

Minnesota Board of Water and Soil Resources. Minutes.

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July 1998

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BOARD OF WATER AND SOIL RESOURCES
CONFERENCE ROOM, ONE WEST WATER STREET
ST. PAUL, MINNESOTA 55107
JULY 22, 1998

BOARD MEMBERS PRESENT: Kathleen Roer, Barb Uppgaard, Paul Krabbenhoft, Barb Cobb, Darrell Bruggman, Lee Coe, Ginny Imholte, Rod Massey, Glenn Annexstad, Allan Oehlke, Marv Tripp, Sharon Clark, Kelli Johnson, Ron Nargang, Jim Anderson

BOARD MEMBERS ABSENT:
Jim Dahlvang
Dwain Otte

OTHERS PRESENT:
Vern Wilker, MASWCD
Franklin Denn, MAT

STAFF PRESENT:
Ron Harnack, Jim Birkholz, Tim Fredbo, Doug Snyder, Mary Jo Anderson

Chair Roer called the meeting to order at 9:00 a.m.

** 98-45 **Adopt Agenda** - Chair Roer stated that the watershed district's presentation will be on the August meeting agenda. Moved by Barb Uppgaard, seconded by Ginny Imholte, to adopt the agenda as presented. Motion passed on a voice vote.

** 98-46 **Approval of Minutes of June 25, 1998** - Chair Roer stated that a correction is needed on page 3, regarding the Pollution Control Agency's (PCA) restructuring. It should state that PCA will have limited service on July 30-31, rather than shut down on August 30 through September 2. On page 5 regarding the drainage round table - it should state "possibly divide the state in two--northern and southern, as they differ regarding farm drainage issues." Moved by Sharon Clark, seconded by Glenn Annexstad, to approve the minutes of June 25, 1998 as corrected. Motion passed on a voice vote.

Chair's Report - Chair Roer attended the environmental cluster meeting. She reported that agencies are working on their budget proposals. The Governor's office is interested in having a lake's initiative. Chair Roer attended the EQB meeting. She reported that the GEIS for feedlots meetings have been held in Rochester, St. Cloud, Marshall, North Mankato, Fergus Falls, and Thief River Falls. Susan Schmidt is the lead on this for EQB; Al Kean is the BWSR technical representative, other agencies and organizations represented are PCA, MDH, MDA, and technical MASWCD. Other issues discussed at the EQB meeting included: the St. Croix River bridge; the powerline in Chisago County; and generated power by use of alfalfa pellets.

Executive Director - Ron Harnack reported he facilitated a meeting between Bois de Sioux Watershed District and county commissioners regarding communication and coordination of levy issues. Ron stated that CREP is now moving forward. Ron commended Roger Mussetter and Paul Flynn at NRCS for their assistance. Ron stated that Kevin Lines started with BWSR today, he'll be working three days a week on CREP. Ron said that it appears administrative responsibilities will be converged resulting in greater efficiency. USDA will continue to downsize over the next three to five years. Although, FSA and NRCS will not be consolidated.

Ron reported that we have a new receptionist, Marlene Mendez, started on July 15.
A consultant has been hired to assess BWSR's easement processing. Staff are working on the budget process for FY 2000-2001. Ron has been making field offices visits. Ron asked board members to complete the brief bio sheet they received, this information will be included in the BWSR website.

Ron stated that the Red River Mediation continues, Ron Nargang represents DNR in the mediation process. They are starting to come to some common ground regarding flood control as it relates to natural resource issues in the Red River basin.

Ron Harnack stated that he has had conversations the past few weeks with various agencies, farmers, and organizations that are interested in participating in the drainage forum. Ron will distribute to board members a drainage publication by Steve Taff, economist, at the University of Minnesota.

Dispute Resolution Committee - Marv Tripp reported that two appeals in Scott County are pending, a prehearing is scheduled for July 29.

Education and Public Relations - Barb Uppgaard reported that the education committee has not met. Ron Harnack stated that interviews were held for the BWSR/MES metro and southern education positions. Ron Struss has been hired for the metro position. He will start on August 1. The southern position is still in the hiring process.

Cost-Share/Soil Conservation Committee - No report at this time, however, Ron Harnack stated that farmstead windbreaks do not currently receive cost-share funding, this has been an issue for discussion with the cost-share committee meeting.

Wetlands Committee - Darrell Bruggman reported that the wetlands committee will meet prior to August board meeting to discuss road replacement.

Agency Reports

Sharon Clark, Department of Agriculture, reported that MDA representatives attended the GEIS meetings, which were well attended in the southern part of the state. MDA commissioners have met with DNR commissioners to discuss coordinated efforts on various issues; MDA is meeting with other agency commissioners as well. Sharon reported that the Ag Land Preservation Program review is underway with completion due in December. She stated that MDA is busy with feedlot issues and drainage issues, as well as grasshoppers and wheat scab, which are problems in the state. MDA would like to meet with Chair Roer and Ron regarding the drainage forum.

Rod Massey, Pollution Control Agency (PCA) - reported that PCA will be meeting with MDA on feedlot issues. PCA is soliciting statewide participation regarding phosphorus control and nutrients in water. Rod stated that PCA will soon have more information available regarding the deformed frog issue. PCA has had discussions with representatives from Minnesota and North Dakota regarding summertime control of ammonia as it relates to low flow conditions in the Red River basin.

Ron Nargang, Department of Natural Resources, (DNR) reported that recent storm damage in New Ulm has closed Flandrau State Park. Ron stated that DNR is not optimistic about the wolf round table. He said there are so many roadblocks for the round table that they can't come to a consensus on issues and make decisions; however, there are many good ideas that could be

included in a management plan. Lee Coe commended DNR for the outstanding information provided to the wolf round table committee. Ron reported that DNR has made progress on the weed control issue in the Worthington and Windom areas of the state. DNR is also making progress on the goose issue in the metro area. Ron reported that DNR is working on the budget preparation process, and DNR is forming another RIM committee. Ron stated that the media has been the recent watchdog scrutinizing DNR's government spending.

Committee Recommendations

Kanaranzi-Little Rock Watershed District Revised Watershed Management Plan and Okabena-Ocheda Watershed District Revised Watershed Management Plan - Glenn Annexstad stated that these watershed management plans are unique because the county, soil and water conservation district and watershed districts are working together on the plans. Glenn reported that the southern sub-committee met and recommends approval of the revised management plans. Moved by Glenn Annexstad, seconded by Allan Oehlke, to approve the Kanaranzi-Little Rock Watershed District Revised Watershed Management Plan and the Okabena-Ocheda Watershed District Revised Watershed Management Plan. Motion passed on a voice vote.

** 98-47

Nobles County Comprehensive Local Water Plan - Allan Oehlke stated that the Nobles County Comprehensive Local Water Plan is also unique as the watershed district, soil and water conservation district and county worked on this plan. The southern sub-committee met and recommended approval of the plan. Moved by Allan Oehlke, seconded by Glenn Annexstad to approve the Nobles County Comprehensive Local Water Plan. Motion passed on a voice vote. Chair Roer commended those involved for the coordination of their plans.

** 98-48

Lac qui Parle-Yellow Bank Watershed District Revised Watershed Management Plan - Marv Tripp reported that the southern sub-committee met to review the revised watershed management plan and recommends approval. Moved by Marv Tripp, seconded by Sharon Clark, to approve the Lac qui Parle-Yellow Bank Watershed District Revised Watershed Management Plan. Motion passed on a voice vote.

** 98-49

Lake County Water Plan - Barb Uppgaard reported that the northern sub-committee reviewed the Lake County water plan and recommends approval. Moved by Barb Uppgaard, seconded by Ginny Imholte, to approve the Lake County Water Plan. Motion passed on a voice vote.

** 98-50

Chair Roer called for a break in the meeting at 10:40 a.m. The meeting reconvened at 10:55 a.m.

New Business

Approval of FY99-00 Conservation Easement Program Work Plan - Tim Fredbo explained that the 1998 legislature appropriated $15 million for the RIM Reserve conservation easement program. LCMR reviewed the work plan in June. Tim summarized the work plan for the $15 million appropriation. Moved by Ron Nargang, seconded by Lee Coe, to approve the

** 98-51 Easement Program Work Plan for 1998 Appropriation (FY99-00). Motion passed on a voice vote. Lee complimented Tim on the packet of information he distributed.

Overview of 1997 SWCDs Financial Statement Summaries - Sara Johnson explained the SWCDs' financial statement summaries as distributed to board members. Discussion followed. Barb Cobb commended East Ottertail SWCD for turning their financial statement around. Allan Oehlke stated that he's proud to see what Minnesota generates statewide. Chair Roer thanked Sara for this information.

Grants to Local Governments to Assist Natural Resource Decision Making - Jim Birkholz stated that BWSR received $150,000 in LCMR funds for the specific purpose of providing matching grants to assist local governments which are experiencing development and resultant land use changes which are impacting natural resources. Jim explained the ranking process used by staff to establish two options for board consideration. Jim stated that the proposals recommended for funding are well distributed across the state. This was not a criteria for ranking but does work well considering the demonstration aspect of this LCMR grant. Discussion followed. Moved by Lee Coe, seconded by Sharon Clark, to adopt Option 2 - Shift funding for the Hennepin drained wetland inventory to Wetland Road Replacement funds currently available to BWSR. This would allow the Scott SWCD and City of Savage proposals to be funded leaving a balance of $5,725 to partially fund the Rock County proposal. Motion passed on a voice vote. Jim will be contacting applicants that submitted proposals that will not be funded.

** 98-52

Draft Affirmative Action Plan - Mary Jo Anderson explained that the Department of Employee Relations (DOER) requires each agency to submit an Affirmative Action Plan (AAP). Mary Jo drafted the AAP, distributed it to board members and management team to review, and now asks for board approval, so it can be submitted to DOER by the required July 31, 1998 deadline date. Moved by Allan Oehlke, seconded by Sharon Clark, to approve the Affirmative Action Plan as presented. Motion passed on a voice vote. Chair Roer thanked Mary Jo for rewriting the plan. This document will be included in the board members and staff administrative handbook.

** 98-53

Presentation from the Youth Rivers Monitors Congress - Wayne Pikal, teacher from Little Falls, introduced four students who are actively involved in the "River Watch Program." The students presented information that was collected in the Upper Mississippi River Basin. The students will be going to Russia this fall to present this information. Chair Roer commended them for their wonderful work and for sharing this data with other agencies and entities that can use this to information to assist with resolving water problems.

Advisory Comments

Franklin Denn, Minnesota Association of Townships (MAT), stated that MAT has been working with townships on land use planning.

Vern Wilker, Minnesota Association of Soil and Water Conservation Districts (MASWCD) reported that the MASWCD will not have a meeting in July. Vern reported that Area 4 had a meeting and tour of Anoka SWCD, rural and urban areas are working together. Vern attended the NACD North Central Meeting in Columbus, Ohio; he appreciated Jim Birkholz's attendance representing BWSR. Vern will attend the NACD leadership training in August. The next MASWCD meeting is August 25.

Jim Anderson, MES, reported that Mike Martin submitted his resignation, he will be leaving effective October 15 taking a job in Florida; this is a great loss for the University. Jim stated that he looks forward to having the two MES/BWSR education positions in place.

Upcoming Meeting

-The next BWSR meeting is August 26, 1998 in St. Paul.
- The September 23 BWSR meeting will be a full-day meeting held at the State Office Building in St. Paul. Ron stated that this meeting will be geared specifically toward water management issues with other state organizations.
- The October 28-29 BWSR tour and meeting will be held in Lanesboro, (southeastern) Minnesota.

The BWSR committees were distributed to board members for review. Chair Roer asked board members to notify her or Ron if this is accurate. Jim Anderson would also like to be on the wetlands committee; Paul Krabbenhoft is interested in the cost-share committee.

Chair Roer adjourned the meeting at 12:40 p.m.

Respectfully submitted,

Kathleen Roer

Kathleen Roer, Chair

INTERNAL MEMORANDUM

July 21, 1998

TO: Ron Harnack, Executive Director
Members, Board of Water and Soil Resources

FROM: Jim Birkholz, Assistant Director

SUBJECT: Staff Ranking of Proposals for "Grants to Local Governments for Natural Resource Decisionmaking"

Staff have completed their review and analysis of the 29 proposals submitted for this grant funded by the LCMR. To arrive at a recommendation, three members of the staff Grants Team worked with Board Conservationists to narrow the 29 applications down to 12, four from each of BWSR's administrative regions. This cut was arrived at by applying the grant criteria and determining which proposals were best suited for further scrutiny. These 12 proposals were then run through an evaluation profile very similar to that used for our NRBG Challenge Grant. The resulting numeric rankings of the three evaluators were combined in several different ways. Consistently, the same proposals ranked one through five. Based on this analysis, staff have prepared the attached spread sheet. Two options are offered for consideration:

Option 1

Fund the top four ranked proposals. Reduce funding for the Hennepin proposal to keep the grants within the $150,000 available. Hennepin could complete their project with this partial funding.

Option 2

Shift funding for the Hennepin drained wetland inventory to Wetland Road Replacement funds currently available to BWSR. This would allow the Scott SWCD and City of Savage proposals to be funded leaving a balance of $5,725 which could be used to partially fund another project (most closely matches the amount needed by the Rock County proposal).

The proposals recommended for funding are also well distributed across the state. This was not a criteria for ranking but does work well considering the demonstration aspect of this LCMR grant. Please review the attached sheet in preparation for making a decision at the July 22 meeting. Staff will be available at the meeting to address additional questions.

Enc.

cc: Wayne Zellmer
Grants Team
Regional Supervisors

LWRPMP CHALLENGE GRANT FY99
Grants to Local Governments to Assist Natural Resource Decision Making

Region	LGU	Proposal Title	Requested Funds	Running Total Funds	Score Ave.	Rank	Recommended Funding Option 1	Recommended Funding Option 2	BWSR Allocated Funds
South	Olmsted County	Model Zoning & Platting Controls	$50,000	$50,000	24.17	1	$50,000	$50,000	
North	Beltrami SWCD	Natural Resource Assessment	$25,000	$75,000	23.67	2	$25,000	$25,000	
Metro	Hennepin CD	Drained wetland inventory	$50,000	$125,000	22.50	3	$37,500	Shift to W.R.R.	
North	Douglas County	Map Sensitive Natural Resource Areas	$37,895	$162,895	22.50	3	$37,500	$37,895	
Metro	Scott SWCD	Development in Review Team - DIRT	$10,000	$172,895	21.83	5		$10,000	
Metro	Savage, City of	CoWProMP	$21,380	$194,275	21.17	6		$21,380	
South	Kandiyohi County	Feedlots & Land Use Mapping/Inventory	$60,000	$254,275	20.67	7			
Metro	Washington SWCD	Water Resource & Monitoring dBase	$35,000	$289,275	20.33	8			
North	Roseau County	Sewer Expansion Planning	$15,000	$304,275	19.33	9			
South	Houston County	Land use Planning Demonstration	$40,000	$344,275	19.33	9			
North	Carlton & St. Louis SWCDs	North Shore Community Natural Resource Protection Model	$24,500	$368,775	19.33	9			
South	Rock County	Land Use Plan Enhancement	$8,000	$376,775	18.33	12		$5,725	
			$376,775				$150,000	$150,000	

SUMMARY
GRANTS TO LOCAL GOVERNMENTS TO ASSIST
NATURAL RESOURCE DECISIONMAKING
FIRST CUT

1. Olmsted County--Model Zoning and Platting Controls. Produce model zoning and platting controls for the focused groundwater recharge area within the Rochester-Zumbro aqui-shed which the City of Rochester relies uupon for its water supply.

2. Beltrami SWCD--Natural Resource Assessment Model. Develop a model used to identify and characterize high risk growth management areas and integrating this as a tool in the decision making process of the City of Bemidji, Beltrami County and five area townships.

3. Hennepin Conservation District--Completion of Drained Wetland Inventory. Completion of the drained wetland inventory for use and inclusion in updates of comprehensive local water plans.

4. Douglas County--Mapping Sensitive Natural Resource Areas. Add technical assistance to do mapping, rezoning of sensitive areas, training of local officials.

5. Scott SWCD/Scott County--Create and maintain a team of professional staff to provide a one-stop approach to meet with developers to facilitate all natural resource protection aspects of proposed developments.

6. City of Savage--Comprehensive Wetland Management Plan. Development of a plan to guide future development decisions as they potentially impact wetlands.

7. Kandiyohi County (Mid MN RDC)--Feedlots and Land Use Mapping/Inventory. Create a more usable data base of information for feedlot inventories in Kandiyohi, Meeker, McLeod and Renville Counties.

8. Washington SWCD--Water Resource Monitoring dBase. Using GIS as a decision making tool for Brown's Creek trout stream habitat preservation by creation of a water natural resource datea base and monitoring network.

9. Roseau County--Warroad Area Sewer Expansion Planning Project. Provide technical assistance to plan and conduct enginnering feasibility studies for considering alternative sewer options in sensitive areas in and around Lake Township.

10. Houston County--Land Use Planning Demonstration. To develop a comprehensive plan for incorporating GIS/GPS technology into land use planning in Houston County and develop a township wide model to demonstrate the application of this technology on a pilot scale.

11. Carlton and S. St. Louis SWCDs--North Shore Community Natural Resource Protection Model. To assist three North Shore communities with wider application of GIS as a tool for their natural resource decisionmaking.

12. Rock County--Land Use Plan Enhancement. Update and reevaluate the local land use plan to use in conjunction with the local water plan and zoning ordinance to make sound decisions on appropriate use of land and water resources.

INTERNAL MEMORANDUM

July 10, 1998

TO: Ron Harnack, Executive Director
Members, Board of Water and Soil Resources

FROM: Jim Birkholz, Assistant Director

SUBJECT: Decision on Grants to Local Governments to Assist Natural Resource Decision making

At the May Board meeting I over viewed a $150,000 grant from LCMR to BWSR to provide for grants to local governments to assist them in natural resource Decision making. At the June meeting you received a list of the applicants for this grant. We received 29 requests totaling over $945,000. Obviously, local governments see the need for this sort of funding. All of the applications have considerable merit--unfortunately there are many excellent proposals which will go unfunded because of the small amount of available funds. Attached is the grant announcement and a summary of the applications for your information.

At this time, staff members of our Grants Team together with our Board Conservationists are making an initial cut, then applying appropriate ranking criteria similar to what we use for our challenge grants to numerically rank the proposals. This process is expected to take until shortly before our July 22 Board meeting to complete. We will make every attempt to mail/fax to you the rankings prior to the meeting for your consideration. At the meeting we will have an opportunity to discuss the rankings and any additional information which would be helpful to a final decision. A board decision is requested so that contracts can be prepared and local governments can begin implementing their projects.

If you have any questions, please contact me directly at (651) 296-0879.

cc: Wayne Zellmer
Grants Team
Regional Supervisors

Enc.

SUMMARY OF APPLICATIONS
GRANTS TO LOCAL GOVERNMENTS TO ASSIST NATURAL RESOURCE DECISIONMAKING

Board Conservationist	LGU/Proposal	Amount
Northern Region		
Dan Steward	**Aitkin Co.**-- Comprehensive ditch inventory	$50,000
	Crow Wing Co.--Developing wellhead protection plans and a Regional groundwater model to assist local units of Governments in directing sustainable growth and development In Crow Wing County	$50,000
	Itasca Co.--Mapping of aggregate (gravel) resources in Itasca County	$22,750
Dale Krystosek	**Clay Co./Clay SWCD**--Glacial Lake Agassiz Beach Ridge critical sites; establish wellhead protection for Buffalo Aquifer; and, Clay County drainage system inventory	$30,000
	Cass Co.--Purchase ArcView 3-D Analyst software and develop ISTS design and inspection software	$6,000
	East Otter Tail SWCD--Develop GIS for groundwater protection and add full-time technician	$35,000
Mark Nelson	**Carlton & S. St. Louis SWCD**--Assist three North Shore communities with their GIS needs at low cost to help produce efficient and sustainable development To help protect the Lake Superior Basin	$72,395.20
	Carlton SWCD--Digitize the soil survey of Carlton County for use in GIS	$40,000
	Pine SWCD--Inventory, evaluation, education and corrective action for non-conforming ISTS in Pine Lake Township	$7,000
Pete Waller	**Douglas Co.**--GIS mapping of shoreline bluffs, wetlands and sensitive areas to guide re-zoning for protection of sensitive areas	$37,895
Keith Grow	**Chisago SWCD**--Develop and maintain a county-wide GIS	$40,000
Brian Dwight	**Roseau Co.**--Warroad area sewer expansion planning project	$50,000
	Beltrami SWCD--Develop and implement a natural resource assessment model for the Bemidji area to manage development	$25,000

Board Conservationist	LGU/Proposal	Amount
Metro Region		
Doug Snyder	**Middle Mississippi River WMO**--Regional storm water management and brown field Remediation for the Southeast Minneapolis Industrial Area	$40,000
	Hennepin SWCD--Completion of a comprehensive wetland inventory of Hennepin County	$50,000
	Carver Co. Planning & Zoning--Expand GIS based wetland assessment county-wide	$7,500
Phil Belfiori	**Scott SWCD**--Create and maintain a Development in Review Team (DIRT) to review development proposals with developers	$10,000
	City of Savage--Develop a comprehensive wetland management plan	$21,380
Matt Moore	**Washington SWCD**--Using GIS as a decision making tool for Brown's Creek trout stream habitat preservation by creation of a water natural resource data base and monitoring network	$35,000
	Carnelian-Marine WD--Aerial lake analysis of lake shorelines and environmental assessment overflight	$30,000
Southern Region		
Tom Fischer	**Kandiyohi Co.**--Enhance GIS capabilities for feedlots and other land use issues	$60,000
Mary Kells	**Olmsted Co.**--Model zoning and platting controls for the focused groundwater recharge area within the Rochester-Zumbro aqui-shed	$50,000
	Houston Co.--Enhanced GIS for land use planning and township scale pilot demonstration	$40,000
Dave Peterson	**Mower SWCD**--Updated GIS land use/land cover layer (1:660')	$15,000
David Sill	**Lincoln SWCD**--Develop and implement a county-wide GIS	$30,000
	Swift SWCD--Hire a District Coordinator	$20,000
Tabor Hoek	**Murray Co.**--Design several sewer and water systems within the Shetek Area Water and Sewer District	$50,000
	Rock Co.--Land use plan enhancement	$8,000
Chris Hughes	**Martin Co.**--Conduct a land use survey as part of developing a comprehensive land use plan	$12,588
TOTAL--29 applications		**$945,508.20**

SPECIAL GRANT ANNOUNCEMENT

GRANTS TO LOCAL GOVERNMENTS TO ASSIST NATURAL RESOURCE DECISION MAKING

Background

The Minnesota Board of Water and Soil Resources has received $150,000 from the Legislative Commission on Minnesota Resources for matching grants to assist local governments which are experiencing development and land use changes which are impacting natural resources. The funds are intended for projects which utilize emerging technologies and information to make land use, zoning, and permitting decisions which are appropriate to land and water resources and contribute to sustainable development. Augmenting local government staff resources and the input they provide to local governing boards for natural resource decisions is a focus of this grant. Successful projects will result in enhanced capability of local governing boards to effectively deal with development pressures which are affecting land and water resources. This is an opportunity to jump start efforts which help put your local government in a better position to deal with development pressures. This is a limited source of funds available for a limited time; the application process has been streamlined accordingly by using a pre-proposal format--selected grantees will establish final details with a BWSR staff person.

Highlights

- Eligibility. Applications must come from Counties, Soil and Water Conservation Districts, Watershed Districts or Metropolitan Watershed Management Organizations. Other local units of government must apply through one of the above local units. This announcement is being distributed to the BWSR Challenge grant mailing list.

- Pre-proposals will be requested and ranked by an inter-agency team. The pre-proposals will be ranked according the criteria used for the BWSR Challenge Grant Program which is in this same mailing plus the additional points covered in this announcement. The BWSR will contact selected recipients to prepare a final work plan, budget, and other details.

- There is no upper or lower dollar limit on applications, however, the BWSR expects to fund at least three projects.

- Projects require a 50:50 match, cash or in-kind.

- Priority will be given to proposals which contain a cash match, indicate a cooperative effort between two or more local units of government, and show good faith commitment to continue the effort beyond the grant period.

- Grants will be available through June 30, 1999, with a possible 6 month extension if approved by BWSR and the LCMR.

To Apply

Applicants should use the following outline. Applications should be kept to two pages or less.

1. Local Unit of Government name and contact person (project manager). Include address and phone number, e-mail, etc....

2. Amount of funds requested. Amount to be committed as match--list as cash or in-kind.

3. Narrative. Describe what is proposed. Please be brief and specific. Use of bullets or outline format to clearly show the nature of the project is helpful to evaluators. Include at least the following information:

- The nature of the development pressure which is affecting land and water resources;
- The staffing expertise to be acquired or the technology to be used to help the governing board(s) make better natural resource decisions;
- Any new development controls which would be implemented;
- Participating/benefiting local units of government; and,
- How this project would show results and how can results be measured or quantified.

4. Other information (optional).

Deadline for applications

The deadline for submitting pre-proposals for this special grant is June 12, 1998. Please note that this date is earlier than the Challenge Grant application deadline!

Submit pre-proposals to:

Jim Birkholz
Board of Water and Soil Resources
One West Water Street
Suite 200
St. Paul, MN 55107

cc: BWSR staff

s:lcmrgnt.lgu

July 8, 1998

TO: Board Members

FR: Tim Fredbo, Easement Program Manager

RE: Easement Program Work Plan for 1998 Appropriation (FY99-00)

The 1998 Legislature appropriated $15.0 million for the RIM Reserve conservation easement program. The Legislative Commission on Minnesota Resources (LCMR) has oversight authority for our capital bond fund appropriations, and as such, they must review and approve of our work plans. The enclosed work plan has been put into the format that they require. The LCMR reviewed and gave their approval to the work plan on June 10, 1998.

Information pertinent to the FY99-00 work plan for the $15.0 million appropriation is contained on the shaded portions of pages 8, 9 and 10. In addition, information on project relationships, priorities, and easement acquisition procedures are contained on pages 17, 18 and 19 under the IV. CONTEXT section of the work plan.

Summarized work plan for the 1998 $15.0 million appropriation:

A. $14,750,000 for RIM and PWP easements allocated as follows:

- $6,875,000 for the Conservation Reserve Enhancement Program (CREP)
- $2,000,000 for wetland restoration easements acquired under the partnership with the NRCS's Wetland Reserve Program (WRP)
- $4,875,000 for "regular" RIM Reserve and PWP easement programs
- $1,000,000 for professional and technical services necessary to acquire easements

B. $250,000 for a pilot flood storage easement program in the Red River watershed area.

The work plan also contains the status reporting information from 1996 and 1997 easement program sign-ups that has been provided to the LCMR. This is a reporting of accomplishments from the 1996 appropriation ($11.5 million). This information on easement program sign-up results has been provided to you when reports have been submitted to LCMR.

Date of Report: May 28, 1998
Date of Work Program Approval:
Date of Next Status Report: March, 1998
Project Completion Date:

LCMR Work Program 1998 (for FY99-00)

I. **PROJECT TITLE:** RIM & PWP CONSERVATION EASEMENTS

Project Manager: Tim Fredbo
Affiliation: Easement Program Manager, Board of Water and Soil Resources
Mailing Address: One West Water Street, St. Paul, MN 55107
Telephone Number: (612) 296-0880 FAX: (612) 297-5615
Email Address: tim.fredbo@bwsr.state.mn.us

	Appropriation	Balance
1998 Work Program		
98 RIM & PWP	$15,000,000	$15,000,000
Previously Approved Requests		
Bonding		
96 RIM & PWP	$11,500,000	1,546,930
94 RIM & PWP	9,000,000	0
93 RIM	500,000	103
92 RIM	1,250,000	310
91 RIM	1,900,000	0
91 RIM	5,000,000	0
91 PWP	7,000,000	343,567

Note: Figures above reflect balances at one point in time. Program obligations, encumbrances and expenditures continuously change as payments are made, landowners cancel applications and accounts are reimbursed.

Trust Fund and Future Resources Fund		
93 RIM	823,000	0
91 RIM & PWP	600,000	0
91 RIM	400,000	0

A. LEGAL CITATIONS

Bonding
1998 Appropriation Language
MN Session Law, Chap. 404, Sec. 10, Subd. 2. **$15,000,000**
RIM and PWP Conservation Easements
This appropriation is for the following purposes:

(1) to acquire conservation easements from landowners on marginal lands to protect soil and water quality and to support fish and wildlife habitat as provided in MN Statutes, section 103F.515; and

(2) to acquire perpetual conservation easements on existing type 1, 2, 3, and 6 wetlands, adjacent lands, and for the establishment of permanent cover on adjacent lands, in accordance with MN Statutes, section 103F.516.

Up to $250,000 may be used for the acquisition of flood storage easements that allow haying, grazing, or other activities approved by the board when the flood storage is not needed, and for the cost of constructing related dikes and other structures necessary to maintain water in the flood storage easement areas. Up to ten percent of the appropriation may be used for professional and technical services related to acquisition of the easement.

The board, in consultation with the commissioner of natural resources, must select at least two local government units for participation in the flood storage easement pilot program based on the potential and need for flood water storage in the local area. The board may acquire the easement directly or provide grants to the local government units for their acquisition of easements that conform with the requirements established by the board. A conservation easement must be for at least ten years. The board or the local government unit must make the following payments to the landowner for the conservation easement and agreement:

(1) to establish conservation practices required by the easement, up to 75% of the total eligible cost, not to exceed an average of $75 per acre; and

(2) 25 percent of the payment rate for 20 year easements acquired under MN Statutes, section 103F.515; or

(3) an alternative payment system for easements as may be determined by the board, in consultation with the commissioner of natural resources.

By January 15, 2000, the board, in conjunction with the commissioner of natural resources, shall report to the senate environment and agricultural budget division and the house environment, natural resources, and agricultural finance committee on the acquisition of easements under this paragraph. The report must include an analysis of the benefit to expansion of the program in other areas of the state that are prone to flooding and on the adequacy of payments under the pilot program.

Up to $1,000,000 is for professional and technical services necessary to administer the program.

1996 Appropriation Language

ML 1996, Chap. 463, Sec. 11, Subd. 3. **$11,500,000**

RIM and PWP Conservation Easements

This appropriation is for the following purposes:

(a) to acquire conservation easements from landowners on marginal lands to protect soil and water quality and to support fish and wildlife habitat as provided in Minnesota Statutes, section 103F.515; and

(b) to acquire perpetual conservation easements on existing 1,2, 3 and 6 wetlands, adjacent lands, and for the establishment of permanent cover on adjacent lands, in accordance with Minnesota Statutes, section 103F.516.

(c) Up to $1,500,000 may be used for the acquisition of limited conservation easements that allow cropping or grazing at reduced payment rates on land that is currently or within the last two years has been enrolled in the federal Conservation Reserve Program (CRP), under United States Code, title 16, section 3831. The board, in conjunction with the commissioner of agriculture, must select counties for participation in the program based on:

(1) the number of CRP acres;

(2) the number of whole farm CRP acres;

(3) the number of highly erodible CRP acres;

(4) local soil conservation initiatives in place;

(5) the potential for negative water quality impacts from CRP acres converted to agricultural crop production; and

(6) the potential to complement public wildlife lands and other conservation lands, including protected grassland prairies.

A conservation easement must be for 20 years and require that the activities on the enrolled lands comply with a conservation plan that will limit soil erosion within the soil loss tolerance, as defined in rules adopted under Minnesota Statutes, section 103F.411. Payments for conservation easements and practices under this program are as follows:

(1) to establish permanent conservation practices required by the conservation plan, for the installation of permanent livestock watering systems, or for the installation of permanent fencing for grazing systems, up to 75 percent of the total eligible costs, not to exceed an average of $65 per acre; and

(2) ten annual payments each equal to five percent of the payment rate for 20-year easements acquired under Minnesota Statutes, section 103F.515 for land restricted to grazing and haying under the conservation plan; or

(3) ten annual payments each equal to two and one-half percent of the payment rate for 20-year easements acquired under Minnesota Statutes, section 103F.515 for land where cropping is allowed under the conservation plan.

