	X			
2004-74	Preserve at Rush Creek	Maple Grove	X	X	X		
2004-75	Killarney Glenn	Maple Grove	X	X			
2004-76	Fairview Health Services	Maple Grove	X	X	X		
2004-77	Lloyd Landkamer, Brandywine Addn Outlot A	Corcoran	X				X
2004-78	Hedgestone Development	Corcoran	X	X	X		X
2004-79	David Foy	Corcoran	X				X
2004-80	Heritage Development Cowley Lake Development	Rogers	X	X	X		X
2004-81	Dunlaven Woods	Maple Grove	X	X	X		
2004-82	Baumeister 3rd Addn	Corcoran					X
2004-83	Cedar Estates	Maple Grove	X	X			
2004-84	36" Trunk Water Main along Terr Road	Maple Grove	X				



Lake Monitoring Report

Elm Creek Watershed Management Commission 2004 Lake Water Quality Summaries

Fish Lake

The Three Rivers Park District established an in-lake phosphorus concentration goal for Fish Lake of 36 µg/L to support direct contact recreational use. The average phosphorus concentration for Fish Lake was 47 µg/L in 2004 with values ranging between 36 µg/L to 82 µg/L. These high phosphorus concentrations were partially due to the excessive amount of precipitation that contributed to increased watershed loading. The excess in-lake phosphorus was conducive for the development of algae blooms. Consequently, the average chlorophyll-a concentration was 28.8 µg/L. These phosphorus and chlorophyll-a concentrations are similar to those conditions observed in 2002 and 2003. Despite the high phosphorus and chlorophyll-a concentrations, the water clarity conditions were not as significantly impaired. The average secchi depth transparency was 2.37 m in 2004, which is relatively high in comparison to 2002 and 2003. This value was relatively high because of a clear water phase that occurred in early May that contributed to a secchi depth measurements of 6.7 m and 4.2 m. The remaining secchi depth measurements ranged between 0.9 and 2.9 m. The total phosphorus and chlorophyll-a concentrations became significantly impaired in mid-June, which coincides with the senescence of curlyleaf pondweed. Although Fish Lake does not have an excessive curlyleaf pondweed problem in comparison to similar lakes within the eco-region, the senescence process can result in a substantial amount of internal nutrient loading. After the senescence of curlyleaf pondweed, phosphorus concentrations increased from 36 µg/L to 57 µg/L. The released nutrients from curlyleaf pondweed became available for algae up-take, and resulted in algae blooms that persisted throughout the summer. These excess nutrients can have dramatic effects on seasonal variation in water quality conditions.

Weaver Lake

Weaver Lake has water quality conditions that potentially inhibit recreational use. The water quality conditions for Weaver Lake have gradually declined since 2002. The average phosphorus concentrations have increased from 43 µg/L in 2002 to 51 µg/L in 2003. The excessive in-lake phosphorus was conducive for the development of algae blooms. The average chlorophyll-a concentration increased from 22 µg/L in 2002 to 40 µg/L in 2004. The average phosphorus and chlorophyll-a concentrations in 2004 were the highest observed since the implementation of the monitoring program in 1991. Despite relatively high phosphorus and chlorophyll-a concentrations, the water clarity conditions were excellent in which the average secchi depth measurement was 2.7 m. This was the highest average secchi depth measurement reported since 1993. This value was relatively high because of a clear water phase that occurred in May that contributed to secchi depth measurements of 7.6 and 6.2 m. The remaining secchi depth measurements ranged between 0.4 to 3.3 m. The water quality conditions began to degrade after 6.5 inches of rainfall occurred in early June. The increased watershed nutrient loading caused an increase in total phosphorus concentration from 32 µg/L to 73 µg/L. Another increase in phosphorus concentration occurred from mid-June through early July due to the senescence of curlyleaf pondweed. Weaver Lake has dense mats of curlyleaf pondweed that frequently grow to the surface. Consequently, there was a substantial amount of internal loading due to the plant senescence. The in-lake phosphorus concentration increased from 44 µg/L to 96 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 10 µg/L to 71 µg/L. After the senescence of curlyleaf pondweed, the algae blooms persisted throughout the summer in which water clarity conditions did not improve considerably until the end of September.



Lake Monitoring Report

Diamond Lake

Diamond Lake has impaired water quality conditions that inhibit recreational use. The lake is extremely eutrophic with phosphorus concentrations consistently above 100 µg/L. The average phosphorus concentration in 2004 was 189 µg/L with values ranging between 109 µg/L to 331 µg/L. The excessive amount of phosphorus in the lake is conducive for severe algae blooms. The average chlorophyll-a concentration was 58 µg/L in 2004. Seasonal variation in chlorophyll-a concentrations ranged between 37 µg/L to 82 µg/L. Consequently, water clarity conditions were extremely poor in which secchi depth measurements ranged between 0.2 to 1.2 m. The severe algae blooms provide a shading effect that inhibits the development of aquatic macrophytes. The poor water quality conditions are partially due to large amounts of watershed nutrient loading from surrounding agricultural areas. In addition, the shallow morphology of the lake is extremely conducive for internal loading of nutrients that are re-suspended from the sediments. The lake is frequently vulnerable to winter and summer fish kills due to the extreme eutrophic conditions.



French Lake CAMP Results

This was the fourth year that the French Lake, located within the boundaries of Dayton, has been involved in CAMP (Citizen Assisted Monitoring Program). The 352-acre lake (218 acres of open water) has a maximum depth of 2.0 m (roughly 6 feet). (See Table 2 in the Commission's *2004 Annual Report*.) 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- 2004 CAMP data are the only known available nutrient water quality data for the lake.

The lake was monitored seven times from early-May to mid-October, 2004. Once again, the dry late-summer conditions resulted in the lake becoming unnavigable. Results are shown below.

2004 summer (May-September) data summary

<i>Parameter</i>	<i>Mean</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Grade</i>
TP (µg/l)	164.5	32.0	577.0	F
CLA (µg/l)	107.2	5.0	610.0	F
Secchi (m)	0.7	0.5	1.1	D
TKN (mg/l)	2.73	1.40	8.50	
<i>Overall Grade</i>				F

The lake's 2004 water quality grades are similar to those recorded in 2002-2003 and worse than that of 2001 [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 average user perception rankings, on a 1-to-5 scale, were 2.8 for physical condition (between 2- "some algae present" and 3- "definite algae present"), and 4.7 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, Metropolitan Council, (651) 602-8743 or randy.anhorn@metc.state.mn.us.



French Lake Monitoring

French Lake Dayton, Hennepin Co.

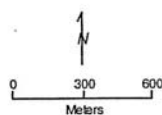
LAKE ID: 270127

WMO: Elm Creek

Volunteer: Steve Fowler

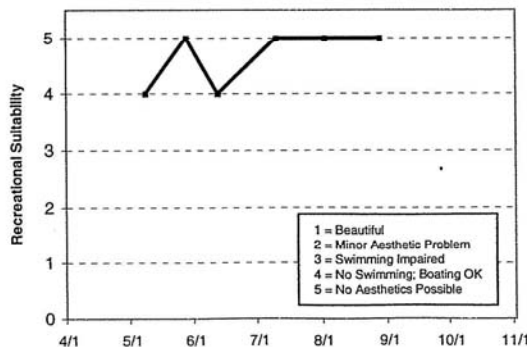
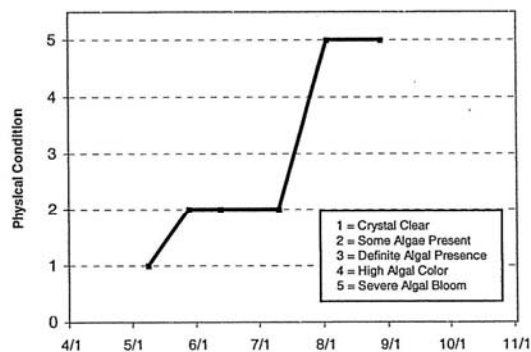
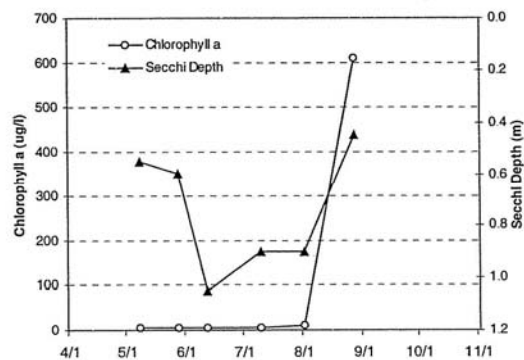
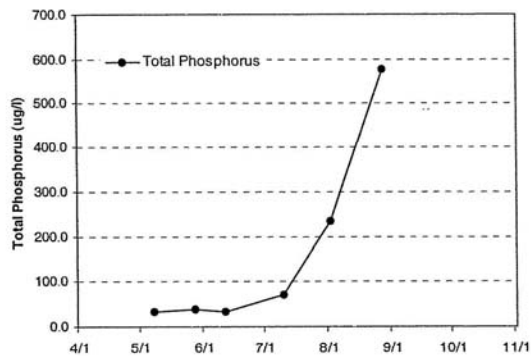
● Sampling site

Contours in meters



2004 Data

DATE	Surf. Temp (C)	Bot. Temp (C)	Surf. DO (mg/L)	Bot. DO (mg/L)	CLA (ug/L)	Surf. TP (ug/L)	Bot. TP (ug/L)	Secchi (m)	PC (1-5)	RS (1-5)
5/6/04	11.2				5.8	32.0	0.6	1	1	4
5/28/04	20.7				6.8	38.0	0.6	2	2	5
6/12/04	18.4				5	34.0	1.1	2	4	
7/10/04	23.2				5.9	72.0	0.9	2	5	
8/2/04	27.6				9.6	234.0	0.9	5	5	
8/28/04	20.7				610	577.0	0.5	5	5	
10/12/04	15.1				140	251.0	0.3	4	5	



Lake Water Quality Grades Based on Summertime Averages

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Total Phosphorus												
Chlorophyll a												
Secchi Depth						F						
Overall												

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Total Phosphorus										F	F	F	F
Chlorophyll a										C	F	F	F
Secchi Depth										F	F	F	D
Overall										D	F	F	F

Source: Metropolitan Council and STORET data



Lake Sampling History

	Lakes											
	Cook	Diamond	Dubay	Fish	Henry	Jubert	Mill Pond	Mud	Sylvan	Weaver	Rice ¹	French
1980		*		*								
1981				*						*		
1982				*								
1983										*		
1984												
1985				*		*	*			*		
1986	*	*	*	*				*		*		
1987				*		*				*		
1988	*			*			*					
1989		*	*	*		*				*		
1990	*			*						*		
1991				*		*	*			*	*	
1992	*	*		*						*	*	
1993				*						*	*	
1994		#		*						*	*	
1995				*	#					*		
1996				*					*	*		
1997				*					*	*		
1998		*		*						*		
1999				*			*			*		
2000				*		#				*		
2001	*			*						*		#
2002				*			*			*		#
2003				*						*		#
2004		*		*						*		#

¹ sampled by the City of Maple Grove

sampled through the Met Council's CAMP program

* indicates years in which lakes were sampled



2004 Lake Water Quality Monitoring Data

Sample Id	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
FISH	26-Apr-04	1.50	11.6	14.5	134	0.386	10.05	82	5.7	1.72	28.9
FISH	11-May-04	6.70	16.6	10.9	111	0.436	8.63	58	10.5	1.71	3.3
FISH	25-May-04	4.20	14.9	10.7	106	0.401	8.4	41		1.39	7.9
FISH	09-Jun-04	2.90	21.1	10.0	113	0.393	8.27	42		1.16	9.1
FISH	21-Jun-04	1.52	21.7	10.7	121	0.374	8.3	36		1.20	24.0
FISH	06-Jul-04	1.40	23.0	7.9	92	0.413	9.13	48		1.50	22.0
FISH	19-Jul-04	0.90	25.9	11.1	136	0.407	9.19	57		1.69	64.1
FISH	02-Aug-04	1.45	25.3	9.6	117	0.423	8.63	39		1.28	31.7
FISH	16-Aug-04	1.10	22.5	10.2	118	0.399	7.71	47		1.47	37.9
FISH	07-Sep-04	2.51	22.1	9.3	107	0.402	7.76	41		1.44	37.4
FISH	27-Sep-04	1.06	19.6	10.0	109	0.406	7.32	63	1.7	1.57	50.7
	Mean	2.29		10.4	115	0.404	8.49	50	6.0	1.47	28.8
	Std.Dev.	1.76		1.61	12.4	0.017	0.77	13.6	4.4	0.20	18.5
	Summer Mean (May-Sept)	2.37		10.0	113.0	0.41	8.33	47.0	6.1	1.4	28.8

Sample Id	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
WEAVER	27-Apr-04	1.60	10.9	14.0	127	0.36	10.30	32	3.6	0.99	21.8
WEAVER	12-May-04	7.57	16.9	10.3	107	0.28	9.21	32	25.0	0.89	1.8
WEAVER	25-May-04	6.15	14.7	10.2	100	0.35	8.71	32		0.76	2.7
WEAVER	08-Jun-04	3.27	22.6	10.1	118	0.34	8.53	73		0.92	10.0
WEAVER	21-Jun-04	2.90	21.1	9.6	108	0.34	8.39	44		1.05	16.2
WEAVER	06-Jul-04	1.00	22.5	8.6	100	0.37	9.43	52		1.59	71.2
WEAVER	19-Jul-04	0.70	27.0	12.8	160	0.36	9.68	96		2.49	159.8
WEAVER	02-Aug-04	0.93	25.0	9.6	117	0.38	8.93	63		1.66	58.9
WEAVER	16-Aug-04	1.00	22.2	11.5	132	0.36	7.88	51		1.71	48.6
WEAVER	07-Sep-04	0.39	21.4	8.1	92	0.37	7.53	39		1.11	16.9
WEAVER	27-Sep-04	3.06	19.2	10.3	111	0.37	7.32	31	1.7	0.99	18.1
	Mean	2.60		10.5	116	0.35	8.72	50	10.1	1.29	38.7
	Std.Dev.	2.35		1.7	19	0.03	0.92	20.7	12.9	0.52	46.3
	Summer Mean (May-Sept)	2.70		10.1	114.4	0.35	8.56	51.3	13.4	1.3	40.4

Sample Id	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
DIAMOND	27-Apr-04	0.40	11.0	11.1	101	0.32	9.84	165	3.8	2.14	56.9
DIAMOND	11-May-04	0.72						160	4.0	2.23	82.4
DIAMOND	25-May-04	0.57	13.7	11.1	107	0.34	8.38	169		2.21	42.3
DIAMOND	08-Jun-04	0.79	23.3	10.8	126	0.32	8.43	109		1.22	25.2
DIAMOND	21-Jun-04	0.45	20.7	9.6	107	0.30	8.26	136		2.48	68.9
DIAMOND	06-Jul-04	0.45	21.9	7.4	85	0.32	9.19	181		2.99	67.9
DIAMOND	19-Jul-04	0.31	28.7	13.5	175	0.30	9.93	137		2.31	50.8
DIAMOND	02-Aug-04	0.37	26.6	12.3	154	0.30	9.31	197		2.75	44.7
DIAMOND	16-Aug-04	0.20	23.8	15.9	188	0.29	8.43	331		3.89	36.3
DIAMOND	07-Sep-04	1.21	20.7	9.4	106	0.28	8.01	257		3.26	111.4
DIAMOND	27-Sep-04	0.38	18.4	12.5	133	0.29	7.61	210	21.7	3.13	45.9
	Mean	0.53		11.4	128	0.31	8.74	186	9.8	2.60	57.5
	Std.Dev.	0.28		2.36	34.1	0.02	0.78	62.3	10.3	0.71	24.1
	Summer Mean (May-Sept)	0.55		11.4	131.0	0.30	8.62	188.6	12.8	2.6	57.6

