

**JEFFERSON GERMAN LAKES CWP PHASE IIB  
FINAL REPORT**



**Le Sueur County Environmental Services**

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February 2, 2006

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The goals of the 1996-98 work plan have been reviewed to identify which actions need to be re-addressed, revised, or completed in the second Implementation Phase(IIB). The second Implementation Phase gives the opportunity to wrap up uncompleted projects, address new problem issues, and complete more detailed monitoring.

Refer to 1994 Implementation Plan (IP) for justification of Phase IIB actions.

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B. Priority Subwatersheds for Implementation: Subsheds 4,9,10,14	IP, p. 19
C. Overall Implementation Goals	IP, p. 31
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## **Background**

The Jefferson – German Lakes Water Quality Improvement Project is a watershed implementation project sponsored by Le Sueur County. The lake chain is more than 3,000 acres in size, ranking it as the largest recreational (swimming, boating and fishing) lake system in south central Minnesota. The chain of lakes has multiple bays and basins. German Lake has a maximum depth of 51 feet. West Jefferson has a maximum depth of 25 feet; Middle Jefferson has a maximum depth of 8 feet while East Jefferson has a maximum depth of 37 feet while Swede's Bay, off of East Jefferson has a maximum depth of 6 feet. The more than 17,000 acres of agriculturally dominated watershed is not relatively large compared to the surface area of the lake. The littoral area is approximately 81% of Jefferson Lake. German Lake has a littoral area of 58%. German Lake is eutrophic while Jefferson Lake is generally hypereutrophic. The lakes have the highest shoreline development index in the area, despite the fact that their water quality is worse than 70 to 90 percent of the monitored lakes within the ecoregion. Located near the interface of the North Central Hardwood Forests and Western Corn Belt Plains ecoregions, the landscape is rolling to steeply sloping with interspersed poorly drained swales and sloughs. Historically, the watershed was covered with hardwoods and, upon settlement, cleared for agricultural use. The water quality of this lake has been degraded by man's activities over a period of decades. The loss of wetlands to other land uses has altered the hydrology of the watershed. Concerned citizens began tracking secchi transparency as early as 1973. In the early 1990's, state and local government and citizens began working to make improvements in lake water quality. A Lake Assessment Project conducted by the MPCA was the first concerted effort that took place in 1990. Watershed assessment and ISTS work began shortly thereafter. Le Sueur County conducted an intense, comprehensive Phase I Diagnostic and Feasibility study of the lake and watershed in 1993. The project objectives were to quantify runoff and nutrient loading from the local watersheds; assess the cause-effect relationships relating watershed land use practices and stream runoff characteristics; provide water budgets and mass nutrient balances for the lake system; and determine methods for improving the water quality of the lake chain. That effort led to the development of an implementation plan identifying strategies to reduce nutrient loading, which developed into the Jefferson – German Lakes Water Quality Improvement Project. A map of the watershed is listed in the Appendices (A). This report covers the continued implementation of that project, 2000-2004 (i.e. Phase IIB). Many people and organizations have participated in this project, including the watershed landowners, Le Sueur County, SWCD, NRCS, MDNR, Greater Jefferson - German Lake Association, MPCA, and BWSR.

## **Primary Action Items and Program Elements Narrative**

### **GOAL 1: REDUCE POLLUTANT LOADING THROUGH THE IMPLEMENTATION OF BEST MANAGEMENT PRACTICES**

#### **Maintain Watershed Specialist**

Le Sueur County Soil and Water Conservation District

The Watershed Specialist has been a key component in educating and promoting Best Management Practices to watershed residents. The project continued to contract with the Le Sueur County Soil and Water Conservation District for the position. This individual was responsible for contacting landowners to promote conservation practices, and to convey the availability of other set aside programs provided through the SWCD/NRCS/FSA offices. The Watershed Specialist, being an individual known in the local agricultural community, has been a critical element in achieving the primary and secondary goals of this implementation program and the long-term success of the overall project.

#### **Treat Three Priority Feedlots**

During the first phase of implementation, corrections were made to the feedlots in watersheds 9 and 14. The feedlot in subwatershed 4 is no longer operational. Follow up monitoring has continued with the feedlot in subshed 14 because sampling indicates that pollution abatement has not fully occurred. No significant changes were made to this feedlot during the phase IIB timeframe. Additional follow-up will be necessary to fully realize the potential for phosphorus reduction from this subshed.

Soil testing was made available to any producer within the watershed. The watershed specialist worked with several landowners, but ultimately, only one utilized this program within the Phase IIB timeframe.

It was the intent of the Environmental Services office that joint site visits with the LWMC and the CFO be performed. Also, it was intended to work with operators on creating and/or reviewing their manure management plans. Few site visits actually occurred, due to the high rate of employee turnover in those positions.