The board may only acquire an easement under this paragraph after it determines that there is adequate funding appropriated to make the annual payments required for the duration of the easement and the landowner agrees to convey at least ten percent of the landowner's CRP land in a permanent easement under Minnesota Statutes, section 103F.515. Priority must be given for land being conveyed or leased to beginning farmers, as defined under Minnesota Statutes, section 41C.02, subdivision 6. Up to 20 percent of the appropriation may be used for professional and technical services related to acquisition of the easements. By March 15, 1997, the board, in conjunction with the commissioner of agriculture, shall report to the finance division of the senate environment and natural resources committee and the house of representative environment and natural resources finance committee on the acquisition of easements under this paragraph. The report must include an analysis of the need for expansion of the program to all agricultural areas of the state in order to protect water quality and provide necessary wildlife habitat, and the adequacy of payments under the program.

1994 Appropriation Language

ML 1994, Chap. 643, Sect. 26, Subd. 3 **$ 9,000,000**

RIM Conservation Easement Acquisition

This appropriation is for the purposes specified in paragraphs (a) and (c).

(a) To acquire conservation easements from landowners on marginal lands to protect soil and water quality and to support fish and wildlife habitat as provided in Minnesota Statutes, section 103F.515.

(b) To acquire perpetual conservation easements on existing type 1, 2, and 3 wetlands, adjacent lands, and for the establishment of permanent cover on adjacent lands, in accordance with Minnesota Statutes, section 103F.516.

(c) Up to $300,000 of this appropriation may be used to establish and restore wetlands to provide credits for deposit in the state wetland bank established under Minnesota Statutes, section 103G.2242, subdivision 1. The board may enter into agreements with local government units and the commissioner of transportation for this purpose. An agreement with the commissioner of transportation may provide for borrowing or acquiring existing wetland credits from the wetland bank established by the commissioner. Proceeds from the sale of credits provided under this paragraph are appropriated to the board for the purposes of paragraph (b).

1993 Appropriation Language

ML 1993, Chap. 373, Sec. 13, Subd. 1 **$ 500,000**

Conservation Reserve

$500,000 of the appropriation in Laws 1989, chapter 300, article 1, section 19, item (a), to dredge the upper harbor area of Duluth harbor, is reappropriated to the board of water and soil resources for the Reinvest in Minnesota conservation reserve program under Minnesota Statutes, section 103F.515.

1992 Appropriation Language

ML 1992, Chap. 558, Sec. 19 **$1,250,000**

Board of Water and Soil Resources

To the board of water and soil resources for the reinvest in Minnesota conservation reserve program under Minnesota Statutes, section 103F.515.

1991 Appropriation Language

ML 1991, Chap. 254, Art. 1, Sect. 17(a) **$ 1,900,000**

(a) To the board of water and soil resources for the reinvest in Minnesota conservation reserve program, under Minnesota Statutes, section 103F.515: $1,900,000;

ML 1991, Chap. 354, Art. 11, Sect. 1, Subd. 1(a) **$ 5,000,000**

(a) $5,000,000 is appropriated to the board of water and soil resources for wetland restoration under Minnesota Statutes, section 103F.515; and

ML 1991, Chap. 354, Art. 11, Sect. 1, Subd.1(b) **$ 7,000,000**

(b) $7,000,000 is appropriated to the board of water and soil resources for acquisition of conservation easements on wetlands.

1990 Appropriation Language

ML 1990, Chap. 610, Art. 1, Sect. 15 $ 2,395,000

Board of Water and Soil Resources -1,645,000

To the board of water and soil resources for the Reinvest in Minnesota resources program. This appropriation is from the infrastructure development fund. This appropriation is to acquire conservation easements under Minnesota Statutes, section 40.43, subdivision 3. The board shall give priority of acquiring easements on cropland in sensitive groundwater areas. Administrative costs for one position of the board are to be paid from this appropriation. $1,645,000 of this appropriation is to construct the Wellner-Hageman dam. **$ 750,000**

1989 Appropriation Language

ML 1989, Chap. 300, Art. 1, Sect. 12 **$1,500,000**

Board of Water and Soil Resources

To the board of water and soil resources for the reinvest in Minnesota resources program. This appropriation is from the reinvest in Minnesota resources fund to acquire conservation easements under Minnesota Statutes, section 40.43, subdivision 3. The board shall give priority to acquiring easements on cropland in sensitive groundwater areas. The approved complement of the board of water and soil resources is increased by one position to administer these projects, to be paid from this appropriation.

1987 Appropriation Language

ML 1987, Chap. 400, Sect. 12 **$9,000,000**

Agriculture

This appropriation is from the Reinvest in Minnesota resources fund for the conservation reserve program under Minnesota Statutes, section 40.43, to be available until expended. The commissioner shall provide the necessary professional services for the performance of duties from the appropriation under this section.

The approved complement of the department of agriculture is increased by one position in the unclassified service to implement this section. The position must be a coordinator to work with other agencies to implement this section.

During the biennium, notwithstanding any other law, easements granted under this act may be permanent or if limited duration, highest priority must be given to permanent easements consistent with the purposes of this act. Easements of limited duration must be for at least 20 years with provisions for renewal for at least another 20 year period.

1986 Appropriation Language

ML 1986, Chap. 383, Sect. 17, Subd. 3(a) **$9,400,000**

Commissioner of Agriculture

$10,000,000 is appropriated to the commissioner of agriculture:

(a) from the bond proceeds account of the Reinvest in Minnesota resources fund for the conservation reserve program under section 4 to be available until expended.

Trust Fund

1991 Appropriation Language

ML 1991, Chap. 254, Sect. 14, Subd. 6(d) **$ 600,000**

Conservation Reserve Easements

This appropriation is from the Minnesota environment and natural resources trust fund to the board of water and soil resources to acquire perpetual easements on wetlands and to acquire perpetual easements under Minnesota Statutes, section 103F.515, subdivision 3, with priority for wetland areas, to enhance wildlife habitat, control erosion, and improve water quality.

ML 1991, Chap. 254, Sect. 14, Subd. 9(h) **$ 400,000**

Easement Acquisition on Restored Wetlands

This appropriation is from the Minnesota environment and natural resources trust fund to the board of water and soil resources for a pilot program to acquire permanent conservation easements on federally restored or enhanced wetlands and adjacent lands in cooperation with the United States Fish and Wildlife Service and the Izaak Walton League.

1993 Appropriation Language

ML 1993, Chap. 172, Sect. 14, Subd. 3(e) **$ 500,000**

Reinvest in Minnesota - Conservation Reserve Easements

$500,000 of this appropriation is from the trust fund and $323,000 of this appropriation is from the future resources fund to the board of water and soil resources to accelerate the RIM program to acquire perpetual conservation easements on marginal agricultural lands. Up to $165,000 may be used to implement conservation practices on the easements. None of this appropriation may be used for administrative costs.

Future Resources Fund

1993 Appropriation Language

ML 1993, Chap. 172, Sect. 14, Subd. 3(e) **$ 323,000**

Reinvest in Minnesota - Conservation Reserve Easements

$500,000 of this appropriation is from the trust fund and $323,000 of this appropriation is from the future resources fund to the board of water and soil resources to accelerate the RIM program to acquire perpetual conservation easements on marginal agricultural lands. Up to $165,000 may be used to implement conservation practices on the easements. None of this appropriation may be used for administrative costs.

II. & III. PROJECT SUMMARY AND RESULTS:

Accomplishments To-date

Since 1986, approximately $58.6 million (does not include 1998 appropriation) have been appropriated to the BWSR easement programs. RIM Reserve has secured 2,370 easements that protect 70,437 environmentally sensitive acres. Over 640 wetland basins have been restored encompassing 6,500 wetland acres. PWP has secured 287 easements which protect 11,609 acres of existing wetlands and adjacent uplands. *Attachment 1* (page 20) illustrates the location of easements across the state.

Financial summary and anticipated results of items requested for approval for use of the 1998 appropriation **- $15,000,000.**

A. $14,750,000 to acquire conservation easements pursuant to paragraphs (1) and (2) allocated as follows:

Personnel (6%)	
$ 852,500	For professional services necessary to acquire easements and provide technical assistance to SWCDs and landowners.
Title Insurance (1%)	
$ 147,500	
Acquisition (93%)	
$13,750,000	To acquire conservation easements and establish associated conservation practices.
$14,750,000	**Total for Section A**

The $13,750,000 will be made available for easement acquisition in the following manner:

1. $6,875,000 for the Conservation Reserve Enhancement Program (CREP) for MN River watershed. This partnership with the USDA Farm Service Agency leverages approximately $1.5 federal dollars for each state $1.

$6,875,000	(State $)
$10,312,500	(Federal $)
$17,187,500	= 17,904 acres under easement*

*based on $960/acre average easement acquisition cost (includes practice costs)

2. $2,000,000 for the wetland restoration partnership effort with the USDA Natural Resources Conservation Service, Wetland Reserve Program (WRP). This partnering effort also leverages $1.5 federal dollars for each state $1.

$2,000,000 (State $)
$3,000,000 (Federal $)
$5,000,000 = 5,208 acres of wetland restoration easements*

*based on $960/acre average easement acquisition cost (includes practices)

3. $4,875,000 for "regular" RIM Reserve and PWP
Based on an average easement cost of $960/acre, the following results are anticipated:

Easement Type	*Acres*	*Cost*
RIM - wetland restorations	1,200	$1,152,000
RIM - riparian lands	1,800	1,728,000
RIM - marginal ag land	778	747,000
RIM - sensitive groundwater	300	288,000
PWP	1,000	960,000
Total	5,078	$4,875,000

B. $250,000 for pilot flood storage easement program allocated as follows:

Personnel (10%)
$ 25,000 professional and technical services necessary to acquire easements.

Acquisition (90%)
$ 225,000 Acquire conservation easements and establish associated conservation practices.

$ 250,000 Total for Section B

The BWSR, in consultation with the Department of Natural Resources, plans on making these flood storage easement program dollars available via grants to a minimum of two local government units in the Red River watershed area. Grant requirements and performance standards for the potential grantees are currently being worked on.

C. Fund balances from prior years' bonding appropriations.

$ 1,890,910 Remaining fund balances from '91 through '96 RIM bonding appropriations will be obligated to RIM Reserve applications taken in FY99-00. At $960 per acre,an additional 1,907 acres of easement will be acquired.

$ 1,890,910 Total for Section C

$16,890,910 Total for Sections A, B, C

Financial summary and anticipated results of items requested for approval for use of the 1996 bonding appropriation - $11,500,000.

A. $10,000,000 to acquire conservation easements pursuant to paragraphs (a) and (b) allocated as follows:

Personnel (7%)
$ 710,000 For professional services necessary to acquire easements and provide technical assistance to SWCDs and landowners.

Title Insurance (1%)
$ 95,000

Acquisition (92%)
$ 9,195,000 To acquire conservation easements and establish associated conservation practices on approximately 11,900 acres (see anticipated results below).

$10,000,000 Total for Section A

Anticipated Results

Easement Type	*Acres*	*Cost*
RIM - wetland restorations	6,300	$5,035,000
RIM - riparian lands	3,400	2,440,000
RIM - marginal ag land	800	610,000
RIM - sensitive groundwater	400	305,000
PWP	1,000	805,000
TOTAL	11,900	$9,195,000

Six Month Status Update - March, 1997
A RIM Reserve and PWP sign-up was held in the late fall of 1996. The BWSR has recently completed the easement selection process for the applications submitted. A

total of 281 applications totaling $8,959,478.00 were submitted by SWCDs. BWSR Board Conservationists (BC) recommended funding for 180 of the 281 easement applications. Funding decisions were based on priority recommendations from local SWCD screening committees, and state resource protection priorities stipulated in the easement program work plan. *Status Update Attachment 1* (page 22) shows easement demand and easement funding for each of the 15 BWSR BC work regions in the state. The demand by BC region for this most recent sign-up is typical of trends since the inception of the RIM Reserve in 1986. Demand has been highest in the prairie pothole, Minnesota River watershed areas.
Easement applications to be funded represent 6,697 acres with payments to landowners totaling $5,483,453. Sign-up results, by easement type, are shown below:

Easement type and (No.)	*Acres*	*Cost*
RIM - wetland restorations (36)	1,279	$1,626,577
RIM - riparian lands (91)	2,858	2,522,269
RIM - marginal ag land (29)	1,538	818,977
RIM - sens. groundwater (2)	169	47,168
RIM - limited (6)	126	36,391
PWP (15)	727	432,071
TOTALS (180)	6,697	$5,483,453

The six (6) RIM limited easements listed in the above table are 20-year marginal agricultural land easements. The BWSR approved funding of these easements in response to the flooding that occurred in the Red River Valley in the spring of 1996. Severely eroded scour areas were taken under easement and will be restored to grassy cover to prevent erosion of these critical areas in the future.

The Minnesota River watershed has been targeted as a high priority area for easement acquisition by the BWSR, and is to receive a minimum of 50% of available funds. Approximately 56% ($3,041,988.35) of the available funds were allocated to the MN River watershed as a result of the 1996 sign-up.

Results of the last sign-up indicate that we may not be able to achieve our anticipated goal acreage for wetland restorations as shown in our original work plan. All the wetland restoration applications which were submitted during the 1996 sign-up that were found to be technically feasible to restore, were approved for funding. The BWSR will continue to emphasize wetland restorations as a high priority , but we will likely not be able to make up the acreage shortfall with our next sign-up. Acreage goals were based on past trends that many times don't always continue. It must be remembered that RIM is a voluntary program, and the BWSR can't control who is willing to enroll land in the program.

Status Update - March 1998

The BWSR held two sign-ups for the RIM Reserve program in 1997. The first sign-up (97-01) was authorized by the BWSR Board in response to the 1997 spring floods. At its June 25, 1997 meeting the Board authorized the use of up to $2.7 million to fund easement applications that came from landowners in declared flood disaster counties. The second, or regular, sign-up (97-02) was available statewide. Approximately $4.6 million was available for easements from this sign-up.

The flood sign-up was limited to accepting only wetland restoration or floodplain riparian easements. Easement types that would inherently reduce impacts of future flood events. A total of 41 easements, 11 wetland restorations and 30 riparian, were selected for funding at a cost of $2,696,357. These easements encompass 2,881.5 acres. *Status Update Attachment 2* (pages 23, 24) shows the county distribution of these easements by number, acres and funding amount. The second page of the attachment shows the exact funding amount by county and a breakdown by easement type.

Flood sign-up facts to note:

* 96% of the easement dollars approved for funding went to the Minnesota River watershed area. No applications were received from counties in the Red River watershed, and all applications received from counties in the Mississippi watershed area were approved for funding.

* All requests for funding via the RIM program that were submitted to the Minnesota Recovers Coordination Committee by the community application process were approved. Community applications were submitted by Redwood, Chippewa, Swift, LacQuiParle, Yellow Medicine and Lyon SWCDs.

Prior to the second, or regular, RIM Reserve sign-up (97-02) an analysis of bond fund balances was undertaken to identify the amount of funds available. The findings are reflected in the table on page 1 of this work plan and in the section A and C financial summaries. The available funds in the 1996 appropriation increased by approximately $1.8 million as a result of $900,000 in landowner cancellations from the 1996 sign-up, and a partnership with the Natural Resources Conservation Service that made an additional $900,000 available for wetland restoration easements. This partnering effort was begun in October and it simply allows us to utilize federal Wetland Restoration Program dollars in combination with RIM Reserve dollars to secure permanent easements. The partnership leverages approximately 1.5 federal dollars for each state dollar committed.

In addition, remaining balances from the CRP to RIM conservation farming easement program (Section B), was made available for the "regular" RIM Reserve. After the 97-01 flood sign-up the following funds were available for the 97-02 sign-up:

$2,837,433 from the 1996 appropriation (Section A financial summary)
$ 828,413 balance from the 1996 appropriation for CRP to RIM pilot (Section B)
$ 991,973 balance from prior bonding appropriations (Section C)
$4,657,799 available for RIM Reserve 97-02 sign-up

The 97-02 RIM Reserve and PWP sign-up was held in the late fall of 1997. A total of 138 applications, encompassing 5,464 acres, were funded at a cost of $4,656,092. Total program demand was approximately $6.3 million. Funding decisions were once again based on priority decisions of local RIM screening committees, and resource protection priorities. 97-02 Sign-up results, by easement type are shown below:

Easement Type and (No.)	*Acres*	*Cost*
RIM - wetland restorations (35)	1,456	$1,600,687
RIM - riparian lands (53)	2,094	1,861,243
RIM - marginal ag land (29)	1,167	732,129
RIM - sens. groundwater (4)	74	35,813
RIM - limited (5)	139	74,386
PWP (12)	534	351,834
TOTALS (138)	5,464	$4,656,092

Refer to *Status Update Attachment 3* (pages 25 - 27) for a county distribution of the 97-02 RIM Reserve sign-up. Approximately 55% of the available funds were allocated to counties in the MN River watershed area.

Once again, the five RIM limited easements in the preceding table are 20 year easements. The BWSR approved funding of these easements in response to the RED River flooding that occurred again in 1997.

Section A Financial Summary - March, 1998

$10,000,000	Appropriated
-710,000	Personnel
-95,000	Title Insurance
$ 9,195,000	Available for easement acquisition
-5,479,410	1996 sign-up ($5,483,453-$4,043 from prior bond accts.)
$ 3,715,590	Available for 1997 (FY98) sign-up
+1,818,200	cancellations 1996 sign-up, and WRP partnership
$ 5,533,790	Available for 1997 (FY98) sign-up
-2,696,357	97-01 flood sign-up
$ 2,837,433	available for 97-02 sign-up
-2,837,433	used for 97-02 sign-up
0	balance

B. $1,500,000 for pilot CRP land-transfer program pursuant to paragraph (c), allocated as follows:

Personnel (20%)	
$ 150,000	BWSR professional services necessary to acquire easements, including a new position to assist SWCDs with required conservation plans.
$ 150,000	SWCD professional services required to design and implement conservation plans.
Acquisition (80%)	
$ 1,200,000	Acquire conservation easements and establish associated conservation practices on approximately 7,920 acres (see anticipated results below).
$ 1,500,000	**Total for Section B**

Anticipated Results

Easement Type	*Acres*	*Cost*
Cropland	3,600	$ 285,000
Pasture/hayland	3,600	465,000
Permanent RIM	720	450,000
Total	7,920	$1,200,000

Six Month Status Update - March, 1997

Twenty-two SWCDs were contacted and invited to submit proposals to participate in the pilot CRP land-transfer program. Nine of the 22 SWCDs submitted proposals to participate. Selecting the five pilot SWCDs was a joint effort of the BWSR and Department of Agriculture. The five SWCDs chosen to participate are Clay, Fillmore, Lac Qui Parle, East Polk, and Pope. Districts were chosen based on the criteria stipulated in M. L. 1996, Ch. 463, Sec. 11, Subd. 3(C).

All the pilot districts actively promoted landowners with acres expiring from CRP to participate in the limited duration / limited use easement program. Efforts were also undertaken to encourage applicants to lease or sell the land to beginning farmers. Ivan Anderson, Program Manager with the Passing on the Farm Center in Granite Falls, met with all of the pilot districts in an effort to link applicants with beginning farmers. Despite these efforts, only one applicant in Lac Qui Parle expressed a desire to rent their land enrolled in the pilot program to a beginning farmer.

The five pilot districts held a sign-up in October of 1996. A total of 31 applicants applied (Clay - 7, Fillmore - 1, Lac Qui Parle - 20, East Polk - 2, Pope - 2) and have been approved for funding. Results of the sign-up are as follows:

Easement Type	*Acres*	*Cost*
Cropland	872	$111,015
Pasture/hayland	1,006	244,945
Permanent RIM	304	187,030
TOTALS	2,182	$542,990

Status Update - March, 1998

No additional sign-ups were received for this program in 1997. The CRP making a strong comeback in Minnesota has limited the interest in this program. Many landowners who originally enrolled in this program in 1996 have cancelled and re-enrolled in the federal CRP. Below are updated acreage that reflect the 15 cancellations:

Easement Type	*Acres*	*Cost*
Cropland	650	$ 81,343
Pasture/hayland	587	146,388
Permanent RIM	80	113,142
TOTALS	1,317	$340,873

Program funds made available as a result of cancellations and unspent personnel costs were allocated to the acquisition of regular RIM Reserve easements in the 97-02 sign-up (Section A of this work plan).

Section B Financial Summary - March, 1998

$1,500,000	Appropriation
-300,000	Personnel (professional services necessary to acquire easements
$1,200,000	Available for easement acquisition
-542,990	Easement costs from 1996 sign-up
-156,250	Conservation practice costs from 1996 sign-up
$ 500,760	Available for 1997 (FY-98) sign-up
+ 327,653	Cancellations and unspent professional service costs
$ 828,413	Available for 97-02 sign-up "regular" RIM Reserve
-828,413	used for 97-02 sign-up
0	Balance

C. Fund balances from prior years' bonding appropriations *March, 1998*

$	424,416	Remaining fund balances from '91 through '94 RIM bonding appropriations. Increase of $420,373 from March '97 report.
$	567,557	This balance from the '91 PWP appropriation is being allocated to easement acquisition for the 97-02 sign-up.
$	**991,973**	**Total for Section C** (- $990,266 allocated to 97-02 easements)

Six Month Status Update - March, 1997

The $4,043 bond fund balance was allocated towards the acquisition of easements from the 1996 sign-up as listed in Section A of this status update. This leaves only the balance from the 1991 PWP appropriation ($567,557) which the BWSR will continue to hold in reserve.

It is anticipated that fund balances from prior years' bonding accounts will be increasing due to landowner cancellation of easement applications, federal grant reimbursements, and unspent conservation practice dollars. Prior to the 1997 sign-up, and the BWSR's next six month update report to the LCMR in September, an analysis of bond account balances will be undertaken to identify the amount of additional funds that will be available for new easement acquisition in 1997 (FY98).

Status Update - March, 1998

An analysis of prior bond account balances in September of 1997 produced a total of $420,373 in additional funds. These funds became available as a result of landowner cancellations, unused conservation practice funds and grant reimbursements to bond accounts. The new total of $424,416, plus the $567,557 PWP appropriation balance, for a total of $991,973 were available for the acquisition of easements from the 97-02 RIM Reserve sign-up (Section A). $990,266 of this total were obligated to 97-02 easement acquisition, leaving a balance of $1,707. The BWSR will no longer hold the 1991 PWP appropriation in reserve.

Section C Financial Summary - March, 1998

$991,973	available for 97-02 RIM sign-up
-990,266	used for 97-02 sign-up
$1,707	Balance

$12,491,973 Total for Sections A, B, C (increase of $420,373 from March '97 report)

Six Month Financial Summary - March, 1998

$12,491,973	Total for Sections A, B, C
12,490,266	Total obligations from A, B, C
$ 1,707	Balance available

IV. CONTEXT:

A. Significance: RIM and PWP protect the state's water and soil resources by retiring marginal agricultural lands, restoring drained wetlands and protecting existing wetlands that are highly susceptible to alteration.

B. Project Relationships:

1. SWCDs - RIM and PWP conservation easement programs are implemented at the local county level by Soil and Water Conservation Districts (SWCDs).

2. CREP - The BWSR has entered into an agreement with the USDA Farm Services Agency (FSA) to participate in a Conservation Reserve Enhancement Program (CREP) in the Minnesota River watershed. The CREP will partner perpetual RIM Reserve easements with 15 year CRP contracts to enroll a goal acreage of 100,000 acres by Dec. 31, 2002. The partnership leverages approximately 1.5 federal dollars for each state easement dollar committed. Federal $ leveraged and anticipated acreage are shown in section II. A. 1 of this work plan. Simply put, the CREP places a perpetual RIM Reserve easement on lands enrolled into the USDA 15 year CRP program, utilizing the CRP payments made to landowners to reduce the state's easement acquisition cost. The CREP has targeted flood prone land, riparian buffer and filter strip land, and wetlands which can be restored for enrollment into the program. Easement applications for CREP will be taken on a continuous sign-up basis.

3. WRP - The BWSR has a signed agreement with the USDA Natural Resources Conservation Service (NRCS) to jointly fund wetland restoration easements via the RIM Reserve and NRCS Wetland Reserve Program (WRP). This partnership program is available statewide. Landowners who apply and are accepted, enter into a 30 year WRP easement and a perpetual RIM Reserve easement on the same parcel of land. This partnership also leverages approximately 1.5 federal dollars for each state dollar (see section II. A. 2 of this work plan for approximate dollars leveraged and acres protected). Leveraged federal dollars will enable state RIM Reserve dollars to go further in addressing our state's wetland restoration and enhancement efforts. Landowner applications for the RIM Reserve/WRP partnership will be taken on a continuous basis throughout the year.

C. Targeting and Program Priorities

1. Statewide priorities - The resource protection and improvement priorities that have been established by the BWSR for the RIM Reserve and PWP easements that we acquire are that they should: 1) protect and improve water quality, 2) reduce soil erosion, and 3) enhance fish and wildlife habitat. In light of these priorities the BWSR seeks to acquire easements that have a history of cropping and grazing and are in close proximity to surface and ground water resources. Riparian easements, wetland restoration easements, and sensitive ground water easements are the priority easement types for the RIM Reserve. Existing wetlands that are cropped and/or exempt and at risk of conversion are the priority for PWP easements. Both the CREP and WRP partnerships will be acquiring riparian and wetland restoration RIM easements, and cropped PWP easements.

The Minnesota River watershed has been targeted as a priority area by the BWSR. 50% of available easement acquisition funds are allocated to easements in this watershed.

2. Local priorities - Easement applications submitted by landowners are prioritized by the SWCD as to how well they achieve local resource protection goals as set forth in local water plans, SWCD comprehensive plans and by the local RIM screening committee. Prioritized applications are then submitted to the BWSR for funding consideration. Local RIM screening committees are made up of representatives from conservation and environmental groups, farm organizations and various federal and state agencies. In addition to identifying resource protection priorities, the RIM screening often assists the SWCD with prioritizing applications.

D. Easement Acquisition Procedures

Once an application has been approved for funding, the local SWCD gathers the information necessary to develop an agreement between the state and the landowner to enter into a conservation easement. During this process, land ownership is verified, a legal description and map of the easement area are prepared and a conservation plan is developed. Once the agreement is signed by the landowners and the state, the easement and conservation practice funds are encumbered.

The state purchases a title insurance policy on each proposed easement area. This allows for the resolution of any title problems that the state determines may pose a threat to the legal interests the state acquires upon conveyance of the easement (i.e., the cropping and grazing rights and the requirement that the conservation practices agreed to by the landowner and the state will be established and maintained). Upon the recording of the conservation easement and the state's approval of the final title policy, the state will issue the easement payment. The easement payment is based on

the Assessor's Township Average Market Value (ATAMV) as provided by the Minnesota Department of Revenue.

TYPE OF LAND	PERPETUAL	LIMITED
LANDS WITH CROP HISTORY	90% of the ATAMV	75% of the ATAMV
LANDS WITHOUT CROP	60% of the ATAMV	45% of the ATAMV
Wetland W/out Crop History	50% of the ATAMV	N/A

The general procedure to acquire a conservation easement is illustrated in a flowchart found in *Attachment 2* (page 21). Once the easement acquisition is complete the SWCD assists the landowner to establish the conservation practices as documented in the conservation plan. Engineering assistance is provided to the SWCD and the landowner by the BWSR where needed (e.g., wetland restoration projects). Expenses incurred to install conservation practices will be reimbursed up to the statutory limits when the SWCD certifies that the practice has been adequately installed and submits an itemized expense voucher to the BWSR.

E. Time: Funds will be encumbered (easement applications approved) within the next two years. Easements will be conveyed and practices established over the next four to five years.

F. Budget Context: See front page for funding balances.

V. LOCATION: Ecological classification location is statewide.

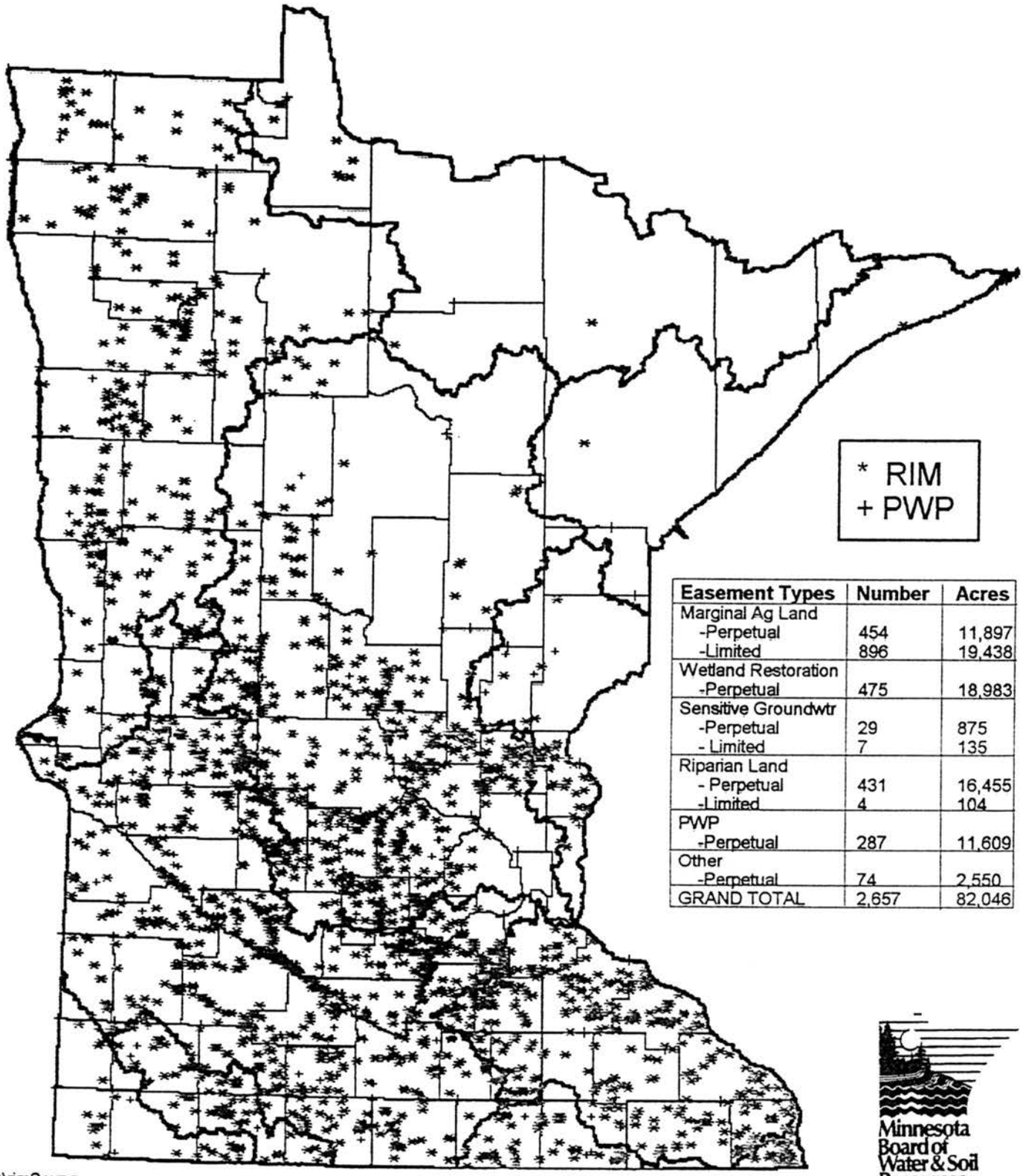
VI. REPORTING REQUIREMENTS: The BWSR will provide semi-annual work program update reports by March 15 and September 15 of each year.