Secchi = Secchi Disc Transparency

TP = Total Phosphorus

TN = Total Nitrogen

Sp. Cond = Specific Conductivity

SRP = Soluble Reactive Phosphorus

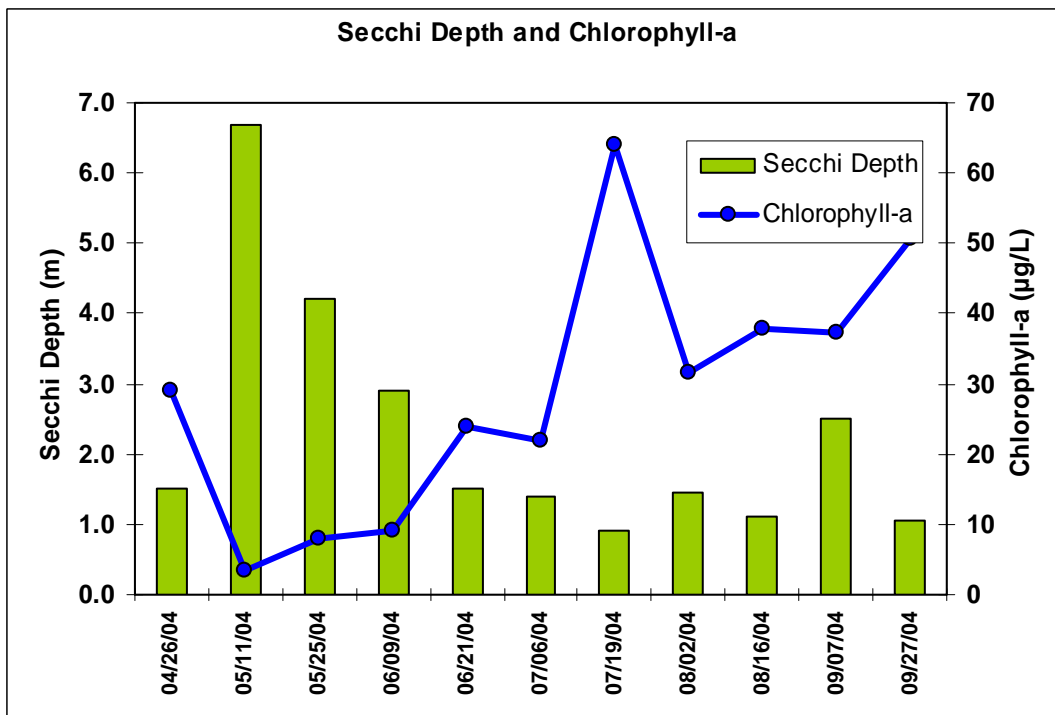
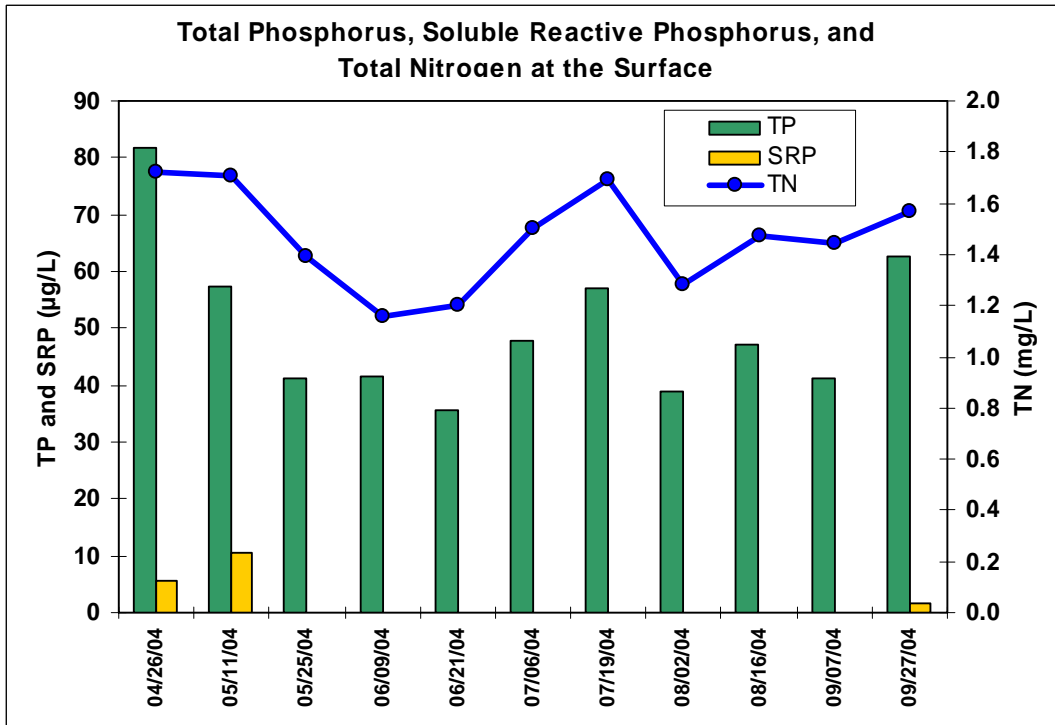
Chl-a = Chlorophyll a

Note: Temperature, DO, DO%, Specific Conductivity and Ph are measured at the surface.



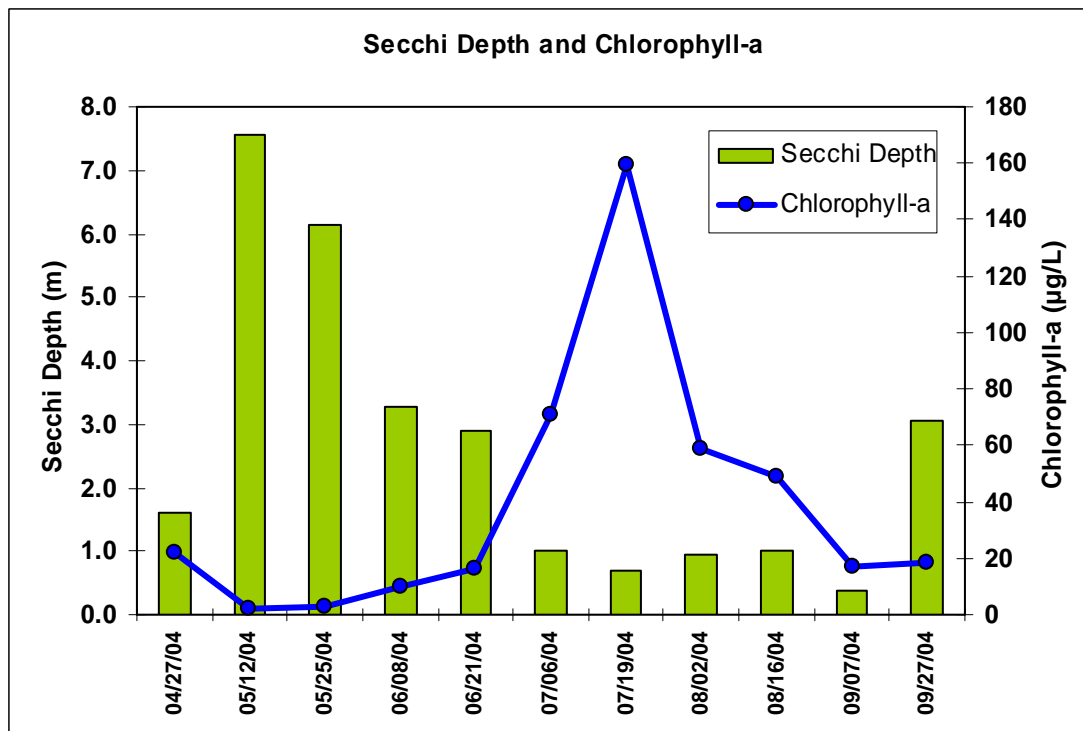
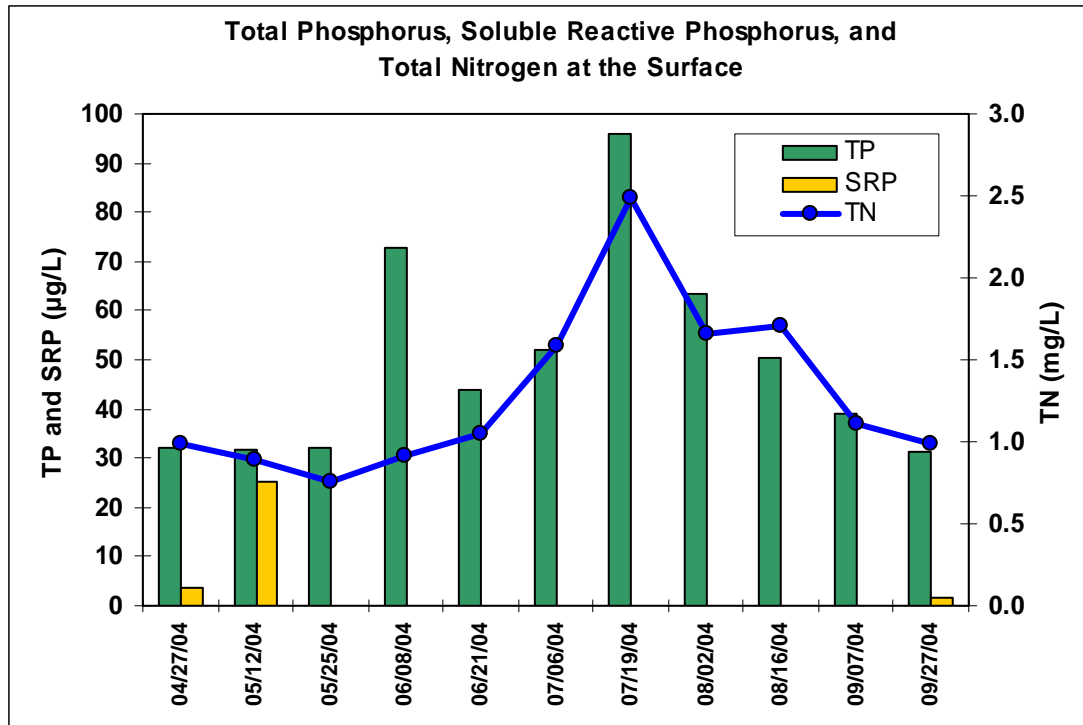
2004 Lake Water Quality Monitoring Figures

Fish Lake



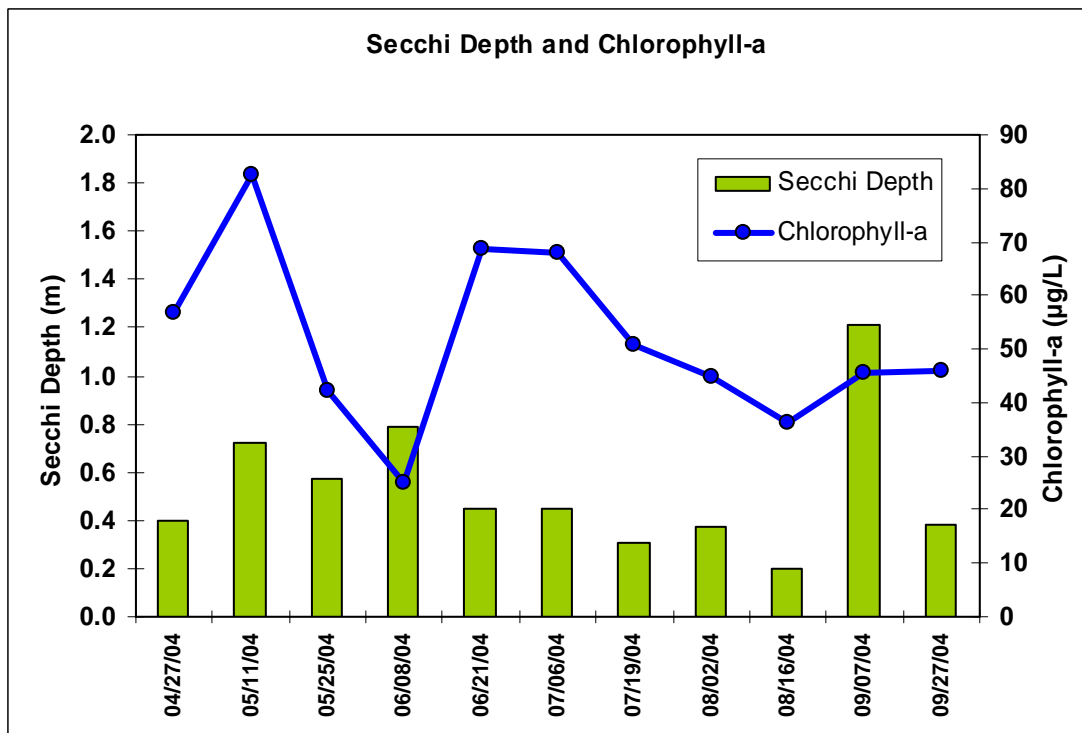
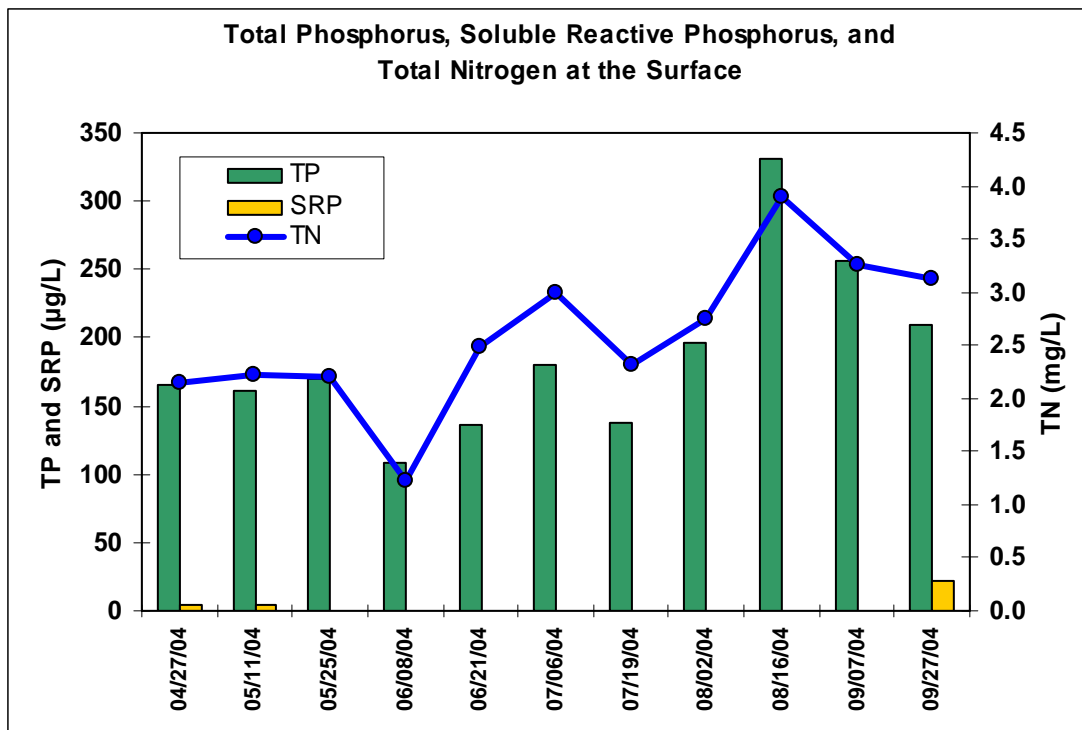
2004 Lake Water Quality Monitoring Figures