#### **Target highly erodible land in four priority subwatersheds for BMP installation.**

The watershed specialist worked with several landowners to promote buffer strips and set-aside programs. Two landowners in particular spent a significant amount of time working with technical staff, but ultimately never enrolled any acres into the program. The Watershed Specialist worked to encourage a program similar to the Grant County Buffer Initiative, but with no success. The project obtained technical assistance from Zone 10 staff on conservation project design.

In early 2001, Wayne Quiram installed three terraces in section 32 of Cordova Township, utilizing state cost share dollars. Jim Scheurer also took advantage of the cost share program and installed six additional terraces in section 16 of Elysian Township in 2000 and 2001.

Continuation of the rock tile inlet grant with the CRWP. There are no records of any ever being installed. The watershed specialist sent several letters to landowners notifying them of this program.

The Dollars for Phosphorus program continued, with follow-up of the producers that received cost share funding in 1998 or 1999. Landowners proposed projects to reduce P-export, and a team reviewed each proposal to determine applicability and funding. Funds for this were provided by the 319 NPS Program. No additional producers were funded during the phase IIB timeframe.

Staff attended numerous meetings to promote the Conservation Reserve Enhancement Program for the region. This program was not funded until after the end of the phase IIB timeframe. Efforts would continue with the next phase of implementation to utilize this program.

### **Shoreline Erosion**

The watershed specialist and water management coordinator met with several property owners of the shores of Jefferson and German Lakes. Some were experiencing washouts from high drainage volumes while others were interested in rip-rap and other stabilization methods. Homeowners were given information from SWCD and the DNR.

### **Oversee operation and maintenance of BMP's**

Planning and Zoning and the Watershed Specialist have the responsibility of documenting that BMP's installed with project funds are properly maintained and are operating in an effective way. Le Sueur County SWCD and NRCS project involvement is as technical support. MN Extension Service project involvement is as educational outreach.

### **Upgrade Non – Complying Individual Sewage Treatment Systems**

Septic system compliance became of increasing concern due to the significant increase in homes converting from seasonal status to year round status. The Lake Jefferson-German Clean Water Partnership Low Interest Loans were set up between Le Sueur County and Community Bank of Cleveland to afford an option to those citizens in the watershed.

2000	37 systems installed \$22,163.66 utilized for ISTS upgrades/installation
2001	27 systems installed \$17,000.00 utilized for ISTS upgrades/installation
2002	34 systems installed \$23,807.50 utilized for ISTS upgrades/installation
2003	35 systems installed \$15,000.00 utilized for ISTS upgrades/installation
2004	34 systems installed SRF no longer available

It should be noted that the AG BMP loan available through the local SWCD office offered a lower interest rate than the watershed loans. Therefore, use of the watershed loans declined in the final years of implementation.

Planning and zoning and the lake association devoted a significant amount of time to pursuing wastewater treatment options for the entire lake chain, namely the possibility of attaining city services, as

was the route taken by the Lake Washington area. The lake association continues to work closely with Bolton and Menk, Minnesota State University – Mankato and Le Sueur County in developing this potential project.

## **GOAL 2: INCREASE PUBLIC AWARENESS OF WATER QUALITY ISSUES**

### **Aquatic Management Manual / Public Information Materials**

An Aquatic Plant Identification and Management Manual was never created for this chain of lakes. The LWMC worked with several lakeshore owners whom were extremely concerned with the newfound presence of Eurasian watermilfoil in the lakes, as well as the continued nuisance presence of Curlyleaf pondweed. Homeowners were given ID cards and management information from the DNR. They were directed to work with the DNR should they wish to pursue cutting along their shoreline property. The University of MN Extension Service attempted to host several lakeshore workshops, but ultimately these never occurred because of low registration.

Two local workshops were held in 2001 and 2002. The first, titled “Aquatic Plants: The Good, The Bad, The Exotic” was held March 27, 2001 at the 4H building in Le Center. John D. Madsen, professor of Biology at MSU-M presented the information. Dr. Madsen also presented at the second aquatic plant meeting on November 14, 2002. He, along with Chip Welling and Wendy Crowell of the DNR presented a variety of information on the life cycle and management issues of curlyleaf pondweed and Eurasian watermilfoil. The meetings were advertised in all county papers and the Jefferson – German newsletter.

The LWMC wrote a total of eight newsletter articles for the Greater Jefferson – German Lakes Improvement Association newsletter. Topics of focus included shoreland rules, vegetation alterations, grading and filling, CWP project updates and general shoreland information. With the extensive mailing list, this proved to be an extremely useful tool for disseminating important information.