ATTACHMENT 1

CONSERVATION EASEMENT LANDS

RIM RESERVE & PERMANENT WETLANDS

MAY, 1998



Easement Types	Number	Acres
Marginal Ag Land		
-Perpetual	454	11,897
-Limited	896	19,438
Wetland Restoration		
-Perpetual	475	18,983
Sensitive Groundwtr		
-Perpetual	29	875
- Limited	7	135
Riparian Land		
- Perpetual	431	16,455
-Limited	4	104
PWP		
-Perpetual	287	11,609
Other		
-Perpetual	74	2,550
GRAND TOTAL	2,657	82,046

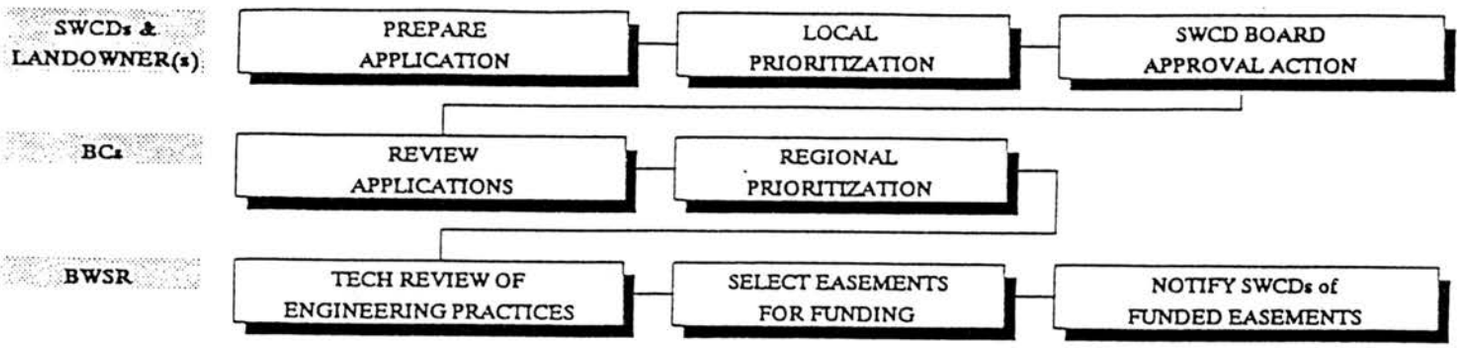
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Minnesota Board of Water & Soil Resources

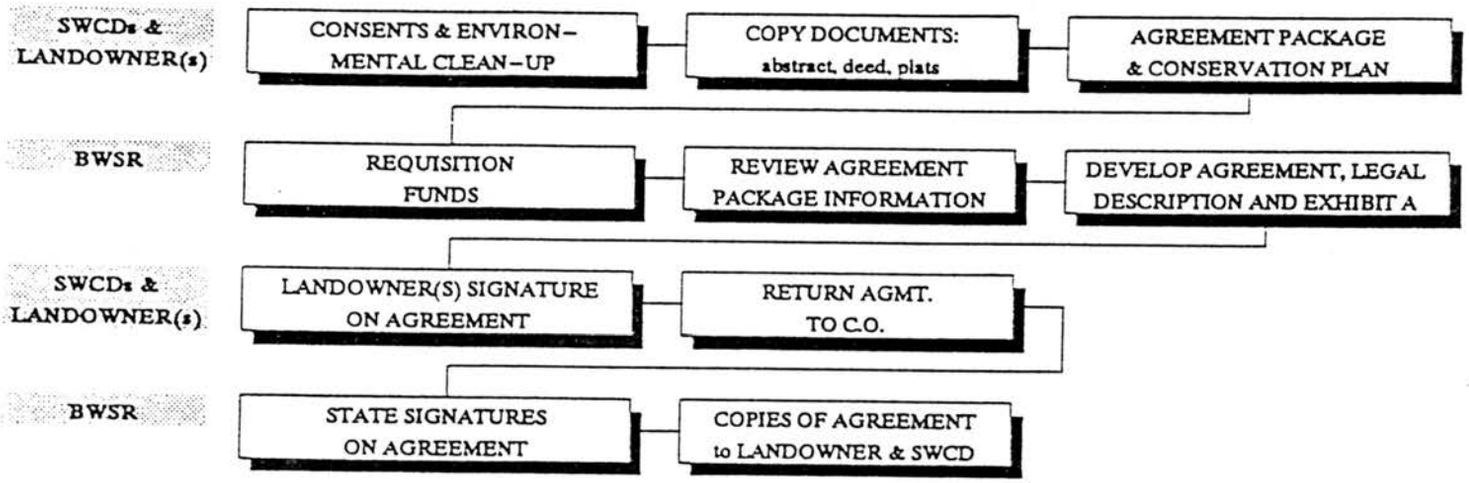
ATTACHMENT 2

A.1 CONSERVATION EASEMENT ACQUISITION FLOWCHART

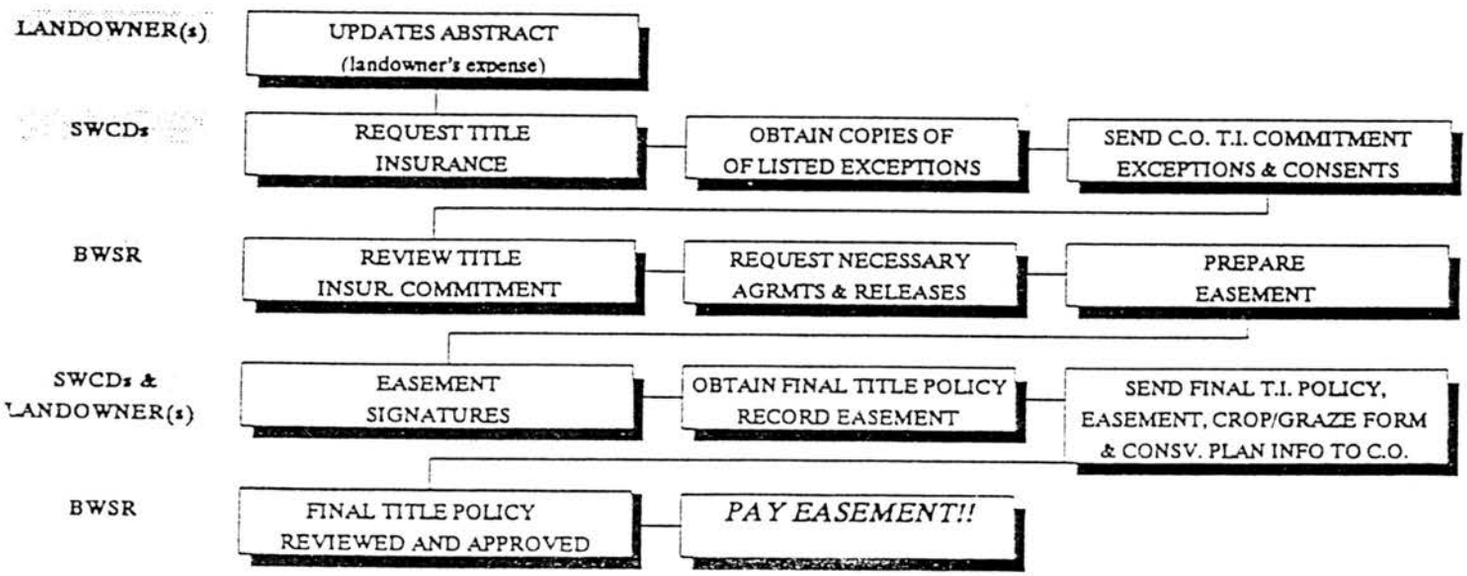
APPLICATION STAGE



AGREEMENT STAGE

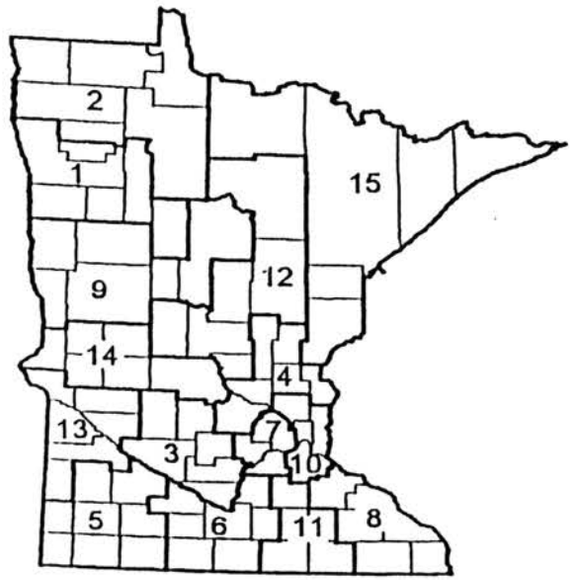


EASEMENT STAGE



1996 RIM Reserve Sign-up

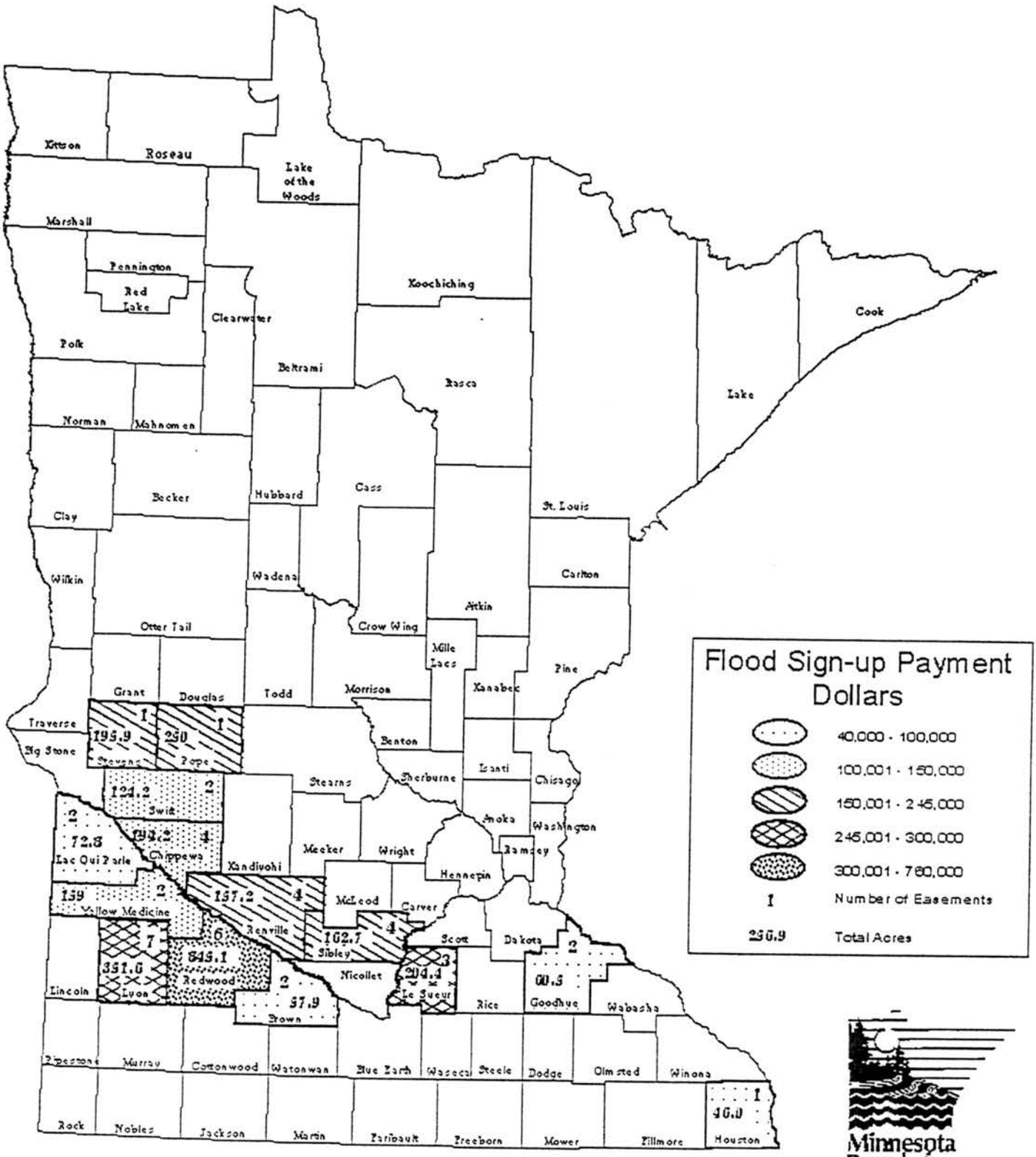
Funds Requested vs. Easements Funded



Page 22

Status Update Attachment 1

1997
RIM Special Flood Sign-up



Minnesota Board of Water & Soil Resources

97-01 RIM SPECIAL FLOOD SIGN-UP

Total Demand	$3,217,787.36
Funded	$2,696,356.51

Breakdown of Funded Applications by Type

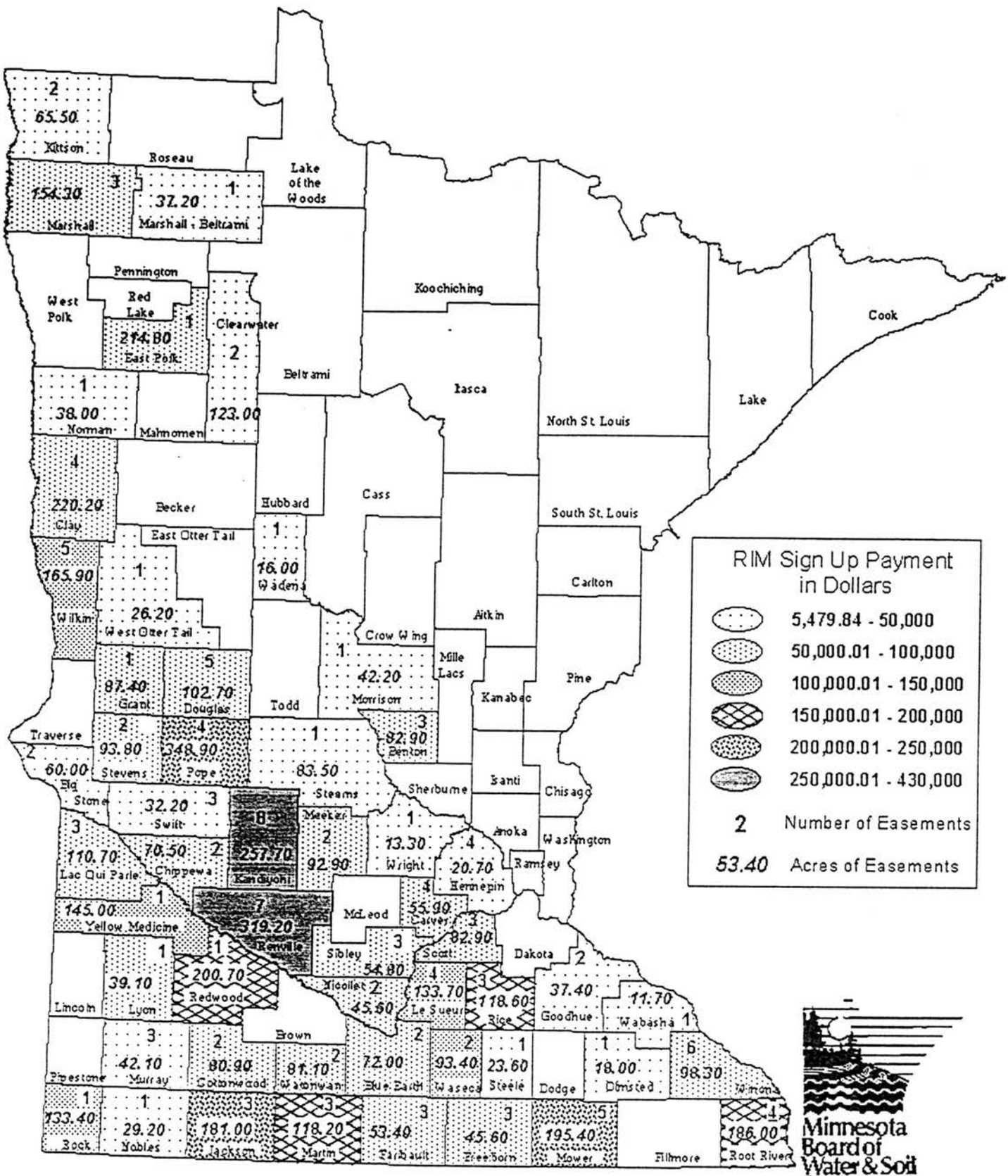
	# of Easements	Acres	Dollars
Wetland Restorations	11	1,088.00	1,045,189.82
Riparian	30	1,793.50	1,651,166.69
	41	2,881.50	$2,696,356.51

Breakdown of Funded Applications by County

County	# of Easements	Acres	Dollars
Brown	2	57.9	83,692.87
Chippewa	4	194.2	109,974.52
Goodhue	2	60.5	71,201.45
Lac Qui Parle	2	72.8	49,911.68
LeSeuer	3	204.4	249,285.30
Lyon	7	351.6	284,256.94
Pope	1	250	220,000.00
Redwood	6	845.1	756,448.66
Renville	4	157.2	207,093.64
Root River (Houston)	1	46	43,641.09
Sibley	4	162.7	215,344.42
Stevens	1	195.9	168,045.00
Swift	2	124.2	115,643.31
Yellow Medicine	2	159	121,817.63
	41	2,881.50	$2,696,356.51

96% ($2,581,513.97) of the applications funded are in the Minnesota River Basin.

RIM Reserve 97-02 Sign Up

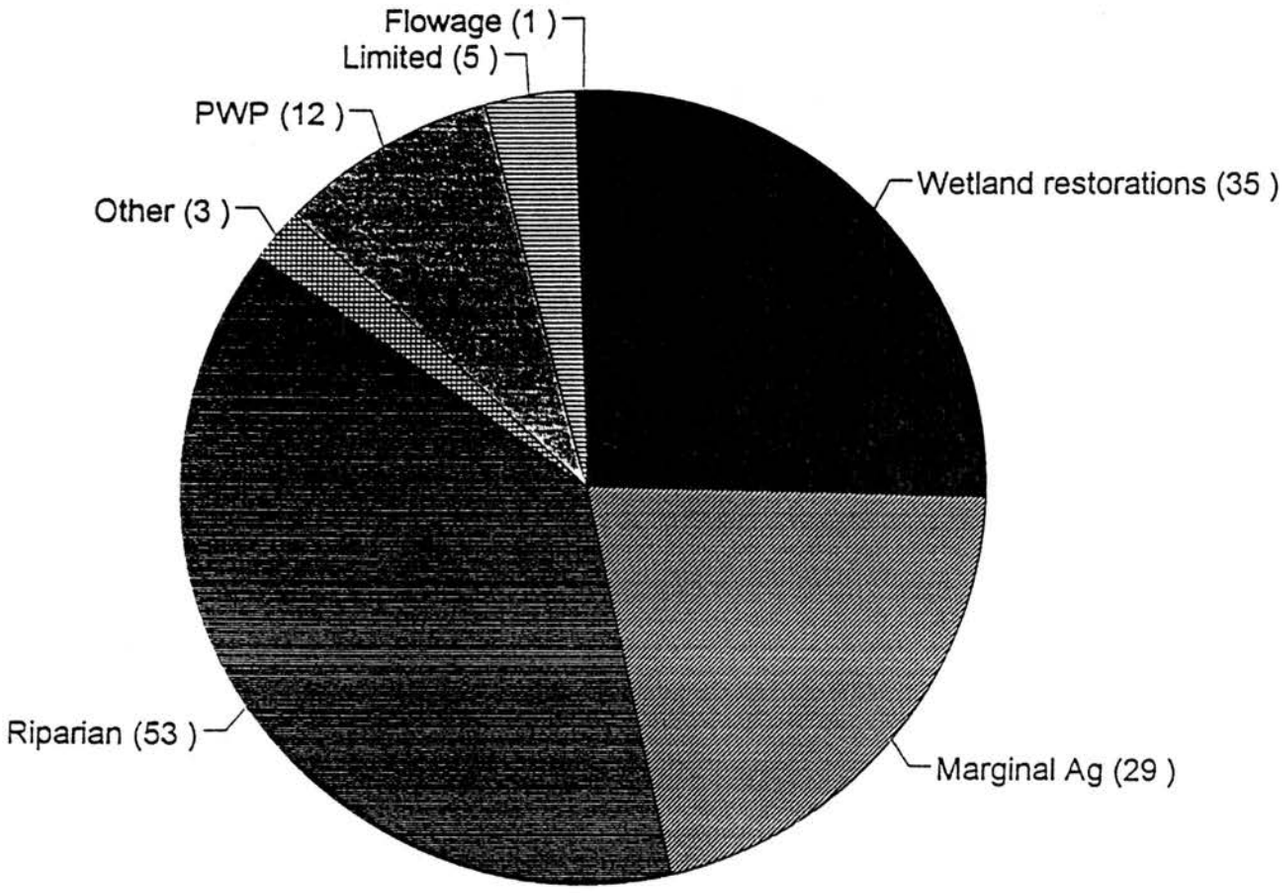


Minnesota Board of Water & Soil Resources

97-02 RIM SIGN-UP, COUNTY DATA

County	Acres	$ Requested Easement	$ Requested Practice	$ Requested Total
Benton	82.9	45,180.35	10,590.00	55,770.35
Big Stone	60.0	24,941.38	830.00	25,771.38
Blue Earth	72.0	88,168.33	4,510.00	92,678.33
Carver	55.9	46,199.79	5,650.00	51,849.79
Chippewa	70.5	46,303.69	6,150.00	52,453.69
Clay	220.2	76,759.65	1,710.00	78,469.65
Clearwater	123.0	22,956.87	0.00	23,079.87
Cottonwood	80.9	81,374.63	15,140.00	96,514.63
Douglas	102.7	51,855.34	10,820.00	62,675.34
Faribault	53.4	69,932.23	3,940.00	73,872.23
Freeborn	45.6	50,569.06	7,990.00	58,559.06
Goodhue	37.4	40,638.34	8,130.00	48,768.34
Grant	87.4	63,337.96	17,100.00	80,437.96
Hennepin	20.7	33,611.27	3,480.00	37,091.27
Jackson	181.0	204,008.45	24,660.00	228,668.45
Kandiyohi	257.7	225,978.39	57,610.00	283,588.39
Kittson	65.5	36,052.51	4,912.50	40,965.01
Lac Qui Parle	110.7	53,545.33	12,540.00	66,085.33
LeSueur	133.7	159,294.79	16,720.00	143,763.53
Lyon	39.1	47,555.28	4,090.00	51,645.28
Marshall	154.3	49,836.58	2,967.50	52,804.08
Marshall-Beltrami	37.2	8,455.19	9,220.00	17,675.19
Martin	118.2	141,422.20	15,850.00	157,272.20
Meeker	92.9	62,271.42	10,030.00	72,301.42
Morrison	42.2	13,096.84	1,500.00	14,596.84
Mower	195.4	168,060.97	38,880.00	206,940.97
Murray	42.1	26,974.25	330.00	27,304.25
Nicollet	45.6	52,047.69	4,350.00	56,397.69
Nobles	29.2	35,018.92	2,350.00	37,368.92
Norman	38.0	13,903.82	0.00	13,903.82
Olmsted	18.0	12,312.54	3,000.00	15,312.54
Otter Tail	26.2	14,028.79	2,620.00	16,648.79
Polk	214.8	49,066.50	1,050.00	50,331.30
Pope	348.9	143,400.13	85,600.00	229,000.13
Redwood	200.7	188,007.93	2,690.00	190,697.93
Renville	319.2	397,825.81	31,140.00	428,965.81
Rice	118.6	136,719.56	23,690.00	160,409.56
Rock	133.4	131,380.79	6,510.00	137,890.79
Root River	186.0	112,269.16	42,600.00	154,869.16
Scott	82.9	81,355.81	4,300.00	85,655.81
Sibley	54.8	61,683.34	7,400.00	69,083.34
Steams	83.5	29,191.02	3,420.00	32,611.02
Steele	23.6	26,172.05	0.00	26,172.05
Stevens	93.8	65,947.97	1,800.00	67,747.97
Swift	32.2	16,330.58	1,570.00	17,900.58
Wabasha	11.7	10,456.99	3,510.00	13,966.99
Wadena	16.0	4,879.84	600.00	5,479.84
Waseca	93.4	101,538.83	9,810.00	111,348.31
Watonwan	81.1	70,136.62	4,730.00	74,866.62
Wilkin	165.9	103,758.45	24,300.00	128,058.45
Winona	98.3	68,537.55	4,610.00	73,147.55
Wright	13.3	13,993.19	1,510.00	15,503.19
Yellow Medicine	145.0	119,085.65	10,860.00	129,945.65

RIM 97-02 Sign-up
breakdown by easement type



	Number of easements	*Dollars*	*Acres*
Total funded apps	138	4,656,092.17	5,464.5
Total nonfunded apps	54	$1,640,729.59	2,227.0
Total	192	$6,296,821.76	7,691.5

Total MNRiver funded apps $2,571,353.94 = 55.2%

	Number of easements	*Dollars*	*Acres*
Wetland restorations	35	$1,600,686.75	1,456.2
Marginal Ag	29	732,129.48	1,167.5
Riparian	53	1,861,243.61	2,094.0
Other	3	35,812.60	68.7
PWP	12	351,833.80	534.5
Limited	5	74,385.93	139.4
Flowage	1	0.00	4.2
Total	138	$4,656,092.17	5,464.5

New Business #2

Minnesota Board of Water & Soil Resources

One West Water Street
Suite 200
St. Paul, MN 55107
(612) 296-3767
Fax (612) 297-5615

Field Offices

Northern Region:
394 S. Lake Avenue
Room 403
Duluth, MN 55802
(218) 723-4752
Fax (218) 723-4794

3217 Bemidji Avenue N.
Bemidji, MN 56601
(218) 755-4235
Fax (218) 755-4201

217 S. 7th Street
Suite 202
Brainerd, MN 56401-3660
(218) 828-2383
Fax (218) 828-6036

Southern Region:
261 Highway 15 S.
New Ulm, MN 56073-8915
(507) 359-6074
Fax (507) 359-6018

40--16th Street SE
Suite A
Rochester, MN 55904
(507) 285-7458
Fax (507) 280-2875

Box 267
1400 E. Lyon Street
Marshall, MN 56258
(507) 537-6060
Fax (507) 537-6368

Metro Region:
One West Water Street
Suite 250
St. Paul, MN 55107
(612) 282-9969
Fax (612) 297-5615

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DATE: June 5, 1998

TO: Soil and Water Conservation Districts

FROM: Sara Johnson, SWCD Accounting Coordinator Sara

SUBJECT: 1997 SWCD Financial Statement Summaries

Attached are the 1997 statewide summaries of the "Statement of Revenues and Expenditures," the "Combined Balance Sheet," and the "Breakdown of County Revenues" submitted for 1997. This information is not only for your use but is supplied to other agencies and local governmental units, the interested public, and legislators.

The figures used on these summaries are taken directly from the annual financial reports submitted by the soil and water conservation districts to the Board of Water and Soil Resources (BWSR) at the end of each calendar year. This report is a requirement for receiving BWSR grants.

On the "Combined Balance Sheet," the Deferred Revenue represents funds received in one calendar year but to be spent in a future year—usually state Cost-Share dollars. More recently, Deferred Revenue has also included water plan and WCA funds as well. The Deposit on Tree Sales is the amount of money received in 1997 for trees that were ordered by customers but were not to be picked up until the spring of 1998. The Fund Balance is the amount of funding available for operating expenses, unless part of it has been designated for a specific expenditure, such as equipment or severance pay.

On the "Statement of Revenues and Expenditures," the Intergovernmental Revenue represents funds from various governmental units. The amount under "state" is money that was spent in 1997. The amount under "county is the annual county allocation, as well as any water plan or wetland funds that were spent in 1997, and other county funds. For a complete breakdown, see the attached "Breakdown of County Revenues."

Also included are graphs of annual and trend analysis of the data in these reports, as well as an analysis of district fund balances.

Enclosures
c: BWSR Members and Staff
MASWCD Office
State Auditor's Office
Legislative Reference Library