Weaver Lake

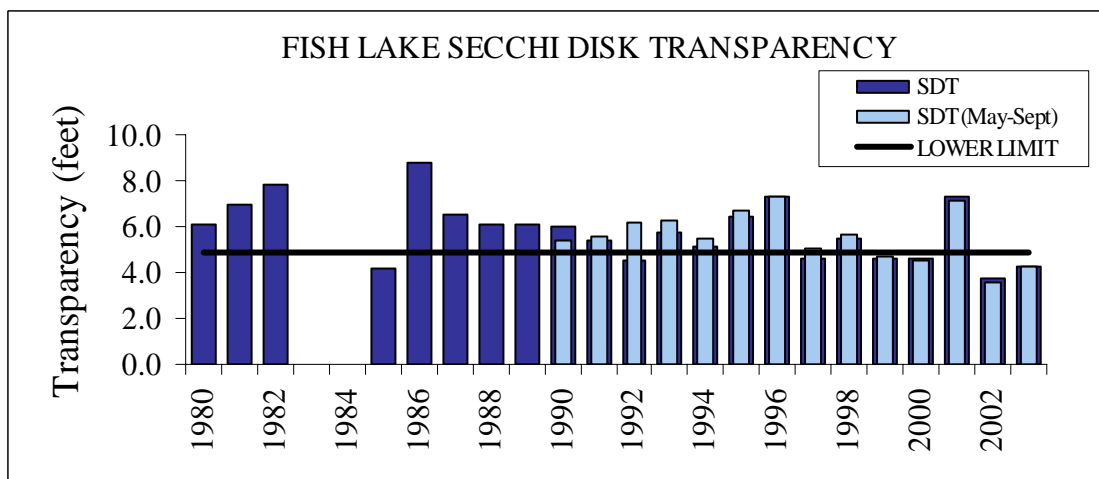
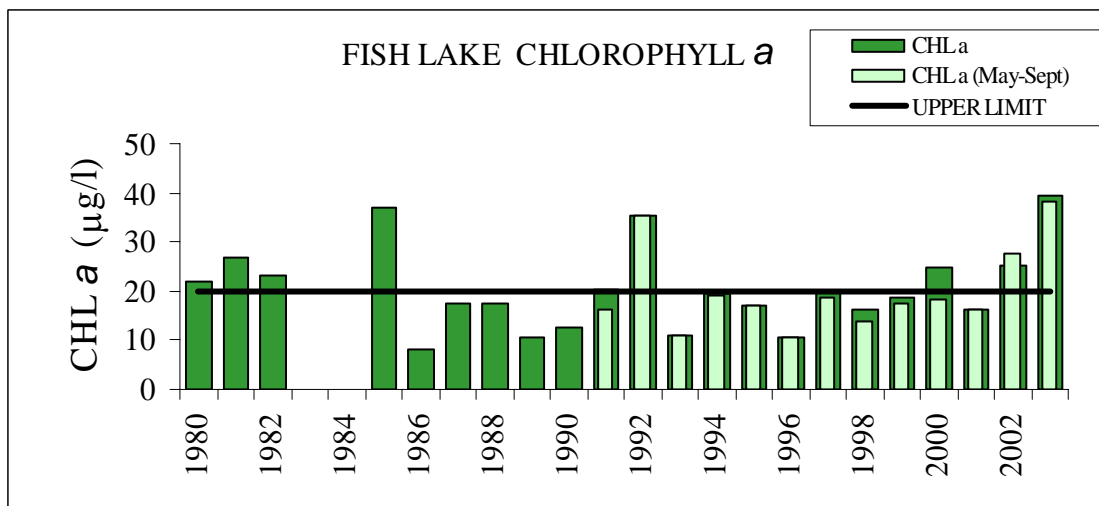
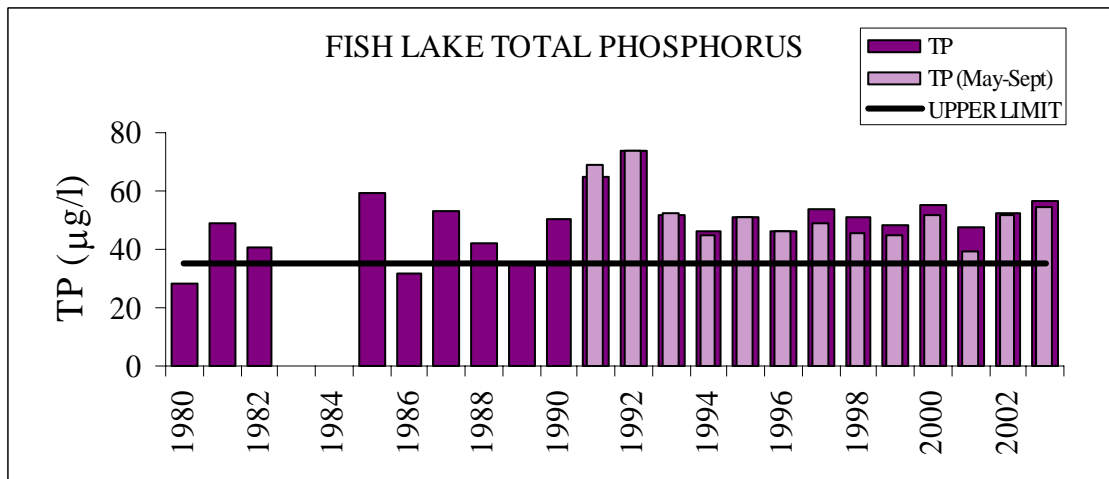


2004 Lake Water Quality Monitoring Figures

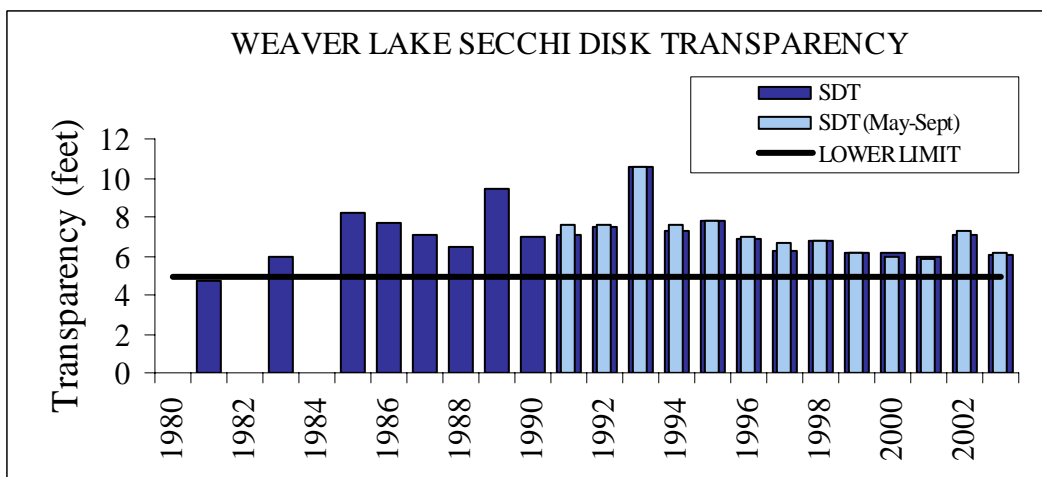
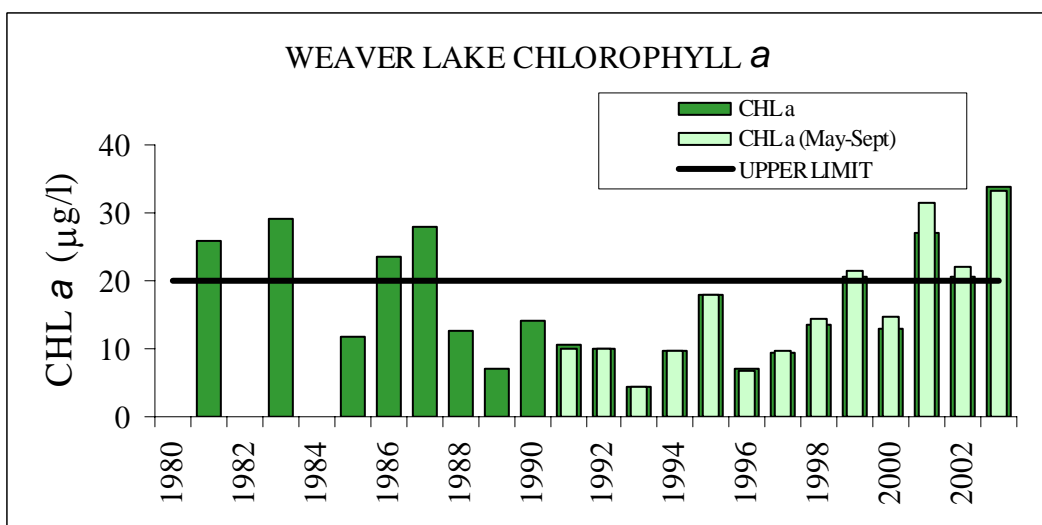
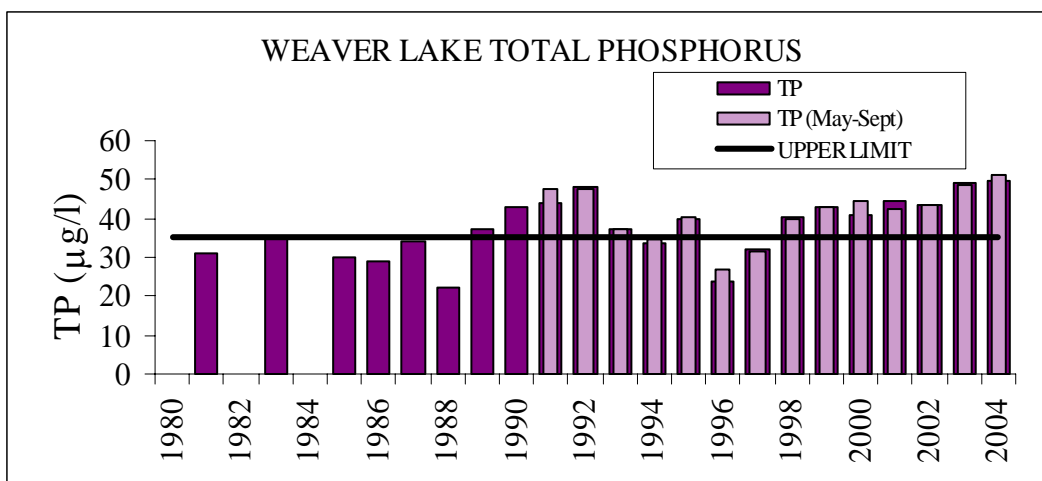
Diamond Lake



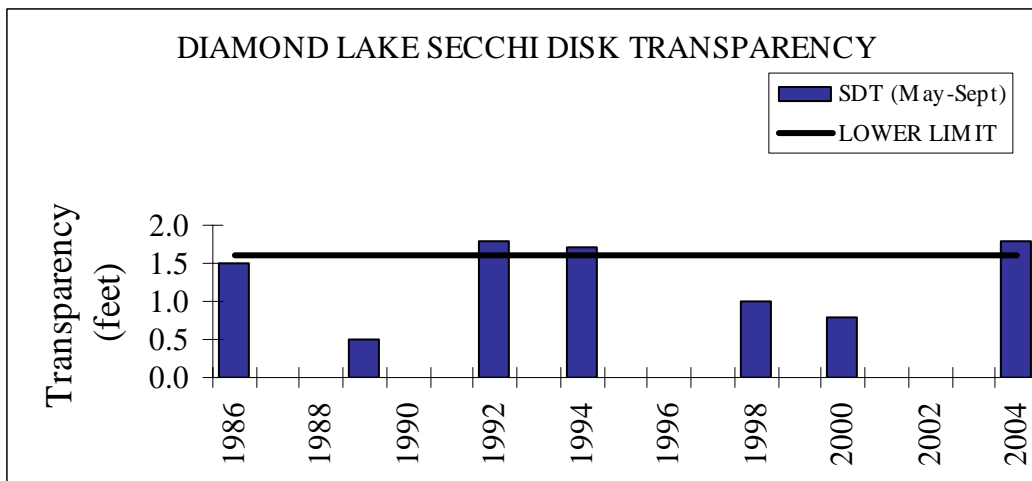
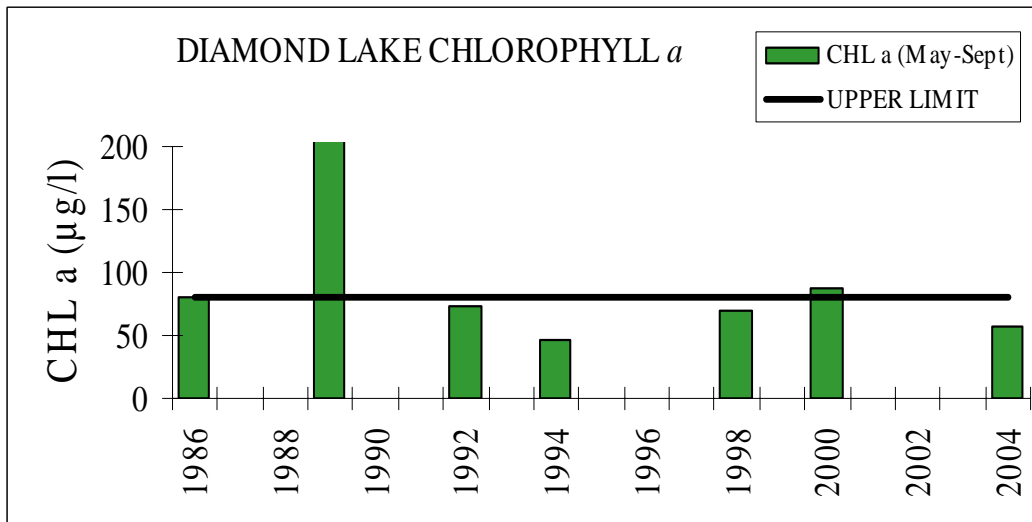
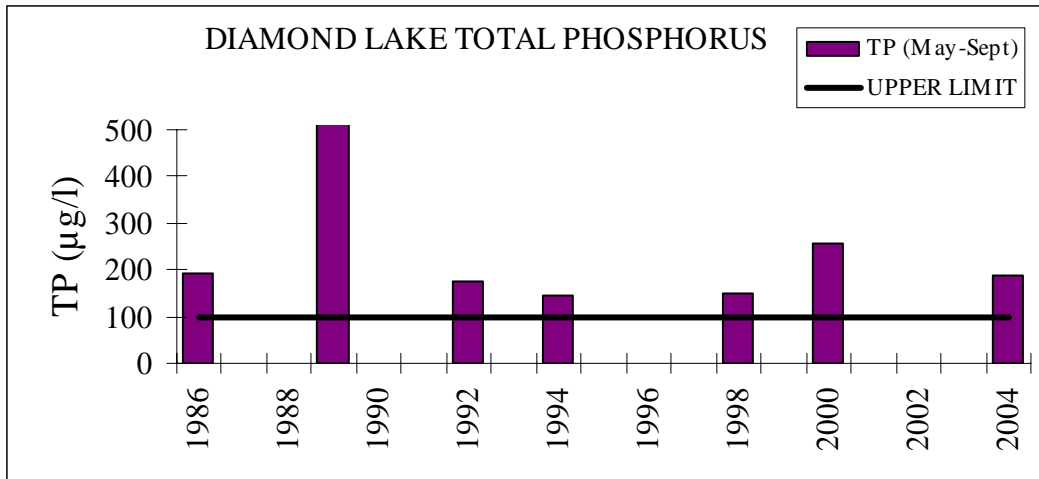
Historical Lake Water Quality Monitoring Figures