### **Implement specific BMPs within the watershed to serve as regional examples**

No demonstration projects were implemented within the phase IIB timeframe. Baker’s Bay Septic Cluster will continue to serve an onsite wastewater demonstration site.

## **GOAL 3: IMPROVE COORDINATION OF WATERSHED ACTIVITIES**

### **Maintain a Citizen’s Steering Committee**

The purpose of this committee is to assist in implementing the project workplan, overview of watershed activities and help direct future implementation goals. Two meetings were held during the Phase IIB timeframe.

- May 15, 2000 – This committee meeting was held to re-introduce the watershed specialist and identify a project schedule for the season. Workplan review and update was also discussed and the LWMC would make the necessary changes and submit to PCA right away.
- February 3, 2003 – This committee meeting focused on continued inflow sampling for the 2003 season and identification of projects to pursue for the following year of the project. It was suggested that shoreline workshops be held to educate homeowners on the proper care and management of their yard next to the lake. Upland AG BMP’s were discussed as well, with

SWCD taking the lead on landowner contacts and promotion of programs. The use of the SRF was also discussed as other loans, such as the AG BMP loan, have a better interest rate.

This project endured the turnover of three staff members in the LWMC position throughout the duration of this project. Lack of consistency in staff has played a large role in the minimal gathering of this committee.

Le Sueur County will be revising their land use plan in 2005. Land use controls will be reviewed at that time with public input.

#### **Participate in the revision of the Le Sueur County Comprehensive Water Management Plan**

Update of Le Sueur County's Water Management Plan began in 2004. Several members of the watershed played an active role on the Water Plan Task Force. Priority concerns identified in the draft-scoping document indicate an increased need for protection of surface water resources in response to the dramatic upward trend of growth in the county.

### **GOAL 4: EVALUATE THE PROJECT'S EFFECTIVENESS**

#### **Develop a lake and watershed-monitoring program.**

Sampling of watershed inflows occurred in 2002, 2003 and 2004 within those subsheds that have continued to show high nutrient levels. Data have shown that subshed 14 continues to contribute large nutrient loading to Middle Jefferson Lake. Additional work occurred with the feedlot operator in that subshed, but ultimately the nutrient load has not been reduced. (Attached spreadsheet)

In lake sampling has not occurred during the phase IIB timeframe, but is being considered for the 2005 sampling year.

#### **Maintain citizen-based monitoring of the lakes using the Citizen Lake Monitoring Program.**

##### **Promote Citizen Stream Monitoring.**

Volunteers have continued to take measurements of each lake basin over the summer growing season (May through mid-September).

2000 – West Jefferson – 17 observations  
Middle Jefferson – 19 observations  
East Jefferson – 6 observations  
German – 19 observations

2001 – West Jefferson – 12 observations  
Middle Jefferson – 10 observations  
East Jefferson – 6 observations  
German – 27 observations

2002 – West Jefferson – 11 observations  
Middle Jefferson – 7 observations  
East Jefferson – 6 observations  
German – 21 observations

2003 – West Jefferson – 9 observations  
Middle Jefferson – 7 observations

East Jefferson – 7 observations  
German – 16 observations

2004 – West Jefferson – 11 observations  
Middle Jefferson – 9 observations  
East Jefferson – 18 observations  
German – 15 observations

\*See Appendix B

No new citizen stream or lake-monitoring volunteers were recruited.

### **Other Activities**

A BWSR Feedlot Challenge Grant was written and submitted. Continued work on feedlots occurred in the watershed. Discussion occurred on the need for the development of a monitoring plan. The Watershed Resource Committee was re-established. A vegetation survey was proposed but the MSU-Mankato professor left his position before this was done. Work was done for potential nutrient management demonstration. The USDA's Nutrient Insurance program was delayed so this portion of the project was not completed. The LWMC and P&Z worked with the Lake Association on the development of a sewer district. A Challenge Grant was awarded for the drainage management project.