SOIL AND WATER CONSERVATION DISTRICTS

SUMMARY OF FY97

STATEMENTS OF REVENUES AND EXPENDITURES

06/01/98

		REVENUES								EXPENDITURES							EXCESS
		INTERGOVERNMENTAL				CHARGES	MISCELLANEOUS		TOTAL	PERSONAL	OTHER SVCS.		CAPITAL	PROJECT EXPENSE		TOTAL	REVENUES
	DISTRICT	LOCAL	COUNTY	STATE	FEDERAL	FOR SERVICES	INTEREST	OTHER	REVENUES	SERVICES	& CHARGES	SUPPLIES	OUTLAY	DISTRICT	STATE	EXPENDITURES	(EXPENDITURES)
NE	AITKIN	0.00	99,481.00	25,039.00	0.00	9,384.00	5,085.00	114,675.00	$253,664.00	47,993.00	22,213.00	1,847.00	180.00	165,973.00	6,722.00	$244,928.00	$8,736.00
EC	ANOKA	6,974.80	94,677.50	153,763.45	0.00	45,614.43	4,219.61	0.00	$305,249.79	124,994.51	39,501.42	1,761.78	15,192.55	14,475.01	84,386.14	$280,311.41	$24,938.38
WC	BECKER	0.00	155,023.40	60,533.12	0.00	47,232.02	6,888.83	3,082.49	$272,789.86	139,643.92	22,699.90	2,752.35	34,923.69	39,983.82	34,455.32	$274,459.00	($1,699.14)
NW	BELTRAMI	38,752.46	163,518.19	60,939.13	0.00	58,365.51	4,549.48	373.00	$326,497.77	173,898.06	26,865.85	1,995.21	6,945.15	107,640.11	0.00	$317,344.38	$9,153.39
EC	BENTON	0.00	104,106.76	84,250.51	3,078.23	21,147.64	3,315.92	7,183.41	$223,082.47	114,374.30	25,176.13	1,713.61	253.99	24,345.61	22,706.64	$188,570.28	$34,512.19
SW	BIG STONE	0.00	55,322.71	44,824.36	0.00	18,258.13	4,771.76	191.38	$123,368.34	63,740.19	15,076.87	1,554.70	2,467.95	17,178.69	23,593.11	$123,611.51	($243.17)
SC	BLUE EARTH	10,000.00	50,658.00	106,052.04	0.00	19,711.08	6,200.00	4,524.64	$197,145.76	89,798.13	22,002.82	4,098.14	6,803.61	16,832.05	72,188.00	$211,722.75	($14,576.99)
SC	BROWN	0.00	68,617.00	81,725.78	0.00	9,947.12	13,120.98	1,488.13	$174,899.01	80,209.05	19,732.99	528.33	14,551.50	5,975.38	36,426.00	$157,423.25	$17,475.76
NE	CARLTON	0.00	76,462.00	43,986.00	0.00	46,284.00	3,157.00	463.00	$170,352.00	108,193.00	22,957.00	1,914.00	1,077.00	0.00	25,827.00	$159,968.00	$10,384.00
EC	CARVER	25,000.00	145,000.00	72,878.32	0.00	30,123.37	5,443.53	3,889.96	$282,335.18	182,490.71	32,039.61	1,200.68	22,785.25	36,016.06	30,096.71	$304,629.02	($22,293.84)
WC	CASS	0.00	54,779.11	53,210.46	0.00	960.00	528.53	9,338.31	$118,816.41	68,550.41	8,236.98	37.75	0.00	1,111.07	30,942.00	$108,878.21	$9,938.20
SW	CHIPPEWA	0.00	65,845.79	52,691.93	0.00	30,706.95	6,739.64	8,798.16	$164,782.47	78,170.36	21,446.99	304.14	19,423.15	22,702.11	8,709.19	$150,755.94	$14,026.53
NE	CHISAGO	0.00	46,735.00	31,418.80	0.00	48,418.39	4,471.52	0.00	$131,043.71	71,338.77	18,673.16	709.12	0.00	27,062.73	9,971.20	$127,774.98	$3,268.73
WC	CLAY	0.00	76,290.00	45,680.96	0.00	92,242.18	10,061.82	456.70	$224,731.66	106,731.07	19,234.63	673.46	17,403.87	38,509.12	20,457.77	$203,009.92	$21,721.74
NW	CLEARWATER	4,565.37	69,394.99	18,698.80	813.85	10,609.98	1,364.18	520.89	$105,968.06	67,671.43	6,649.98	5,683.28	728.87	22,853.68	176.20	$103,763.44	$2,204.62
NE	COOK	4,500.00	19,266.23	46,701.99	0.00	30.75	4,249.81	142.00	$74,890.78	21,336.39	8,953.45	456.92	0.00	63.70	38,267.15	$69,077.61	$5,813.17
SW	COTTONWOOD	10,000.00	73,065.04	73,577.52	0.00	39,296.16	2,376.30	4,017.51	$201,332.53	101,401.10	23,129.54	2,199.15	0.00	27,598.75	53,403.16	$207,731.70	($5,399.17)
WC	CROW WING	0.00	26,750.00	30,516.80	0.00	43,299.32	848.97	29,272.40	$130,687.49	52,618.34	57,114.50	2,562.37	0.00	3,582.46	6,210.00	$122,087.67	$8,599.82
EC	DAKOTA	65,466.16	271,565.51	38,069.20	0.00	69,598.64	11,085.34	1,404.54	$457,189.39	269,518.24	98,514.06	1,398.28	23,406.11	69,670.85	18,644.40	$481,151.94	($23,962.55)
SE	DODGE	0.00	103,346.08	31,815.72	0.00	12,556.81	10,062.12	200.00	$157,980.73	105,411.89	18,454.58	2,742.58	6,809.89	11,469.17	11,924.72	$156,812.83	$1,167.90
WC	DOUGLAS	0.00	65,058.75	64,611.80	0.00	53,182.83	13,813.90	25.28	$196,692.56	115,102.37	23,799.74	1,616.95	0.00	33,793.03	27,339.55	$201,651.64	($4,959.08)
SC	FARIBAULT	0.00	147,765.50	33,731.23	440.00	18,261.96	2,666.93	37,112.00	$239,977.62	125,707.99	16,880.80	1,319.09	0.00	53,973.71	24,231.61	$222,113.20	$17,864.42
SE	FILLMORE	0.00	137,041.54	56,133.35	0.00	39,481.43	7,220.26	1,516.01	$241,392.59	110,469.98	23,246.31	1,374.72	16,121.75	31,744.97	41,941.64	$224,899.37	$16,493.22
SE	FREEBORN	0.00	74,000.00	56,166.98	0.00	14,845.69	4,413.72	85.34	$149,511.73	72,772.13	16,434.23	2,499.63	2,819.78	10,488.35	29,467.52	$134,481.64	$15,030.09
SE	GOODHUE	0.00	171,570.00	73,311.46	4,595.00	33,123.44	6,360.95	13,858.45	$302,819.30	209,569.89	42,279.60	1,449.89	4,715.14	31,905.66	17,688.31	$307,608.49	($4,789.19)
WC	GRANT	0.00	89,455.19	44,025.94	3,500.00	24,279.21	2,636.38	1,371.10	$165,267.82	114,076.69	13,796.52	354.94	1,916.43	23,569.57	10,399.36	$164,113.51	$1,154.31
EC	HENNEPIN	6,500.00	671,460.80	51,462.67	0.00	12,242.66	14,482.97	2,421.24	$758,570.34	503,617.51	228,583.46	15,962.76	10,147.74	0.00	215.87	$758,527.34	$43.00
NW	HUBBARD	11,704.50	59,699.76	23,033.02	350.00	21,759.74	3,532.79	301.43	$120,381.24	73,763.72	11,885.65	1,761.08	10,564.71	18,010.72	8,671.87	$124,657.75	($4,276.51)
NE	ISANTI	0.00	72,244.49	31,627.42	0.00	100,165.56	3,009.20	13,957.99	$221,004.46	81,361.44	17,490.84	0.00	9,157.72	98,731.09	14,243.02	$220,984.11	$20.35
NE	ITASCA	1,850.00	100,070.46	125,614.47	0.00	0.00	5,076.51	8,760.30	$241,371.74	164,397.89	22,906.46	5,560.70	280.00	8,002.13	20,945.11	$222,091.29	$19,279.45
SW	JACKSON	0.00	37,972.68	47,408.95	0.00	21,587.65	5,727.38	6,968.70	$119,665.36	49,529.52	15,126.44	755.03	3,730.62	25,458.14	7,984.35	$102,584.10	$17,081.26
NE	KANABEC	0.00	38,284.67	21,788.00	0.00	12,259.30	1,301.97	12,723.87	$86,357.81	58,767.26	12,986.59	848.36	591.03	8,206.53	0.00	$81,399.77	$4,958.04
SC	KANDIYOHI	0.00	101,786.00	66,432.49	5,100.00	29,278.60	12,103.27	7,989.25	$222,689.61	114,837.72	46,402.70	1,529.90	0.00	30,631.37	26,705.25	$220,106.94	$2,582.67
NW	KITTSON	0.00	106,792.98	78,858.25	0.00	27,902.23	2,464.18	669.31	$216,686.95	96,417.63	24,498.53	1,788.50	725.00	31,795.06	21,528.26	$176,752.98	$39,933.97
NE	KOOCHICHING	0.00	59,493.85	16,246.62	0.00	1,830.00	992.15	0.00	$78,562.62	43,571.88	17,046.10	1,476.37	3,594.97	1,473.68	7,606.80	$74,769.80	$3,792.82
SW	LAC QUI PARLE	9,600.00	80,000.00	74,512.50	0.00	25,684.68	3,117.19	19,379.81	$212,294.18	113,722.82	31,951.70	1,754.83	4,168.73	13,619.89	35,954.00	$201,171.97	$11,122.21
NE	LAKE	4,617.00	78,872.00	29,906.00	0.00	15,830.00	3,065.00	15,273.00	$147,563.00	59,174.00	7,768.00	684.00	0.00	73,404.00	15,669.00	$156,699.00	($9,136.00)
NW	LAKE OF THE WOODS	0.00	28,075.51	20,545.50	0.00	1,608.72	554.72	54.00	$50,838.45	45,455.86	8,191.46	357.96	0.00	1,848.47	1,236.00	$57,089.75	($6,251.30)
SC	LESUEUR	0.00	113,601.06	22,357.65	5,750.00	10,052.73	3,882.12	1,742.05	$157,385.61	98,704.91	21,012.23	990.01	0.00	7,478.42	12,522.99	$140,708.56	$16,677.05
SW	LINCOLN	0.00	74,720.44	58,795.00	0.00	60,562.21	6,599.78	0.00	$200,677.43	105,694.24	23,677.04	461.37	287.39	24,954.07	25,941.00	$181,015.11	$19,662.32
SW	LYON	0.00	66,850.00	32,764.25	0.00	9,199.35	3,324.71	204.00	$112,342.31	92,756.68	22,862.15	3,238.11	1,692.92	6,940.15	1,022.00	$128,512.01	($16,169.70)
NW	MAHNOMEN	0.00	49,799.43	45,853.97	0.00	10,630.31	3,324.66	5,759.81	$115,368.18	58,036.42	14,645.56	417.34	1,562.05	13,135.31	29,215.06	$117,011.74	($1,643.56)
NW	MARSHALL	0.00	69,232.00	58,261.75	2,500.00	29,038.94	3,242.22	250.00	$162,524.91	71,231.00	16,806.42	878.99	15,256.91	21,664.12	33,281.08	$159,118.52	$3,406.39
NW	MARSHALL-BELTRAMI	11,954.64	69,090.67	20,672.68	500.00	2,169.18	1,324.61	1,212.60	$106,924.38	62,273.39	22,607.39	891.89	1,955.14	2,570.48	5,280.75	$95,579.04	$11,345.34
SC	MARTIN	6,583.00	56,148.90	30,525.87	0.00	21,184.62	4,776.50	4,587.51	$123,806.40	85,773.00	20,644.32	1,348.56	366.16	12,947.00	7,909.94	$128,988.98	($5,182.58)
SC	MCLEOD	0.00	36,952.78	37,966.75	0.00	19,117.87	5,348.16	72.56	$99,458.12	62,935.58	13,919.77	589.76	5,307.97	10,783.27	3,311.67	$96,848.02	$2,610.10
SC	MEEKER	0.00	51,207.00	54,146.76	1,500.00	33,899.09	7,586.42	17.49	$148,356.76	82,038.31	15,007.11	191.95	8,489.12	19,490.15	12,604.31	$137,820.95	$10,535.81
NE	MILLE LACS	0.00	82,430.62	25,999.72	0.00	14,206.69	4,337.24	38.76	$127,013.03	73,806.83	19,547.17	43.32	2,270.76	22,608.28	4,076.00	$122,352.36	$4,660.67
WC	MORRISON	0.00	81,700.00	79,109.55	0.00	61,041.15	5,501.18	10,629.72	$237,981.60	129,147.88	20,370.96	4,152.56	91.49	31,700.36	40,943.42	$226,406.67	$11,574.93
SE	MOWER	15,500.00	151,380.27	43,884.64	15,850.00	45,228.56	5,938.22	2,389.70	$280,171.39	176,297.30	28,956.66	7,288.11	4,923.49	31,870.67	18,879.25	$268,215.48	$11,955.91
SW	MURRAY	5,004.16	109,168.10	37,880.87	0.00	40,845.06	2,674.95	581.82	$196,154.96	137,214.26	17,680.07	630.49	20,974.21	21,937.08	13,473.87	$211,909.98	($15,755.02)

SOIL AND WATER CONSERVATION DISTRICTS

SUMMARY OF FY97

STATEMENTS OF REVENUES AND EXPENDITURES

06/01/98

		REVENUES								EXPENDITURES							EXCESS
		INTERGOVERNMENTAL				CHARGES	MISCELLANEOUS		TOTAL	PERSONAL	OTHER SVCS.		CAPITAL	PROJECT EXPENSE		TOTAL	REVENUES
	DISTRICT	LOCAL	COUNTY	STATE	FEDERAL	FOR SERVICES	INTEREST	OTHER	REVENUES	SERVICES	& CHARGES	SUPPLIES	OUTLAY	DISTRICT	STATE	EXPENDITURES	(EXPENDITURES)
SC	NICOLLET	0.00	47,850.00	56,163.03	0.00	10,745.57	4,296.85	187.05	$119,242.50	50,280.90	13,837.34	128.05	3,123.00	7,948.10	12,822.01	$88,139.40	$31,103.10
SW	NOBLES	30,980.00	62,240.00	67,430.00	0.00	37,047.00	5,746.00	930.00	$204,373.00	94,881.00	24,348.00	1,213.00	2,384.00	21,772.00	57,355.00	$201,953.00	$2,420.00
NW	NORMAN	0.00	125,923.90	42,218.50	2,000.00	26,630.64	4,451.14	626.95	$201,851.13	123,542.34	29,448.82	1,878.39	10,248.55	9,560.90	48,960.68	$223,639.68	($21,788.55)
SE	OLMSTED	3,000.00	156,225.42	66,984.56	0.00	39,453.15	7,528.21	890.65	$274,081.99	151,165.29	39,074.02	1,125.37	0.00	23,469.68	31,238.06	$246,072.42	$28,009.57
WC	OTTERTAIL EAST	0.00	48,049.79	37,168.63	0.00	53,768.79	3,402.77	12,366.93	$154,756.91	54,539.61	20,309.59	302.22	592.77	29,271.80	9,353.83	$114,369.82	$40,387.09
WC	OTTERTAIL WEST	0.00	45,896.96	43,468.50	0.00	28,956.29	2,021.79	55.25	$120,398.79	74,371.41	22,688.05	734.51	522.05	13,106.21	12,288.50	$123,710.73	($3,311.94)
NW	PENNINGTON	2,368.50	125,989.52	50,238.01	750.00	6,854.36	5,811.08	1,583.50	$193,594.97	85,984.95	20,816.73	1,118.54	7,997.48	3,513.01	70,865.01	$190,295.72	$3,299.25
NE	PINE	65,239.32	163,277.00	27,627.00	35,627.62	34,509.41	5,200.48	1,919.65	$333,400.48	164,783.07	23,062.86	1,311.79	1,257.90	120,631.15	10,531.00	$321,577.77	$11,822.71
SW	PIPESTONE	0.00	87,060.70	64,249.23	0.00	27,394.22	2,503.47	0.00	$181,207.62	77,867.78	23,183.03	5,579.43	6,792.97	29,949.76	40,451.42	$183,824.39	($2,616.77)
NW	POLK EAST	0.00	85,450.00	22,034.58	0.00	7,201.87	5,059.32	6,559.51	$126,305.28	70,621.54	18,348.32	1,129.56	23,249.56	4,547.18	4,234.16	$122,130.32	$4,174.96
NW	POLK WEST	10,500.00	77,776.00	28,410.00	0.00	19,389.00	2,529.00	2,063.00	$140,667.00	86,721.00	15,331.00	897.00	1,233.00	21,142.00	0.00	$125,324.00	$15,343.00
WC	POPE	0.00	40,500.00	143,474.18	8,600.00	64,509.51	4,543.22	20,754.31	$282,381.22	108,774.74	25,692.25	1,042.17	8,555.93	46,793.32	84,292.75	$275,151.16	$7,230.06
EC	RAMSEY	0.00	95,362.00	65,311.00	0.00	83,271.00	0.00	619.00	$244,563.00	115,584.00	26,975.00	868.00	106.00	25,006.00	40,325.00	$208,864.00	$35,699.00
NW	RED LAKE	0.00	110,395.94	20,965.58	0.00	7,561.08	1,794.60	7,090.62	$147,807.82	77,073.07	16,163.86	1,416.33	0.00	13,322.38	0.00	$107,975.64	$39,832.18
SW	REDWOOD	9,507.60	134,290.91	309,740.85	1,000.00	15,849.10	7,464.36	1,365.29	$479,218.11	140,713.55	33,163.85	1,005.21	7,303.69	33,166.40	258,340.89	$473,693.59	$5,524.52
SC	RENVILLE	0.00	95,640.00	80,395.67	0.00	23,546.78	7,025.91	315.87	$204,924.23	139,170.58	24,022.99	942.78	0.00	14,884.91	38,478.47	$217,499.73	($12,575.50)
SE	RICE	0.00	49,466.00	44,861.95	11,492.32	31,600.56	2,673.52	68.00	$140,162.35	71,395.49	17,401.52	1,037.48	3,990.89	29,633.66	13,034.57	$136,493.61	$3,668.74
SW	ROCK	0.00	0.00	37,317.93	0.00	78,182.08	2,751.56	1,322.91	$119,574.48	0.00	7,198.74	0.00	2,183.46	45,134.41	38,148.56	$92,665.17	$26,909.31
SE	ROOT RIVER	0.00	145,105.00	60,578.80	415.71	9,881.33	943.47	3,393.59	$220,317.90	163,366.64	26,604.50	1,642.73	3,058.59	7,800.47	21,065.00	$223,537.93	($3,220.03)
NW	ROSEAU	0.00	81,970.65	20,355.54	0.00	22,631.87	4,273.18	2,483.83	$131,715.07	83,708.15	26,732.82	2,405.97	6,738.09	14,911.04	539.63	$135,035.70	($3,320.63)
EC	SCOTT	0.00	216,338.50	179,523.70	0.00	41,087.25	10,566.71	192.93	$447,709.09	222,429.65	25,442.59	306.52	5,481.59	33,645.86	160,424.70	$447,730.91	($21.82)
EC	SHERBURNE	0.00	148,897.92	20,331.71	0.00	31,401.32	5,855.07	42.80	$206,528.82	136,610.47	25,570.48	747.96	0.00	19,309.70	1,937.48	$184,176.09	$22,352.73
SC	SIBLEY	0.00	49,821.00	47,668.00	0.00	16,138.32	3,946.23	4,420.05	$121,993.60	78,470.17	7,287.19	885.89	4,347.33	13,883.07	24,870.99	$129,744.64	($7,751.04)
EC	STEARNS	12,168.00	370,723.00	130,291.00	8,413.00	8,746.00	10,282.00	4,771.00	$545,394.00	382,776.00	37,878.00	9,304.00	8,686.00	6,218.00	89,459.00	$534,321.00	$11,073.00
SE	STEELE	0.00	93,325.83	42,960.81	0.00	52,975.17	712.27	4,933.22	$194,907.30	121,716.94	19,860.31	1,079.13	4,644.26	40,579.56	11,717.81	$199,598.01	($4,690.71)
WC	STEVENS	0.00	70,500.00	56,439.83	0.00	99,638.23	7,555.81	839.67	$234,973.54	97,806.76	23,365.50	1,925.58	5,514.75	61,898.31	26,858.18	$217,369.08	$17,604.46
NE	ST. LOUIS N.	0.00	61,500.00	23,256.30	0.00	18,001.60	1,291.82	2,692.77	$106,742.49	61,383.75	20,758.67	649.45	1,666.30	14,764.44	3,248.00	$102,470.61	$4,271.88
NE	ST. LOUIS S.	0.00	63,000.00	48,165.47	(0.62)	55,163.00	3,333.96	22,619.97	$192,281.78	101,114.87	19,967.52	14.74	267.98	39,835.46	30,269.11	$191,469.68	$812.10
SW	SWIFT	0.00	58,779.86	51,705.46	0.00	48,359.97	3,927.21	314.75	$163,087.25	69,160.25	22,503.43	0.00	0.00	29,101.54	16,878.63	$137,643.85	$25,443.40
WC	TODD	25,650.00	120,966.50	97,624.39	0.00	20,428.53	8,142.11	120.00	$272,931.53	134,823.95	39,106.51	1,824.94	18,528.66	59,765.53	14,618.63	$268,668.22	$4,263.31
WC	TRAVERSE	0.00	126,584.19	92,605.52	0.00	89,202.88	9,217.11	1,434.77	$319,044.47	119,258.83	67,371.61	611.54	15,904.68	42,446.38	63,672.65	$309,265.69	$9,778.78
SE	WABASHA	0.00	121,087.83	91,518.12	0.00	4,699.68	9,528.25	7,419.94	$234,253.82	130,011.11	24,768.98	1,624.19	420.95	2,699.53	16,400.00	$175,924.76	$58,329.06
WC	WADENA	0.00	85,933.84	65,862.09	0.00	20,677.78	5,458.16	738.00	$178,669.87	86,318.04	27,595.49	2,804.38	6,870.86	21,992.64	5,737.75	$151,319.16	$27,350.71
SC	WASECA	0.00	61,450.00	82,124.97	0.00	35,107.64	1,194.94	10,649.42	$190,526.97	113,224.41	30,140.09	833.00	0.00	33,140.54	16,234.33	$193,572.37	($3,045.40)
EC	WASHINGTON	0.00	258,383.53	33,330.30	0.00	95,861.35	3,235.43	181.94	$390,992.55	262,539.32	55,414.03	3,224.30	18,243.48	40,493.59	11,729.30	$391,644.02	($651.47)
SC	WATONWAN	2,083.00	77,667.01	31,069.18	600.00	2,484.56	2,204.42	125.98	$122,234.15	79,549.96	17,658.63	1,025.78	4,600.61	3,720.41	8,026.42	$114,581.81	$7,652.34
WC	WILKIN	0.00	42,333.00	42,351.45	0.00	33,091.41	6,382.48	17,484.68	$141,643.02	79,789.74	22,412.53	5,559.33	3,981.30	17,055.32	7,857.74	$136,655.96	$4,987.06
SE	WINONA	0.00	84,388.71	44,161.80	0.00	11,069.95	2,326.43	3,083.25	$145,030.14	91,731.86	27,819.26	1,217.59	3,523.44	8,799.65	9,852.86	$142,944.66	$2,085.48
EC	WRIGHT	0.00	153,000.00	79,625.00	2,730.00	40,977.94	5,723.07	3,586.13	$285,642.14	212,809.74	30,142.59	722.91	3,862.10	25,041.45	10,799.45	$283,378.24	$2,263.90
SW	YELLOW MEDICINE	0.00	83,792.61	130,290.23	2,764.00	39,257.20	11,665.76	6,641.27	$274,411.07	107,221.83	23,101.48	2,357.51	35,236.14	26,477.95	106,036.57	$300,431.48	($26,020.41)
	TOTAL	$400,068.51	$9,076,772.88	$5,305,908.87	$118,369.11	$2,857,639.13	$451,509.75	$516,863.07	$18,727,131.32	$10,079,601.73	$2,390,253.62	$160,847.29	$535,782.17	$2,434,232.41	$2,484,349.71	$18,085,066.93	$642,064.39

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SOIL AND WATER CONSERVATION DISTRICTS

SUMMARY OF FY97

SUMMARY OF COMBINED BALANCE SHEET

06/01/98

		ASSETS									LIABILITIES								
	DISTRICT	CASH CHECKING	CASH SAVINGS	PETTY CASH	INVESTMENTS	ACCOUNTS RECEIVABLE	INTEREST RECEIVABL	DUE FROM OTHER GOVERNMENTS	PREPAID EXPENSES	TOTAL ASSETS	ACCOUNTS PAYABLE	ACCRUED SALARIES PAYABLE	DUE TO OTHER GOVERNMENTS	SALES TAX PAYABLE	DEFERRED REVENUE	DEPOSIT TREE SALES	TOTAL LIABILITIES	FUND BALANCE	TOTAL LIABILITIES & FUND EQUITY
NE	AITKIN	17,744.00	11,684.00	0.00	75,299.00	0.00	0.00	8,118.00	4,941.00	$117,786.00	15,228.00	3,800.00	4,888.00	802.00	24,779.00	1,890.00	51,387.00	66,399.00	117,786.00
EC	ANOKA	(44,406.05)	20,886.69	55.00	74,587.27	6,168.91	0.00	18,346.60	11,385.84	$87,024.26	0.00	3,084.24	9,113.95	(0.02)	32,619.05	2,165.86	46,983.08	40,041.14	87,024.22
WC	BECKER	12,327.74	146,351.55	52.00	0.00	292.88	0.00	1,320.00	304.00	$160,648.17	23,223.81	3,710.83	450.13	110.60	64,527.52	1,711.26	93,734.15	66,914.02	160,648.17
NW	BELTRAMI	2,891.42	8,026.00	25.00	90,307.29	7,228.78	0.00	52,720.65	510.76	$161,709.90	28,865.29	0.00	13,272.28	(0.41)	79,401.60	6,720.47	128,259.23	33,450.67	161,709.90
EC	BENTON	73,935.21	0.00	0.00	80,000.00	0.00	4,683.20	0.00	2,989.17	$161,607.58	1,282.59	0.00	8,316.98	566.68	57,653.65	8,708.33	76,528.23	85,079.35	161,607.58
SW	BIG STONE	3,152.07	234,098.83	5.06	18,724.62	318.95	0.00	1,849.10	0.00	$258,148.63	1,031.23	2,531.10	2,154.00	305.96	142,198.15	0.00	148,220.44	109,928.19	258,148.63
SC	BLUE EARTH	8,257.20	98,750.32	0.00	388.99	431.20	189.93	0.00	0.00	$108,017.64	625.97	2,630.70	0.00	(0.60)	49,137.60	933.00	53,326.67	54,690.97	108,017.64
SC	BROWN	36,255.55	282,342.34	20.00	0.00	0.00	0.00	345.00	0.00	$318,962.89	0.00	0.00	0.00	54.60	85,451.52	0.00	85,506.12	233,456.77	318,962.89
NE	CARLTON	(153.57)	55,523.25	0.00	21,254.31	0.00	0.00	7,545.89	0.00	$84,169.88	0.00	0.00	0.00	0.00	17,721.07	0.00	17,721.07	66,448.81	84,169.88
EC	CARVER	3,001.13	2,698.85	20.30	180,000.00	39,812.12	0.00	0.00	0.00	$225,532.40	0.00	0.00	0.00	2,067.06	89,098.54	2,560.00	93,725.60	131,806.80	225,532.40
WC	CASS	27,098.67	2,179.68	50.00	0.00	0.00	0.00	8,064.69	0.00	$37,393.04	2,237.79	0.00	11,737.36	0.00	12,053.32	0.00	26,028.47	11,364.57	37,393.04
SW	CHIPPEWA	65,590.54	11,663.43	0.00	70,000.00	4,232.83	4,837.72	1,212.25	0.00	$157,536.77	0.00	0.00	0.00	0.00	27,056.47	0.00	27,056.47	130,480.30	157,536.77
NE	CHISAGO	(132.83)	95,547.06	100.00	0.00	262.50	0.00	417.00	54.50	$96,248.23	282.11	2,058.80	144.00	0.00	44,390.80	2,630.20	49,505.91	46,742.32	96,248.23
WC	CLAY	217,887.32	0.00	50.00	0.00	1,199.30	0.00	1,215.00	0.00	$220,351.62	0.00	0.00	0.00	2.60	35,070.87	0.00	35,073.47	185,278.15	220,351.62
NW	CLEARWATER	1,561.50	44,882.33	40.00	0.00	430.93	85.87	3,518.40	0.00	$50,519.03	0.00	200.00	0.00	3.19	36,537.80	840.74	37,581.73	12,937.30	$50,519.03
NE	COOK	429.07	16,310.44	0.00	83,000.00	142.00	85.32	0.00	0.00	$99,966.83	0.00	0.00	0.00	0.00	84,624.98	0.00	84,624.98	15,341.85	$99,966.83
SW	COTTONWOOD	90,439.83	4,472.12	50.00	21,000.00	709.85	582.24	270.00	0.00	$117,524.04	27.69	0.00	36.49	46.41	85,363.38	0.00	85,473.97	32,050.07	$117,524.04
WC	CROW WING	63,404.55	0.00	20.00	10,000.00	0.00	660.21	0.00	0.00	$74,084.76	0.00	1,697.62	201.68	0.00	7,703.23	0.00	9,602.53	64,482.23	$74,084.76
EC	DAKOTA	144,529.87	140,047.03	100.00	0.00	1,440.00	0.00	3,626.34	1,268.53	$291,011.77	1,491.21	6,889.00	800.51	0.00	68,078.79	3,317.35	80,576.86	210,434.91	$291,011.77
SE	DODGE	4,210.51	109,704.47	0.00	0.00	0.00	2,824.72	0.00	0.00	$116,739.70	358.22	2,592.68	314.42	0.00	14,960.28	0.00	18,225.60	98,514.10	$116,739.70
WC	DOUGLAS	2,670.86	117,504.37	50.00	95,000.00	6,950.27	630.00	1,693.31	287.34	$224,786.15	80.34	0.00	0.00	153.75	170,821.04	820.06	171,875.19	52,910.96	$224,786.15
SC	FARIBAULT	1,724.97	72,143.31	40.00	125,000.00	138.33	0.00	110.00	0.00	$199,156.61	0.00	0.00	0.00	824.65	171,743.93	0.00	172,568.58	26,588.03	$199,156.61
SE	FILLMORE	26,137.77	84,863.68	0.00	117,859.47	0.00	0.00	90.00	0.00	$228,950.92	685.00	1,636.74	208.00	(0.09)	62,221.65	2,758.28	67,509.58	161,441.34	$228,950.92
SE	FREEBORN	2,772.84	168,538.98	0.00	0.00	0.00	0.00	90.00	0.00	$171,401.82	5,650.13	2,493.44	1,621.26	910.63	66,538.46	80.44	77,294.36	94,107.46	$171,401.82
SE	GOODHUE	79,238.83	0.00	50.00	82,427.27	856.86	0.00	6,000.00	516.00	$169,088.96	0.00	0.00	0.00	10.22	25,758.89	1,782.50	27,551.61	141,537.35	$169,088.96
WC	GRANT	39,000.60	17,822.74	20.00	98,000.00	347.46	0.00	0.00	0.00	$155,190.80	0.00	0.00	0.00	21.80	74,019.25	0.00	74,041.05	81,149.75	$155,190.80
EC	HENNEPIN	683.58	136,501.36	0.00	120,000.00	326.98	359.26	10,218.00	0.00	$268,089.18	868.56	0.00	53.00	7.98	76,387.33	0.00	77,316.87	190,772.31	$268,089.18
NW	HUBBARD	269.98	59,579.13	50.00	33,776.84	0.00	161.53	6,499.70	2,888.00	$103,225.18	66.97	0.00	2,699.00	261.71	97,191.42	1,430.72	101,649.82	1,575.36	$103,225.18
NE	ISANTI	141.22	28,458.09	0.00	33,457.81	7,596.90	0.00	0.00	0.00	$69,654.02	0.00	0.00	0.00	0.00	36,518.60	0.00	36,518.60	33,135.42	$69,654.02
NE	ITASCA	2,020.17	59,453.13	0.00	60,000.00	0.00	1,146.00	0.00	0.00	$122,619.30	0.00	0.00	0.00	0.00	52,091.78	0.00	52,091.78	70,527.42	$122,619.20
SW	JACKSON	20,271.11	94,043.66	0.00	85,000.00	542.40	1,649.04	0.00	0.00	$201,506.21	0.00	0.00	10,500.00	0.87	72,984.82	0.00	83,485.69	118,020.52	$201,506.21
NE	KANABEC	353.42	20,567.14	50.00	30,598.87	0.00	0.00	2,270.00	0.00	$53,839.43	937.00	528.48	8,500.00	99.29	40,182.15	1,393.74	51,640.66	2,198.77	$53,839.43
SC	KANDIYOHI	29,572.76	0.00	25.00	280,000.00	0.00	4,150.82	0.00	0.00	$313,748.58	0.00	0.00	0.00	0.00	97,351.41	18,558.82	115,910.23	197,838.35	$313,748.58
NW	KITTSON	4,912.18	90,638.78	100.00	10,000.00	1,045.56	0.00	0.00	0.00	$106,696.52	0.00	0.00	0.00	0.29	67,871.53	0.00	67,871.82	38,824.70	$106,696.52
NE	KOOCHICHING	6,717.10	25,421.20	0.00	0.00	0.00	0.00	0.00	0.00	$32,138.30	162.29	1,481.20	1,153.28	170.00	17,994.91	0.00	20,961.68	11,176.62	$32,138.30
SW	LAC QUI PARLE	1,624.20	56,566.44	0.00	30,000.00	1,436.66	219.00	1,680.00	0.00	$91,526.30	0.00	0.00	0.00	0.00	57,486.00	223.54	57,709.54	33,816.76	$91,526.30
NE	LAKE	67,214.00	5,496.00	27.00	38,000.00	0.00	241.00	0.00	0.00	$111,038.00	0.00	0.00	0.00	0.00	84,145.00	0.00	84,145.00	26,892.00	$111,037.00
NW	LAKE OF THE WOODS	2,602.53	13,488.32	0.00	0.00	0.00	0.00	0.00	0.00	$16,090.85	0.00	0.00	0.00	105.88	14,731.79	0.00	14,837.67	1,253.18	$16,090.85
SC	LESUEUR	172,735.49	0.00	0.00	13,000.00	0.00	0.00	0.00	0.00	$185,735.49	0.00	0.00	0.00	747.44	51,476.65	2,075.88	54,299.97	131,435.52	$185,735.49
SW	LINCOLN	15,822.01	38,027.10	0.00	116,899.31	3,218.61	1,694.67	0.00	0.00	$175,661.70	0.00	4,891.79	6,360.15	(0.43)	70,510.00	0.00	81,761.51	93,900.19	$175,661.70
SW	LYON	(169.37)	47,707.70	0.00	40,000.00	208.70	446.88	0.00	0.00	$88,193.91	5,916.00	0.00	0.00	0.85	54,030.21	4,133.87	64,080.93	24,112.98	$88,193.91
NW	MAHNOMEN	52,824.81	4,995.80	0.00	0.00	4,243.50	367.24	0.00	0.00	$62,431.35	0.00	0.00	0.00	1.63	27,098.28	0.00	27,099.91	35,331.44	$62,431.35
NW	MARSHALL	1,062.63	67,595.35	0.00	0.00	6,189.27	0.00	0.00	529.38	$75,376.63	864.51	0.00	0.00	873.42	68,657.98	0.00	70,395.91	4,980.72	$75,376.63
NW	MARSHALL-BELTRAMI	751.66	39,480.06	0.00	20,000.00	0.00	0.00	8,068.57	0.00	$68,300.29	605.00	1,412.55	171.34	0.00	26,421.00	139.26	28,749.15	39,551.14	$68,300.29
SC	MARTIN	79,826.62	0.00	0.00	43,882.00	0.00	657.21	450.00	0.00	$124,815.83	87.46	496.80	530.26	0.00	91,252.62	0.00	92,367.14	32,448.69	$124,815.83
SC	MCLEOD	93,787.57	65,265.21	15.00	0.00	0.00	0.00	530.59	3,319.49	$162,917.86	0.00	0.00	0.00	0.00	42,610.28	0.00	42,610.28	120,307.58	$162,917.86
SC	MEEKER	2,748.70	63,509.88	0.00	90,000.00	11.14	272.08	0.00	0.00	$156,541.80	0.00	1,854.08	866.88	1,461.00	33,172.99	1,046.15	38,401.10	118,140.70	$156,541.80
NE	MILLE LACS	8,235.89	30,304.16	0.00	76,277.31	803.49	0.00	731.60	100.00	$116,452.45	0.00	0.00	0.00	25.83	62,779.46	0.00	62,805.29	53,647.16	$116,452.45
WC	MORRISON	15,576.66	114,043.06	0.00	0.00	0.00	0.00	0.00	4,601.80	$134,221.52	0.00	0.00	0.00	0.00	58,498.44	5,861.24	64,359.68	69,861.84	$134,221.52
SE	MOWER	3,412.72	29,649.43	50.00	113,744.56	1,937.50	198.85	7,703.57	0.00	$156,696.63	0.00	0.00	1,545.00	2.07	45,924.41	3,200.43	50,671.91	106,024.72	$156,696.63
SW	MURRAY	1,998.81	71,733.14	0.00	35,000.00	0.00	263.69	0.00	0.00	$108,995.64	0.00	0.00	0.00	0.00	36,840.00	0.00	36,840.00	72,155.64	$108,995.64

