

Pioneer-Sarah Creek Watershed
Management Commission

2005 ANNUAL REPORT



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for the Pioneer-Sarah Creek Watershed Management Commission
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INTRODUCTION

The Pioneer-Sarah Creek Watershed Management Commission is a joint powers watershed organization formed as required under MN Statutes 103B.201-103B.255 and MN Rules Chapter 8410. The Commission's membership is comprised of the cities of Greenfield, Independence, Loretto, Maple Plain, Medina, and Minnetrista.

HISTORY

In 1978 the Cities of Independence, Medina, and Minnetrista, along with the Hennepin Conservation District, created the Pioneer Creek Watershed Management Commission to protect and manage the natural resources of the Pioneer Creek watershed. Six years later the City of Greenfield offered a resolution to the Pioneer Watershed Commission requesting a merger of the Sarah Creek and Pioneer Creek commissions in order to combine services and avoid creation of numerous small watershed organizations.

In 1984 the Pioneer-Sarah Creek Watershed Management Commission was officially established through a Joint Powers Agreement (JPA) signed by the cities of Corcoran, Greenfield, Independence, Loretto, Maple Plain, Medina, and Minnetrista, Watertown Township, and the Hennepin Conservation District (HCD) under authority conferred to the member parties through MN Statutes 471.59 and 103B.1. This resulted in adding the Sarah Creek watershed and Crow River drainage area to the Commission's legal boundaries.

In 2001 the Commission approved the City of Corcoran's request to withdraw from the Commission and to transfer its small area of land in the Pioneer-Sarah Creek watershed under the Elm Creek Watershed Management Commission. Effective in December of that year, Watertown Township also requested to withdraw its membership in the Commission and transfer its total area under the Carver County Water Plan.

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 Pioneer-Sarah 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 Commission's Joint Powers Agreement since, prior to that time, technical services were provided by the Hennepin County Conservation District, a party of the original JPA.

WATERSHED MANAGEMENT PLAN

In 2000 the Pioneer-Sarah Creek Watershed Management Commission and the Elm Creek Watershed Management Commission together began working cooperatively with WSB & Associates to develop and write their second generation watershed management plans. In 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 Pioneer-Sarah Creek Commission's Technical Advisory Committee (TAC) and representatives from various state agencies met to review and develop policies, standards and rules. Input from these meetings and the public meeting was used to create a preliminary draft plan that was presented to Pioneer-Sarah Creek watershed residents at a second public meeting in June of that year. A public hearing was conducted in November 2002, to receive comments. Written comments were also received from the City of Greenfield, the Lake Independence Citizens Association, and the Department of Natural Resources. Capital project funding was also discussed. At the end of 2002 the revised draft plan underwent its second 45-day agency comment period.

In August 2004 the City of Greenfield 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 *Pioneer-Sarah Creek Watershed Management Commission Comprehensive Watershed Management Plan* on October 27, 2004. The Commission adopted the plan on December 16, 2004.

LOCAL WATER MANAGEMENT PLANS

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 November 2006. It is an option for member cities to adopt all or part of the Commission's plan as their local plans. *Appendix 1* shows the status of the members' local regulatory programs.

WATER RESOURCES

The major water resources in the Pioneer-Sarah Creek watershed are Pioneer Creek, which has its headwaters at Lake Independence and travels south and west to the Crow River, and Sarah Creek which begins at Lake Sarah and travels to the Crow River at Rockford. The two largest lakes are Lake Independence and Lake Sarah. The Crow River, which borders Greenfield and Independence, is the receiving water for the entire watershed.

The watershed covers approximately 70.5 square miles. Independence has 29.7 square miles or 42% of the area within the watershed. Greenfield follows with 21.5 square miles or 30% of the watershed. Minnetrista (10.7 - 15%); Medina (7.5 - 10%); Maple Plain (0.8 - 1.1%); and Loretto (0.3 - 0.4%) comprise the remaining area in the watershed.

Land use in the watershed is primarily agricultural and rural residential. Since rural residential development is expected to continue for many years into the future, it is vital that the Commission and member communities work cooperatively to protect the water resources.

BOARD OF COMMISSIONERS

A Board of Commissioners serves as the governing body of the Pioneer-Sarah Creek Watershed Management Commission. The Commissioners are appointed by the member communities. Their duties include preparing and

adopting a watershed management plan; reviewing and approving local water management plans, reviewing development plans, and exercising the authority of a watershed management organization to regulate the use and development of land when an approved local plan is not in place or when a local government is not enforcing the policies of the Commission.