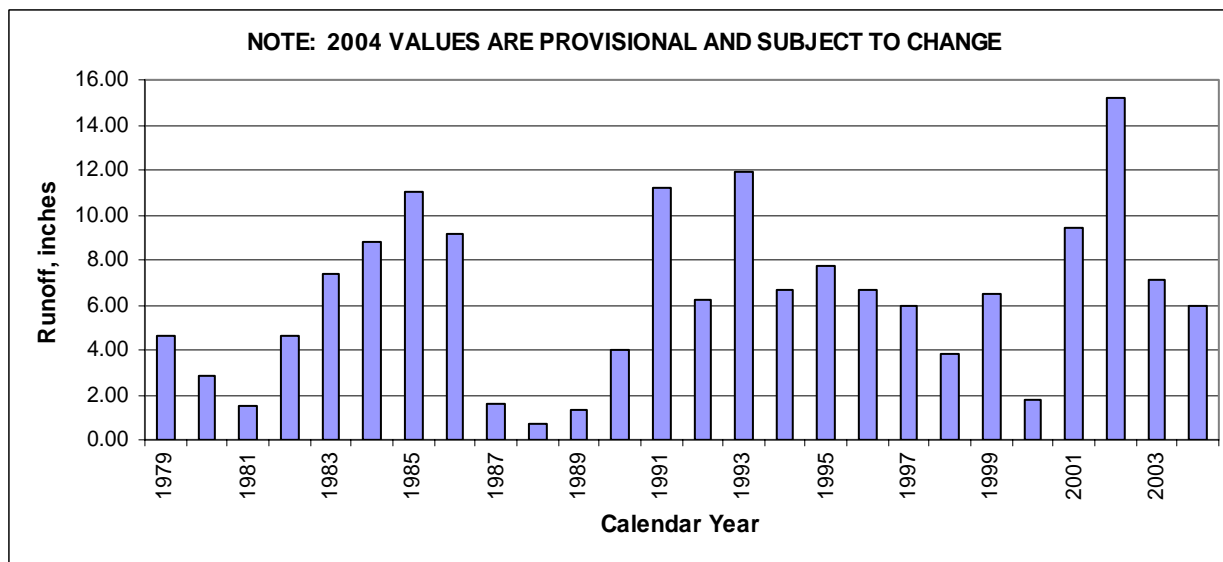
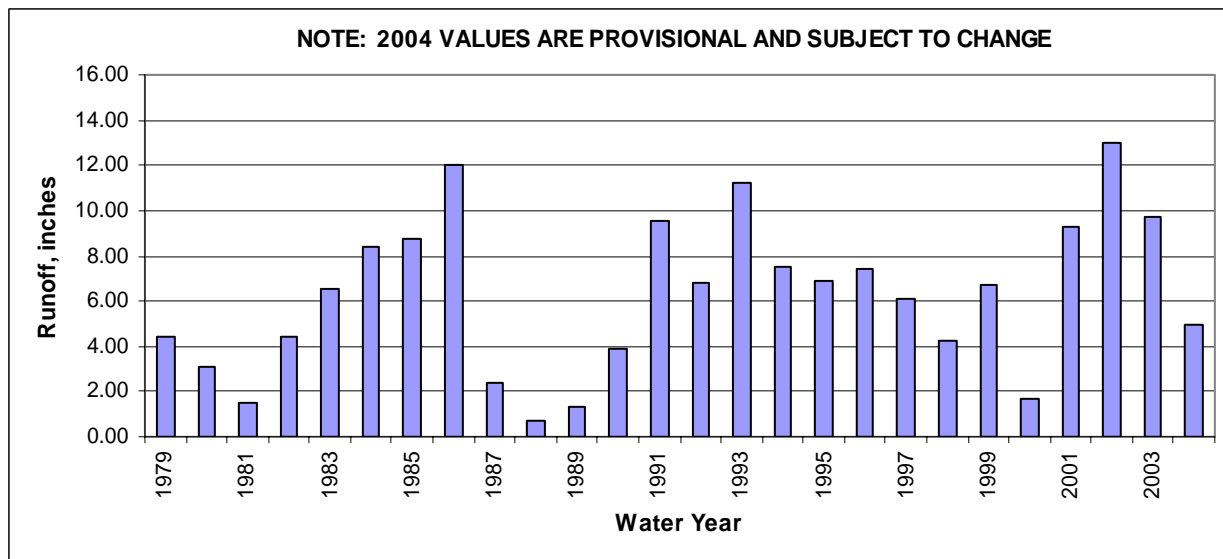
Historical Lake Water Quality Monitoring Figures



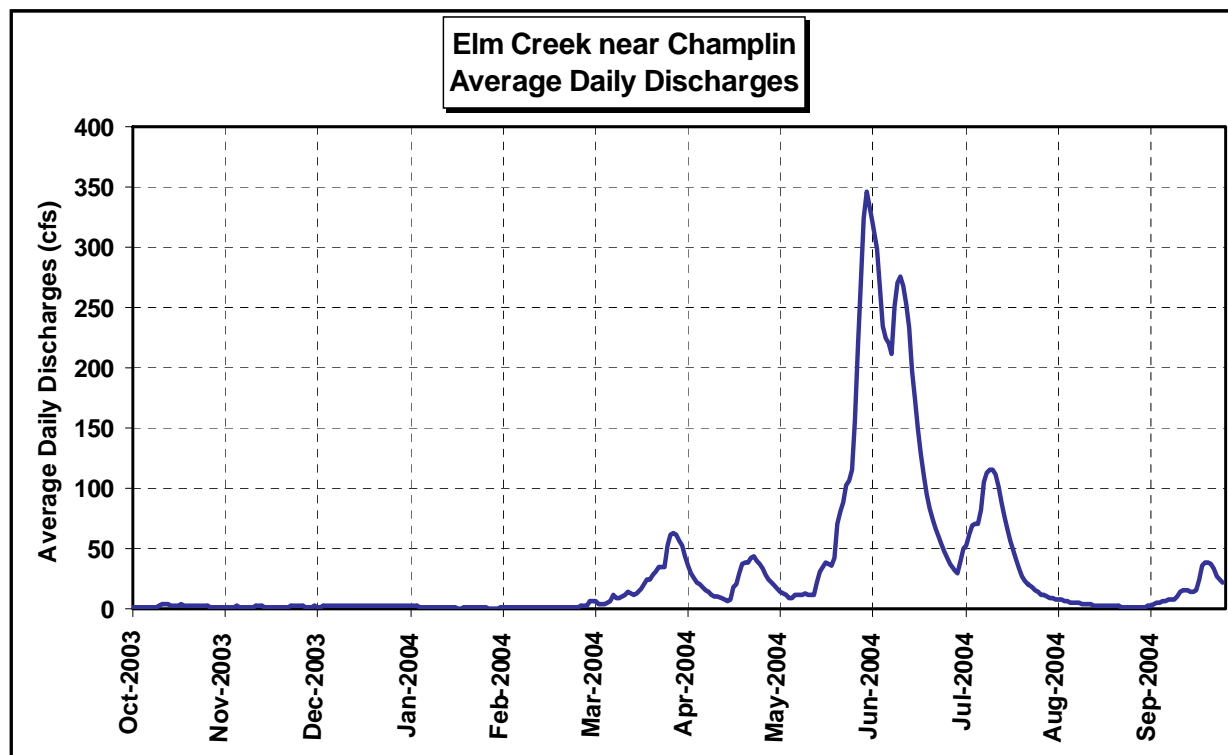
Historical Lake Water Quality Monitoring Figures



Historical Flow Volumes at the USGS Gauging Station



Elm Creek Flow Hydrograph at the USGS Gauging Station



Elm Creek USGS Gauging Station Flow Data

U.S. DEPARTMENT OF THE INTERIOR - U.S. GEOLOGICAL SURVEY - WATER RESOURCES
Station No 05287890 Elm Creek Nr Champlin, MN Source Agency USGS State 27 County 053

WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
Daily Mean Values Discharge, cubic feet per second

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	1.7	2.0	2.2	e0.68	2.9	57	25	270	37	11	e1.5
2	1.4	1.7	1.9	2.3	e0.80	6.2	52	22	325	32	10	e1.5
3	1.6	1.7	1.9	e2.3	e0.72	6.2	43	19	346	29	9.4	e1.5
4	1.6	1.9	2.0	e2.1	e0.66	6.5	36	17	333	40	e8.8	e1.5
5	1.4	2.1	2.0	e1.6	e0.80	4.3	30	14	320	50	e8.2	e2.0
6	1.3	1.9	2.0	e0.70	e0.84	3.5	26	13	299	52	e7.4	e3.0
7	1.4	1.7	2.1	e0.72	e0.80	e4.2	22	11	267	61	e7.4	e4.0
8	1.5	1.7	2.2	e0.72	e0.76	e5.0	20	9.2	234	69	e6.6	e4.8
9	1.7	1.7	e2.2	e0.73	e0.82	6.9	18	9.2	225	71	e6.0	e5.6
10	2.2	1.9	e2.2	e0.74	e0.76	11	16	11	220	70	e5.6	e6.2
11	4.2	2.2	e2.1	e0.76	e0.80	e9.0	14	11	212	82	e5.0	e7.0
12	4.3	2.2	e2.1	e0.72	e0.76	e9.4	12	11	251	105	e4.7	e7.4
13	3.7	2.0	e2.0	e0.70	e0.80	e10	10	13	271	113	e4.5	e7.8
14	3.0	1.8	2.0	e0.70	e0.74	e12	9.7	12	276	115	e4.0	e8.0
15	2.5	1.9	2.2	e0.68	e0.70	e14	8.9	11	268	116	e3.7	e10
16	2.8	1.9	2.3	e0.68	e0.94	e13	7.8	12	252	112	e3.7	e14
17	3.4	1.9	2.4	e0.74	e1.3	e12	6.6	22	233	101	e3.6	e15
18	2.9	1.7	2.1	e0.62	1.7	e13	7.3	31	198	88	e3.2	e15
19	2.4	1.7	2.1	e0.64	1.7	e17	18	34	173	77	e2.6	e14
20	2.2	1.7	2.1	e0.80	1.8	e21	20	38	149	67	2.5	e14
21	2.2	1.7	2.1	e1.2	1.6	e24	30	37	128	57	2.4	15
22	2.2	1.9	2.1	e0.66	1.8	e25	37	36	110	49	e2.4	24
23	2.1	2.1	e2.0	e0.68	1.8	e28	39	42	95	41	e2.3	36
24	2.0	2.1	e2.1	e0.72	1.8	e31	38	70	83	33	e2.2	39
25	2.0	2.1	e2.0	e0.76	1.9	34	42	81	74	27	e2.1	38
26	2.0	2.1	2.0	e0.80	1.9	35	44	88	67	23	e2.0	37
27	1.6	2.1	2.3	e0.70	1.9	35	40	102	60	20	e1.9	33
28	1.6	e1.9	2.6	e0.60	2.0	52	37	107	54	18	e1.8	27
29	1.7	e1.8	2.5	e0.50	2.0	61	33	116	48	16	e1.8	24
30	1.9	1.9	2.4	e0.50	---	63	28	157	42	14	e1.7	22
31	1.9	---	2.5	e0.56	---	61	---	218	---	12	e1.6	---

Statistics for Water Year October 2003 to September 2004

TOTAL	68.1	56.7	66.5	28.83	35.58	636.1	802.3	1,399.4	5,883	1,797	140.1	438.8
MEAN	2.20	1.89	2.15	0.93	1.23	20.5	26.7	45.1	196	58.0	4.52	14.6
MAX	4.3	2.2	2.6	2.3	2.0	63	57	218	346	116	11	39
MIN	1.3	1.7	1.9	0.50	0.66	2.9	6.6	9.2	42	12	1.6	1.5
AC-FT	135	112	132	57	71	1,260	1,590	2,780	11,670	3,560	278	870
CFSM	0.03	0.02	0.02	0.01	0.01	0.24	0.31	0.52	2.28	0.67	0.05	0.17
IN.	0.03	0.02	0.03	0.01	0.02	0.28	0.35	0.61	2.54	0.78	0.06	0.19

Statistics of monthly mean data for water years 1979-2004 by Water Year

MEAN	30.5	21.2	11.2	5.18	9.36	61.9	104	71.9	54.6	42.6	31.9	28.8
MAX	240	67.4	41.3	22.0	99.1	185	414	203	196	157	151	170
(WY)	(1986)	(1994)	(1992)	(1992)	(1984)	(1985)	(2001)	(2002)	(2004)	(1993)	(2002)	(1991)
MIN	1.13	1.03	0.92	0.74	0.91	3.86	5.31	3.54	1.34	0.76	1.44	1.08
(WY)	(1990)	(1990)	(1990)	(1991)	(1990)	(2001)	(1987)	(2000)	(1988)	(1988)	(1989)	(1988)



Elm Creek USGS Gauging Station Flow Data

Summary Statistics	<u>2003 Calendar Year</u>		<u>2004 Water Year</u>		<u>Water Years 1979-2004</u>	
ANNUAL TOTAL	16,468.32		11,352.41			
ANNUAL MEAN	45.1		31.0		39.6	
HIGHEST ANNUAL MEAN					82.2	2002
LOWEST ANNUAL MEAN					4.54	1988
HIGHEST DAILY MEAN	651	Jun 29	346	Jun 3	815	Apr 25, 2001
LOWEST DAILY MEAN	0.74	Mar 9	a0.50	Jan 29,30	0.31	Jun 30, 1988
ANNUAL SEVEN-DAY MINIMUM	0.78	Mar 6	0.62	Jan 26	0.35	Jun 26, 1988
MAXIMUM PEAK FLOW			350	Jun 3	875	Apr 25, 2001
MAXIMUM PEAK STAGE			8.85	Jun 3	10.02	Apr 25, 2001
INSTANTANEOUS LOW FLOW			b0.50	Jan 29	0.29	Jul 9, 1989
ANNUAL RUNOFF (AC-FT)	32,660		22,520		28,650	
ANNUAL RUNOFF (CFSM)	0.525		0.361		0.460	
ANNUAL RUNOFF (INCHES)	7.12		4.91		6.25	
10 PERCENT EXCEEDS	155		84		110	
50 PERCENT EXCEEDS	3.0		4.8		12	
90 PERCENT EXCEEDS	1.4		0.80		1.8	

a=Backwater from ice; b=Daily-mean discharge, backwater from ice; e=Estimated



Elm Creek Water Quality Data

Elm Creek Near Champlin (USGS Station 05287890)

Manual Water Quality Samples for Water Year 2004

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 27, 2003	10:30	1.8	5.6	N/A	737	7.7	61	20	677	7.7
Nov 13, 2003	09:50	2	1.8	N/A	750	11.9	86	20	652	7.7
Dec 17, 2003	09:50	2.3	0.3	N/A	739	9.5	66	10	680	7.7
Jan 21, 2004	10:00	1.6	0.1	N/A	736	10.7	74	<10	755	7.6
Feb 26, 2004	10:20	1.9	1.7	N/A	747	11.7	84	10	708	7.8
Mar 15, 2004	09:30	15	0.1	N/A	749	12.8	88	30	710	7.3
Mar 22, 2004	11:25	47	0.1	N/A	750	13.2	91	40	608	7.4
Apr 12, 2004	10:00	12	5.2	N/A	748	12.8	101	30	614	8
May 20, 2004	13:15	38	18.5	N/A	744	8.5	93	20	672	7.7
Jul 14, 2004	09:45	111	22.4	N/A	742	4.3	50	30	462	7.1
Aug 19, 2004	10:40	2.7	14.4	N/A	746	7.2	71	30	483	7.5
Sep 29, 2004	09:30	25	12.5	N/A	746	8.3	78	30	490	7.7