SOIL AND WATER CONSERVATION DISTRICTS

SUMMARY OF FY97

SUMMARY OF COMBINED BALANCE SHEET

06/01/98

		ASSETS									LIABILITIES								
	DISTRICT	CASH CHECKING	CASH SAVINGS	PETTY CASH	INVESTMENTS	ACCOUNTS RECEIVABLE	INTEREST RECEIVABL	DUE FROM OTHER GOVERNMENTS	PREPAID EXPENSES	TOTAL ASSETS	ACCOUNTS PAYABLE	ACCRUED SALARIES PAYABLE	DUE TO OTHER GOVERNMENTS	SALES TAX PAYABLE	DEFERRED REVENUE	DEPOSIT TREE SALES	TOTAL LIABILITIES	FUND BALANCE	TOTAL LIABILITIES & FUND EQUITY
SC	NICOLLET	168,592.52	0.00	0.00	28,964.20	0.00	0.00	0.00	0.00	$197,556.72	0.00	0.00	0.00	0.00	37,602.98	0.00	37,602.98	159,953.74	$197,556.72
SW	NOBLES	5,113.00	107,658.00	25.00	32,500.00	0.00	128.00	2,013.00	0.00	$147,437.00	0.00	2,395.00	2,484.00	3.00	104,536.00	0.00	109,418.00	38,019.00	$147,437.00
NW	NORMAN	15,185.24	0.00	0.00	87,562.50	1,436.27	2,078.27	8,760.00	270.00	$115,292.28	1,957.03	0.00	29,117.00	0.00	115,914.83	484.56	147,473.42	(32,181.14)	$115,292.28
SE	OLMSTED	5,389.89	174,025.93	42.05	284.18	753.90	0.00	180.00	9,341.29	$190,017.24	57.91	1,411.08	5,319.12	0.00	76,287.88	3,747.68	86,823.67	103,193.57	$190,017.24
WC	OTTERTAIL E.	3,522.10	78,486.33	25.00	45,224.93	907.75	0.00	0.00	0.00	$128,166.11	0.00	0.00	37,700.00	192.62	41,459.47	2,932.41	82,284.50	45,881.61	$128,166.11
WC	OTTERTAIL W.	37,765.89	0.00	50.00	20,000.00	0.00	91.56	4,730.33	0.00	$62,637.78	0.00	0.00	0.00	26.14	44,589.07	1,929.30	46,544.51	16,093.27	$62,637.78
NW	PENNINGTON	7,002.19	13,930.62	0.00	76,911.68	30.00	138.22	0.00	0.00	$98,012.71	0.00	0.00	0.00	0.00	54,059.46	689.94	54,749.40	43,263.31	$98,012.71
NE	PINE	11,788.61	85,583.45	0.00	38,102.25	360.00	618.35	6,667.50	770.53	$143,890.69	0.00	0.00	0.00	0.00	57,047.09	544.16	57,591.25	86,299.44	$143,890.69
SW	PIPESTONE	2,652.97	40,444.38	0.00	37,346.70	0.00	0.00	0.00	0.00	$80,444.05	0.00	0.00	0.00	0.00	21,430.97	0.00	21,430.97	59,013.08	$80,444.05
NW	POLK EAST	151,973.92	60,704.36	0.00	0.00	377.27	1,127.48	0.00	527.25	$214,710.28	0.00	0.00	0.00	22.69	32,810.37	0.00	32,833.06	181,877.22	$214,710.28
NW	POLK WEST	602.00	102,263.00	0.00	0.00	572.00	0.00	0.00	0.00	$103,437.00	124.00	0.00	0.00	608.00	43,344.00	41.00	44,117.00	59,320.00	$103,437.00
WC	POPE	1,417.41	83,601.28	20.00	21,239.29	1,405.70	0.00	7,590.93	0.00	$115,274.61	0.00	0.00	0.00	642.40	92,800.10	0.00	93,442.50	21,832.11	$115,274.61
EC	RAMSEY	679,174.00	0.00	75.00	0.00	0.00	0.00	1,263.00	0.00	$680,512.00	1,928.00	3,869.00	40,479.00	0.00	107,888.00	0.00	154,164.00	526,348.00	$680,512.00
NW	RED LAKE	113,745.30	0.00	0.00	15,791.86	1,259.20	0.00	270.00	0.00	$131,066.36	0.00	0.00	0.00	0.00	60,915.00	0.00	60,915.00	70,151.36	$131,066.36
SW	REDWOOD	297,249.99	0.00	40.00	43,696.77	723.16	0.00	720.00	0.00	$342,429.92	1,836.00	1,168.34	141.72	0.00	231,062.97	2,285.00	236,494.03	105,935.89	$342,429.92
SC	RENVILLE	24,217.49	2,851.42	0.00	66,161.35	901.87	0.00	12,063.66	369.10	$106,564.89	0.00	0.00	0.00	0.00	28,206.63	0.00	28,206.63	78,358.26	$106,564.89
SE	RICE	10,567.62	70,797.05	0.00	0.00	0.00	0.00	270.00	0.00	$81,634.67	0.00	483.60	0.00	6.09	30,196.32	4,554.92	35,240.93	46,393.74	$81,634.67
SW	ROCK	13,611.97	10,000.00	15.00	64,220.39	1,101.70	0.00	0.00	0.00	$88,949.06	0.00	0.00	0.00	4.05	23,582.64	0.00	23,586.69	65,362.37	$88,949.06
SE	ROOT RIVER	163,075.27	26,225.15	100.00	7,986.29	0.00	0.00	629.58	3,788.62	$201,804.91	164.79	3,757.98	988.90	60.05	16,903.00	2,502.16	24,376.88	177,428.03	$201,804.91
NW	ROSEAU	6,700.25	74,855.29	0.00	15,442.33	1,405.57	0.00	0.00	0.00	$98,403.44	0.00	0.00	0.00	0.00	38,456.97	0.00	38,456.97	59,946.47	$98,403.44
EC	SCOTT	9,865.72	266,661.78	11.94	40,000.00	329.25	117.00	1,868.50	0.00	$318,854.19	10,724.97	12,038.00	2,096.87	0.00	207,671.70	4.00	232,535.54	86,318.65	$318,854.19
EC	SHERBURNE	84,737.26	0.00	25.00	91,895.57	0.00	720.06	0.00	0.00	$177,377.89	625.00	1,851.64	444.58	18.66	27,875.78	0.00	30,815.66	146,562.23	$177,377.89
SC	SIBLEY	3,566.86	64,335.63	0.00	10,000.00	133.12	0.00	0.00	0.00	$78,035.61	37.74	0.00	1,116.04	0.00	24,185.35	0.00	25,339.13	52,696.48	$78,035.61
EC	STEARNS	220,285.00	0.00	0.00	85,488.00	0.00	0.00	3,113.00	0.00	$308,886.00	13,922.00	9,511.00	1,105.00	0.00	90,141.00	2,253.00	116,932.00	191,954.00	$308,886.00
SE	STEELE	52,337.69	0.00	0.00	7,744.31	426.15	357.53	11,766.83	300.00	$72,932.51	5,966.01	4,350.78	452.35	36.06	12,625.49	0.00	23,430.69	49,501.82	$72,932.51
WC	STEVENS	14,165.06	68,653.09	50.00	80,000.00	1,572.46	0.00	0.00	0.00	$164,440.61	700.00	0.00	0.00	77.93	123,769.66	0.00	124,547.59	40,598.02	$165,145.61
NE	ST. LOUIS N.	4,752.35	42,784.08	1.56	0.00	0.00	0.00	1,808.25	1,193.80	$50,540.04	0.00	0.00	0.00	132.27	14,863.53	2,006.59	17,002.39	33,537.65	$50,540.04
NE	ST. LOUIS S.	12,010.02	19,923.18	31.86	20,000.00	6,107.72	581.02	0.00	6,317.98	$64,971.78	88.20	972.72	107.40	4.55	15,486.95	868.00	17,527.82	47,443.96	$64,971.78
SW	SWIFT	7,659.37	0.00	0.00	93,573.37	1,590.63	0.00	2,340.00	0.00	$105,163.37	51.83	0.00	226.22	12.71	30,424.90	0.00	30,715.66	74,447.71	$105,163.37
WC	TODD	2,799.94	51,414.91	20.00	105,960.21	1,130.81	0.00	5,792.00	2,850.00	$169,967.87	7,835.57	872.64	105.84	10.29	130,822.42	492.10	140,138.86	29,829.01	$169,967.87
WC	TRAVERSE	727.28	120,068.37	50.00	0.00	3,933.98	0.00	0.00	0.00	$124,779.63	303.98	0.00	0.00	342.02	75,282.71	300.00	76,228.71	48,550.92	$124,779.63
SE	WABASHA	8,507.40	24,066.00	20.00	155,000.00	0.00	2,104.62	0.00	2,428.36	$192,126.38	0.00	3,022.72	359.10	330.77	34,091.00	710.00	38,513.59	153,612.79	$192,126.38
WC	WADENA	4,247.22	52,797.23	100.00	89,177.22	1,267.96	1,113.42	1,534.00	1,149.50	$151,386.55	438.01	828.00	2,487.38	(315.39)	52,383.60	631.10	56,452.70	94,933.85	$151,386.55
SC	WASECA	10,784.96	6,385.26	0.00	10,310.06	5,053.21	0.00	0.00	0.00	$32,533.49	0.00	0.00	0.00	502.09	8,898.68	0.00	9,400.77	23,132.72	$32,533.49
EC	WASHINGTON	96,515.47	0.00	50.00	37,500.00	30,803.43	251.44	7,425.47	0.00	$172,545.81	2,539.06	6,072.96	464.58	532.79	93,457.97	8,076.04	111,143.40	61,402.41	$172,545.81
SC	WATONWAN	84,944.65	0.00	0.00	25,663.24	195.00	0.00	1,545.92	0.00	$112,348.81	0.00	0.00	0.00	0.00	44,676.91	0.00	44,676.91	67,671.90	$112,348.81
WC	WILKIN	166.75	48,080.33	30.00	100,000.00	200.00	1,571.60	779.60	0.00	$150,828.28	0.00	0.00	0.00	0.00	35,776.57	0.00	35,776.57	115,051.71	$150,828.28
SE	WINONA	69,414.95	35,745.80	0.00	0.00	0.00	0.00	1,070.80	2,150.75	$108,382.30	0.00	0.00	2,860.29	1,544.71	105,100.75	2,993.41	112,499.16	(4,116.86)	$108,382.30
EC	WRIGHT	23,666.07	78,000.00	0.00	0.00	28.50	0.00	54,300.00	0.00	$155,994.57	0.00	2,013.60	0.00	3.02	22,990.07	0.00	25,006.69	130,987.88	$155,994.57
SW	YELLOW MEDICINE	7,673.30	80,560.38	0.00	156,789.56	837.90	3,103.78	264.50	0.00	$249,229.42	0.00	0.00	0.00	0.53	134,977.53	0.00	134,978.06	114,251.36	$249,229.42
	TOTAL	$3,902,801.00	$4,799,467.91	$1,846.77	$4,223,021.18	$163,368.39	$40,508.83	$293,471.13	$65,152.99	$13,489,638.20	$139,877.27	$98,609.11	$213,693.36	$14,434.91	$5,558,336.22	$113,027.51	$6,137,978.38	$7,352,363.68	$13,490,342.06

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SOIL AND WATER CONSERVATION DISTRICTS
SUMMARY OF FY97
INTERGOVERNMENTAL REVENUE - COUNTY

	DISTRICT	COUNTY ALLOCATION	CLWP GRANT	WETLAND	OTHER COUNTY	TOTAL
NE	AITKIN	57,269.00	23,012.00	19,200.00	0.00	$99,481.00
EC	ANOKA	90,137.00	0.00	0.00	4,540.50	$94,677.50
WC	BECKER	96,131.28	34,692.12	24,200.00	0.00	$155,023.40
NW	BELTRAMI	49,564.00	38,000.00	26,523.49	49,430.70	$163,518.19
EC	BENTON	58,602.00	37,500.00	10,000.00	0.00	$106,102.00
SW	BIG STONE	45,000.00	9,239.80	1,082.91	0.00	$55,322.71
SC	BLUE EARTH	50,658.00	0.00	0.00	0.00	$50,658.00
SC	BROWN	68,217.00	0.00	400.00	0.00	$68,617.00
NE	CARLTON	66,603.00	0.00	5,000.00	4,858.60	$76,461.60
EC	CARVER	140,000.00	0.00	5,000.00	0.00	$145,000.00
WC	CASS	11,650.00	0.00	0.00	0.00	$11,650.00
SW	CHIPPEWA	56,900.00	237.79	8,708.00	0.00	$65,845.79
NE	CHISAGO	30,000.00	0.00	5,000.00	11,735.00	$46,735.00
WC	CLAY	71,290.00	0.00	5,000.00	0.00	$76,290.00
NW	CLEARWATER	37,925.00	28,526.01	2,943.98	0.00	$69,394.99
NE	COOK	11,992.00	0.00	5,000.00	0.00	$16,992.00
SW	COTTONWOOD	47,000.00	4,500.00	5,000.00	16,565.04	$73,065.04
WC	CROW WING	26,750.00	0.00	0.00	0.00	$26,750.00
EC	DAKOTA	199,577.00	0.00	0.00	71,988.51	$271,565.51
SE	DODGE	95,021.00	0.00	2,594.47	5,730.61	$103,346.08
WC	DOUGLAS	49,000.00	0.00	16,058.75	0.00	$65,058.75
SC	FARIBAULT	43,750.00	104,015.50	0.00	0.00	$147,765.50
SE	FILLMORE	122,041.54	0.00	15,000.00	0.00	$137,041.54
SE	FREEBORN	74,000.00	0.00	0.00	0.00	$74,000.00
SE	GOODHUE	154,570.00	5,000.00	12,000.00	0.00	$171,570.00
WC	GRANT	40,980.00	37,036.92	11,438.27	0.00	$89,455.19
EC	HENNEPIN	503,969.17	9,375.00	6,000.00	152,116.63	$671,460.80
NW	HUBBARD	19,566.92	7,102.42	3,094.83	29,935.59	$59,699.76
NE	ISANTI	30,000.00	37,500.00	5,000.00	0.00	$72,500.00
NE	ITASCA	63,172.00	17,138.46	19,760.00	0.00	$100,070.46
SW	JACKSON	37,972.68	0.00	0.00	0.00	$37,972.68
NE	KANABEC	27,000.00	6,284.67	5,000.00	0.00	$38,284.67
SC	KANDIYOHI	93,286.00	0.00	8,500.00	0.00	$101,786.00
NW	KITTSON	31,500.00	54,667.98	8,350.00	12,275.00	$106,792.98
NE	KOOCHICHING	20,600.00	24,000.00	14,720.16	173.69	$59,493.85
SW	LAC QUI PARLE	75,000.00	0.00	5,000.00	0.00	$80,000.00
NE	LAKE	25,185.00	37,500.00	5,000.00	0.00	$67,685.00
NW	LAKE OF THE WOODS	5,000.00	214.88	22,226.76	633.87	$28,075.51
SC	LESUEUR	96,865.00	0.00	16,700.00	36.06	$113,601.06
SW	LINCOLN	60,000.00	9,720.44	5,000.00	0.00	$74,720.44
SW	LYON	60,500.00	0.00	10,000.00	0.00	$70,500.00
NW	MAHNOMEN	1,554.88	23,410.95	12,200.00	12,633.60	$49,799.43
NW	MARSHALL	58,732.00	0.00	7,500.00	3,000.00	$69,232.00
NW	MARSHALL-BELTRAMI	56,250.00	4,316.26	8,524.41	0.00	$69,090.67
SC	MARTIN	50,200.00	0.00	5,000.00	948.90	$56,148.90
SC	MCLEOD	30,000.00	0.00	6,952.78	0.00	$36,952.78
SC	MEEKER	51,207.00	0.00	0.00	0.00	$51,207.00
NE	MILLE LACS	34,577.00	3,577.00	0.00	44,276.62	$82,430.62
WC	MORRISON	55,000.00	0.00	26,700.00	0.00	$81,700.00
SE	MOWER	113,500.00	0.00	21,840.77	16,039.50	$151,380.27
SW	MURRAY	70,565.80	0.00	5,000.00	33,602.30	$109,168.10

SOIL AND WATER CONSERVATION DISTRICTS
SUMMARY OF FY97
INTERGOVERNMENTAL REVENUE - COUNTY

	DISTRICT	COUNTY ALLOCATION	CLWP GRANT	WETLAND	OTHER COUNTY	TOTAL
SC	NICOLLET	42,580.00	0.00	5,000.00	0.00	$47,580.00
SW	NOBLES	35,000.00	2,500.00	5,000.00	19,740.00	$62,240.00
NW	NORMAN	39,000.00	46,729.29	12,794.98	27,399.63	$125,923.90
SE	OLMSTED	140,962.00	0.00	15,263.42	0.00	$156,225.42
WC	OTTERTAIL EAST	38,383.29	0.00	9,666.50	0.00	$48,049.79
WC	OTTERTAIL WEST	36,230.46	0.00	9,666.50	0.00	$45,896.96
NW	PENNINGTON	62,748.00	25,574.29	9,352.23	28,315.00	$125,989.52
NE	PINE	40,000.00	51,615.51	64,103.76	7,557.73	$163,277.00
SW	PIPESTONE	24,125.00	38,585.72	10,000.00	14,350.00	$87,060.72
NW	POLK EAST	38,170.00	18,750.00	16,700.00	11,830.00	$85,450.00
NW	POLK WEST	38,711.00	18,750.00	16,700.00	3,615.00	$77,776.00
WC	POPE	34,000.00	0.00	0.00	6,500.00	$40,500.00
EC	RAMSEY	95,362.00	0.00	0.00	0.00	$95,362.00
NW	RED LAKE	36,940.00	40,316.30	10,039.52	23,100.12	$110,395.94
SW	REDWOOD	94,000.00	30,290.91	10,000.00	0.00	$134,290.91
SC	RENVILLE	70,640.00	13,000.00	10,000.00	0.00	$93,640.00
SE	RICE	30,266.00	0.00	19,200.00	0.00	$49,466.00
SW	ROCK *	0.00	0.00	0.00	0.00	$0.00
SE	ROOT RIVER	128,565.00	0.00	7,500.00	9,040.00	$145,105.00
NW	ROSEAU	41,200.00	32,881.90	7,888.75	0.00	$81,970.65
EC	SCOTT	195,766.00	0.00	0.00	20,572.50	$216,338.50
EC	SHERBURNE	97,229.00	44,309.00	5,000.00	2,359.92	$148,897.92
SC	SIBLEY	35,521.00	0.00	12,200.00	2,100.00	$49,821.00
EC	STEARNS	370,723.00	0.00	0.00	0.00	$370,723.00
SE	STEELE	81,559.00	2,124.80	7,962.24	1,679.79	$93,325.83
WC	STEVENS	65,500.00	5,000.00	0.00	0.00	$70,500.00
NE	ST. LOUIS N.	53,000.00	0.00	5,000.00	3,500.00	$61,500.00
NE	ST. LOUIS S.	53,000.00	0.00	5,000.00	5,000.00	$63,000.00
SW	SWIFT	47,895.00	8,169.66	1,190.20	1,525.00	$58,779.86
WC	TODD	61,846.00	30,320.50	28,800.00	0.00	$120,966.50
WC	TRAVERSE	68,585.00	51,779.19	15,000.00	(8,780.00)	$126,584.19
SE	WABASHA	113,581.51	2,506.32	5,000.00	0.00	$121,087.83
WC	WADENA	22,500.00	37,388.00	26,700.00	0.00	$86,588.00
SC	WASECA	49,250.00	0.00	12,200.00	0.00	$61,450.00
EC	WASHINGTON	225,100.00	0.00	33,283.53	0.00	$258,383.53
SC	WATONWAN	53,000.00	17,920.86	6,729.15	17.00	$77,667.01
WC	WILKIN	42,333.00	0.00	0.00	0.00	$42,333.00
SE	WINONA	56,122.00	29,215.00	0.00	0.00	$85,337.00
EC	WRIGHT	138,000.00	0.00	15,000.00	0.00	$153,000.00
SW	YELLOW MEDICINE	76,082.00	180.00	7,530.61	0.00	$83,792.61
	TOTAL	$6,439,306.53	$1,104,475.45	$833,690.97	$649,942.41	$9,027,415.36

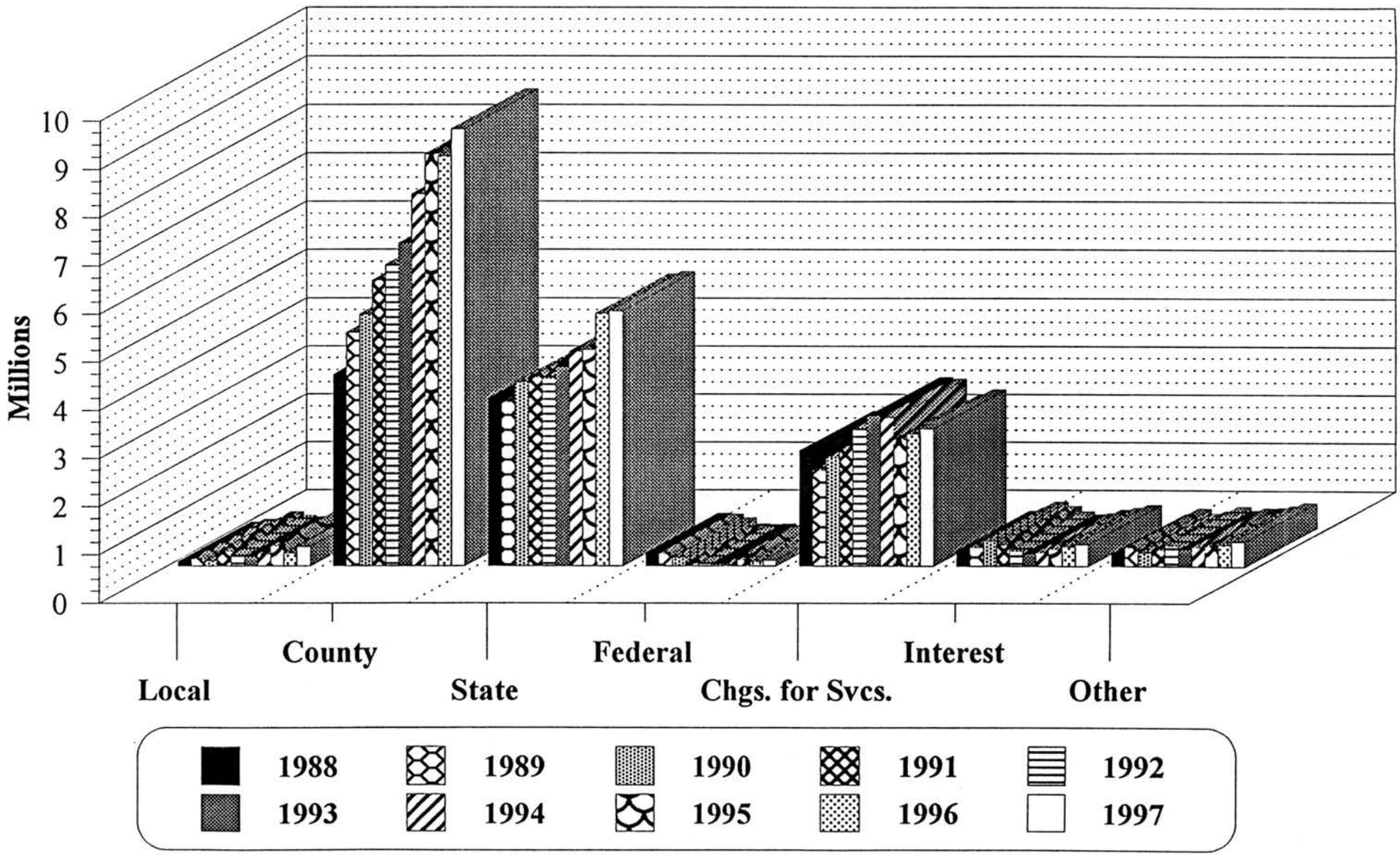
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Note: Several districts reported totals on the breakdown of county revenues that did not agree with the county revenue total on the Statement of Revenues and Expenditures.

*** County pays all expenses. The district does not receive funds directly.**

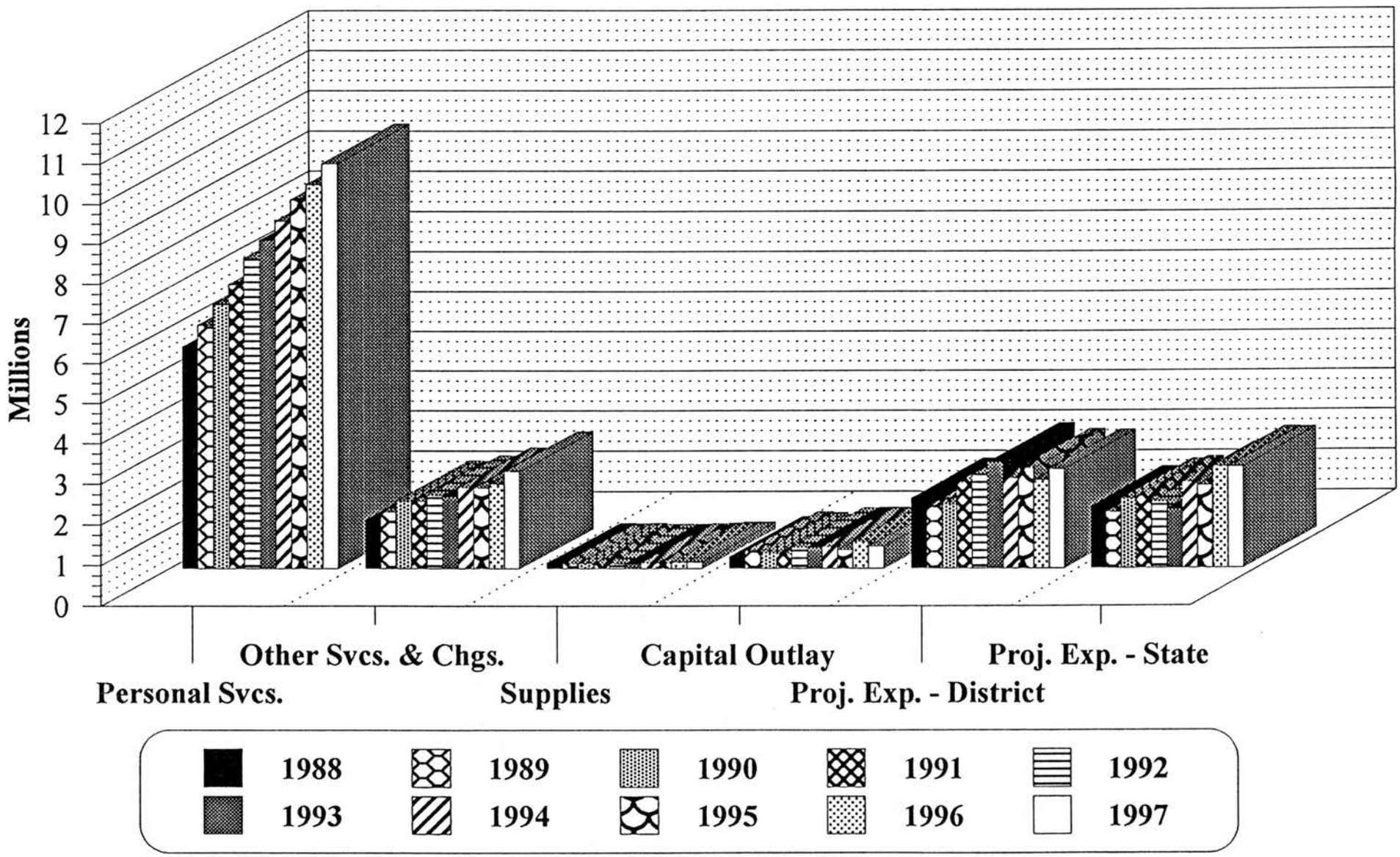
SWCD Revenue Sources

1988-1997 Summary



SWCD Expenditures

1988-1997 Summary



SOIL AND WATER CONSERVATION DISTRICT FUND BALANCES

TOTAL NUMBER OF MONTHS DECEMBER 1997 FUND BALANCES WILL LAST IF ONLY USED FOR DISTRICT OPERATIONS

		1997 DISTRICT OPERATION EXPENDITURES							
	DISTRICT	PERSONAL SERVICES	OTHER SERVICES & CHARGES	SUPPLIES	TOTAL*	MONTHLY OPERATION COST	SEVERANCE PAY	1997 FUND BALANCE	NO.OF MOS. FUND BALNCE WILL LAST FOR OPERATIONS
NE	AITKIN	$47,993.00	$22,213.00	$1,847.00	$72,053.00	$6,004.42	$0.00	$66,399.00	11.06 months
EC	ANOKA	$124,994.51	$39,501.42	$1,761.78	$166,257.71	$13,854.81	$7,998.49	$40,041.14	2.31 months
WC	BECKER	$139,643.92	$22,699.90	$2,752.35	$165,096.17	$13,758.01	$25,278.14	$66,914.02	3.03 months
NW	BELTRAMI	$173,898.06	$26,865.85	$1,995.21	$202,759.12	$16,896.59	$8,651.20	$33,450.67	1.47 months
EC	BENTON	$114,374.30	$25,176.13	$1,713.61	$141,264.04	$11,772.00	$4,366.10	$85,079.35	6.86 months
SW	BIG STONE	$63,740.19	$15,076.87	$1,554.70	$80,371.76	$6,697.65	$6,277.97	$109,928.19	15.48 months
SC	BLUE EARTH	$89,798.13	$22,002.82	$4,098.14	$115,899.09	$9,658.26	$2,820.00	$54,690.97	5.37 months
SC	BROWN	$80,209.05	$19,732.99	$528.33	$100,470.37	$8,372.53	$6,634.25	$233,456.77	27.09 months
NE	CARLTON	$108,193.00	$22,957.00	$1,914.00	$133,064.00	$11,088.67	$10,002.71	$66,448.81	5.09 months
EC	CARVER	$182,490.71	$32,039.61	$1,200.68	$215,731.00	$17,977.58	$9,594.25	$131,806.80	6.80 months
WC	CASS	$68,550.41	$8,236.98	$37.75	$76,825.14	$6,402.10	$677.44	$11,364.57	1.67 months
SW	CHIPPEWA	$78,170.36	$21,446.99	$304.14	$99,921.49	$8,326.79	$10,897.14	$130,480.30	14.36 months
NE	CHISAGO	$71,338.77	$18,673.16	$709.12	$90,721.05	$7,560.09	$2,637.83	$46,742.32	5.83 months
WC	CLAY	$106,731.07	$19,234.63	$673.46	$126,639.16	$10,553.26	$15,313.78	$185,278.15	16.11 months
NW	CLEARWATER	$67,671.43	$6,649.98	$5,683.28	$80,004.69	$6,667.06	$2,413.80	$12,937.30	1.58 months
NE	COOK	$21,336.39	$8,953.45	$456.92	$30,746.76	$2,562.23	$386.69	$15,341.85	5.84 months
SW	COTTONWOOD	$101,401.10	$23,129.54	$2,199.15	$126,729.79	$10,560.82	$11,020.71	$32,050.07	1.99 months
WC	CROW WING	$52,618.34	$57,114.50	$2,562.37	$112,295.21	$9,357.93	$4,676.20	$64,482.23	6.39 months
EC	DAKOTA	$269,518.24	$98,514.06	$1,398.28	$369,430.58	$30,785.88	$14,449.27	$210,434.91	6.37 months
SE	DODGE	$105,411.89	$18,454.58	$2,742.58	$126,609.05	$10,550.75	$14,796.17	$98,514.10	7.93 months
WC	DOUGLAS	$115,102.37	$23,799.74	$1,616.95	$140,519.06	$11,709.92	$21,153.07	$52,910.96	2.71 months
SC	FARIBAULT	$125,707.99	$16,880.80	$1,319.09	$143,907.88	$11,992.32	$9,443.40	$26,588.03	1.43 months
SE	FILLMORE	$110,469.98	$23,246.31	$1,374.72	$135,091.01	$11,257.58	$23,573.00	$161,441.34	12.25 months
SE	FREEBORN	$72,772.13	$16,434.23	$2,499.63	$91,705.99	$7,642.17	$5,977.40	$94,107.46	11.53 months
SE	GOODHUE	$209,569.89	$42,279.60	$1,449.89	$253,299.38	$21,108.28	$22,707.89	$141,537.35	5.63 months
WC	GRANT	$114,076.69	$13,796.52	$354.94	$128,228.15	$10,685.68	$10,829.72	$81,149.75	6.58 months
EC	HENNEPIN	$503,617.51	$228,583.46	$15,962.76	$748,163.73	$62,346.98	$66,606.76	$190,772.31	1.99 months
NW	HUBBARD	$73,763.72	$11,885.65	$1,761.08	$87,410.45	$7,284.20	$8,986.79	$1,575.36	-1.02 months
NE	ISANTI	$81,361.44	$17,490.84	$0.00	$98,852.28	$8,237.69	$6,455.40	$33,135.42	3.24 months
NE	ITASCA	$164,397.89	$22,906.46	$5,560.70	$192,865.05	$16,072.09	$16,671.61	$70,527.42	3.35 months
SW	JACKSON	$49,529.52	$15,126.44	$755.03	$65,410.99	$5,450.92	$5,622.91	$118,020.52	20.62 months
NE	KANABEC	$58,767.26	$12,986.59	$848.36	$72,602.21	$6,050.18	$7,276.30	$2,198.77	-0.84 months
SC	KANDIYOHI	$114,837.72	$46,402.70	$1,529.90	$162,770.32	$13,564.19	$24,721.48	$197,838.35	12.76 months
NW	KITTSON	$96,417.63	$24,498.53	$1,788.50	$122,704.66	$10,225.39	$13,244.04	$38,824.70	2.50 months
NE	KOOCHICHING	$43,571.88	$17,046.10	$1,476.37	$62,094.35	$5,174.53	$1,324.69	$11,176.62	1.90 months
SW	LAC QUI PARLE	$113,722.82	$31,951.70	$1,754.83	$147,429.35	$12,285.78	$11,521.54	$33,816.76	1.81 months
NE	LAKE	$59,174.00	$7,768.00	$684.00	$67,626.00	$5,635.50	$0.00	$26,892.00	4.77 months
NW	LAKE OF THE WOODS	$45,455.86	$8,191.46	$357.96	$54,005.28	$4,500.44	$3,607.42	$1,253.18	-0.52 months
SC	LESUEUR	$98,704.91	$21,012.23	$990.01	$120,707.15	$10,058.93	$5,208.96	$131,435.52	12.55 months
SW	LINCOLN	$105,694.24	$23,677.04	$461.37	$129,832.65	$10,819.39	$7,011.23	$93,900.19	8.03 months
SW	LYON	$92,756.68	$22,862.15	$3,238.11	$118,856.94	$9,904.75	$12,722.37	$24,112.98	1.15 months
NW	MAHNOMEN	$58,036.42	$14,645.56	$417.34	$73,099.32	$6,091.61	$549.06	$35,331.44	5.71 months
NW	MARSHALL	$71,231.00	$16,806.42	$878.99	$88,916.41	$7,409.70	$4,880.00	$4,980.72	0.01 months
NW	MARSHALL-BELTRAMI	$62,273.39	$22,607.39	$891.89	$85,772.67	$7,147.72	$4,576.04	$39,551.14	4.89 months
SC	MARTIN	$85,773.00	$20,644.32	$1,348.56	$107,765.88	$8,980.49	$4,419.30	$32,448.69	3.12 months
SC	MCLEOD	$62,935.58	$13,919.77	$589.76	$77,445.11	$6,453.76	$10,947.40	$120,307.58	16.95 months
SC	MEEKER	$82,038.31	$15,007.11	$191.95	$97,237.37	$8,103.11	$20,622.99	$118,140.70	12.03 months
NE	MILLE LACS	$73,806.83	$19,547.17	$43.32	$93,397.32	$7,783.11	$3,088.82	$53,647.16	6.50 months