The individuals appointed by the member cities to serve as Commissioners in 2005 are shown in *Appendix 2*. (2006 information, where different, is also shown.)

The Commission meets at 4:00 p.m. on the third Thursday of every month at Independence City Hall. The meetings are open to the public.

STAFF AND CONSULTANTS

The Commission has no employees. Independent consultants perform administrative, legal, technical, auditing, and wetland services for the Commission and are selected biannually. 2005 staff and consultants are also listed in *Appendix 2*.

PROJECT REVIEWS

Sixteen projects were reviewed by the Pioneer-Sarah Creek Watershed Management Commission in 2005 for conformance with its Watershed Management Plan. Projects were reviewed for erosion and sediment control, wetland, floodplain and stormwater management issues. The Commission discusses and approves plans at its monthly meetings. A list of each project, location, and critical areas reviewed appears in *Appendix 3*. The Commission also reviewed DNR permit applications within the watershed.

STREAM MONITORING

Automated monitoring stations, located at the outlets of Pioneer and Sarah Creeks, provide both flow and water quality monitoring data. Tipping bucket rain gauges are also maintained at both sites. The Commission works with Three Rivers Park District to operate these stations. For budgetary reasons, no stream monitoring was conducted in 2005.

It is a goal of the Commission to determine pollutant loading and measure continuous flow in both creeks. The Commission will work with Three Drivers Park District staff to operate gauging and water quality monitoring stations on Pioneer-Sarah Creek when funding allows.

LAKE MONITORING

The Commission has been monitoring lakes within the watershed since 1989. In 2005 the Commission monitored Independence, Sarah and Lakes in cooperation with the Three Rivers Park District and Haften Lake as part of Met-

ropolitan Council Citizen Assisted Monitoring Program (CAMP). Excerpts from their reports as well as current year and historical data of the four lakes are provided in *Appendix 4*.

Also included in *Appendix 4* is a table showing the monitoring history of all the lakes in the Pioneer Creek and Sarah Creek watersheds.

LAKE INDEPENDENCE TMDL

Lake Independence is an 851-acre lake located within the municipal boundaries of Independence and Medina. Over the past several decades, the lake has experienced increasingly impaired water quality that has reduced the lake's recreational and aesthetic value. In 2003, the lake was designated as an impaired water body by the Minnesota Pollution Control Agency (MPCA) based upon its recent water quality history (MPCA 2002 303(d) list).

To better understand the factors that have been affecting the water quality of Lake Independence, Three Rivers Park District initiated a comprehensive monitoring plan. This included biweekly monitoring of in-lake conditions during ice-free periods from 1990 to 2003 and intensive stream monitoring in 1996, 1997 and 2001 at a majority of the sites where water flowed into the lake. In addition, computer models were developed and calibrated with actual field data. The inflow monitoring results and computer modeling identified major sources of pollutants within the Lake Independence watershed and allowed for the characterization of flow volumes, pollutant concentrations, and overall loadings for each inflow site. The primary goal of the study was to develop a list of potential management actions and estimate their associated costs, effectiveness, expected longevity, and technical feasibility based upon the observed field data, computer model predictions, and characteristics of each potential source.

A preliminary draft of the *Lake Independence Diagnostic Feasibility Report* identified potential nutrient sources that have contributed to poor in-lake water quality. It was determined that there has been a considerable amount of nutrient loading from the watershed as well as an in-lake internal loading component. The study identified several best management practices (BMPs) that could be implemented to improve the lake's water quality.

In 2004, John Barten, Three Rivers Park District; and Commission Staff met with Tim Larson from the Minnesota Pollution Control Agency (MPCA) to begin the TMDL process. (A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources that a waterbody can receive and still meet water quality standards.) The Feasibility Report forms the basis of the TMDL project. A work plan is required before entering into a contract with MPCA and a final report must be sent to MPCA when the project is completed. The final report must include an assessment of the lake, a description of project activities and results, a plan for the allocation of pollutant loads, a public outreach plan, and an implementation plan to achieve and maintain water quality standards.

The Commission sponsored a stakeholders meeting in 2004 to begin discussing the BMPs and their technical and financial feasibility. From that meeting a Stakeholders Committee was formed, a work plan developed and water quality goals for the lake determined. The Stakeholders Committee was comprised of representatives from the Lake Independence Citizens Association, the Cities of Independence and Medina, the Independence Horse Owners Association, Medina Horse Association, the Pioneer-Sarah Creek Watershed Management Commission, Three Rivers Park District, Hennepin County Environmental Services, the agricultural producers in the watershed, and at-large citizens.