DATE	Sample Start Time	TSS mg/L	Volatile Residue mg/L	Dissolve Chloride mg/L	Ammonia mg/L	Dissolved NO ₂ +NO ₃ mg/L	Nitrite mg/L	Total Nitrogen mg/L	Dissolve P mg/L	Total P mg/L
Oct 27, 2003	10:30	<10	<10	18.3	E.04	<.06	0.012	0.42	0.06	0.1
Nov 13, 2003	09:50	<10	<10	28.3	<.04	<.06	0.023	0.49	E.04	0.05
Dec 17, 2003	09:50	<10	<10	29.8	0.25	0.11	E.005	0.68	<.04	0.07
Jan 21, 2004	10:00	<10	<10	18.7	0.11	0.11	<.008	0.49	E.03	0.07
Feb 26, 2004	10:20	<10	<10	20.7	0.24	0.09	E.004	0.7	<.04	0.04
Mar 15, 2004	09:30	<10	<10	96.2	0.8	1.88	0.074	2.4	0.17	0.29
Mar 22, 2004	11:25	<20	<20	73.8	0.6	1.07	0.031	2	0.09	0.2
Apr 12, 2004	10:00	<20	<20	68.7	E.04	E.06	<.008	1.1	E.04	0.09
May 20, 2004	13:15	<10	<10	100	E.03	0.09	0.01	1	0.09	0.14
Jul 14, 2004	09:45	14	<10	46.1	<.04	E.03	<.008	1.2	0.22	0.28
Aug 19, 2004	10:40	10	<10	42.1	<.04	E.04	E.005	0.76	0.1	0.16
Sep 29, 2004	09:30	12	10	48.5	E.04	0.13	0.02	1.2	0.13	0.19

Data are provisional and are subject to change

E = Estimated

Automatic Event Samples for Water Year 2004

DATE & TIME	Sp Cond µS/cm	pH	TSS mg/L	COD mg/L	Ammonia mg/L	Nitrite mg/L	Total N mg/L	Dissolved NO ₂ +NO ₃ mg/L	Total P mg/L	Dissolved P mg/L	Dissolved Chloride mg/L
Apr 18, 2004 22:50 to Apr 21, 2004 19:50	654	8.2	11	30	<.04	0.03	1.3	0.22	0.13	0.04	80.4
May 17, 2004 10:17 to May 18, 2004 10:17	682	8	<10	20	E.04	0.013	1.1	<.06	0.15	0.1	85.8
May 23, 2004 12:48 to May 26, 2004 09:49	609	8	14	30	E.03	0.075	1.3	0.37	0.19	0.1	86.3
May 29, 2004 06:42 to Jun 01, 2004 03:43	543	7.9	<10	30	E.04	0.075	1.3	0.44	0.2	0.12	68.7
Jun 11, 2004 21:49 to Jun 14, 2004 06:49	442	7.7	21	30	E.05	0.075	1.3	0.12	0.3	0.26	43.8
Sep 04, 2004 10:35 to Sep 06, 2004 07:35	629	8.2	11	20	E.06	0.075	0.64	0.09	0.14	0.08	26

E = Estimated

Data are provisional and are subject to change

Sp Cond = Specific Conductivity

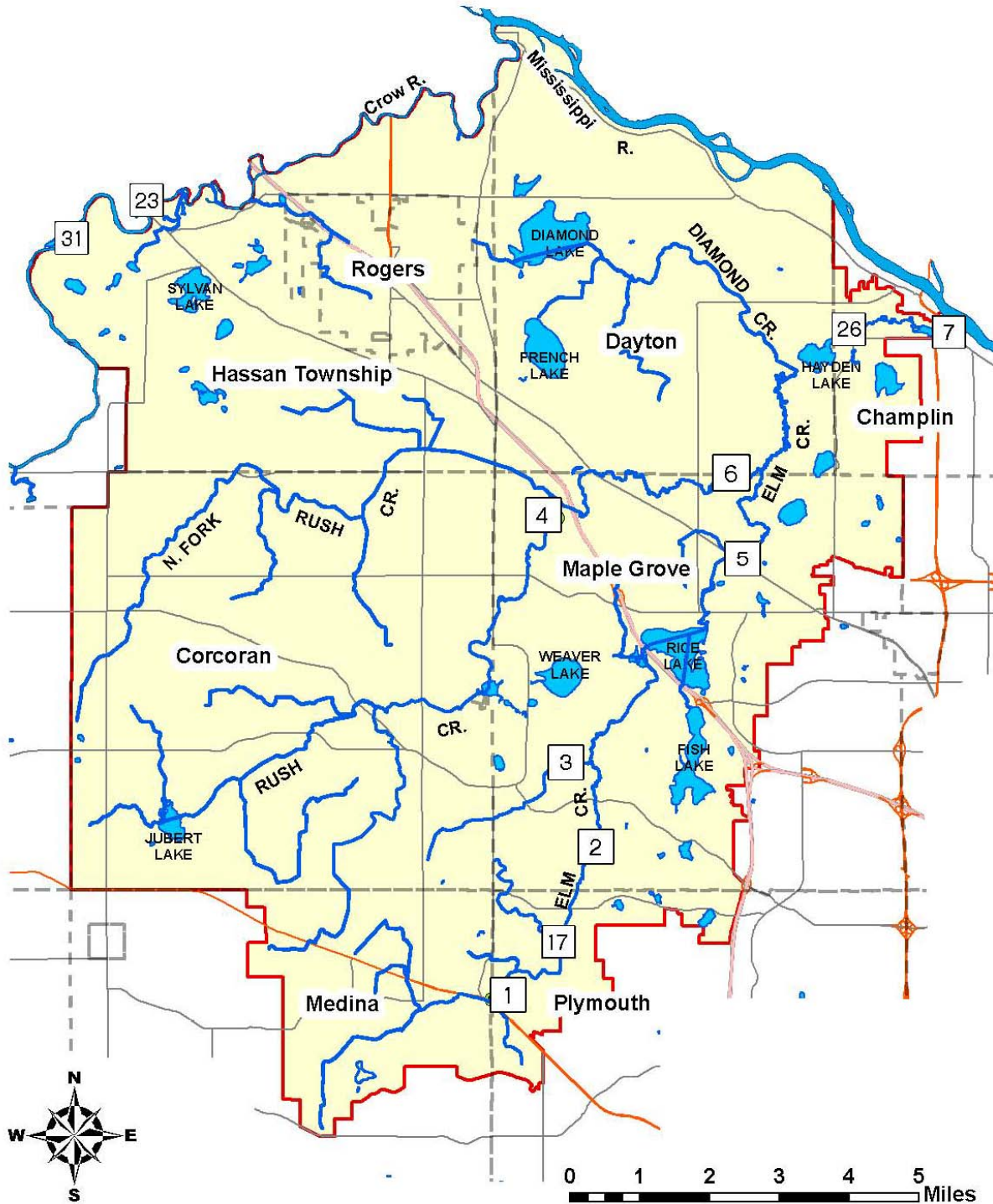
TSS = Total Suspended Sediments

COD = Chemical Oxygen Demand



River Watch Sites

Elm Creek Watershed Macroinvertebrate Sampling Sites



River Watch Program

The Elm Creek Watershed Management Commission has supported the macroinvertebrate monitoring (River Watch) program since its inception in 1995. There are currently seven schools monitoring seven sites in this watershed. 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.

Site 1

This is the most upstream Elm Creek sample site. It is located at the border of Medina and Plymouth, near Wayzata High School and drains the Medina area. Part of the creek is fed by untreated storm sewers 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 2003, the site was sold to the adjacent golf course, a large facility was built adjacent to the creek and much of the vegetated buffer was removed. The 2001 reference habitat site score for this site was 61.(On a scale of 0-180)

Prior to the 2001 sampling season, this site 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; however, low numbers are still a problem. Any analysis based on this data should be viewed with caution. Values for the three primary metrics indicate an impacted stream, with possible slight improvement in recent years. This may be due to a change in monitoring location with better substrate.



David Astin inspects Site 1 during low flow conditions.

Teachers Elizabeth Thornton and David Astin led the monitoring effort at Site 1 from 1995-1999. Thornton retired in 1999 and Astin continues to lead the monitoring effort. Due to class size and changes in school curriculum the school was not able to monitor in 2003 and 2004. River Watch staff are currently looking to find a replacement for 2005.

Results for Site 1

Date	# Identified	Family biotic index	Habitat Score	EPT	Number of Families	Dominant family	Dominant family % overall	Stream Quality Grade
10/12/95	∇	6.5	0*	3	8	Caenidae	34.0	C
5/8/97	∇	6.3	0*	2	10	Chironomidae	50.0	D+
10/1/97	∇	7.0	81	1	6	Chironomidae, red	31.0	D+
5/6/98	∇	6.2	70	3	8	Pelecypoda	51.0	C
5/5/99	∇	6.0	93	2	6	Chironomidae	72.0	C-
10/6/99	∇	5.8	0*	2	7	Chironomidae	58.0	C-
5/18/01	∇	5.3	79	3	7	Baetidae	44.0	B-
**10/11/01	186	5.8	55	4	12	Heptageniidae	23.0	B-

* A Habitat Score of 0 indicates that the habitat was not scored using the River Watch Network Habitat Assessment field sheet.

** Sampling site was moved 500 m downstream. Explanation below.

∇ Less than 100 organisms were identified. State agencies recommend identifying at least 100 macroinvertebrates per sample for standard site characterization.

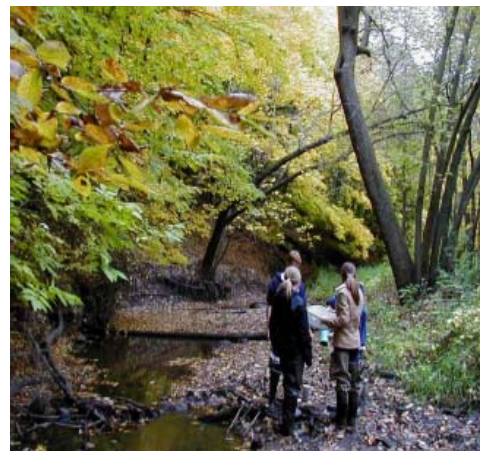


River Watch Program

Site 2

This site is located in a wooded area that is part of a City forest reserve in Maple Grove. Land use in the surrounding area has 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)

When visiting this beautiful wooded stretch of Elm Creek, one might guess that it is a pristine and healthy stream. However, the biotic index, EPT and family richness indicate an impacted site. In the spring of 2002 the monitors began using the multi-habitat sampling method in an effort to improve the number of organisms collected, which was frequently below 100. Black flies, which are tolerant of pollution, are most often the dominant species at this site. MMCD treated for black flies at upstream and downstream Elm Creek sites in 1998-1999. This site has many more Simuliidae than the treated sites. It is not known what treatments occurred beyond 1999.



Elm Creek at Site 2

Although this site has been monitored since 1996, most of the samples had an inadequate sample size. A trend analysis shows fairly stable conditions. However, the 2004 sample indicates a possible positive change in water quality. Additional sampling in 2005 and beyond will help verify if improvements in stream quality are occurring.

Armstrong High School has been monitoring this site since the program started in 1995. Teacher Dan Hanka led the monitoring effort until his retirement in 2004. A new monitor is needed for this site in 2005.

The 2004 spring sample had an adequate number of invertebrates and a surprising change in dominant species and species composition. The Pronggilled Mayfly dominated the sample (67%). This mayfly is sensitive to pollution and indicative of better water quality than previously observed. Two families of stoneflies were also found in this sample, again indicating good water quality. The FBI for the spring 2004 sample was at its lowest value of 3.2 compared to the previous years' range of 5.2 to 6.6.

Results for Site 2

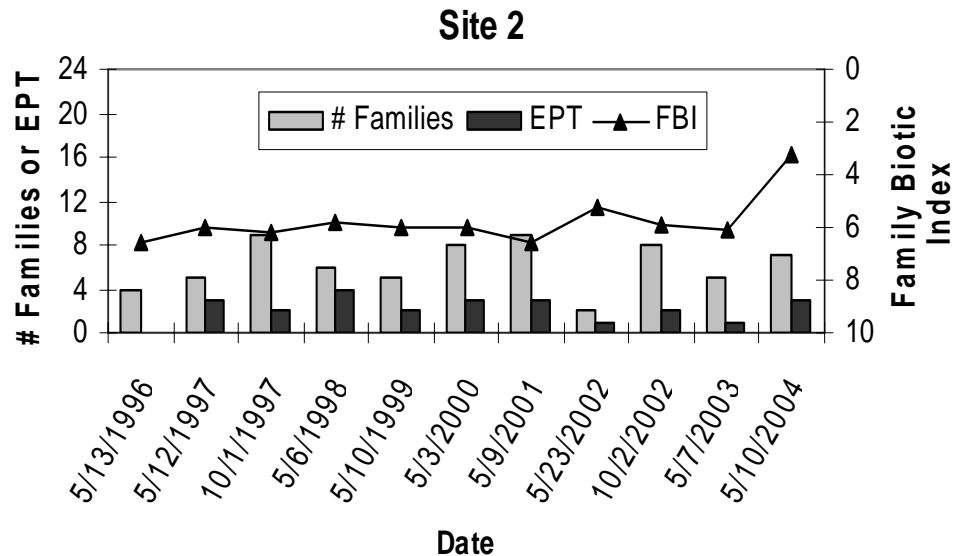
Date	# Identified	Family Biotic index	Habitat Score	EPT	Number of Families	Dominant family	Dominant family % overall	Stream Quality Grade
5/13/96	<70**	6.6	0*	0	4	Simuliidae	61.0	D
5/12/97	200+	6.0	0*	3	5	Simuliidae	99.0	C-
10/1/97	<70**	6.2	93	2	9	Simuliidae	55.0	C-
5/6/98	200+	5.8	99	4	6	Simuliidae	85.0	C
5/10/99	<70**	6.0	100	2	5	Chironomidae	38.0	D+
5/3/00	<70**	6.0	81	3	8	Simuliidae	55.0	C
5/9/01	<70**	6.6	103	3	9	Chironomidae	56.0	C
5/23/02	12	5.2	0*	1	2	Chironomidae	83.3	C-
10/2/02	76**	5.9	27	2	8	Simuliidae	52.6	C-
5/7/03	57**	6.1	0*	1	5	Chironomidae	70.2	D+
5/10/04	229	3.2	0*	3	7	Leptophlebiae	67.0	B-

* A Habitat Score of 0 indicates that the habitat was not scored using the River Watch Network Habitat Assessment field sheet.

**State agencies recommend identifying at least 100 macroinvertebrates per sample for standard site characterization.



River Watch Program



Site 3

This is a small unnamed 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 highly 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 this site in 1997, 1998 and again in 2003. In spring 2001 Girl Scout Troop 1506 from West-Tonka/Orono monitored this site. Providence Academy under teacher Dr. Yvonne Boldt began monitoring the site in 2002.

For several of the samples, the total number of organisms collected at Site 3 was below 100. To accurately determine the Family Biotic Index a minimum of 100 organisms should be collected. With the exception of the fall 2002 sample, the water quality determined by the biotic index is fairly poor. The site generally has a below average biotic index, EPT score and a high percentage of pollution tolerant families.

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. This was the most drastically altered site monitored. It went from a stable drainage ditch with good riparian vegetation to a ripped up construction site, to a newly constructed stream bed. It now appears stable again with good vegetation, but the stream channel has been changed entirely. A trend analysis indicates variable conditions between the metrics. No trend can be predicted based on the limited data available.



Providence Academy students at site 3, fall 2004.