SOIL AND WATER CONSERVATION DISTRICT FUND BALANCES

TOTAL NUMBER OF MONTHS DECEMBER 1997 FUND BALANCES WILL LAST IF ONLY USED FOR DISTRICT OPERATIONS

		1997 DISTRICT OPERATION EXPENDITURES							
	DISTRICT	PERSONAL SERVICES	OTHER SERVICES & CHARGES	SUPPLIES	TOTAL*	MONTHLY OPERATION COST	SEVERANCE PAY	1997 FUND BALANCE	NO.OF MOS. FUND BALNCE WILL LAST FOR OPERATIONS
WC	MORRISON	$129,147.88	$20,370.96	$4,152.56	$153,671.40	$12,805.95	$3,396.45	$69,861.84	5.19 months
SE	MOWER	$176,297.30	$28,956.66	$7,288.11	$212,542.07	$17,711.84	$10,236.34	$106,024.72	5.41 months
SW	MURRAY	$137,214.26	$17,680.07	$630.49	$155,524.82	$12,960.40	$20,525.37	$72,155.64	3.98 months
SC	NICOLLET	$50,280.90	$13,837.34	$128.05	$64,246.29	$5,353.86	$4,131.72	$159,953.74	29.10 months
SW	NOBLES	$94,881.00	$24,348.00	$1,213.00	$120,442.00	$10,036.83	$2,315.00	$38,019.00	3.56 months
NW	NORMAN	$123,542.34	$29,448.82	$1,878.39	$154,869.55	$12,905.80	$7,376.11	($32,181.14)	-3.07 months
SE	OLMSTED	$151,165.29	$39,074.02	$1,125.37	$191,364.68	$15,947.06	$11,458.51	$103,193.57	5.75 months
WC	OTTERTAIL EAST	$54,539.61	$20,309.59	$302.22	$75,151.42	$6,262.62	$1,494.40	$45,881.61	7.09 months
WC	OTTERTAIL WEST	$74,371.41	$22,688.05	$734.51	$97,793.97	$8,149.50	$958.50	$16,093.27	1.86 months
NW	PENNINGTON	$85,984.95	$20,816.73	$1,118.54	$107,920.22	$8,993.35	$11,300.00	$43,263.31	3.55 months
NE	PINE	$164,783.07	$23,062.86	$1,311.79	$189,157.72	$15,763.14	$9,948.68	$86,299.44	4.84 months
SW	PIPESTONE	$77,867.78	$23,183.03	$5,579.43	$106,630.24	$8,885.85	$7,346.97	$59,013.08	5.81 months
NW	POLK EAST	$70,621.54	$18,348.32	$1,129.56	$90,099.42	$7,508.29	$6,125.89	$181,877.22	23.41 months
NW	POLK WEST	$86,721.00	$15,331.00	$897.00	$102,949.00	$8,579.08	$2,442.00	$59,320.00	6.63 months
WC	POPE	$108,774.74	$25,692.25	$1,042.17	$135,509.16	$11,292.43	$19,206.00	$21,832.11	0.23 months
EC	RAMSEY	$115,584.00	$26,975.00	$868.00	$143,427.00	$11,952.25	$4,334.00	$526,348.00	43.67 months
NW	RED LAKE	$77,073.07	$16,163.86	$1,416.33	$94,653.26	$7,887.77	$5,936.40	$70,151.36	8.14 months
SW	REDWOOD	$140,713.55	$33,163.85	$1,005.21	$174,882.61	$14,573.55	$5,405.17	$105,935.89	6.90 months
SC	RENVILLE	$139,170.58	$24,022.99	$942.78	$164,136.35	$13,678.03	$11,612.85	$78,358.26	4.88 months
SE	RICE	$71,395.49	$17,401.52	$1,037.48	$89,834.49	$7,486.21	$9,155.59	$46,393.74	4.97 months
SW	ROCK	$0.00	$7,198.74	$0.00	$7,198.74	$599.90	$0.00	$65,362.37	108.96 months
SE	ROOT RIVER	$163,366.64	$26,604.50	$1,642.73	$191,613.87	$15,967.82	$14,107.59	$177,428.03	10.23 months
NW	ROSEAU	$83,708.15	$26,732.82	$2,405.97	$112,846.94	$9,403.91	$19,163.24	$59,946.47	4.34 months
EC	SCOTT	$222,429.65	$25,442.59	$306.52	$248,178.76	$20,681.56	$22,445.00	$86,318.65	3.09 months
EC	SHERBURNE	$136,610.47	$25,570.48	$747.96	$162,928.91	$13,577.41	$26,475.54	$146,562.23	8.84 months
SC	SIBLEY	$78,470.17	$7,287.19	$885.89	$86,643.25	$7,220.27	$21,193.93	$52,696.48	4.36 months
EC	STEARNS	$382,776.00	$37,878.00	$9,304.00	$429,958.00	$35,829.83	$82,259.00	$191,954.00	3.06 months
SE	STEELE	$121,716.94	$19,860.31	$1,079.13	$142,656.38	$11,888.03	$9,081.73	$49,501.82	3.40 months
WC	STEVENS	$97,806.76	$23,365.50	$1,925.58	$123,097.84	$10,258.15	$6,714.16	$40,598.02	3.30 months
NE	ST. LOUIS N.	$61,383.75	$20,758.67	$649.45	$82,791.87	$6,899.32	$1,157.58	$33,537.65	4.69 months
NE	ST. LOUIS S.	$101,114.87	$19,967.52	$14.74	$121,097.13	$10,091.43	$9,333.64	$47,443.96	3.78 months
SW	SWIFT	$69,160.25	$22,503.43	$0.00	$91,663.68	$7,638.64	$11,673.95	$74,447.71	8.22 months
WC	TODD	$134,823.95	$39,106.51	$1,824.94	$175,755.40	$14,646.28	$9,895.58	$29,829.01	1.36 months
WC	TRAVERSE	$119,258.83	$67,371.61	$611.54	$187,241.98	$15,603.50	$15,323.13	$48,550.92	2.13 months
SE	WABASHA	$130,011.11	$24,768.98	$1,624.19	$156,404.28	$13,033.69	$18,918.47	$153,612.79	10.33 months
WC	WADENA	$86,318.04	$27,595.49	$2,804.38	$116,717.91	$9,726.49	$2,148.63	$94,933.85	9.54 months
SC	WASECA	$113,224.41	$30,140.09	$833.00	$144,197.50	$12,016.46	$15,145.79	$23,132.72	0.66 months
EC	WASHINGTON	$262,539.32	$55,414.03	$3,224.30	$321,177.65	$26,764.80	$26,826.14	$61,402.41	1.29 months
SC	WATONWAN	$79,549.96	$17,658.63	$1,025.78	$98,234.37	$8,186.20	$7,991.13	$67,671.90	7.29 months
WC	WILKIN	$79,789.74	$22,412.53	$5,559.33	$107,761.60	$8,980.13	$4,710.74	$115,051.71	12.29 months
SE	WINONA	$91,731.86	$27,819.26	$1,217.59	$120,768.71	$10,064.06	$17,039.25	($4,116.86)	-2.10 months
EC	WRIGHT	$212,809.74	$30,142.59	$722.91	$243,675.24	$20,306.27	$13,714.45	$130,987.88	5.78 months
SW	YELLOW MEDICINE	$107,221.83	$23,101.48	$2,357.51	$132,680.82	$11,056.74	$19,743.53	$114,251.36	8.55 months
	TOTAL	$10,079,601.73	$2,390,253.62	$160,847.29	$12,630,702.64	$1,052,558.55	$1,022,409.88	$7,352,363.68	

Average	6.01 months

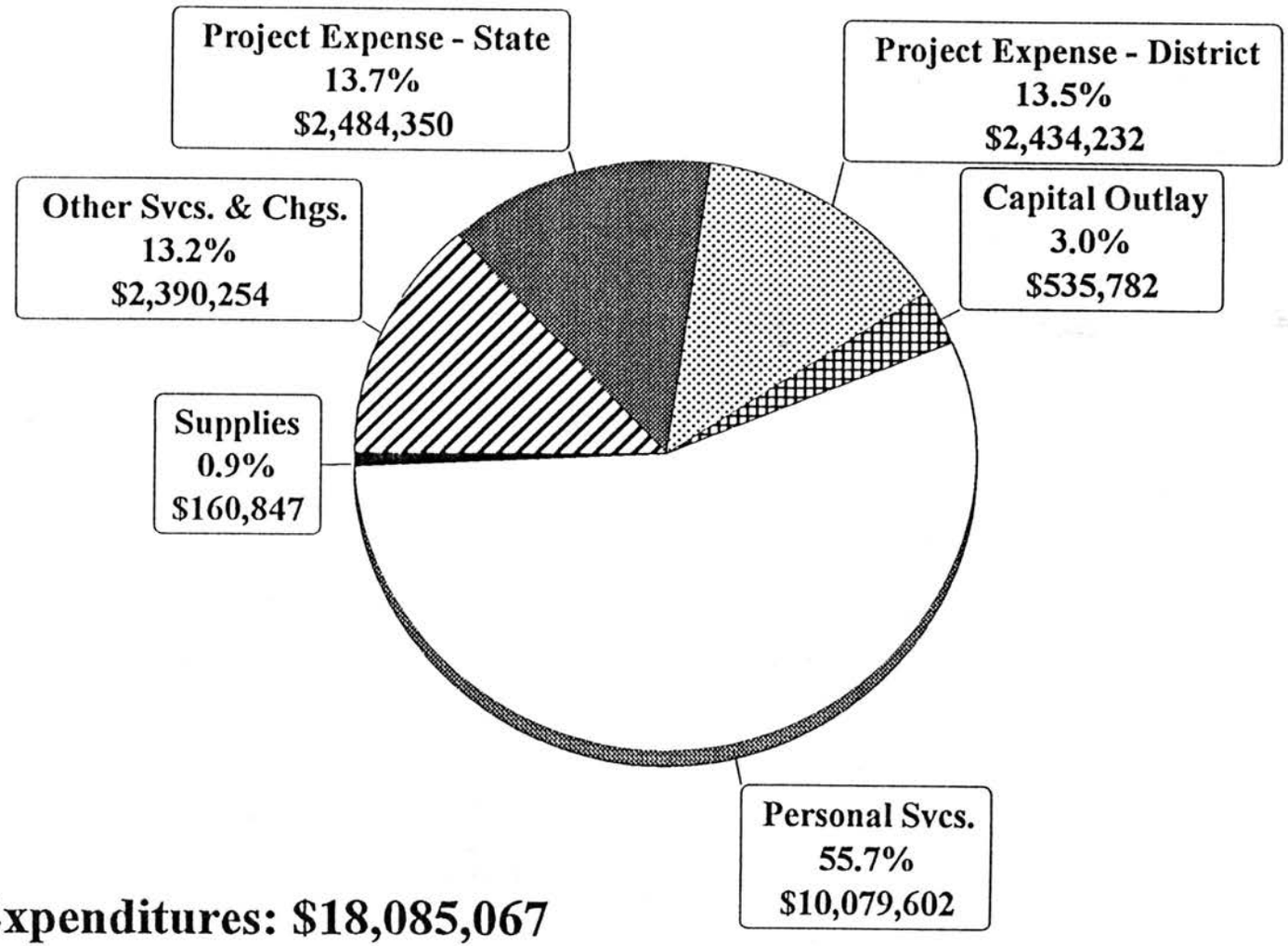
*** Equipment (Capital Outlay) was not added into these figures because it is so variable from year to year.**

**** Three to six months operating funds is appropriate--more may be necessary if you are planning equipment purchases.**

06/05/98

SWCD Expenditures

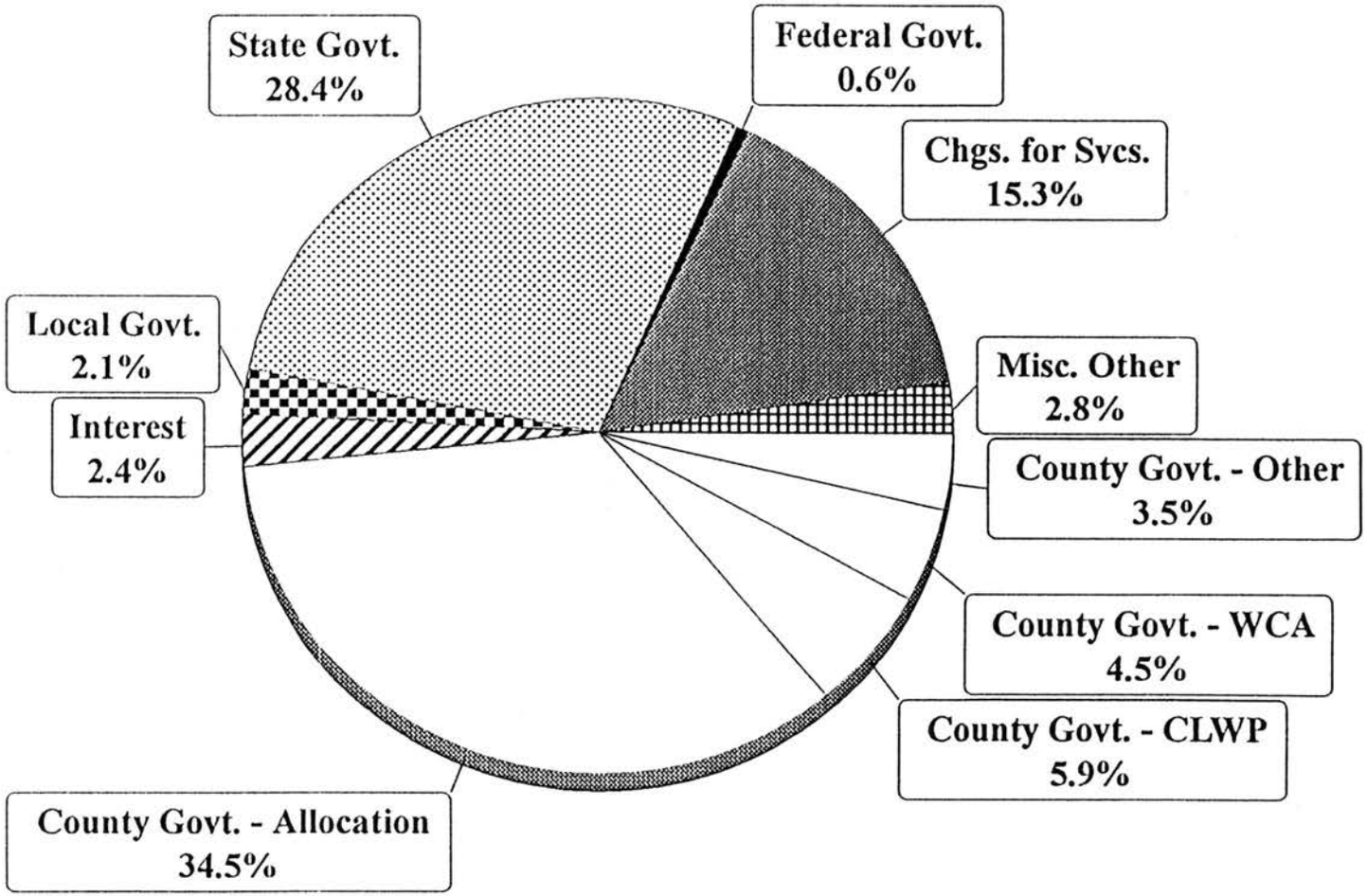
FY 1997



Total Expenditures: $18,085,067

SWCD Revenue Sources

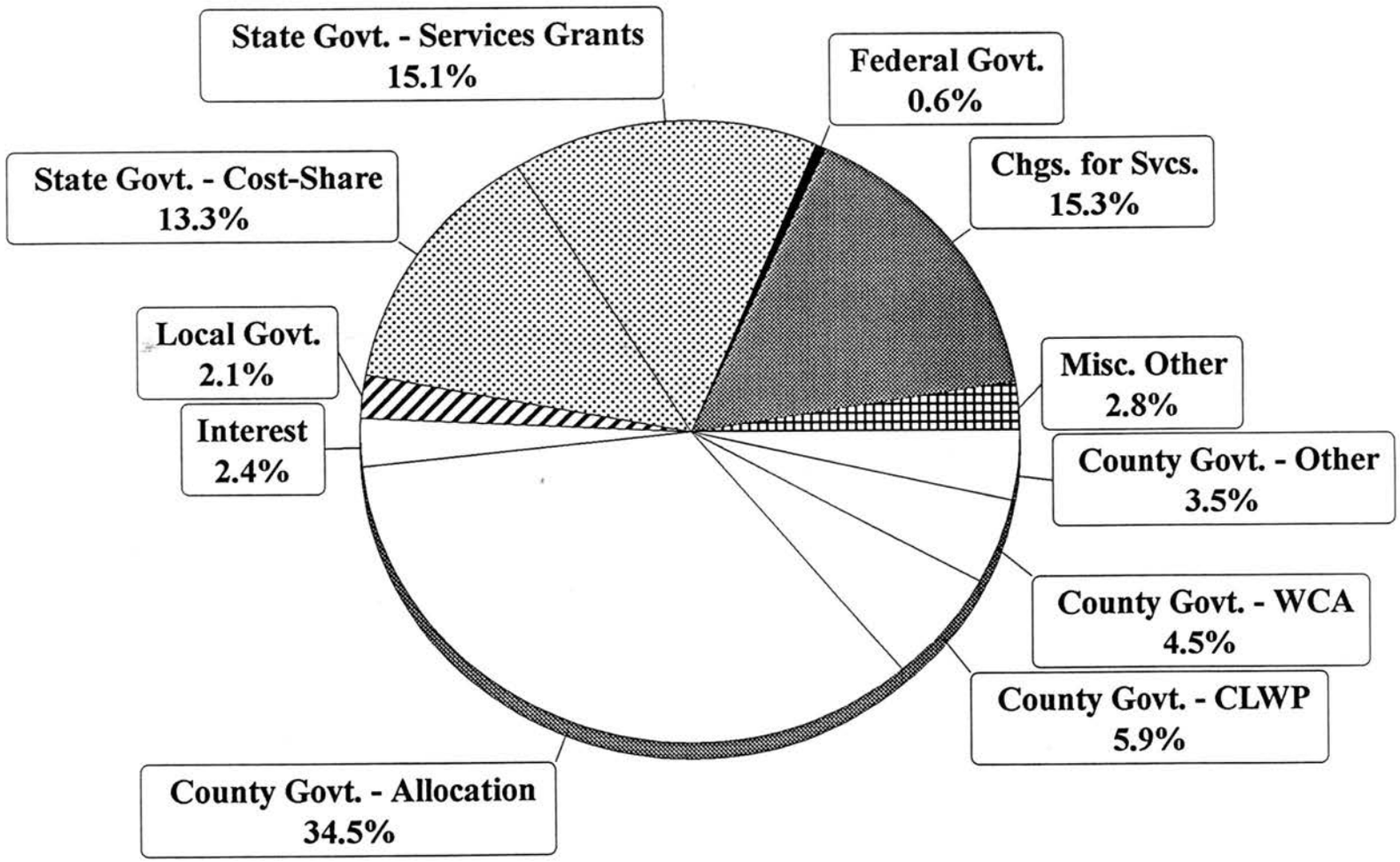
FY 1997



Total Revenues: $18,727,131

SWCD Revenue Sources

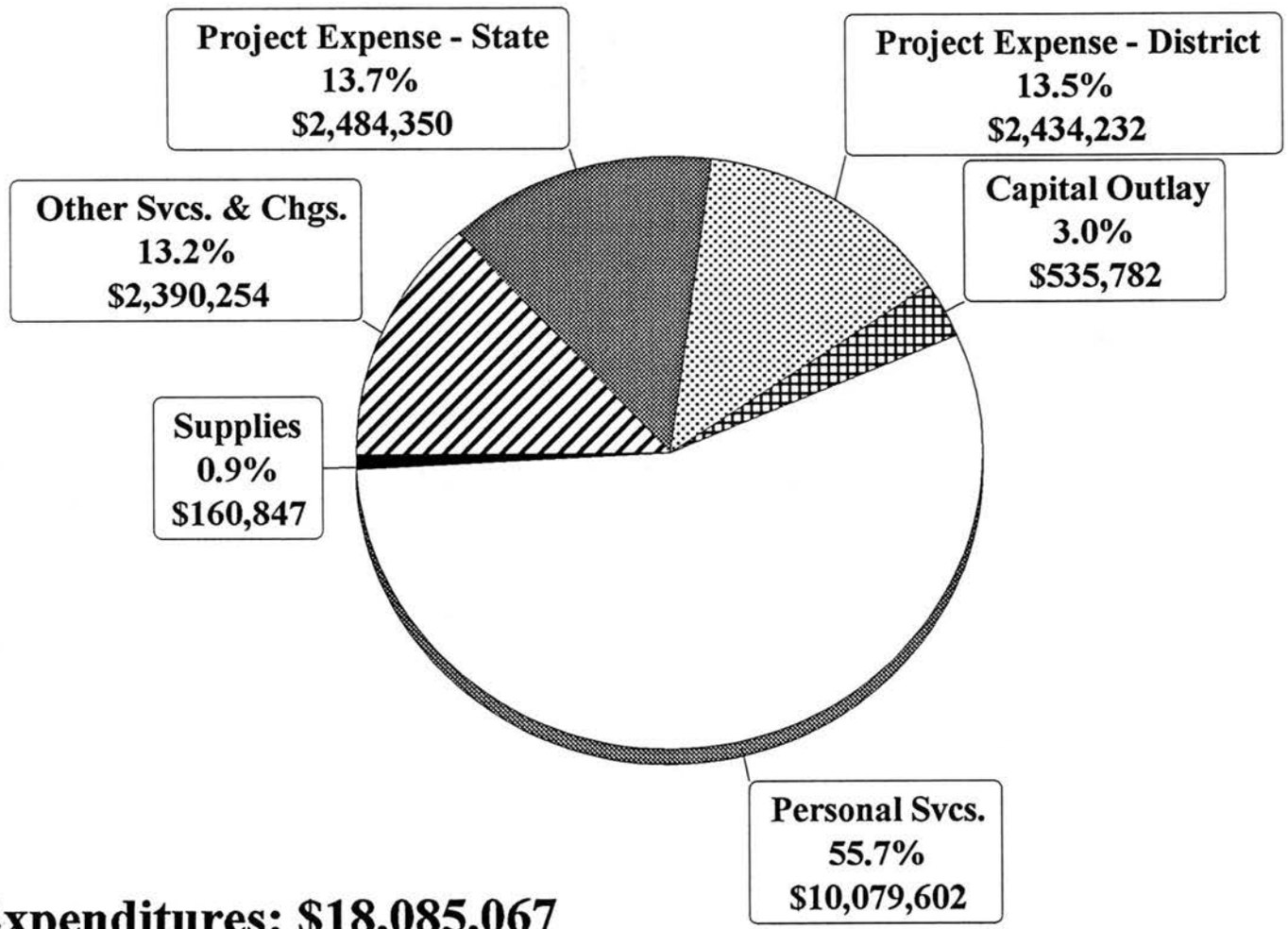
FY 1997



Total Revenues: $18,727,131

SWCD Expenditures

FY 1997



Total Expenditures: $18,085,067

Date sent: **13 May 98 10:30:13 -0500**
From: **wpikal@lfalls.k12.mn.us (Wayne Pikal)**
Subject: **Report to BWSR**
To: **"maryjo.anderson@bwsr.state.mn.u" <maryjo.anderson@bwsr.state.m**
Send reply to: **Wayne Pikal <wpikal@lfalls.k12.mn.us>**

Dear Mary Jo Anderson:
Jane from the MHB gave me your email address and asked me to get in contact with you concerning a report to BWSR on the recommendations that resulted from the 1998 Youth River Monitors Congress held at Camp Ripley on April 29th. Little Falls High School was selected to make the presentation and some of my students will prepare a 20-30 min. report. Three dates were suggested by Jane.....May 27, June 24, and July 22. June 24 will not work for me but May 27 and July 22 are possibilities. One concern with the May 27 date is that it is very close to the end of our school term and things are very hectic--plus we would have to pull students out of class for a day. My first choice would be the July 22 date. Let me know your thoughts.
Wayne

Ron Shelito

LITTLE FALLS RIVER WATCH PROGRAM

"Learning combined with public service"
by W. H. Pikal, LFCHS

BACKGROUND

The Little Falls Community High School began monitoring the water quality of the Mississippi River and local tributaries in the spring of 1991. At that time we were networked with the Midwestern River Project located out of Southern Illinois University Edwardsville (SIUE) in Edwardsville Illinois. In the summer of '91 contact was made with the Director of the Mississippi Headwaters Board River Watch and we began their monitoring program the following spring of 1992.

SITES AND PARAMETERS MONITORED

Three permanent sites located on the main channel of the Mississippi in the Little Falls area are routinely monitored on a monthly basis from April through October. The northern most site at Belle Prairie, is used as a reference site and two downstream locations are monitored to measure impact of the municipality of Little Falls. In addition, two local tributaries are also included in the monthly monitoring, one located north of the city limits, and one located about two miles south. Attempt is made each year to also include a few storm event samplings from the tributaries in order to determine runoff impact from various land use practices.

The water quality parameters measured include the routine tests recommended by the River Watch Network (RWN): dissolved oxygen, pH, nitrate nitrogen, total phosphorus, conductivity, turbidity, and fecal coliform bacteria. All parameters follow the protocol and quality control/assurance procedures recommended by RWN. Biological monitoring of water quality has also been implemented over the past five years. An analysis of benthic macroinvertebrates is done at a minimum of twice a year at the reference site in the Belle Prairie rapids area, downstream at one of the potential impact sites, and at riffle area on the Swan River, one of the local tributaries south of the city limits. In 1997 a bioassay methodology for testing for heavy metals and toxic organics has been tested and currently is in the experimental stage on storm drain discharge and municipal waste water effluent.

HOW OUR DATA IS USED BY THE COMMUNITY AND GOVERNMENTAL AGENCIES

In the early stages of our program, our data was sent to the Mississippi Headwaters Board (MHB) where it became part of their network data bank. Shortly thereafter the local DNR Fisheries became aware of our program and began to receive and utilize our data. In 1994 the Morrison County Water Plan Coordinator and Task Force became very interested in

our program and incorporated our work into their County Water Plan. The past four years has seen a close partnership develop between the LF River Watch and the County Water Plan. They have commissioned several water quality investigations on local impact areas and each year has seen growth in our partnership and program.

PROGRAM IMPLEMENTATION IN THE SCHOOLS

Since 1991 the River Watch Program has been part of two curriculum offerings at the Little Falls Community High School. The fall program is part of Aquatic Biology, a single trimester elective biology course for juniors and seniors. The spring monitoring is done by students enrolled in Community Environmental Involvement, a three credit interdisciplinary program involving elective choices of science, social studies, and English. The summer monitoring consists of interested selected students who are hired on a hourly part time basis.

Funding for the program comes from a variety of community resources. Since the program is part of the academic curriculum, the cost of expendable supplies, and instructional costs used for training is covered by the school district science budget. Additional costs for operation, such as reagents used for monitoring, salaries for students and teacher during the summer is covered by the county water plan, local community organizations, and recently the Sullivan Lake Association. The initial cost of equipment used for the program was paid for by the MHB via a grant from the Blandin Foundation.

Recently an attempt has been made in the K-12 curriculum to introduce the concept of water quality monitoring in the mid-primary grades. Using simplified technology many of the parameters measured by River Watch can be introduced to elementary students. The collection of invertebrates from local tributaries is particularly suitable for elementary involvement and can serve as a means of cross age interaction with elementary and high school students. This project is still in the early developmental stage in Little Falls and time will be needed to assess how well it will work. It is hoped that this will lead to increased interest in the River Watch Program when these students reach high school age.

PLANS FOR THE FUTURE

The program has received a lot of positive publicity over the past seven years and the scope and number of monitoring projects has steadily grown. Recently, several lake associations from Morrison County have expressed interest in having water quality monitoring done on their lakes. During the summer of 1997 the Sullivan Lake Association funded a study on inlets to their lake. The results provided important information for developing Best Management Practices along the perimeter of the lake. It is anticipated that future years will see similar interest and projects on other lakes within Morrison County.

Because of the close association with the Morrison County Water Plan there is an unlimited number of projects which could be considered. In depth short term studies on tributaries from origin to confluence with the Mississippi, monitoring of wetlands within the county, ground water analysis, suspected point source pollution discharges, etc. are all potential projects which are under consideration.