The Committee agreed that reductions from six phosphorus sources would achieve the adopted water quality goal of

36 ppb (parts per billion), a reduction of 23% in the current nutrient loading to the lake. Those sources were identified as agricultural cropland, animal waste, urban development, failing individual sewage treatment systems, the Loretto Sewage Treatment Facility, and geese. On September 15, 2005, a public meeting was held to present and discuss the management strategies necessary to achieve the 23% reduction requirement. It was emphasized that final phosphorus loads and allocations must be agreed upon by the individuals who will eventually implement the practices in the plan.

In 2006, the Cities of Independence and Medina, the Stakeholder Committee, Three Rivers Park District, MPCA, and the Commission will meet to discuss the waste load reduction allocations, determine what BMPs are financially and socially acceptable, and develop a time line for implementation. The implementation plan will determine responsibility and funding mechanisms for each strategy. They will also discuss potential funding sources and the consequences of non-compliance.

The *Lake Independence Diagnostic Feasibility Report* and draft *Lake Independence Phosphorus TMDL* are available on the Commission's website, www.pioneersarahcreek.org.

LAKE SARAH

The Lake Sarah watershed lies within the boundaries of five cities -- Corcoran, Greenfield, Independence, Loretto, and Medina. The majority of the watershed (79%) lies within the cities of Greenfield and Independence.

In the early 1990s, the Commission undertook a *Lake Sarah Diagnostic Study* in response to concerns about degrading water quality in Lake Sarah. An overview of the Diagnostic Study and Implementation Plan is found in *Appendix 5*.

In 1998 Lake Sarah was included on the Minnesota Pollution Control Agency's list of impaired water for Mercury Fish Consumption Advisory. As a result, the Commission will be required to undertake a TMDL for this lake as well. Completion of the TMDL (Total Maximum Daily Load) will provide a detailed plan of action to implement the BMPs necessary to improve the quality of the lake.

The TMDL process was initiated in August 2005. Completion of the Lake Sarah TMDL will require one year of inflow stream monitoring and an additional six months to write a feasibility report and develop a work plan. Anticipated activities identified in the work plan include installation of rain gardens, street sweeping, stabilization of eroding lakeshore and installation of shoreline buffers.

MACROINVERTEBRATE MONITORING (RIVER WATCH)

Hennepin County has 450 miles of streams. These streams vary from permanent watercourses to drainage ditches with variable flow and stream sizes, from the broad Crow River to a small creek flowing through a backyard. Land use in the region is diverse, including agricultural, residential, industrial, rural, urban, and forested areas.

In order to learn more about these local waterways, the Hennepin Conservation District (HCD) initiated a benthic macroinvertebrate monitoring program in 1995 to provide hands-on environmental education for high school and college students, promote river stewardship, and obtain water quality information on streams in Hennepin County. Intended to connect teachers and students with professionals to monitor the health of local streams, the River

Watch program has expanded to include twenty-seven active sampling sites (shown on the map in *Appendix 6*.) In 2005, an estimated 500 students monitored nine sites in Hennepin County.

The Pioneer-Sarah Creek Watershed Management Commission has been a sponsor of the River Watch program since 1998 and has two monitoring sites. Site 12 is located on the Crow River on the western edge of the watershed. Water quality here is far more dependent on land use activity in the greater Crow River watershed which extends through several counties in central Minnesota. The Crow River flows through Lake Rebecca Park Reserve just before it is sampled in downtown Rockford. This area hosts a variety of large, beautiful riffle areas and often shows the best water quality of the sample sites. Rockford High School monitored this site from 1996 to 1999. In the fall of 1999, Teacher Steve Merten and students from West Lutheran High School took over the site. In 2001, 2003 and 2004 both Rockford High School and West Lutheran monitored Site 12. This site was not monitored in 2005.

Site 24 is the program's first site on Pioneer Creek. It is located adjacent to an Independence city park surrounded by agricultural land that is being converted to suburban housing developments on the north side of the Creek. Several homes now border the creek and much of the native vegetation has been cleared around those homes. Future erosion of the bank due to vegetation removal is a concern. Students from Rockford High School and teacher Jason Hester have monitored this site since spring 2001.