River Watch Program

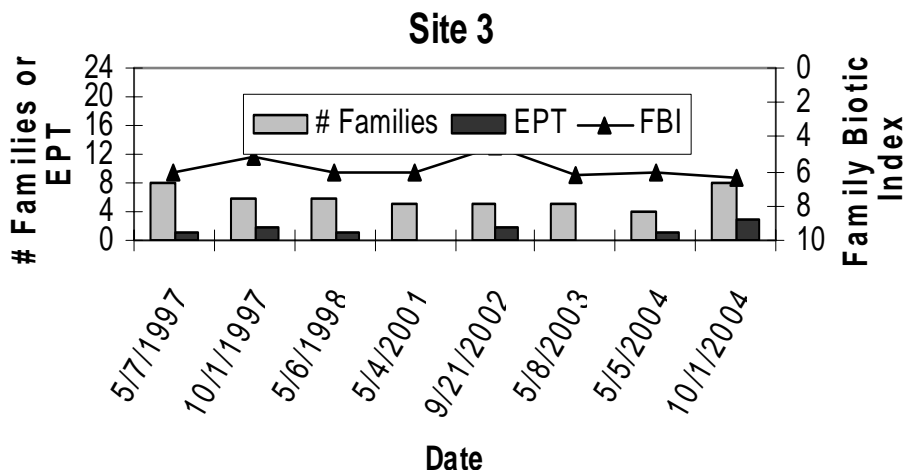
Results for Site 3

Date	# Identified	Family Biotic Index	Habitat Score	EPT	Number of Families	Dominant Family	Dominant Family % overall	Stream Quality Grade
5/7/97	∇	6.1	79	1	8	Simuliidae	71.0	C
10/1/97	∇	5.1	20	2	6	Hydropsychidae	33.0	C
5/6/98	∇	6.0	62	1	6	Simuliidae	47.0	C-
5/4/01	471	6.0	93	0	5	Chironomidae	80.0	D+
9/21/02	134	4.6	0*	2	5	Baetidae	63.0	C-
5/8/03	39**	6.2	0*	0	5	Simuliidae	69.0	D+
5/5/04	100	6.0	0*	1	4	Chironomidae	71.0	C-
10/1/04	108	6.4	0*	3	8	Chironomidae	52.8	C-

* A Habitat Score of 0 indicates that the habitat was not scored using the River Watch Network Habitat Assessment field sheet.

∇ Less than 100 organisms were identified. State agencies recommend identifying at least 100 macroinvertebrates per sample for standard site characterization.

**State agencies recommend identifying at least 100 macroinvertebrates per sample for standard site characterization.



Site 4

This 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. It is 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, Connie Fortin, Hennepin County River Watch founder, and her colleagues at Fortin Consulting volunteered to monitor the site. Teacher Dr. Yvonne Boldt and her students monitored the site in fall 2002.



Providence Academy at Site 4, Fall 2004.



River Watch Program

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 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. With the exception of 1998, the family has always been a pollution tolerant family. Water levels fluctuate greatly at this site.

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 later. A trend analysis of the samples indicates fairly stable, but impacted conditions.

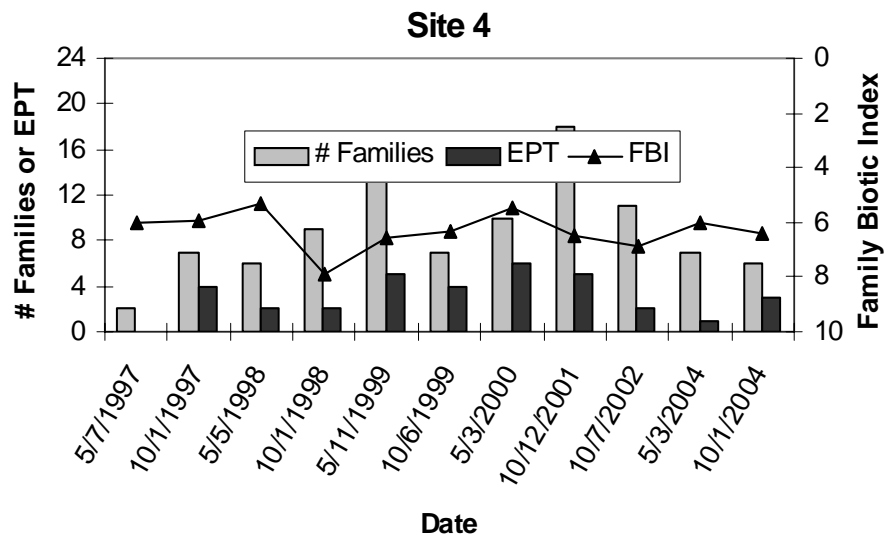
Results for Site 4

Date	# Identified	Family Biotic Index	Habitat Score	EPT	Number of Families	Dominant Family	Dominant Family % overall	Stream Quality Grade
5/7/97	▲	6.0	0*	0	2	Simuliidae	98.0	D+
10/1/97	▲	5.9	120	4	7	Simuliidae	77.0	D+
5/5/98	▲	5.3	111	2	6	Baetidae	61.0	D+
10/1/98	▲	7.9	113	2	9	Talitridae	90.0	D+
5/11/99	▲	6.6	98	5	14	Simuliidae	43.0	C+
10/6/99	▲	6.3	81	4	7	Talitridae	55.0	C+
5/3/00	▲	5.5	0*	6	10	Simuliidae	42.0	B
10/12/01	▲	6.5	68	5	18	Talitridae	34.0	B-
10/7/02	72**	6.9	0*	2	11	Oligochaeta	46.0	C
5/3/04	166	6.0	0*	1	7	Simuliidae	66.0	C-
10/1/04	200	6.4	0*	3	6	Chironomidae	67.5	C-

* A Habitat Score of 0 indicates that the habitat was not scored using the River Watch Network Habitat Assessment field sheet.

▲ The number of organisms identified is greater than or equal to 100.

** State agencies recommend identifying at least 100 macroinvertebrates per sample for standard site characterization.



River Watch Program

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 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 and 2004.

The consistently high biotic index and relatively low EPT at this site 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, likely due to inputs from Rice Lake. The dominant family at this site has consistently been a pollution tolerant family. Rice Lake flows into this site and has very poor water quality. The water contains about five times the phosphorus of Fish Lake. 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.



High water at Site 5

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. A trend analysis indicates fairly stable conditions with a possible slight improvement in water quality. The number of families has been variable.

Results for Site 5

Date	# Identified	Family Biotic Index	Habitat Score	EPT	Number of Families	Dominant Family	Dominant Family % overall	Stream Quality Grade
5/15/96	▲	6.0	0*	0	3	Simuliidae	86.0	D
9/25/96	▽	9.0	0*	0	2	Hirudinea	67.0	D
5/8/97	▲	6.1	0*	0	5	Simuliidae	92.0	D+
10/1/97	▲	7.0	135	2	13	Talitridae	36.0	D+
5/6/98	▲	6.6	58	2	12	Chironomidae	50.0	C
9/30/98	▲	6.4	0*	2	11	Simuliidae	64.0	C
5/10/99	▲	6.3	0*	1	10	Chironomidae	80.0	C
10/4/99	▲	5.9	89	1	13	Simuliidae	42.0	C
5/1/00	▲	6.1	115	3	8	Talitridae	30.0	C-
10/3/00	▲	6.7	68	1	8	Simuliidae	60.0	C-
10/2/01	▲	6.5	94	1	8	Simuliidae	62.0	C-
5/16/02	163	6.1	95	1	5	Simuliidae	81.6	C-
10/4/02	263	6.8	0*	2	11	Talitridae	47.9	C-

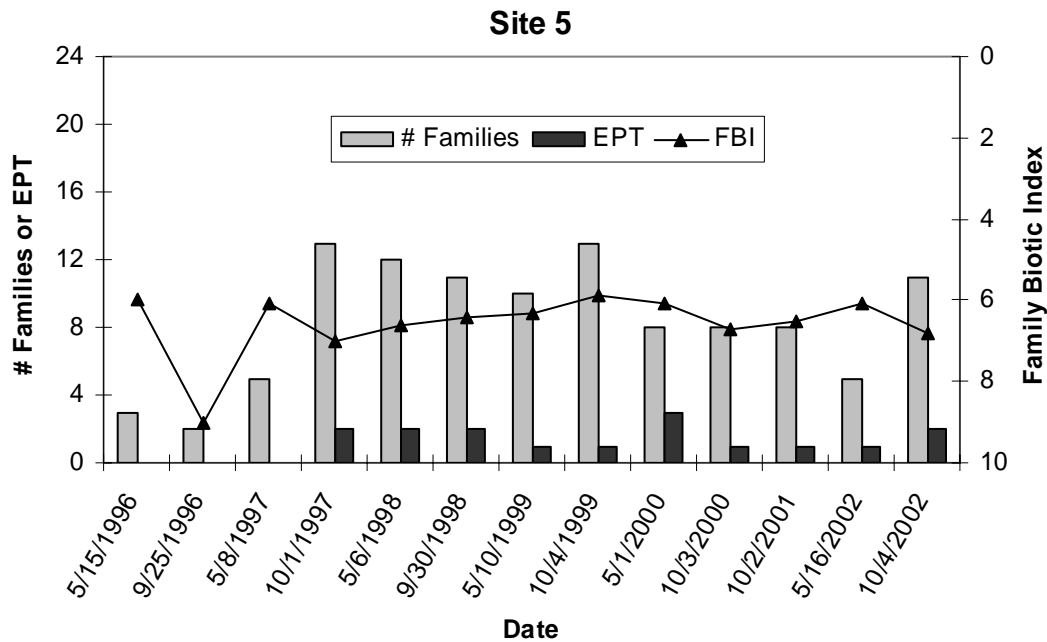
* A Habitat Score of 0 indicates that the habitat was not scored using the River Watch Network Habitat Assessment field sheet.

▲ Number of organisms identified is greater than or equal to 100.

▽ Less than 100 organisms were identified. State agencies recommend identifying at least 100 macroinvertebrates per sample for standard site characterization.



River Watch Program



Site 6

This sample site is on Rush Creek, which is a tributary to Elm Creek. It is located in the Elm Creek Park Reserve and 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)

Osseo High School has been monitoring this site since 1996. Teacher Jim Schultz leads the monitoring effort. In 1995, the Hennepin Conservation District monitored this site.

Site 6 has been sampled since 1995. When compared to other Elm Creek sites, this site usually shows a lower family biotic index (FBI), a higher EPT and larger number of families. These are all indicators of a relatively healthy stream with fair water quality and some organic pollution probable. The water quality, based on the macroinvertebrate community, has remained fairly stable. The average FBI is 5.3, indicating fair water quality with substantial pollution likely. This 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. It is not known if treatments occurred in 2002 and later.



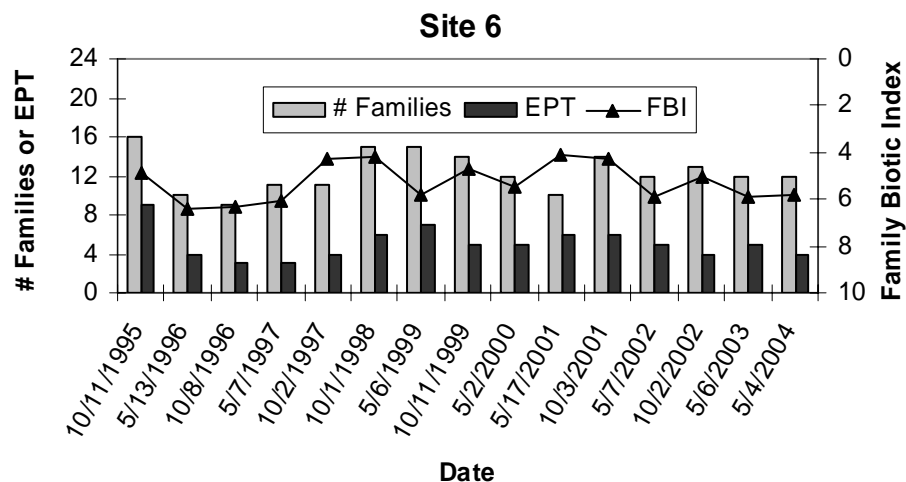
River Watch Program

Results for Site 6

Date	# Identified	Family Biotic Index	Habitat Score	EPT	Number of Families	Dominant Family	Dominant Family % overall	Stream Quality Grade
10/11/95	▲	4.9	0*	9	16	Hydropsychidae	23.0	A
5/13/96	▲	6.4	0*	4	10	Chironomidae	52.0	C+
10/8/96	▲	6.3	0*	3	9	Talitridae	37.0	C+
5/7/97	▲	6.1	0*	3	11	Simuliidae	72.0	B-
10/2/97	▲	4.3	127	4	11	Hydropsychidae	52.0	B-
10/1/98	▲	4.2	112	6	15	Hydropsychidae	70.0	B+
5/6/99	▲	5.8	0*	7	15	Simuliidae	49.0	B+
10/11/99	▲	4.7	89	5	14	Hydropsychidae	51.0	B+
5/2/00	▲	5.5	111	5	12	Simuliidae	55.0	B
5/17/01	▲	4.1	145	6	10	Limnephilidae	24.0	B
10/3/01	▲	4.3	106	6	14	Hydropsychidae	64.0	B
5/7/02	259	5.9	116	5	12	Simuliidae	76.0	B
10/2/02	302	5.0	0*	4	13	Hydropsychidae	50.7	B
5/6/03	258	5.9	0*	5	12	Chironomidae	48.4	B-
5/4/04	347	5.8	0*	4	12	Chironomidae	34.0	B-

* A Habitat Score of 0 indicates that the habitat was not scored using the River Watch Network Habitat Assessment field sheet.

▲ Number of organisms identified is greater than or equal to 100.



Site 7

This site at the mouth of Elm Creek was monitored by Champlin Park High School from '96—'00. It was dropped from the Hennepin County River Watch program in 2001 because the site was too heavily influenced by macroinvertebrates from the Mississippi River. 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.

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. Based on the biotic index, this site exhibits fairly poor water quality. A trend analysis indicated fairly stable water quality with variability between the metrics.



River Watch Program

Results for Site 7

Date	# Identified	Family Biotic Index	Habitat Score	EPT	Number of Families	Dominant Family	Dominant Family % overall	Stream Quality Grade
5/13/96	▲	6.6	0*	3	12	Talitridae	38.0	B
9/22/96	▲	3.9	0*	7	13	Hydropsychidae	84.0	
5/8/97	▲	6.0	95	4	11	Chironomidae	61.0	C+
10/1/97	▲	6.4	0*	2	9	Chironomidae	63.0	
5/6/98	▲	6.0	82	4	10	Simuliidae	74.0	B-
10/9/98	▲	6.7	108	6	14	Chironomidae	47.0	
5/5/99	▲	6.8	96	3	10	Chironomidae	53.0	C+
10/8/99	▲	7.2	81	8	14	Talitridae	44.0	
5/1/00	▲	6.6	88	3	8	Chironomidae	47.0	C+
10/15/00	▲	6.2	0*	5	13	Chironomidae	80.9	
5/29/02	93**	7.0	0*	4	10	Talitridae	30.0	C

* A Habitat Score of 0 indicates that the habitat was not scored using the River Watch Network Habitat Assessment field sheet.

▲ Number of organisms identified is greater than or equal to 100.

** State agencies recommend identifying at least 100 macroinvertebrates per sample for standard site characterization.

Site 17

This site was located on the Wayzata High School grounds just downstream from the school's storm water holding ponds. Monitoring at this site was completed as an experiment with artificial samplers (mesh rock bags) for collecting organisms at this site. Due to the lack of organisms found, it is no longer in use.

In the two years monitored, this site reported less than 100 organisms. The data should not be directly compared to other sites.



Eroded streambank at Site 17, Spring 2004

Results for Site 17

Date	# Identified	Family biotic index	Habitat Score	EPT	No. of Families	Dominant Family	Dominant Family % Overall	Stream Quality Grade
10/12/95	▽	6.5	0*	3	8	Caenidae	34.0	C
5/6/98	▽	6.2	70	3	8	Chironomidae	51.0	C

* A Habitat Score of 0 indicates that the habitat was not scored using the River Watch Network Habitat Assessment field sheet.

▽ Less than 100 organisms were identified. State agencies recommend identifying at least 100 macroinvertebrates per sample for standard site characterization.



River Watch Program

Site 26

The site replaces site 7 as the most downstream site on Elm Creek. It is located in Josephine Nunn Park in 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. The wooded south side of the creek is now being developed. 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.