1998 YOUTH RIVER MONITORS CONGRESS

On April 29, 1998 the second annual Youth River Monitors Congress was held at Camp Ripley, Minnesota. There was an excellent turnout and those in charge of the program as well as those participating were well pleased with the event. One of the main objectives of the Congress was to allow selected students from each drainage basin an opportunity to present the results of their water quality monitoring from the 1997 testing season. Not all seven basins were represented, however, reports were made by representatives from Lake Superior, Red River Valley, Minnesota, Lower Mississippi, and two from the Upper Mississippi drainage basins.
This document will focus on the Upper Mississippi report that represents data from participating schools in the eight counties in the Mississippi Headwaters region. Other documents will be presented which cover data from the other drainage basins.

This report consists of three components: 1. data and analysis from seven schools in the MHB region on the parameters of dissolved oxygen, nitrate nitrogen, total phosphorus, turbidity, and fecal coliform bacteria. 2. data and analysis from a study done on storm drains and municipal waste water effluent in the Little Falls area. 3. a report on an impacted tributary(Swan River) of the Mississippi in the Little Falls area.

There is a lot of diversity in the programs of the seven schools that this data represents. Bagley, Aitkin, and Little Falls have been with the MHB River Watch program almost since it began in 1991. Others such as Hill City and MacGregor are newer participants. The values graphed represent the mean values for each of the parameters selected from each of the test sites monitored. Most of these are main channel Mississippi sites, however, some represent tributaries. The Little Falls data is an average of two main channel Mississippi sites, one north and one south of the community.

DATA ANALYSIS (see spreadsheet 1)

The five parameters, dissolved oxygen, nitrate nitrogen, total phosphorus, turbidity, and fecal coliform bacteria, were selected because of their significance to the MPCA standards for the classification of this portion of the Mississippi. Mean values for these parameters are all compliant with the defined standards. It should be noted that the two major nutrients, nitrogen and phosphorus, which are major causes of cultural eutrophication are not effectively regulated by the defined standards. Less than 10 mg/l of nitrate nitrogen would be 25 X the ecoregion norms of much of the Upper Mississippi Basin. Phosphorus discharge is not even regulated.

For data analysis most River Watch programs are using the 75th percentile of the MPCA STORET data bank (1975-1990) for least impacted streams in their respective ecoregions. It is our understanding that this is (at least at this time) the best way to analyze data to determine impaction. Six of the seven data sources are from the Northern Lakes and Forests (NLF) ecoregion and the Little Falls data represents the northern tip of the North Central Hardwood Forests (NCHF).

NITRATE-N (see graph)

Mean values for the test sites at Bagley, Deer River, and Hill City are either at, or below, the NLF ecoregion norms. A spike occurs at MacGregor (.95 mg/l) and nitrogen levels continue elevated above NFL norms at Aitkin and Brainerd. At Little Falls the means are similar to Aitkin and Brainerd and at the norms for the NCHF ecoregion. This data suggests that the southern portion of the Headwaters Region is somewhat nitrogen impacted and probably a result of non point source run off from agricultural practices, and discharge from municipal waste water effluent. To our knowledge, most waste water treatment facilities within this area are not regulated on the amount of nitrogen they discharge.

TOTAL PHOSPHORUS (see graph)

Surprisingly, the highest mean concentrations occur at Bagley. This is is due to two downstream sites from the Itasca outflow. Data from previous years is similar. What is causing this is not known to us at this time. The remainder of the test sites show phosphorus levels at, or below, their respective ecoregion norms. It is interesting to note that the phosphorus levels at Little Falls are far below the NCHF norm of .17 mg/l. Phosphorus, like nitrogen, is discharged by municipal waste water plants and not regulated along this portion of the Mississippi.

DISSOLVED OXYGEN

Mean values for dissolved oxygen are well above the 5 mg/l minimum standard set for warm water fisheries classification. Ecoregion norms for dissolved oxygen are not available so a comparison similar to the other parameters is not possible. Brainerd did have one sampling which fell slightly below the 5 mg/l minimum (French Rapids site), however the mean values were well above. Data analysis suggests that dissolved oxygen levels are suitable for the fisheries that are native to the upper Mississippi River.

TURBIDITY

Turbidity levels from Bagley to Hill City are below the NLF norms. Hill City did not have turbidity data available. Brainerd had a spike considerably above the NLF norm, and it decreased downstream at Little Falls. Turbidity is correlated to the velocity of current and can reflect bank erosion and agricultural run off. All of the mean data are well below the 25 NTU maximum set for the river classification for this portion of the Mississippi.

FECAL COLIFORM BACTERIA

The river classification mandates that the waters be suitable for recreational purposes which includes swimming. This calls for the water to contain less than 200 colonies per 100 ml of water of fecal coliform bacteria. The mean values for all test sites are well below the 200 colony level.

In Little Falls there is considerable concern over the fecal coliform levels at locations south (downstream) of the city limits. This portion of the river is a reservoir and has considerable body contact recreational use. River Watch data over the past

nine years has indicated severely impacted water from a tributary (Swan River) and this will be presented in another separate report. We also have learned that the municipal waste water plant is regulated for fecal coliform discharge based upon the geometric monthly mean. This statistical method of reporting allows for periodic levels of discharge far in the excess of the 200 colonies/100 ml considered safe for body contact. Over the years there have been a number of times where the Mississippi River has been unsafe for the recreational uses mandated.

RECOMMENDATIONS:

1. The nitrate nitrogen levels at MacGregor, and the phosphorus levels at Bagley should be monitored closely to try to determine cause and effect.

2. Analysis of waste water effluent and storm drain discharge in the Little Falls area has indicated very high levels of phosphorus, nitrogen, and in some instances, coliform bacteria. Other River Watch programs should be encouraged to investigate similar effluent.

3. More data is needed from other schools participating in the River Watch Program. Data from tributaries leading into the Mississippi is of particular importance. A consistent system of reporting needs to be developed which would make all data available to interested parties.

4. Many participating schools are also involved with biological monitoring activities. Reporting data from Benthic Macroinvertebrate Analysis programs need to be standardized and made available.

5. Funding for a permanent annual Student River Monitors Congress needs to be found so that this Congress can continue for years to come.

Communities with River Watch Projects

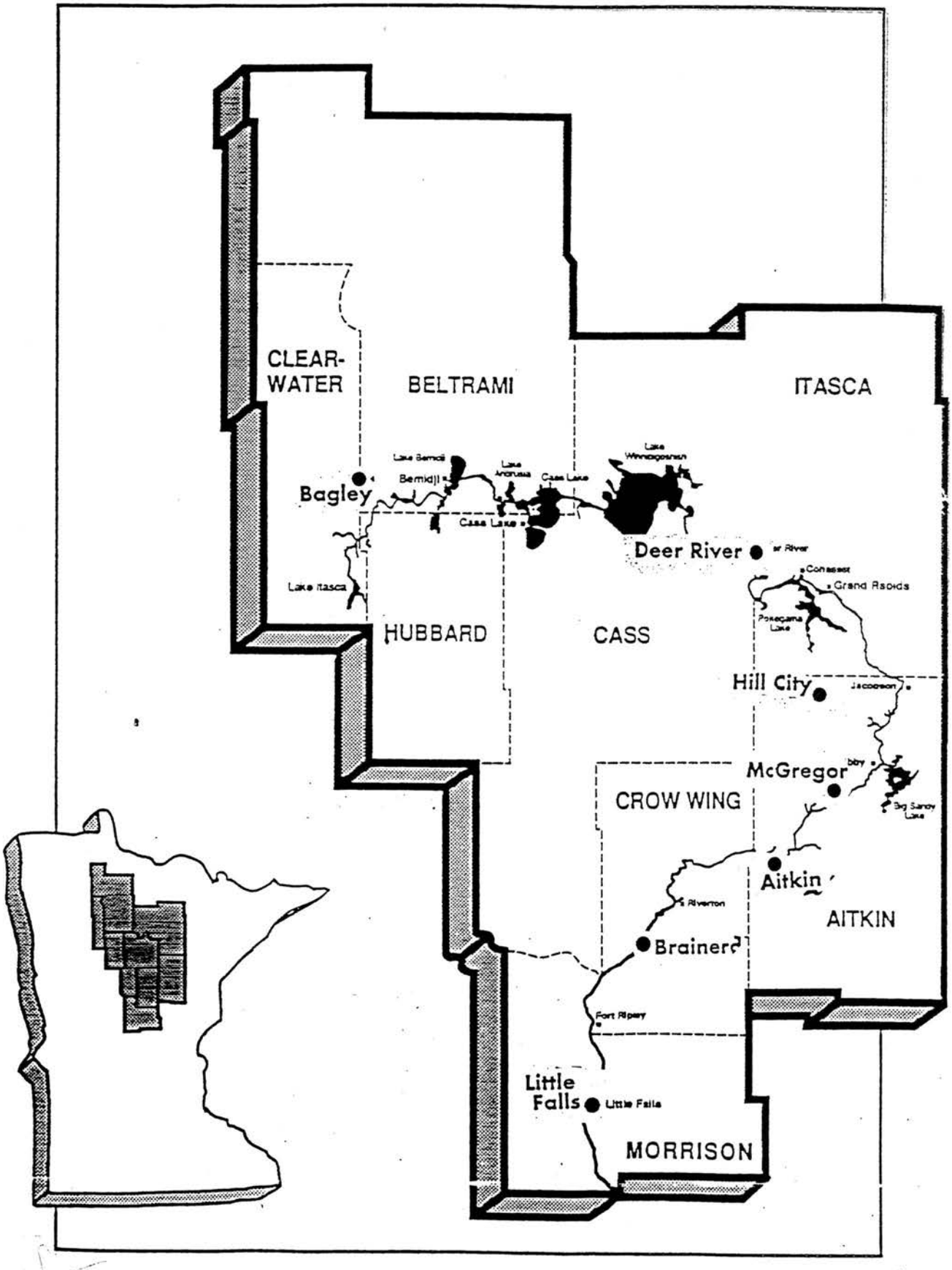


DRAINAGE BASINS

1 Rainy River
2 Red River Valley
3 Lake Superior
4 Upper Mississippi
5 St. Croix
6 Minnesota
7 Lower Mississippi
8 Missouri
9 Des Moines

MISSISSIPPI HEADWATERS BOARD

Counties in Minnesota



RIVER CLASSIFICATION AND WATER QUALITY STANDARDS MPCA

Bagley to Deer River: 2b3b-4ab5,6 Little Falls: 1,2b3b-4ab5,6

CLASS 1: WATER IS SUITABLE FOR DOMESTIC CONSUMPTION WITH STANDARD TREATMENT PROCEDURES

*Nitrate Nitrogen levels less than 10 mg/l

CLASS 2: FISHERIES AND RECREATION:

*Dissoved oxygen >5 mg/l
*Fecal coliform < 200 colonies/100ml (geometric mean)
*pH 6.5--8.5
*Turbidity < 25 NYU
*Temperature not to exceed daily average of 86°F

CLASS 3: WATER IS SUITABLE FOR MOST INDUSTRIAL PURPOSES, EXCEPT FOOD PROCESSING, WITH A MODERATE DEGREE OF TREATMENT.

CLASS 4: AGRICULTURE AND WILDLIFE: SUITABLE FOR IRRIGATION OF CROPS, AND CONSUMPTION BY LIVESTOCK AND WILDLIFE

*pH 6.0--8.5
*Conductivity < 1,000 umhos

CLASS 5: SUITABLE FOR AESTHETIC ENJOYMENT AND NAVIGATION

CLASS 6: SUITABLE FOR OTHER USES YET TO BE DETERMINED

FOR WATERS WITH MULTIPLE CLASSIFICATION, THE MOST RESTRICTIVE STANDARDS APPLY

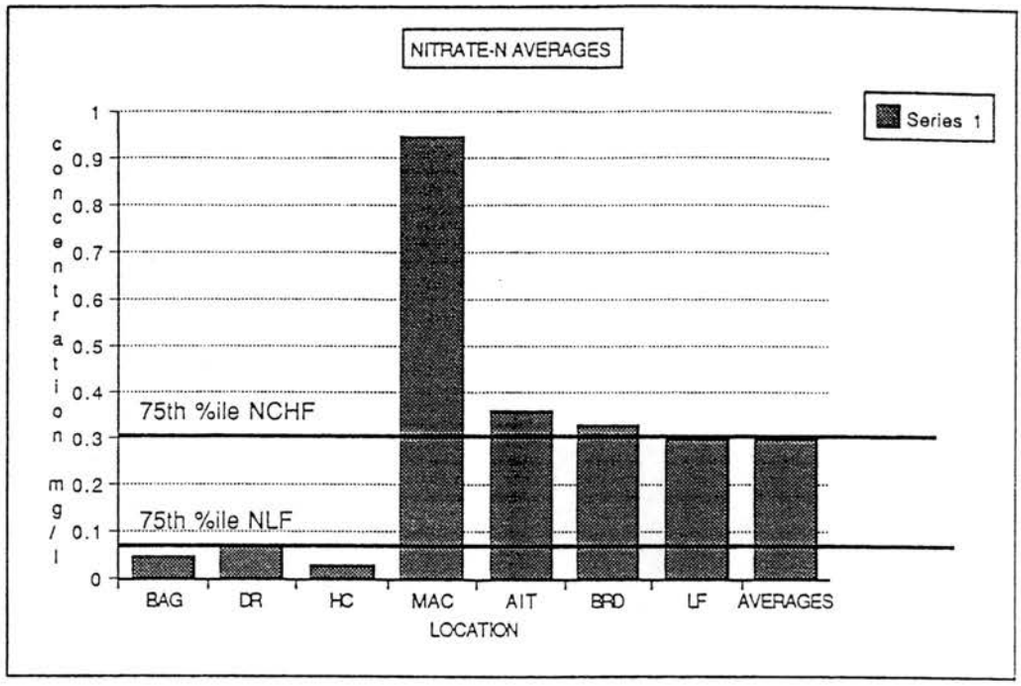
SUMMARY OF STANDARDS

CONDUCTIVITY < 1000 umhos
DISSOLVED OXYGEN > 5mg/l
FECAL COLIFORM BACTERIA < 200 colonies/100ml (geometric monthly mean, March 1 to October 31)
pH 6.5--8.5
TURBIDITY < 25 NTU
NITRATE NITROGEN < 10 mg/l

MEAN VALUES FOR SELECTED WATER QUALITY PARAMETERS
1997 TESTING SEASON
UPPER MISSISSIPPI BASIN by LFCHS, April 1998

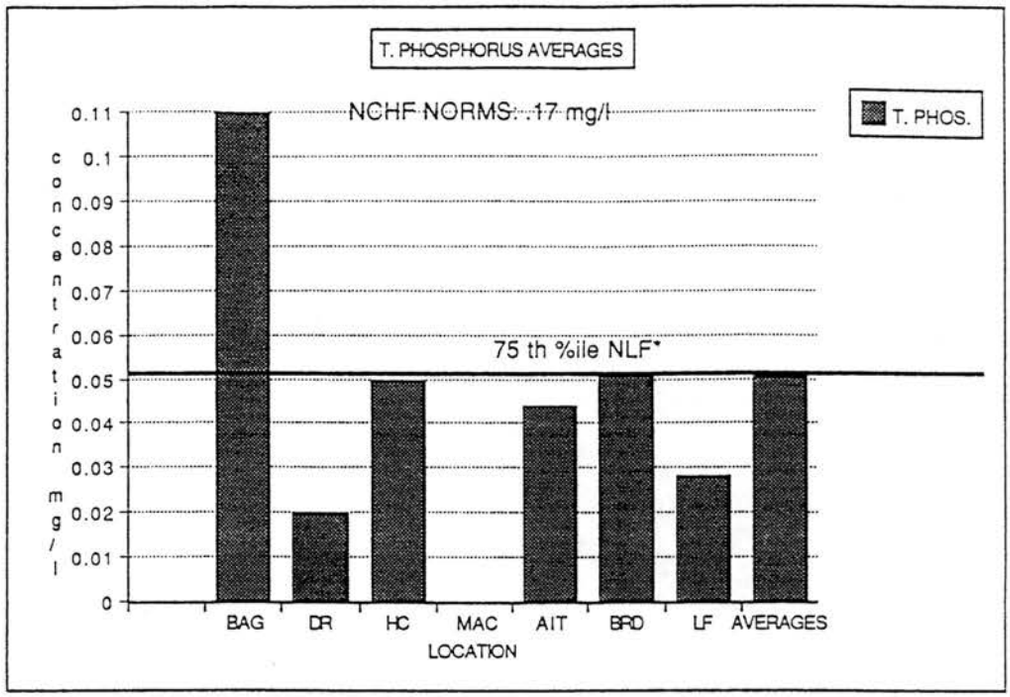
LOCATION	DISSOLVED OXYGEN mg/l	NITRATE-N mg/l	T. PHOS. mg/l	TURBIDITY NTU	F.COLI. col/100ml
BAGLEY	7.66	.05	.11	4	42*
DEER RIVER	7.4	.07	.02	2.7	7
AITKIN	7.4	.36	.04	6.7	60
HILL CITY	8.2	.03	.05	3.2	4
MACGREGOR	7.1	.95	NA	NA	NA
BRAINERD	6.1	.33	.05	9.6	17
LITTLE FALLS	9.2	.3	.028	4.9	55**
MEAN	7.58	.3	.051	5.2	32

*CONTAINS 4 SAMPLES REPORTED AT >140
**CONTAINS 2 SAMPLES REPORTED AS TNTC--GRAPHED AT 200



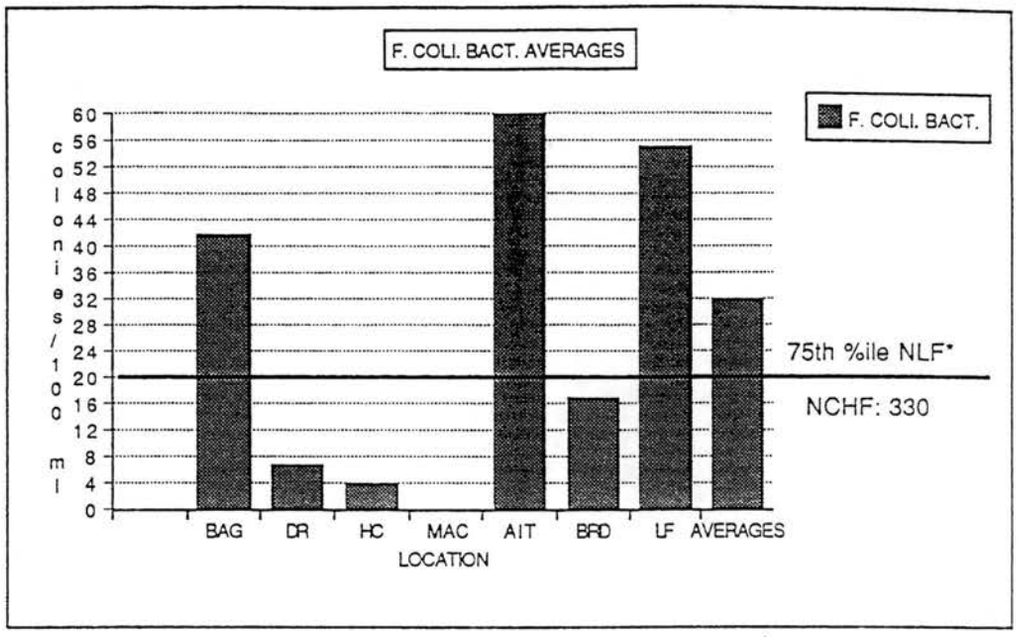
*ECOREGION NORMS

BAG: BAGLEY DR: DEER RIVER HC: HILL CITY MAC: MACGREGOR AIT: AITKIN
BRD: BRAINERD LF: LITTLE FALLS



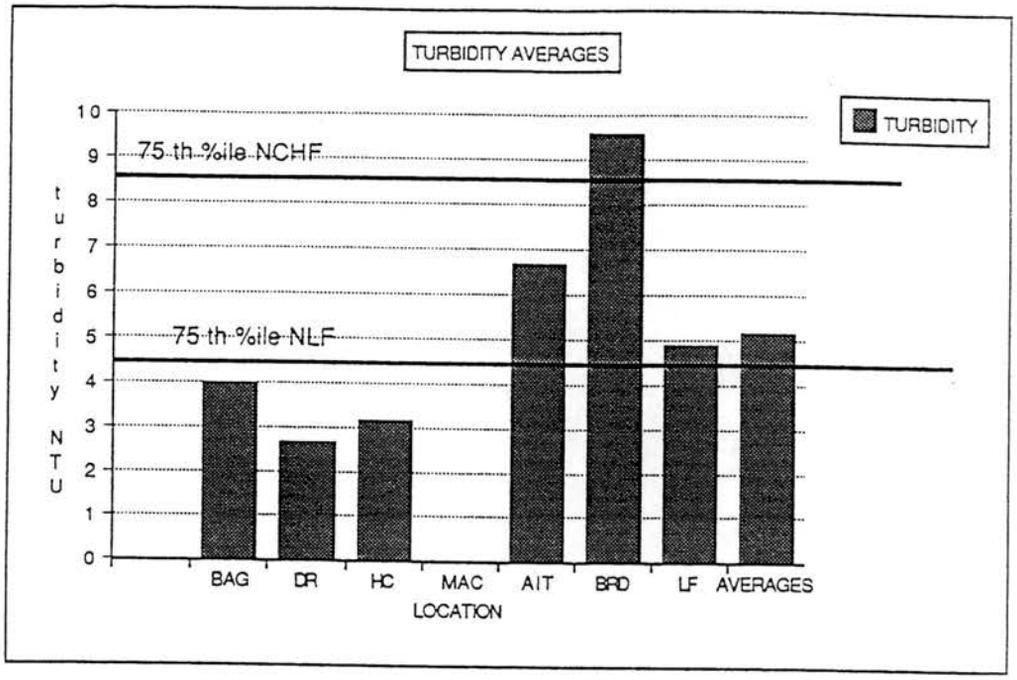
*ECOREGION NORMS

BAG: BAGLEY DR: DEER RIVER HC: HILL CITY MAC: MACGREGOR AIT: AITKIN
BRD: BRAINERD LF: LITTLE FALLS



*ECOREGION NORMS

BAG: BAGLEY DR: DEER RIVER HC: HILL CITY MAC: MACGREGOR AIT: AITKIN
BRD: BRAINERD LF: LITTLE FALLS



BAG: BAGLEY DR: DEER RIVER HC: HILL CITY MAC: MACGREGOR AIT:AITKIN
BRD: BRAINERD LF: LITTLE FALLS

River Watch Monitoring Plan:
Vermillion River
April 1998

1. Why are we monitoring?

Goal: Utilize volunteers working in partnership with the Vermillion River Watershed Management Organization and communities in the watershed to determine the health of the river and its tributaries and to identify or implement stewardship activities to protect and enhance the river. This goal includes:

- Building awareness and appreciation of the Vermillion River and its ecology.
- Establishing baseline water quality data.
- Investigating effects of specific land uses on water quality in the Vermillion River.

2. Who will use the monitoring data?

Vermillion River Management Organization
Dakota County
Communities in the watershed
Schools in the watershed
Metropolitan Council
Minnesota Pollution Control Agency
Minnesota Department of Natural Resources

3. How will the data be used?

To work in partnership with the Vermillion River Watershed Management Organization, communities in the watershed, and Dakota County to evaluate the current function and status of the river and participate in reaching long-range goals for the river.

4. What parameters or conditions will be monitored?

Physical habitat assessment (two times per year, spring and fall)

Chemical indicators: Air and Water Temperature; Conductivity; pH; Turbidity; Dissolved Oxygen; Total Phosphorus; Nitrate Nitrogen; Fecal Coliform

Biological indicators: organism density per sample; total family richness; EPT Family Richness; % composition major groups; % major affinity (Level 1 analysis)

5. How good does the monitoring data need to be?

Meet requirements of MPCA/River Watch for Clean Water Act 305B attainment reporting. Data reported should be accurate, precise, complete, representative and comparable. (See River Monitors Manual, pp. 41-49, attached)

6. What methods should be used?

Physical Measures of Water Quality

Conductivity

Hach Portable Conductivity Meter, Model 44600
Calibration will be checked with two conductivity standards, 800 and 1900 uS/cm, Standard Methods, 17 ed, Method #2510A.

Temperature

Conductivity meter, pH meter or armored thermometer can be used for measurement. Measure air and water temperature in Celsius.

Turbidity

Hach Turbidimeter Model 16800, with supplied permanent standards.
Hach Turbidimeter 2100, with supplied permanent standards.

Chemical Measures of Water Quality

Dissolved Oxygen

Hach Dissolved Oxygen Kit # 20613-00
Modified Winkler titration using Hach digital titrator

pH

Hach One Portable pH Meter
Standardize for each sample set against pH 4, and pH 10 buffers and check the calibration with the pH 7 buffer, discarding buffer after one use.
Results will be recorded in the quality assurance lab book.

Nitrate/Nitrite
Hach DR200 Method #22451-00, Cadmium Reduction.
Calibration check before each use with standards prepared from Standard Methods, 17 ed, method #4500E.

Total Phosphorus
EPA method 365.2, persulfate digestion followed by neutralization to phenolphthalein end point with 1N NaOH, colorized by the ascorbic acid method, and read on the Hach DR2000 spectrophotometer calibrated for the EPA low limit technique.

Biological Measures of Water Quality
Fecal coliform bacteria
Standard Methods, 17 ed, Method #9222A, 9222D, and 9222E.
Sample container, 6 oz Whirl Pack
Time limit for field sample, 6 hours from sampling to the bath.
Greater than 6 hours requires field filtration and M-VFC holding medium.

7. Where are the monitoring sites?

Hastings: west of Hwy. 61, Con Agra site, by Hastings HS
Vermillion: near Dakota County Alternative Learning Center
Empire (Met Council site): above and below wastewater treatment plant
Lakeville: site to be determined by city and DNR
Dakota County Fairground: site on the South Branch, school to be determined
Farmington: riffle site west of town
North Branch: site to be determined, school to be determined
Eureka Township: NE corner

8. When will monitoring occur?

Physical parameters (channel, flow, hydrology, climate, vegetation, soil and land use): one time per year

Chemical analysis: six times per year, every 2-3 weeks in summer

Biological diversity analysis: two times per year

9. How will monitoring data be managed and presented?

The enclosed three-diskette sets provides a MS Excel spreadsheet which can be sent as an attachment to Rivers Council of Minnesota.

Instructions for using this set are:

1. Start the program (look for the faucet icon on your Windows 95 Start menu)

2. Enter values for the date, monitor _id, river name and person submitting report (check with regional program manager for monitor _id).

3. In the row of the data sheet with the * in the left gray area, enter values for each test.

4. Hints:

- The end key moves the cursor to the end of the current row.
- The home key moves the cursor to the end of the current row.
- The scroll bar moves the cells to the right/left or up/down with a click in the gray area of the scroll bar. You may also press the button in the scroll bar and slide it toward either end.

5. If you enter invalid data in a row, you can't leave or delete that row until it has valid data in all cells.
6. Press enter on last column to get to a new row and start at the first column.
7. Use the envelope icon or the File menu to create an email message and attach the spreadsheet.
8. Send the email message.

10. How will you ensure that the data are credible?

Vermillion River Watch Quality Assurance Plan will be prepared and attached.

Quality Assurance/ Quality Control for Vermillion River Watch Project

(Reference: The Volunteer Monitor's Guide to Quality Assurance Project Plans, U.S. Environmental Protection Agency (Document No. 841-B-96-003) September 1996)

The heart of a solid monitoring program is its quality assurance. All River Watch monitoring programs should have a quality assurance project plan. This plan will help both the user of the data be confident that the collected data meets their needs and that the quality control steps needed to verify results are built into the project.

In natural systems such as steams, lakes, estuaries, and wetlands, variability is a fact of life. Changes in temperature, flow, sunlight, and many other factors affect these systems and the animals that inhabit them. Variability also occurs when we attempt to monitor such systems. Each of us reads, measures and interprets differently; we may also apply different levels of efforts in how we monitor. The equipment we use may be contaminated, broken or incorrectly calibrated. These and many other differences can lead to variability in monitoring results. Measures of precision, accuracy, representativeness, completeness, comparability and sensitivity help us evaluate sources of variability and error and thereby increase confidence in our data.

A Quality Assurance Project Plan demonstrates that the data gathered through your program is:

Consistent over time and within projects and group members;

Collected and analyzed using standardized and acceptable techniques;

Comparable to data collected in other assessments using the same methods.

The U.S. EPA recommends the following steps be followed in developing a Quality Assurance Project Plan:

Establish a small team to serve as advisors in development of your QAPP by offering feedback and guidance throughout the project.

Who should be on the team: trained professionals with experience in analytical chemistry or field biology; such as the Minnesota Pollution Control Agency, Minnesota Department of Natural Resources, U.S. Fish and Wildlife Service, or the faculty of the local college or university.

Determine the goals and objectives of your project: why it is needed, who will use the data and how the data will be used.

The three basic goals of data gathering each benefit from quality assurance:

Awareness and education about river health: Quality assurance methods for data designed to build awareness of rivers includes training of participants and documentation of field work.

Baseline of water quality information: Quality assurance methods for data collected to build a baseline of water quality information require training, documentation of procedures in the field and in the lab, and demonstrates the accuracy and precision of analytical procedures. Ideally, this data can be compared from location to location.

Analyzing water quality questions: Quality assurance methods for data collected to analyze water quality questions, such as the impact of a waste water discharge on a community, or how well best management practices are reducing nutrients or sediments, requires training, documentation, accuracy, precision, and should be representative of conditions and be comparable between projects.

Collect background information to help you in designing your project and refine your project based on information you collect.

Background information means who is monitoring the chosen river or stream and why; who uses the river and why, and how your program fits into current monitoring and river uses. The U.S. EPA recommends that a watershed survey be the foundation of your monitoring, and quality assurance program ***(Testing the Waters Manual, pages 64-76 describes this survey, provides instruction on conducting the survey and includes classroom procedures for introducing the concept).***

Design your project's sampling, analytical and data requirements.

The Quality Assurance Project Team should consider the following questions:

What parameters or conditions will you monitor, and which are most important to your needs? Which are of secondary importance?

How good does your monitoring data have to be?

How will you pick your sampling sites, and how will you identify them over time?

What methods or protocols will you use for sampling and analyzing samples?

When will you conduct the monitoring?

How will you manage your data and ensure your data are credible?

Develop an implementation plan.

The implementation plan answers these questions:

- Who will train the volunteers?
- Who will manage the data?
- Who will generate reports?
- Who will assure lab and field quality?
- Who will collect samples?
- Who will analyze?
- When will samples be taken?
- Where will samples be taken?

Draft your standard operating procedures and QAPP, solicit comment and revise as necessary.

Quality Assurance Glossary:

Quality assurance (QA) refers to the overall management system which includes the organization, planning, data collection, quality control, documentation, evaluation and reporting activities of your group. QA provides the information you need to ascertain the quality of your data and whether it meets the requirements of your project. QA ensures that your data will meet defined standards of quality with a state level of confidence.

Quality control (QC) refers to the routine technical activities whose purpose is, essentially, error control. Since errors can occur in either the filed, the laboratory or the office, QC must be part of each of these functions. QC should include both internal and external measures.

Internal Quality Control is a set of measures that the project undertakes among its own samplers and within its own lab to identify and correct analytical errors. Examples include lab analyst training and certification, proper equipment calibration and documentation, laboratory analysis of samples within known concentrations or repeated analysis of the same sample, and collection and analysis of multiple samples from the field.

External Quality Control is a set of measures that involves laboratories and people outside of the program. These measures include performance audits by outside personnel, collection of samples by people outside of the program from a few of the same sites at the same time as the volunteers, and splitting some of the samples for analysis at another lab.

Precision is the degree of agreement among repeated measurements of the same characteristic on the same sample or on separate samples collected as close as possible in time and place. It tells you how consistent and reproducible your field or laboratory methods are by showing you how close your measurements are to each other. It does not mean that the sample results actually reflect the "true" value, but rather that your sampling and analysis are giving consistent results under similar conditions.

Typically, precision is monitored through the use of replicate samples, which is two or more samples taken from the same place at the same time.

When you have many replicate samples, determine precision by calculating the standard deviation(s) of the samples. The standard deviation indicates the range of variation in the measurements you have taken. Many calculators perform the standard deviation calculation.