Results of the monitoring conducted at site 24 are included in *Appendix 6*. A detailed analysis of all sites is available at <mailto:jenny.schaust@co.hennepin.mn.us> <http://www.co.hennepin.mn.us>, key word River Watch. The *2005 Hennepin County River Watch Results* report was prepared by Jenny Schaust, Hennepin County Environmental Services, and Fortin Consulting, Inc.

WETLAND CONSERVATION ACT (WCA)

The Commission serves as the local government unit (LGU) for administering the Wetland Conservation Act (WCA) for the cities of Greenfield, Loretto and Maple Plain. The Commission reviews drain and fill applications and replacement plans, 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 2005 the Commission reviewed seven plans involving wetlands. The Commission received no new wetland banking applications in 2005 but is continuing to work on several applications received in previous years. They also participated in four Technical Evaluation Panels (TEPs). Two new potential Wetland Conservation Act violations were investigated within the watershed in 2005 and one previous violation remains to be resolved.

Four outside firms were approved to perform wetland consulting services for the Commission in 2005-2006 and are listed in *Appendix 2* of this report.

The goals of complying with the WCA requirements are accomplished through the Commission's Watershed Management Plan review and assistance process. The goal of minimizing impacts is accomplished through technical assistance to landowners, plan reviews and meetings with developers. The Commission will continue to serve as the LGU for those cities requesting it, ensure that the WCA rules are properly implemented, work with landowners and developers to avoid wetland impacts wherever possible, review replacement plans, and oversee wetland banking.

BEST MANAGEMENT PRACTICES (BMPS)

The Commission has a goal to work with cooperating agencies and landowners in the watershed to install best management practices on lands in the watershed. Natural Resource Incentives for Critical Habitat (NRICH) is a new incentive program developed and funded by Hennepin County. It offers technical and financial assistance to landowners, local governments and schools that implement BMPs to preserve and/or restore critical habitats, reduce erosion, and protect and improve water quality.

Cost share project examples include rain gardens, shoreland and wetland restoration, streambank stabilization, agricultural best management practices, pasture management, riparian or natural area buffers, natural area restoration and native vegetation establishment

The NRICH program also offers financial incentives to landowners interested in placing land under a conservation easement. Financial incentives are offered for easement costs relating to surveys, title work, appraisals, practice implementation and other related costs.

Assistance is also available to local governments to address non-point source pollution to those waters listed as impaired by the Minnesota Pollution Control Agency, including development of TMDLs for problem pollutants and implementation of practices and projects to reduce non-point source pollution to impaired waters. For more information and application materials, visit: www.hennepin.us, keyword NRICH.

The Commission will continue to work with landowners to initiate and implement best management practices in the watershed.

WRITTEN COMMUNICATION

The Pioneer-Sarah Creek Commission publishes an annual newsletter that is transmitted to member municipalities for dissemination to their citizens. In 2005 the newsletter was provided in electronic format. (A copy is included in *Appendix 7*.) In addition, from time to time, news releases are provided to the member and their official newspapers for publication.

The Commission also maintains a website to provide watershed news to a larger audience. The Watershed Management Plan, monthly meeting materials, project reviews, annual reports, newsletters and other watershed-related information are posted there.

PROPOSALS FOR SERVICE

The biennial solicitation for interest proposals for professional services was published in the February 22, 2005 issue of the State Register. After reviewing the responses, the Commissioners approved the individuals and companies named in *Appendix 2*

FINANCIAL REPORTING

Appendix 8 includes the Commission's approved budget for 2005, a report of revenues and expenditures for 2005, and the 2005 Audit prepared by Johnson & Company, Ltd.

WORK PLAN FOR 2006

In addition to continuing the programs and activities described above, the Pioneer-Sarah Creek Watershed Management Commission has developed a water resource management program that reflects the needs and concerns of the Commission, its member communities and the residents. The implementation program will be reviewed annually by the Commission. Studies and capital improvements identified in the Commission's second generation Watershed Management Plan may be completed entirely or partially by member communities, the Commission, or a joint effort between them.

Due to funding constraints the Commission has determined it will primarily focus on a few projects at a time and consider other projects as funding becomes available. In the immediate future, the Commission intends to concentrate on water quality improvement projects for watershed lakes. In 2006 the Commissioners will complete the Phosphorus TMDL for Lake Independence and begin work on a Mercury TMDL for Lake Sarah.

A list of current and future capital improvement projects can be found in the Commission's second generation Watershed Management Plan. The Plan is available on the Commission's website.