Site 26 changes in riparian land use



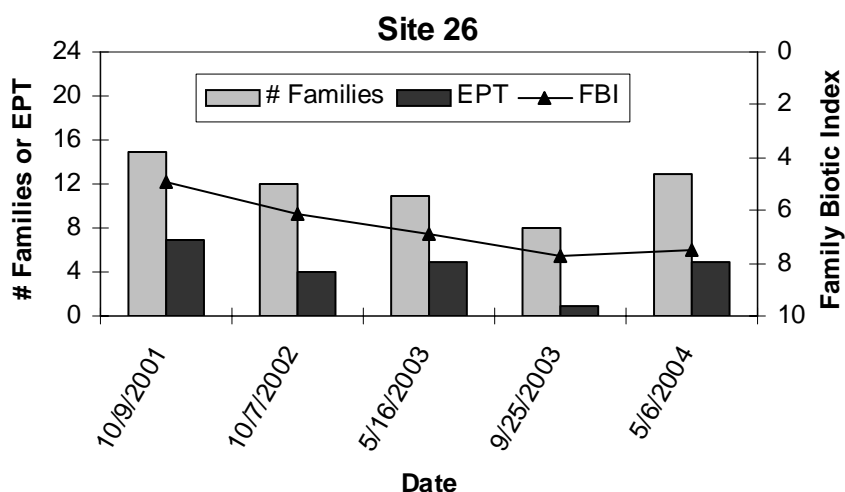
Champlin Park students, Spring 2004

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 5 years. Although there are only 5 data points over 4 years, a trend analysis indicates a definite decline in the number of families and the EPT and an increase in FBI. The water quality extrapolated from the FBI has gone from "Good" in 2001 to "Very Poor" in 2004. The land use around site 26 has also changed significantly in the past 2 years. A development has gone in along the south side of the creek, where there previously was open space and wooded areas. Ongoing monitoring at this site is needed to verify the possible downward trend in water quality.

Results for Site 26

Date	# Identified	Family Biotic Index	Habitat Score	EPT	Number of Families	Dominant Family	Dominant Family % overall	Stream Quality Grade
10/9/01		4.9	115	7	15	Hydropsychidae	63.0	B+
10/7/02	167	6.1	0*	4	12	Asellidae	38.0	B-
5/16/03	246	6.9	0*	5	11	Simuliidae	23.0	C
9/25/03	346	7.7	0*	1	8	Asellidae	63.9	C
5/6/04	211	7.5	0*	5	13	Talitridae	57.0	C+

▲ Number of organisms identified is greater than or equal to 100.



River Watch Program

Selected Characteristics and Average Water Quality Metrics for 2004

Watershed Site	Area mi ²	Level of Development	Density People/mi ²	Impervious surface	Urban Land Use	Agricultural Land Use	Avg Family Biotic Index	Avg EPT	Avg # of Families	Stream Quality Grade	Trend
Elm Creek	109		340	6%	8.7%	85%	5.8 avg	3.2 avg	8.9avg		
Site #1		Developing					N/A	N/A	N/A	N/A	Variable
Site #2		Developing					3.2	3.0	7	B-	Stable, slight↑
Site #3		Developing					6.2	2	6	C-	Variable
Site #4		Rural					6.2	2	6.5	C-	Stable
Site #5		Developing					N/A	N/A	N/A	N/A	Stable, slight↑
Site #6		Rural					5.8	4.0	12.0	B-	Stable
Site #7		Developing					N/A	N/A	N/A	N/A	Variable
Site #26		Rural					6.5	0	5	C+	Possible ?,ND
Shingle Creek	43.5		2610	23%	71%	20%	6.0 avg	1.3 avg	7.7avg		
Site #10		Developed					7.5	0	5.5	D	Declining
Site #27		Developed					N/A	N/A	N/A	N/A	ND
Site #28		Developed					5.3	2.0	8	C	Variable, ND
Site #30		Developed					5.4	2.0	9.5	C+	Variable,ND
Minnehaha Creek	181		964	7%	37%	38%	5.2 avg	2.6 avg	8.9avg		
Site #19		Developed					5.3	2.5	6.5	C	Declining
Site #9		Developed					6.0	4	14	B-	Variable
Site #11		Developed					5.2	3.0	10	B-	Stable
Site #14		Developed					4.7	2.5	7	C	Variable
Site #25		Developed					4.8	1	7	C	Stable, ND
Site #16		Rural					N/A	N/A	N/A	N/A	Stable, possible ?
Purgatory Creek	31.4		1760	15%	83%	12%					
Site #18		Developed					N/A	N/A	N/A	N/A	Possible ?,ND
Nine Mile Creek	50		2210	28%	87%	6%					
Site #21		Developed					4.9	2	9	B-	Variable, possible slight?
Site #22		Developed					N/A	N/A	N/A	N/A	Variable, ND
Bassett Creek	39.1		2240	22%	82%	11%					
Site #13		Developed					5.0	4.3	10	B-	Variable
Site #15		Developed					N/A	N/A	N/A	N/A	Stable
Pioneer-Sarah Cr	59.4										
Site #24		Rural					6.5	0	5	D+	Possible ?,ND
Crow River	2,725						4.3 avg	5.9 avg	9.4avg	B avg	
Site #12		Developing					3.8	5.7	9.3	B	Steady, Possible ?
Site #31		Rural					4.8	6.0	9.5	B	ND
West Mississippi	23.5										
Site #20		Developed					5.1	1	9	C	Possible ?,ND

N/A- indicates no monitoring occurred or data is not available. ND- more data is needed to more accurately evaluate trends.

Impervious Surface, Population Density and Land Use Data—From USGS: Water Resources Investigations Report 99-4247.

EPT - The number of mayfly (Ephemeroptera), stonefly (Plecoptera), and caddisfly (Trichoptera) families in the sample. These families represent the pollution intolerant insects. A high EPT score reflects better water quality than a low one. **ave**= average

Family Biotic Index (FBI) - Summarizes pollution tolerances of families in a sample. Ranges from 0 to 10, **low** values=**high** water quality.

Number of Families - The number of different benthic macroinvertebrate families found at the site. In general, more diversity is better. **Site Grade** – Hennepin County issued an environmental report card in 2001. HCD developed the following grading system:

A: Family Biotic Index 0.00-4.00; EPT 9-12; Number of Families 12-15

B: Family Biotic Index 4.01-5.75; EPT 6.0-8.9; Number of Families 8-11.9

C: Family Biotic Index 5.76-6.50; EPT 3-5.9; Number of Families 6-9.9

D: Family Biotic Index > 6.50; Average EPT < 3; Number of Families < 6



River Watch Program

Discussion

Hennepin County River Watch has a range of one to 10 years of data on 30 monitoring sites. We have the most in-depth results on Elm Creek and Minnehaha Creek. It is important to note that not all sites have the recommended minimum five years worth of data to detect trends. As more sites reach this stage, it will become possible to use these macroinvertebrate indices as baseline data. Identifying trends or significant changes in the indices over time is probably the most fitting use for volunteer-collected stream data.

There are nine monitoring sites in the Elm Creek Watershed. Data was submitted for five of the sites in 2004. Stream Quality Grades for 2004 ranged from C- to B-. Elm Creek and its tributaries generally exhibit very poor to fair conditions. Site 2 showed some surprising results, with a major shift in species composition and metrics indicating much better biologic health than any previous sampling. Sites 26 and 7 exhibit better water quality than the other Elm Creek sites. They are located downstream of the Elm Creek Park Reserve. Flowing through this undisturbed riparian zone may be helping to improve stream health. The land adjacent to site 26 is now being developed. It will be important to continue monitoring and watch the results closely.

The table on the previous page compares land use and water quality in six of the primary watersheds in Hennepin County. It also includes the 2004 metric averages and trends. The Crow River, our only larger river, exhibits the best water quality. For the smaller streams, Nine Mile Creek, Bassett Creek and site 9 on Minnehaha Creek usually exhibit better water quality than the other watersheds. Some individual sites on the other creeks have also shown good water quality. In general, the watersheds that are undergoing changes, such as development are showing poor water quality. Pioneer Creek and parts of Shingle and Elm Creeks exhibit our poorest water quality.

Drawing conclusions based on comparisons between different watersheds and streams is difficult. Variations in gradient, flow, bottom composition, and other factors that impact habitat quality influence the results. We can make conjectures about water quality from the data and continue to look for trends. The comparisons are an attempt to identify trends and should not be considered statistically significant results.

Water Quantity & Biological Data

Changes in the quantity of water in the streams in Hennepin County may also play a role in macroinvertebrate populations. Precipitation for 2004 was above normal in the spring and fall, but below normal in the summer. During some years, some of the sites are too dry to sample. It is unclear how much this fluctuation is due to weather and precipitation and how much this is facilitated by the increases in impervious surface throughout the developing areas of the county. An increase in impervious surfaces may create faster velocity and higher volume run-off of storm water to streams, and less infiltration. This could result in higher flows during storm events and lower flows during drought periods. While regulations are in place to mitigate the loss of wetlands and most new development is required to create storm water ponds, the volume of stormwater entering Hennepin County Creeks is increasing and the amount of water available for base flow is likely decreasing. These changes are likely to result in impacts to the streambed and banks, water quality and aquatic life. Impacts such as erosion, increased sediment load, downcutting, and increased flooding have been observed. It is unclear how these replacement wetlands and detention ponds are impacting overall flow levels in area creeks and streams. It is also unclear how changes in flow impact water quality. The value of this biological monitoring program lies in these unanswered questions. Consistent monitoring provides data that enables resource managers to evaluate the success of such conservation practices.

Conclusions

Analyzing the health of the streams in Hennepin County is a complex task, but we believe macroinvertebrate monitoring provides a valuable overview of water quality. The macroinvertebrate data has given us additional insight on the health of our streams. For many of these stream reaches, this is the only monitoring that is occurring. It is critical to continue to monitor these streams and take action based on the findings. As we collect data each year, we will continue to add to the historical picture of the streams over time. The health of all of our sites reflects the land use in the watershed. Land use could be improved by implementing Best Management Practices (BMPs) in order to improve the water quality of the streams. Examples of BMPs include: keeping native vegetation along the stream banks, limiting livestock access to streams, avoiding the use of chemical fertilizers close to a water resource, limiting the disturbance to the natural stream channel when building nearby, etc.

It is a challenge to address water quality in an urban and rapidly developing county. Through this program we are trying to take advantage of the energy of high school and college students and direct it towards stream stewardship. As the River Watch Program completes its tenth year in Hennepin County we are encouraged by the ongoing commitment of the monitoring schools, and by the continued increase in interest from other schools, counties and agencies in our monitoring efforts.

To learn more about the program, contact Jenny Schaust, River Watch Program Coordinator, at Jenny.Schaust@co.hennepin.mn.us.



2004 Budget

Elm Creek Watershed Management Commission Year 2004 Budget Adopted June 11, 2003

	A	B	C	D	E	F	G
				2001 Actual (cash basis)	2002 Actual (cash basis)	2003 Budget Projected to Year End	2004 Budget Approved
1							
2							
3							
4			EXPENSES				
5			Administrative	(54,516)	(52,354)	(65,000)	(70,000)
6			Website	0	0	(1,500)	(1,500)
7			Legal/Audit Services	(9,213)	(5,042)	(14,000)	(15,000)
8			Insurance	(2,496)	(2,526)	(3,000)	(3,400)
9			Contingency	0	0	0	0
10			Project Review Expense - Technical	(10,000)	(8,697)	(5,000)	(10,000)
11			Technical Support				(12,000)
12			Stream Monitoring	(14,354)	(9,627)	(15,000)	(16,000)
13			Gauging Station - Electric Bill	(105)	(124)	(110)	(150)
14			Lake Monitoring	(3,040)	(700)	(3,400)	(3,600)
15			BMP Implementation	(10,116)	(5,637)	(1,906)	
16			WCA Escrows - Returned/Utilized	0	0	0	0
17			Wetland Monitoring	(832)	(1,035)	0	0
18			WCA Expense - Technical	(5,004)	(3,750)	0	(8,000)
19			WCA Expense - Legal	(1,842)	(1,463)	(1,000)	(1,000)
20			WCA Expense - Administrative	(4,290)	(3,152)	(3,000)	(5,000)
21			2nd Gen Plan - HCD	0	(7,548)	0	0
22			2nd Gen Plan - WSB Extras			(5,500)	
23			2nd Gen Plan Development (WSB)	(17,430)	(23,517)	(3,985)	0
24			2nd Gen Plan - Legal			(6,000)	
25			2nd Gen Plan - Admin Support	(13,264)	(8,499)	(4,500)	0
26			Stormwater Studies/Programs - 2 G Implementation	0	0	0	(20,000)
27			Greenways Project	(10,639)	0		
28			Macroinvertebrate Monitoring	(4,000)	(4,000)	(4,000)	(5,000)
29			Education/Training	(50)	0	0	(2,000)
30			Special Projects	0	0	(500)	(1,000)
31			Contingency	0	(108)	(500)	(1,000)
32							
33			Total Expenses	(161,191)	(137,779)	(137,901)	(174,650)
34			REVENUE				
35			Project Review Fees	0	22,750	30,000	34,000
36			Water Monitoring - Hennepin Parks share	1,851	2,688	2,300	3,000
37			BMP Implementation	40,918	0		
38			WCA Fees	1,700	1,860	800	6,000
39			2nd Gen Plan - Hennepin Parks	0	12,500		
40			Greenways Grant	5,000	0		
41			Membership Dues	75,000	96,500	115,000	131,000
42			Interest Income	4,149	776	100	650
43			Miscellaneous Income	128	185	0	0
44							
45			Total Revenue	128,746	137,259	148,200	174,650
46			Operating Fund Surplus	(32,445)	(520)	10,299	0
47							
48			Beginning Fund Balance (Unencumbered)	48,997	16,552	16,032	26,331
49			Ending Fund Balance (Unencumbered)	16,552	16,032	26,331	26,331
50							
51			Encumbered Funds - WCA Escrows	18,668	17,668	17,668	17,668
52			Encumbered Funds - Other	8,607	11,994	0	0
53			Total Encumbered Funds Balance	27,275	29,662	17,668	17,668
54							
55			Total Fund Balance	43,827	45,694	43,999	43,999
56							



2004 Treasurer's Report

ELM CREEK WATERSHED MANAGEMENT COMMISSION Treasurer's Report - December 31, 2004 Adjusted