### **SUMMARY**

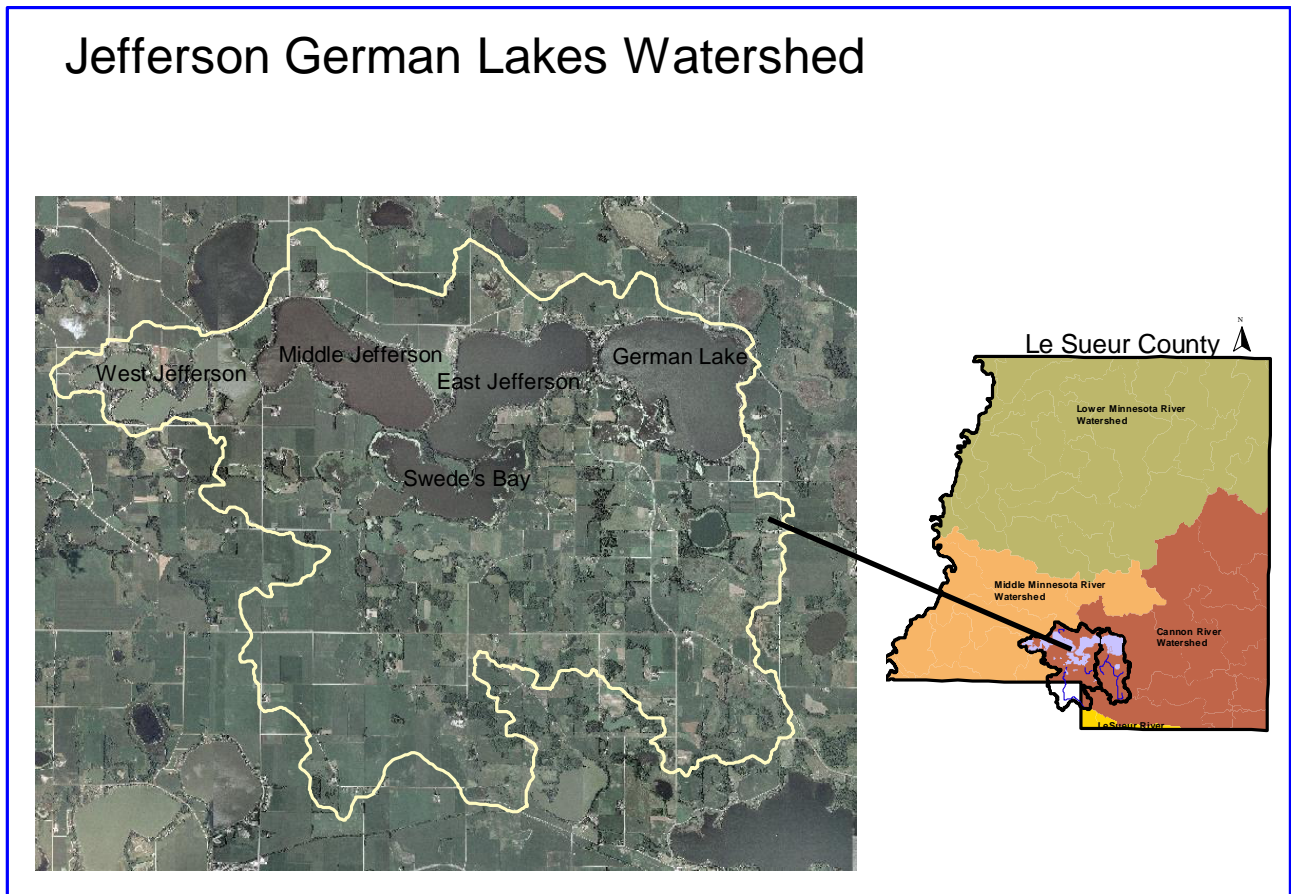
Staff turnover made implementation of the project difficult. Action items were accomplished. Below is an overview of accomplishments:

- Watershed Specialist position maintained
- One Ag producer utilized soil testing
- Significant amount of time spent on promoting buffer strips and set aside programs
- 9 terraces were installed
- WS and LWMC met with many landowners who were experiencing erosion problems and worked to solve the problems
- 167 septic systems were upgraded watershed wide
- Two aquatic management workshops were organized
- 8 newsletter articles were written
- Citizen steering committee was maintained
- Monitoring efforts occurred
- Citizen Lake monitoring efforts occurred

Overall, the Phase IIB Jefferson German Improvement Project accomplished many actions and goals that were laid out. Also it is important to note that staff turnover during the project delayed the progress. The Implementation Phase IIC will accomplish the remaining objectives and actions. During this timeframe, the Jefferson German Lake Improvement Association began to look into the development of a sewer district. Monitoring of water quality throughout the process of developing a system to pump sewage to an urban wastewater treatment facility in the area will occur. While the Lake Association will devote much of their time to the sewer district project, the watershed specialist and project coordinator will keep the project moving on a watershed basis than shoreline. The diagnostic phase has determined that nutrient export also occurs from several subwatersheds as well as internal recycling of phosphorus from lake sediment. Decreasing nutrient input from the entire watershed, along with appropriate shoreline and inlake management efforts are needed.

## Appendices

### A. Map of the Watershed



### B. Citizen Lake Monitoring Volunteers

### C. Photographs

### D. Contracts

### Budget, Expenditure, Timeline

See Attachment

### Monitoring Data