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
1			BUDGET	Encum- bered at 12/31/03	Jan - 08%	Feb - 17%	Mar - 25%	Apr - 33%	May - 42%	Jun - 50%	July	August	September	October	November	December	A/P and A/R 12/31/04	Calendar YTD (E thru P)	Budget YR (F thru Q)	Unrealized Budget	Encum- bered at 12/31/04	
2	EXPENSES																					
3	Administrative		70,000.00		4,393.20	3,337.68	4,731.26	5,978.48	4,865.68	4,578.29	4,283.19	4,164.53	3,684.36	4,378.91	4,282.30	4,975.90	5,419.79	53,653.78	54,680.37	15,319.63		
4	Legal/Audit Services		15,000.00		137.50	0.00	262.50	75.00	2,225.00	525.00	0.00	0.00	0.00	0.00	295.95	0.00	142.50	3,520.95	3,525.95	11,474.05		
5	Insurance		3,400.00		0.00	2,781.00	110.00	0.00	218.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.00	3,118.00	3,118.00	282.00		
6	Stream Monitoring		16,000.00		0.00	0.00	506.23	0.00	0.00	0.00	0.00	3,412.00	0.00	0.00	10,238.00	0.00	3,413.00	17,569.23	17,569.23	-1,569.23		
7	Rain Gauge		150.00		8.07	13.82	10.43	8.80	10.41	8.63	9.63	10.29	19.92	10.01	8.96	7.68	8.07	117.02	117.02	32.98		
8	Lakes Monitoring		3,600.00		0.00	0.00	0.00	0.00	550.00	0.00	0.00	0.00	0.00	0.00	0.00	2,490.00		3,040.00	3,040.00	560.00		
9	Invertebrate Monitoring		5,000.00		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	5,000.00	3,500.00	
10	Second Genera Plan			138.00	0.00	0.00	57.63	0.00	0.00	0.00	37.00	0.00	0.00	0.00	74.00	185.00		353.63	353.63	-353.63	0.00	
11	Admin-2d Genera Plan			5,770.28	137.73	241.47	1,004.25	101.15	60.55	82.85	44.26	0.00	400.18	509.53	98.46	0.00	47.99	2,680.43	2,590.69	-2,590.69	3,179.59	
12	Legal - 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		
13	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		
14	Contingency		1,000.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	786.60	0.00	0.00		786.60	786.60	213.40		
15	Education		2,000.00	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		
16	Project Reviews		10,000.00		1,447.65	977.45	825.00	840.35	1,215.33	1,394.21	1,691.11	1,618.21	1,591.25	1,861.50	1,579.63	1,373.39	1,810.39	16,415.08	16,777.82	-6,777.82		
17	Technical Support		12,000.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18,000.00	0.00		18,000.00	18,000.00	-6,000.00		
18	WCA-Technical		8,000.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12,000.00		12,000.00	12,000.00	-4,000.00		
19	WCA-Administrative		5,000.00		316.10	58.78	272.59	168.67	49.73	162.25	422.89	99.19	227.68	243.77	300.87	141.48	631.47	2,464.00	2,779.37	2,220.63		
20	WCA - Legal		1,000.00		443.50	0.00	75.00	337.50	25.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		881.00	437.50	562.50		
21	Wetland Monitoring				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		
22	Stormwater Studies - 2G Imp		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	20,000.00	
23	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	1,000.00	
24	Website		1,500.00	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	1,224.10	0.00	1,224.10	275.90	1,775.90	
25	TOTAL - Month				6,883.75	7,410.20	7,854.89	7,509.95	9,219.70	6,751.23	6,441.45	9,304.22	5,923.39	7,827.32	16,878.17	39,173.45	12,706.31	134,599.72	\$131,177.72	37,649.72	\$29,455.49	
26	TOTAL - Year		174,650.00	9,408.28	6,883.75	14,293.95	22,148.84	29,658.79	38,878.49	45,629.72	52,071.17	61,375.39	67,298.78	75,126.10	92,004.27	131,177.72	143,884.03					
27																						
28	INCOME																					
29	From Fund Balance											-900.00						-900.00	-900.00			
30	Member Dues		131,000.00		61,072.43	11,297.08	0.00	0.00	0.00	34,765.21	11,509.18	4,587.87	0.00	0.00	0.00	7,768.24		131,000.01	131,000.01	-0.01		
31	Water Qlty Monitoring		3,000.00	2,932.01	2,932.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,588.97	2,932.01	1,588.97	1,411.03		
32	Misc Income				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	262.00		262.00	262.00	-262.00		
33	Project Reviews		34,000.00		0.00	4,900.00	8,400.00	24,200.00	9,750.00	15,700.00	17,384.00	6,800.00	5,600.00	2,100.00	21,900.00	10,338.00	7,500.00	126,172.00	134,572.00	-100,572.00		
34	WCA Fees		6,000.00		0.00	550.00	0.00	250.00	700.00	900.00	450.00	0.00	500.00	800.00	250.00	300.00		4,700.00	4,700.00	1,300.00		
35	Interest Earned		650.00		18.53	17.17	18.14	17.55	19.10			17.55	85.76	37.86	40.87	47.87		320.40	320.40	329.60		
36																						
37	TOTAL - Month				64,022.97	16,764.25	8,418.14	24,467.55	10,469.10	51,365.21	29,343.18	10,505.42	6,165.76	2,937.86	22,190.87	18,716.11	9,088.97	265,386.42	\$272,443.38	-97,793.38		
38	TOTAL - Year		174,650.00	2,932.01	64,022.97	80,787.22	89,205.36	113,672.91	124,142.01	175,507.22	204,850.40	215,355.82	221,541.58	224,479.44	246,670.31	265,386.42	274,475.39					
39																						
40	CASH SUMMARY	Bal Fwd																				
41	Checking		44,504.66		101,625.35	110,916.93	111,462.04	124,940.84	126,171.14	170,785.12	193,686.85	193,970.50	198,780.55	193,853.23	199,125.06	178,619.85		OK per bank				
42	FBS Fund		33,312.58		33,331.11	33,348.28	33,366.42	33,383.97	33,403.07	33,403.07	33,420.62	33,506.38	33,544.24	33,585.11		33,632.98						
43	Cash on Hand		77,817.24		134,956.46	144,265.21	144,828.46	158,324.81	159,574.21	204,188.19	227,089.92	227,391.12	232,286.93	227,397.47	232,710.17	212,252.83		Okay per 2003 Financial Statement				
44																						
45	CASH SURETIES HELD - PRIOR YEAR			15,411.86																	15,411.86	
46	WCA Escrows Received Current Year				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7,500.00	0.00	0.00	0.00	7,500.00				15,000.00	
47	WCA Escrow Refunded/Used Current Year				0.00	45.30	0.00	3,461.25	0.00	0.00	0.00	0.00	2,866.56	0.00	0.00	0.00	0.00				6,373.11	
48	Total Cash Sureties Held			15,411.86																	\$24,038.75	
49																						
50	Accounts Payable/Receivable at 12/31/03																					



2004 Financial Report

ELM CREEK WATERSHED MANAGEMENT COMMISSION

Financial Statements
and Accompanying Information
for the years ended
December 31, 2004 and 2003

(with Accountants' Review Report)



2004 Financial Report

ELM CREEK WATERSHED MANAGEMENT COMMISSION

December 31, 2004 and 2003

Table of Contents

	Page
Accountants' Review Report	1
Statement of Assets, Liabilities and Fund Equity	2
Statement of Revenues and Expenditures and Changes in Fund Balance	3
Statement of Cash Flows	4
Notes to Financial Statements	5 - 7
Accompanying Information Statement of Revenue and Expenditures and Changes in Fund Balance - Actual and Budget	8



2004 Financial Report

JOHNSON & COMPANY, Ltd.

Certified Public Accountants

Dwaine C. Johnson, C.P.A.

MEMBER

American Institute of Certified Public Accountants
Minnesota Society of Certified Public Accountants
Private Companies Practice Section of
American Institute of Certified Public Accountants

Thomas J. Opitz, C.P.A.
Bridget K. McKelvey, C.P.A.
Thomas D. Johnson, C.P.A.
Thomas A. Barber, C.P.A.
Julie A. Lawrence, C.P.A.

Members

Elm Creek Watershed Management Commission
Plymouth, Minnesota

We have reviewed the accompanying modified cash basis statement of assets, liabilities, and fund equity of Elm Creek Watershed Management Commission (a public agency) as of December 31, 2004 and the related statement of revenue and expenditures and changes in fund balance, and statement of cash flows for the year then ended, 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 the 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 modified cash basis of accounting, as described in Note 1.

Our review has been made primarily for the purpose of expressing limited assurance that there are no material modifications that should be made to the financial statements in order for them to be in conformity with the modified cash basis of accounting. The information on page 8 is presented only for additional analysis purposes. Such information has been subjected to the inquiry and analytical procedures applied in the review of the basic financial statements, and we are not aware of any material modifications that should be made thereto.

The 2003 financial statements of Elm Creek Watershed Management Commission were reviewed by other accountants, whose report dated March 22, 2004, states that they were not aware of any material modifications that should be made to those statements in order for them to be in conformity with the modified cash basis of accounting.

Johnson & Company, Ltd.

April 5, 2005



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2004 Financial Report

FINANCIAL STATEMENTS



2004 Financial Report

ELM CREEK WATERSHED MANAGEMENT COMMISSION

Statement of Assets, Liabilities and Fund Equity (See Accountants' Review Report)

	December 31	
	2004	2003
Assets		
Current assets		
Cash in bank - checking	\$ 178,620	\$ 44,505
Piper Jaffray investments	33,633	33,313
Accounts receivable	9,089	2,932
Total assets	\$ 221,342	\$ 80,750
Liabilities and fund equity		
Current liabilities		
Accounts payable	\$ 16,206	\$ 6,884
Total liabilities	16,206	6,884
Fund equity		
Reserved fund balance - Financial Guarantee	500	500
Reserved fund balance - Monitoring	23,539	14,912
Unreserved fund balance	181,097	58,454
Total fund equity	205,136	73,866
Total liabilities and fund equity	\$ 221,342	\$ 80,750

See notes to financial statements

-2-



2004 Financial Report

ELM CREEK WATERSHED MANAGEMENT COMMISSION

Statement of Revenues and Expenditures and Changes in Fund Balance (See Accountants' Review Report)

	For years ending December 31	
	2004	2003
Revenue		
Membership dues	\$ 131,000	\$ 115,000
WCA administration fees	4,700	3,700
Project reviews	125,272	43,881
Water monitoring - lakes	-	2,932
Water monitoring - streams	1,589	-
Interest and dividend income	320	261
Miscellaneous income	262	622
Total revenue	263,143	166,396
Project expenditures		
Invertebrate monitoring	3,500	4,000
Lakes monitoring	3,040	2,210
Stream monitoring	17,569	17,558
Rain gauge	117	105
Wetland monitoring	-	(763)
Project reviews	34,778	10,219
Contingency	-	637
WCA expenditures	15,216	3,993
Watershed management plan	2,945	12,223
Administration	54,680	62,330
Insurance	3,118	2,734
Legal and audit services	3,526	5,441
Web site	1,224	-
Miscellaneous	787	874
Total expenditures	140,500	121,561
Increase in fund balance	122,643	44,835
Fund balance		
Fund balance - beginning of year	73,866	31,287
Increase (decrease) in reserved funds	8,627	(2,256)
Fund balance - end of year	\$ 205,136	\$ 73,866

See notes to financial statements

-3-



2004 Financial Report

ELM CREEK WATERSHED MANAGEMENT COMMISSION

Statement of Cash Flows (See Accountants' Review Report)

	For years ending December 31	
	2004	2003
Cash flows from operating activities		
Net increase in fund balance	\$ 122,643	\$ 44,835
Adjustments to reconcile net increase in fund balance to cash provided by operating activities		
Changes in operating assets and liabilities		
Piper Jaffray investments	(320)	(261)
Accounts receivable	(6,157)	(859)
Accounts payable	9,322	(11,706)
Net cash provided by operating activities	125,488	32,009
Cash flows from fund activity		
Increase (decrease) in reserved funds	8,627	(2,256)
Net increase in cash	134,115	29,753
Cash		
Beginning of year	44,505	14,752
End of year	\$ 178,620	\$ 44,505

See notes to financial statements

-4-



2004 Financial Report

ELM CREEK WATERSHED MANAGEMENT COMMISSION

Notes to Financial Statements
December 31, 2004 and 2003
(see Accountants' Review Report)

NOTE 1 - SIGNIFICANT ACCOUNTING POLICIES

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.

Basis of accounting

The Commission accounts for receipts and disbursements on the modified cash basis, with accruals recorded at year-end for expenditures budgeted and incurred in the current year, yet not approved and paid until the following year and accruals recorded at year-end for revenue billed and budgeted but not collected until the following year.

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.

Members' contributions

Members' contributions are calculated based on the member's share of the taxable market value of all real property within the watershed to the total market value of all real property in the watershed.

Project review revenue

The Commission recognizes the revenue for project reviews in the period in which the fees are collected. Determination of the fees is based on the scope the project.

Project review expenditures

The Commission has an agreement with the Hennepin County Department of Environmental Services to share the costs of reviewing the projects. These costs are recognized as they are incurred.

NOTE 2 - 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.

During 2004, the balance in the checking account exceeded the \$100,000 amount insured by the Federal Deposit Insurance Corporation. As of April 5, 2005, the members were in the process of opening another bank account in order to comply with Minnesota statutes. These deposits were fully insured at December 31, 2003.



2004 Financial Report

ELM CREEK WATERSHED MANAGEMENT COMMISSION

Notes to Financial Statements (continued)
December 31, 2004 and 2003
(see Accountants' Review Report)

NOTE 3 - INVESTMENTS

The Commission also invests funds in fully-insured money market funds held by Piper Jaffray. These investments are held in the name of the Commission and are recorded at cost. The balance in the investment account was \$33,633 and \$33,313 at December 31, 2004 and 2003, respectively.

NOTE 4 - ACCOUNTS RECEIVABLE

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

NOTE 5 - ACCOUNTS PAYABLE

Accounts payable include expenditures incurred during the current year. These expenditures were approved by the Commission and paid in the following year.

NOTE 6 - RESTRICTED AND UNRESTRICTED FUNDS

Unrestricted funds are received and available for use in the normal operations of the Commission.

The Monitoring Guarantee Restricted Funds are 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.

The Financial Guarantee Restricted Funds are received as a guarantee that the mitigation will perform as required. Upon completion, and if 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:

Greg Ebert - Project 98-076	\$12,000
Preserve/Hidden Oaks - Project 2001-013	75,000
Meadow Creek - Project 2004-022	5,000



2004 Financial Report

ELM CREEK WATERSHED MANAGEMENT COMMISSION

Notes to Financial Statements (continued)

December 31, 2004 and 2003

(see Accountants' Review Report)

NOTE 8 - MEMBERS' CONTRIBUTIONS

Contributions received from members were as follows:

	For the year ended December 31			
	2004		2003	
	Amount	Percentage	Amount	Percentage
Champlin	\$ 7,591	5.79%	\$ 6,391	5.56%
Corcoran	9,176	7.00	8,571	7.45
Dayton	7,428	5.67	6,711	5.84
Hassan	7,058	5.39	6,107	5.31
Maple Grove	69,530	53.08	62,070	53.97
Medina	8,533	6.51	7,469	6.49
Plymouth	6,148	4.69	5,474	4.76
Rogers	15,536	11.86	12,207	10.61
Total	<u>\$131,000</u>	<u>100.00%</u>	<u>\$115,000</u>	<u>100.00%</u>



2004 Financial Report

ACCOMPANYING INFORMATION



2004 Financial Report

ELM CREEK WATERSHED MANAGEMENT COMMISSION

Statement of Revenues and Expenditures and Changes in Fund Balance Actual and Budget (See Accountants' Review Report)

	For year ending December 31, 2004		
	Actual	Budget	Variance
Revenue			
Membership dues	\$ 131,000	\$ 131,000	\$ -
WCA administration fees	4,700	6,000	(1,300)
Project reviews	125,272	34,000	91,272
Water monitoring - lakes	-	-	-
Water monitoring - streams	1,589	3,000	(1,411)
Interest and dividend income	320	650	(330)
Miscellaneous income	262	-	262
Total revenue	263,143	174,650	88,493
Project expenditures			
Invertebrate monitoring	3,500	5,000	(1,500)
Lakes monitoring	3,040	3,600	(560)
Stream monitoring	17,569	16,000	1,569
Rain guage	117	150	(33)
Project reviews	34,778	22,000	12,778
Stormwaters studies	-	20,000	(20,000)
Special projects	-	1,000	(1,000)
Contingency	-	1,000	(1,000)
WCA - administration	2,779	5,000	(2,221)
WCA - technical services	12,000	8,000	4,000
WCA - legal	437	1,000	(563)
Watershed management plan	354	-	354
Second generation plan	2,591	-	2,591
Administration	54,680	70,000	(15,320)
Insurance	3,118	3,400	(282)
Legal and audit services	3,526	15,000	(11,474)
Web site	1,224	1,500	(276)
Education and training	-	2,000	(2,000)
Miscellaneous	787	-	787
Total expenditures	140,500	174,650	(34,150)
Increase in fund balance	122,643	-	122,643
Fund balance			
Fund balance - beginning of year	73,866	73,866	-
Increase in reserved funds	8,627	-	8,627
Fund balance - end of year	<u>\$ 205,136</u>	<u>\$ 73,866</u>	<u>\$ 131,270</u>