The relative standard deviation (RSD), or coefficient of variation, expresses the standard deviation as a percentage. This is generally easier to understand. The smaller the relative standard deviation (or standard deviation), the more precise your measurements.

When you have only two replicate samples, determine precision by calculating the relative percent difference (RPD) of the two samples. Again, the smaller the relative percent different, the more precision your measurements.

Accuracy is a measure of the confidence in a measurement. The smaller the difference between the measurement of a parameter and its "true" or expected value, the more accurate the measurement. The more precise or reproducible the result, the more reliable or accurate the result.

Measurement accuracy can be determined by comparing a sample that has a known value, such as a standard reference material or a performance evaluation sample, to a volunteer measurements of that sample. Accuracy is equal to average value minus true value. For example, a monitoring team recorded the following 12 pH values when measuring a pH standard buffer solution of 7.0 units:

7.5	7.2	6.5	7.0
7.4	6.8	7.2	7.4
6.7	7.3	6.8	7.2

The average of these measurements is equal to 7.08 units. Since we know that the reference or "true" value is 7.0 units, the difference between the average pH value is off or biased by +0.08 units. This level of accuracy is satisfactory for the data quality objectives of the project.

If you are concerned that other components of a sample matrix (e.g. soil or sludge) may be interfering with analysis of a parameter, one way to measure accuracy is to add a known concentration of the parameter to a portion of the sample. This is called a spiked sample. The difference between the original measurement of the parameter and the measurement of the spiked sample should be equal (or close to) the added amount. The difference indicates your ability to obtain an accurate measurement.

Note: No standard reference or performance evaluation samples exist for macroinvertebrate sampling. It might be possible to use the trainer's results to compare the volunteer's results.

If you are monitoring biological conditions by collecting and identifying specimens, maintaining a voucher collection is a good way to determine if your identification procedures are accurate. The voucher collection is a preserved archive of the organisms your volunteers have collected and identified. An expert taxonomist can then provide a "true" value by checking the identification in the voucher collection.

It is important to note that the relationship between a voucher collection and accurate identification cannot be expressed numerically in your QAPP. Rather, the QAPP document should indicate that you have a voucher collection and describe how it is used to evaluate consistent accurate identification in your program.

Representativeness is the extent to which measurements actually depict the true environmental condition or population you are evaluating. A number of factors may affect the representativeness of your data. For instance, are your sampling locations indicative of the waterbody? Data collected just below a pipe

outfall is not representative of an entire stream. Minimizing the effects of variation is critical in the development of your sampling design.

Completeness is a measure of the number of samples you must take to be able to use the information, as compared to the number of samples you originally planned to take. Since there are many reasons why your volunteers may not collect as many samples as planned, as a general rule you should try to take more samples than you actually need. This issue should be discussed within your QAPP team and by peer reviewers before field activities begin.

To calculate percent completeness, divide the number of measurements that have been judged valid by the total number of measurements you originally planned to take and then multiply by 100.

Remember, completeness requirements can be lowered if extra samples are factored into the project. The extra samples, in turn, increase the likelihood of more representative data.

Comparability is the extent to which data from one study can be compared directly to either past data from the current project or data from another study. For example, you may wish to compare two seasons of summer data from your project or compare your summer data set to one collected 10 years ago by state biologists.

Using standardized sampling and analytical methods, units of reporting, and site selection procedures helps ensure comparability. However, it is important to keep in mind that some types of monitoring rely heavily on best professional judgment and that standard methods may not always exist.

Detection limit is a term applied to monitoring and analytical instruments as well as methods. In general, detection limit is defined as the lowest concentration of a given pollutant your methods or equipment can detect and report as greater than zero. Readings that fall below the detection limit are too unreliable to use in your data set. Furthermore, as readings approach the detection limit (that is, as they go from higher, easier to detect concentrations to lower, harder to detect concentrations) they become less and less reliable. Manufacturers generally provide detection limit information with high-grade monitoring equipment such as meters.

Quality Control samples helps you identify when and how contamination of samples may occur. Contamination is a common source of error in both sampling and analytical procedures. For most projects, there is no set number of field or laboratory QC samples which must be taken. The general rule is that 10 percent of samples should be QC samples. This means that if 20 samples are collected, at least one additional sample must be added as a QC sample. The laboratory must also run its own QC samples. For a new monitoring project or for a new analytical procedure, it is a good idea to increase the number of QC samples (up to 20 percent) until you have full confidence in the procedures you are using.

When the project is over, determine data quality by evaluating the results of all the QC samples and determining precision and accuracy. For QC samples that are not blind to the lab, require the lab to calculate and report precision and accuracy results. Lab reported precision and accuracy results can then be checked during data validation.

The decision to accept data, reject it, or accept only a portion of it should be made after analysis of all QC data. Various types of QC samples are:

A **field blank** is a "clean" sample, produced in the field, used to detect analytical problems during the whole process (sampling, transport, lab analysis). To create a field blank, take a clean sampling container filled with distilled or deionized water to the sampling site. Other sampling containers will be filled with water from the site. Except for the type of water in them, the field blank, and all site samples should be handled and treated in the same way. For example, anything you add to the sample should be added to the field blank, such as preparing the sample with reagents for analyzing dissolved oxygen, or adding preservative. When the field blank is analyzed, it should read as analyte-free or, at a minimum, the reading should be a factor of 5 below all sample results.

A **split sample** is one sample that is divided equally into two or more sample containers and then analyzed by different analysts or labs. Split samples are used to measure precision. Samples should be thoroughly mixed before they are divided. Large errors can occur if the analyte is not equally distributed into the two containers. A sample can be split in the field, called a field split, or in the laboratory, a lab split. The lab split measures analytical precision while the field split measures both analytical and field sampling precision. In addition, a sample split in the field and submitted to the laboratory without informing the laboratory represents a blind sample. Split samples can also be submitted to two different laboratories for analysis to measure the variability in results between the two labs using the same procedures.

Replicate samples are obtained when two or more samples are taken from the same site, at the same time, using the same method, and independently analyzed in the same manner. When only two samples are taken, they are referred to as duplicate samples. These types of samples are representative of the same environmental conditions. Replicates (or duplicates) can be used to detect both the natural variability in the environment and that caused by field sampling methods.

Spiked samples are samples to which a known concentration of the analyte of interest has been added. Spiked samples are used to measure accuracy. If this is done in the field, the results reflect the effects of preservation, shipping, laboratory preparation, and analysis. If done in the laboratory, they reflect the effects of the analysis from the point when the compound is added, e.g., just prior to the measurement step. Percent recovery of the spike material is used to calculate analytical accuracy.

How to Calculate Percent Completeness:

For example, the Volunteer Creek Monitoring project planned to collect 20 samples, but because of volunteer illness and a severe storm, only 17 samples were actually collected. Furthermore, of these, two samples were judged invalid because too much time elapsed between sample collection and lab analysis. Thus, of the 20 samples planned, only 15 were judged valid.

The following formula is used to determine **Percent Completeness**:

$\%C = v/T \times 100$

where v = the number of planned measurements judged valid and
T = the total number of measurements.

In this example, v = 15 and T = 20. In this case, percent completeness would be 75 percent. Is this enough information to be useful?

General Considerations

Samples are collected either as grab samples or by the use of a collector similar to the MPCA river sampler. Sample collection method is noted on the data summary sheet for recording sampling results. Samples will then be fixed and sealed on site and transported on ice in a cooler to the laboratory for analysis.

Site selection for field blanks, duplicates, and spikes will be random based on a method adopted by the specific group conducting monitoring. Record the method by which these are selected on the data summary sheet.

Standard: Any known concentration or value for a parameter being tested. Standards are provided for high and low ranges for pH, conductivity, turbidity, (each tested using electronic meters), and nitrate nitrogen and total phosphorus, testing using a spectrophotometer.

Field Sample: This is the water sample that will be recorded as "official results". One field sample is tested for each of the sample site identified by the monitoring group.

Field Blank: Also known as a "trip blank". This is distilled water (use Glenwood brand, if possible, or use the same brand consistently), poured into a sample container in the field as if

it were a river sample. Field or trip blanks are usually collected at 10 percent of the sampling sites. This blank is to be run as a regular sample, not as a zero blank for calibration. It will be used for all analysis including invertebrate counts, fecal coliforms, and chemical analysis.

Assessment of results: The results should be "0".

Duplicate samples: One duplicate sample will be collected with each collection set of ten samples or less, with an additional duplicate for samples number eleven through twenty. The duplicates will be done for all test parameters, biological as well as chemical, and should be treated as another sample for data reporting. Duplicate samples are used to determine total (both sampling and laboratory precision).

Assessment of results: The results for the two samples should be compared using the relative of percent difference between them. The results for three or more samples should be compared using the standard deviation among them. Results are compared with data quality requirements.

Spike samples: A sample is split into two subsamples in the lab. One is analyzed according to the specified procedure. The other is treated by adding a known amount and concentration of the indicator being measured, then running the specified procedure. This should increase the concentration in the spiked sample relative to the unspiked sample by a predictable amount. Usually, 10 percent of the samples are split and spiked. They are used to rest the accuracy of the laboratory method.

Assessment of results: The percent of the indicator "recovered" by comparing the spiked to the unspiked sample is determined. Results are compared with data quality requirements.

Equipment Calibration: All analytical equipment should be calibrated according to the manufacturer's instructions. Three common techniques are the calibration blank, calibration standards, and calibration to a reference device:

Calibration Blank: A calibration blank is de-ionized water processed like any of the samples and used to "zero" the instrument. It is the first "sample" analyzed and used to set the meter to zero. This is different from the field blank in that it is "sampled" in the lab. It is used to check the measuring instrument periodically for "drift" (the instrument should always read "0" when this blank is measured). It can also be compared to the field blank to the pinpoint where contamination may have occurred.

Assessment of Results: The results of periodic checks should be "0".

Calibration Standards: Calibration standards are used to calibrate a meter. They consist of one or more "standard concentrations" (made up in the lab to specified concentrations) of the indicator being measured, one of which is the calibration blank. Calibration standards can be used to calibrate the meter before running the test, or they can be used to convert the units read on the meter to the reporting units (for example, absorbance to milligrams per liter).

COMMUNITY RIVERS PROJECT
1997 WATER QUALITY REPORT

LITTLE FALLS RIVER WATCH LAB
WAYNE H. PIKAL, COORDINATOR- PROJECT DIRECTOR
LITTLE FALLS COMMUNITY HIGH SCHOOL

PROJECT PARTICIPANTS:

STUDENTS OF COMMUNITY ENVIRONMENTAL INVOLVEMENT(618)SPRING 1997
STUDENTS OF AQUATIC BIOLOGY (613) FALL 1997
1997 SUMMER RIVER WATCH CREW:

Christina Heinz	Nathaniel Deshayes
Diana Poehler	Ryan Hanson
Carrie Poehler	Chris Emblom
Jessica Seimers	Beth Spofford
Cassie Jenson	

PREPARED FOR AND PRESENTED TO THE MORRISON COUNTY WATER TASK FORCE AND
MORRISON COUNTY PLANNING AND ZONING

Wayne H. Pikal
Little Falls River Watch Coordinator

BACKGROUND

Over the past seven years the River watch program has been monitoring water quality at the confluence of the Swan and Mississippi River. Several monitoring events during 1992 and 1993 revealed high levels of fecal coliform bacteria, nitrates and phosphates at the confluence of the two rivers. In 1994 the Morrison County Water Plan Task Force approved a plan to have the River Watch program do an in-depth water quality study on the Swan River beginning in the spring of 1994. The 1994 and '95 data indicated heavy impaction of water quality during periods of heavy run off, particularly in the Sobieski area. It was decided by the Water Plan Task Force to continue the study in 1996 on a reduced scale.

SITE SELECTION

The origin of the Swan River is the outflow of Little Swan Lake (also known as Pillsbury Lake) about 15 miles west of Little Falls. Map analysis suggests a linear flow of about 16.5 miles from the origin to the confluence with the Mississippi. Initially nine sites were selected along the stretch of the river. Each site was given a double digit number beginning at the origin (S-10) to the confluence (S-90). For the 1995 study many of the sites were eliminated to reduce time and cost. Sites that were retained were: S-10 (Pillsbury Lake outflow), S-50 (Co. road 1 west of Sobieski), S-60 (Sobieski bridge), and S-80 (highway 238 bridge). In 1996 sites were further reduced on the Swan River because two sites were selected along the upper region of the Platte River for monitoring.

In 1996 it was decided that the sites should be recoded to allow for more flexibility and consistency. See the enclosure for details. The 1997 monitoring program saw the addition of the Waste Water Treatment effluent as a test site. The site LF-20 was relocated during the summer of '96 to the boat landing about 100 yards downstream of the effluent pipe. Data from this site indicated enriched nitrogen and phosphorus levels, consequently it was decided to sample the effluent directly. Since the discharge is known, loading values for nitrogen and phosphorus can be calculated, and will be found later in this document.

DATA ANALYSIS

Eight standard River watch parameters were monitored during the '97 testing season. They included: dissolved oxygen, fecal coliform bacteria, pH, temperature, total phosphorus, nitrates, turbidity, and conductivity.

The easiest and most direct way of assessing land use impact is to compare the data of sites T-SW-30(Pillsbury outflow) and the Mississippi sites (LF-10,20,30) to the Swan sites. T-SE-30 is the out-flow of a lake and data analysis over the years '94-96 has shown it to have water quality very well in line with a lake of its type and location. The Mississippi sites give benchmark data which can be compared to assess negative impaction on the water quality of the main channel of the Mississippi.

The 19967 results are quite similar to the previous years of this study. We were not able to obtain significant storm event analysis due to the weather patterns and availability of personnel. In general, the parameters of dissolved oxygen, pH, temperature and turbidity do not seem to be negatively impacted throughout the flow of the Swan, as the averages for these parameters are pretty well in line with the comparative sites. However, the parameters fecal coliform bacteria and nitrogen do show elevated levels near SW-10 (bridge nearest the confluence with the Mississippi). Particularly, fecal coliform bacteria which renders water unfit for swimming (above 200 colonies/100ml) is of major concern because of the frequent recreational use of the Swan--Mississippi confluence for swimming.

For the second time since monitoring began in 1991, high levels of fecal coliform bacteria were found in the main channel of the Mississippi at sites M-LF-10, 20, and 30. This occurred during late April, and again in early November at sites 20 and 30. During the November testing the coliform levels were also very high in the waste water effluent, which was obviously one of the causative factors. However, the ambient water at LF-20 was higher than the effluent discharge, thus some other source must also be involved. Storm drain discharge could be suspect. The cause of the high coliform levels in April is unknown.

BIOLOGICAL MONITORING

The River Watch program recommends that biological monitoring methodologies also be included in a river monitoring study. An analysis of benthic macroinvertebrates in riffle areas of a river can be used to assess water quality. The Belle Prairie rapids area north of Little Falls is an excellent riffle area and supports a wide diversity of macroinvertebrates. Several biotic indexes have been developed to quantify the water quality based upon biodiversity of these "critters". Biological monitoring during 1997 indicated excellent water quality of the Mississippi in the Belle Prairie area.

A new methodology for assessing heavy metal and toxic organics was developed and tried by the Little Falls River Watch program in 1997. This methodology is based upon publications found in the journal Environmental Toxicology and Chemistry, and was tried several times on waste water effluent and storm drain discharge. No evidence of heavy metals, or toxic organics, was found. However, much more data needs to be collected before any conclusions can be drawn.

RECOMMENDATIONS

The data still indicates that the water quality of the Mississippi is being degraded by the Swan River. Like all rivers, the Mississippi is a product of its watershed and tributaries like the Swan should have land use practices that are regulated in line with those mandated for the Mississippi corridor. The Little Falls Waste Water Treatment Plant effluent indicated that it has a heavy concentration of nitrogen and phosphorus. With an annual discharge of approximately 500 million gallons, this certainly has an impact on the water quality of the Mississippi. The following are recommendations made as a result of this study:

1. Flow rate and discharge should be continue to be monitored on tributaries
2. Remedial action should be taken on the land use practices along the Swan corridor.
3. Water quality monitoring should continue on selected sites on a monthly basis for the 1998 season. The Platte River should be monitored on a regular basis also.
4. If possible, the parameters alkalinity and ammonia should be added to the study.
5. Data should be collected on selected storm drains in the Little Falls area--chemical as well as biological.
6. Biological monitoring should be incorporated into the monitoring program.
7. **The public should be warned of the contaminated water at the confluence of the Swan and Mississippi.** Over the past four years 44% of the samplings have resulted in fecal coliform levels above 200 colonies/100ml.

This water is considered unsafe for body contact, yet this area is a heavily used recreational area during the summer. This is a serious matter of public safety.

A BRIEF DESCRIPTION OF THE RIVER WATCH WATER QUALITY PARAMETERS

DISSOLVED OXYGEN

The amount of dissolved oxygen in the water expressed in milligrams per liter. Levels below 2 mg/l can cause fish kills of many game species.

pH

The acid-base characteristics of water. The pH scale ranges from 0-14, with 7 being neutral. The lower the number the greater the acidity. The higher the number the greater the alkalinity(base). Most waters in Morrison County range between 6.5-8.5.

NITRATE NITROGEN/PHOSPHATES

These are major plant nutrients found in water. High levels can cause heavy weed and algae growth and is often an indication of both point as well as non-point source pollution. These conditions are often associated with heavy agricultural runoff and septic discharge.

CONDUCTIVITY

This is an electrical measurement that gives an indication of the amount of dissolved solids in the water.

TURBIDITY

This is a measurement of the clarity or transparency of the water. It is correlated to the speed of current and amount of suspended solids found in the water.

FECAL COLIFORM BACTERIA

These are intestinal bacteria found in all warm blooded animals. They are not themselves pathogenic but are often associated with disease producing pathogens. APHA standards call for levels less than 200 colonies per 100ml for waters used for swimming. Partial body contact (boating) should not exceed 1000col./100ml. Treated sewage effluent is not to exceed 200col./100ml. High levels are often associated with septic discharge and agricultural runoff.

LITTLE FALLS RIVER WATCH TEST SITES 1997

M-LF-10

LOCATION: Morrison County Park located at the Belle Prairie Rapids, north of Little Falls. Northern most location intended to monitor pre-Little Falls impact.

M-LF-20

LOCATION: east shoreline of Miss. river near the south end of the Little Falls city limits. Public boat landing area, approximately 100 yards downstream of the Waste Water Treatment Plant effluent pipe. Selected to monitor impact from effluent pipe and other

Little Falls city discharges.

M-LF-30
LOCATION: approximately 2 miles downstream (south) of LF-20. East shoreline of Miss. river at Riverview Terrace residential area, off lot of River Watch coordinator W. Pikal. Selected to monitor post-Litttle Falls water quality conditions.

T-LE-10 (formally T-A)
LOCATION: Little Elk creek, Co. Rd. bridge approximately 300 yards from confluence with Miss. River. Selected to monitor Little Elk discharge.

T-SW-10 (formally T-C)
LOCATION: Closest bridge to the confluence with the Mississippi. Selected to monitor Swan R. discharge.

T-SW-20 (formally S-60)
LOCATION: Swan River bridge on east side of Sobieski. Site originally selected to monitor impact from feedlot operations in Sobieski area. In '96 the site is not monitored on a routine basis.

T-SW-30 (formally S-10)
LOCATION: Swan river bridge located at Pillsbury Lake outflow. Site is the origin of the Swan River and selected to obtain baseline data on water quality at the beginning of the flow.

T-PC-10 (formally T-B)
LOCATION: Pike Creek bridge on Lindbergh Drive, south end of Lindbergh State Park. In '96 data is taken only when flow is occurring. Much of the year it is only backwaters of the Miss. River.

LF Waste Water
LOCATION: South edge of LF city limits, near the golf course. The effluent pipe discharges into the Mississippi about 100 yards upstream of M-LF-20. This site was added in 1997 to gather data on nitrogen, phosphorus, and possible fecal coliform impaction.

1997 RIVER WATCH WATER QUALITY DATA LITTLE FALLS AREA

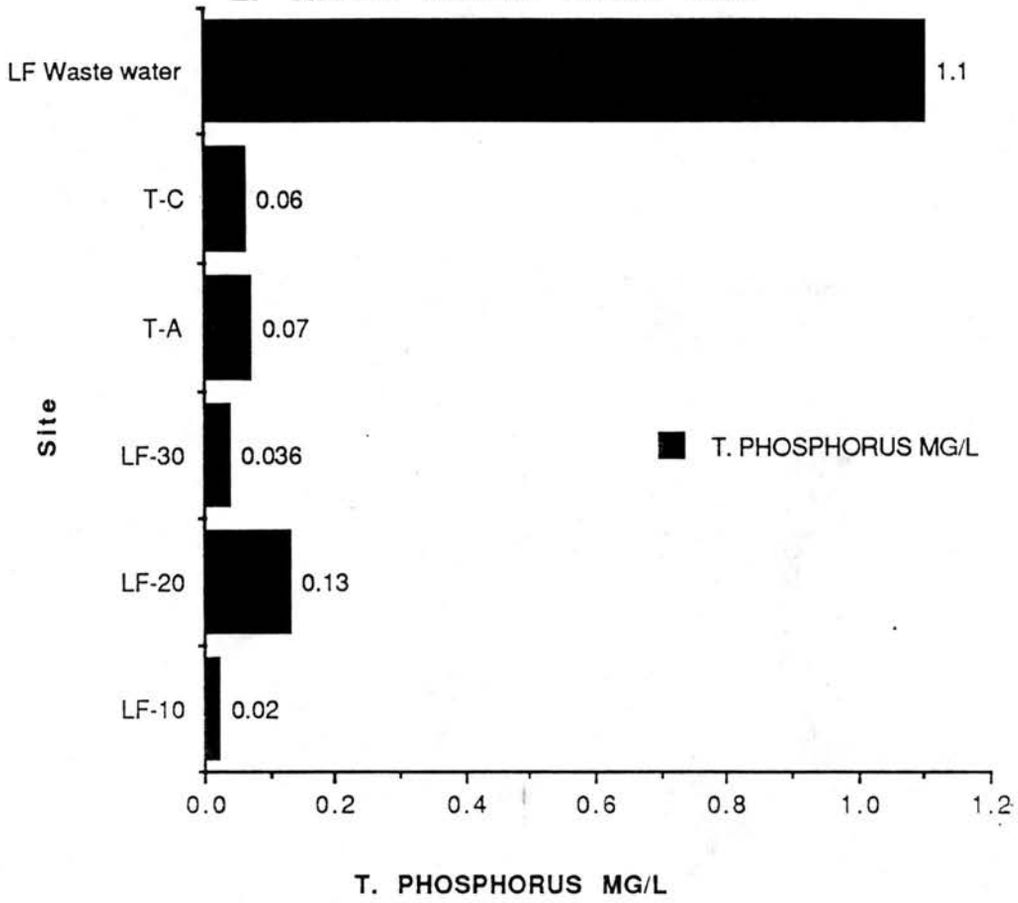
1997 RIVER WATCH WATER QUALITY DATA LITTLE FALLS AREA

1			SITE LF 10 MISSISSIPPI RIVER LITTLE ELK AREA/M-LF-10									
2		D.O.	pH	NIT.-N	AMMONI	T. PHOS.	COND.	TURB	F. COLI.	TEMP.	ALKALINITY	mg/l
3	DATE	MG/L	STD.	MG/L	MG/L	MG/L	UMHOS	NTU	C/100ML	C		
4	4/23/97	9.1	7.4	0.5	na	0.02	211	6.9	TNTC	NA		
5	5/21/97	9.6	7.7	0.5	na	0.01	280	2.9	2	13		
6	6/18/97	6.5	8.1	0.2	na	0.03	335	4.8	13	19		
7	7/18/97	7.7	7.49	0.3		0.03	NA	6.5	18	NA		
8	8/14/97	9.7	8.4	0.1		0.03	na	3	19	22		
9	9/17/97	8.9	8.01	0.2		0.03	314	3.6	38	20		
10	11/4/97	11.7	7.8	0.1		0.02	298	3	43	3.7	148	
11	**Average**	**9**	**7.8**	**0.27**		**0.02**	**288**	**4.4**		**15.5**		
12												
13			SITE LF 20 BOAT LANDING MISS. RIVER/M-LF-20									
14	DATE	D.O.	pH	NIT.-N	AMMONI	T. PHOS.	COND.	TURB	F. COLI.	TEMP.	ALKALINITY	mg/l
15		MG/L	STD.	MG/L	MG/L	MG/L	UMHOS	NTU	C/100ML	C		
16	4/23/97	9.5	7.5	0.3	na	0.03	193	6.8	TNTC	na		
17	5/21/97	8.8	7.5	0.5	na	0.03	290	3.4	43	13		
18	6/18/97	7.02	7.93	0.5	na	0.24	403	5.6	17	19		
19	7/18/97	8.2	7.59	0.4		0.06	NA	8.1	32	NA		
20	8/19/97	9.5	NA	NA		NA	NA	NA	10	NA		
21	9/17/97	8.5	7.8	0.3		0.16	332	3.9	44	20		
22	11/4/97	10.5	7.5	0.6		0.27	360	3.4	3300*	3.9	147	
23	**Average**	**8.9**	**7.6**	**0.43**		**0.13**	**316**	**5.2**		**14**		
24	NOTE: * INDICATES A GRID COUNT ESTIMATE UNDER MAGNIFICATION FOR F. COLI											
25												
26	DATE		SITE LF 30 MISS. RIVER SOUTH/M-LF-30									
27		D.O.	pH	NIT.-N	AMMONI	T. PHOS.	COND.	TURB	F. COLI.	TEMP.	ALKALINITY	mg/l
28		MG/L	STD.	MG/L	MG/L	MG/L	UMHOS	NTU	C/100ML	C		
29	4/23/97	10	7.2	0.4	na	0.03	194	7.8	TNTC	na		
30	5/21/97	9.4	7.7	0.5	na	0.02	260	3.4	12	14		
31	6/18/97	7.7	8.2	0.3	na	0.03	335	6.4	37	20		
32	7/18/97	8.2	7.47	0.4		0.06	NA	7.8	NA	NA		
33	8/14/97	9.4	8.1	0.3		0.03	na	3.8	28	21		
34	9/17/97	9.5	7.9	0.1		0.07	317	5	na	20		
35	11/4/97	11.2	7.7	0.3		0.01	322	2.9	366*	2.8	134	
36	**Average**	**9.3**	**7.8**	**0.33**		**0.036**	**286**	**5.3**		**16**		
37												
38												
39												
40												
41	DATE		SITE TRIBUTARY A LITTLE ELK//T-LE-10									
42		D.O.	pH	NIT.-N	AMMONI	T. PHOS.	COND.	TURB	F. COLI.	TEMP.	ALKALINITY	mg/l
43		MG/L	STD.	MG/L	MG/L	MG/L	UMHOS	NTU	C/100ML	C		
44	4/.23/97	8.6	7.4	0.4	na	0.03	232	5.2	10	na		
45	5/21/97	11.9	8	0.2	na	0.02	310	2.5	12	14		
46	6/18/97	6.3	7.9	0.4	na	0.03	362	2.5	86	18		
47	7/18/97	7.3	7.63	1		0.19	NA	4.2	35	NA		
48	8/14/97	9.4	8.2	0.3		0.06	na	4	14	19		
49	9/17/97	9	8	0.4		0.16	363	4.1	82	19		
50	11/4/97	12	7.6	0.3		0.03	351	2.9	28	2.4	172	
51	**Average**	**9.2**	**7.8**	**0.43**		**0.07**	**324**	**3.6**		**14**		
52												
53												
54												
55												
56												

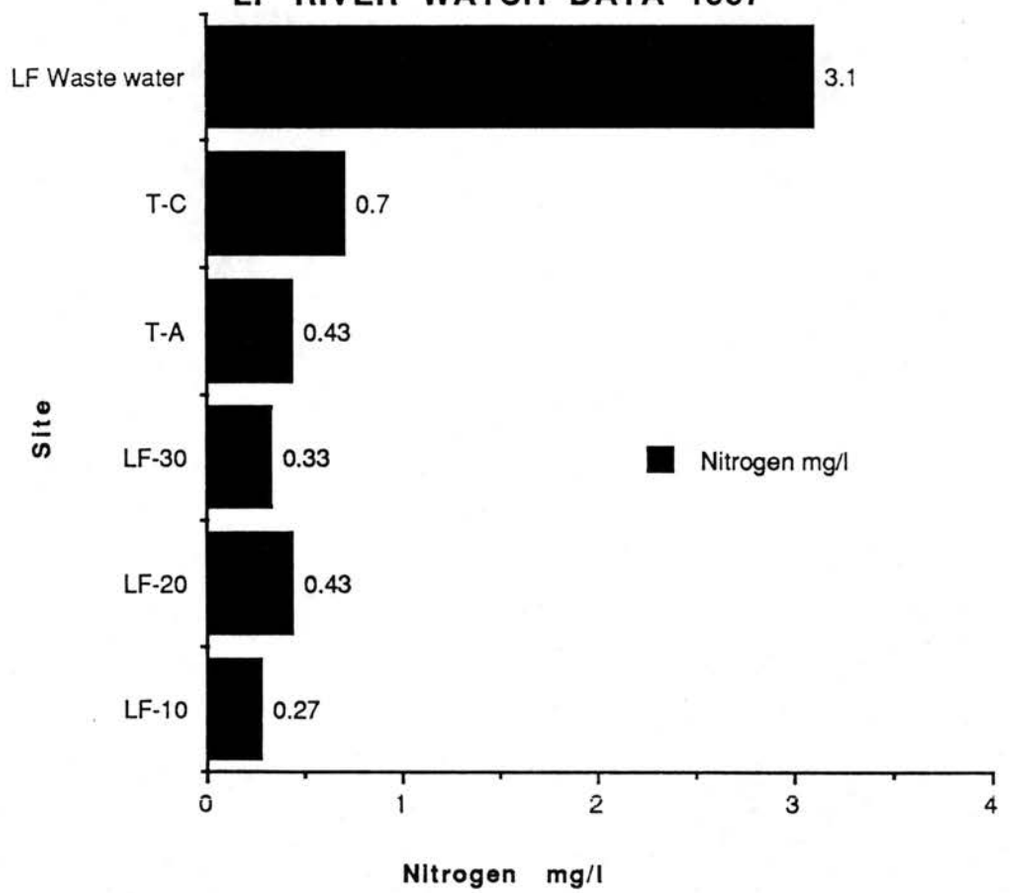
1997 LF RIVER WATCH DATA

	A	B	D	E	F	G	H	I	J	K	L	M
57												
58		SITE TRIB C SWAN RIVER HYW 238/T-SW-10										
59		D.O.	pH	NIT.-N	AMMONI	T. PHOS.	COND.	TURB	F. COLI.	TEMP.	ALKALINITY	mg/l
60		MG/L	STD.	MG/L	MG/L	MG/L	UMHOS	NTU	C/100ML	C		
61	4/23/97	9.5	7.8	0.2	na	0.02	331	2.4	12	na		
62	5/21/97	10.6	8	0.9	na	0.02	450	2.2	14	14		
63	6/18/97	6.7	8.1	0.6	na	0.03	484	2.8	130	18		
64	7/18/97	7.6	7.71	0.5		0.14	NA	5	TNTC*	NA		
65									*EST. 250-400			
66	8/14/97	9.6	8.2	0.6		0.03	na	2	65	20		
67	9/17/97	9.3	7.9	1		0.06	418	4	TNTC	19		
68	11/4/97	11.7	7.7	1		0.15	477	2.1	TNTC*	2.5	224	
69									*>5000			
70	**Average**	**9.3**	**7.9**	**0.7**		**0.06**	**432**	**2.9**		**15**		
71												
72			SITE LF WASTE WATER PLANT EFFLUENT									
73		D.O.	pH	NIT.-N	AMMONI	T.PHOS.	COND.	TURB	F.COLI.	TEMP.	ALKALINITY	mg/l
74	DATE	MG/L	STD.	MG/L	MG/L	MG/L	UMHOS	NTU	COL/100M	C		
75	6/18/97			3.9	NA	1.58			1			
76	7/18/97	5.2	7.01	3		0.88	NA	3.5	4	NA		
77	8/14/97	5.8	7.1	2.6		0.48		3.2	na			
78	8/19/97	6.3	7.4	2.8		1.26		2.2	6			
79	9/17/97	7.8	7.3	2.9		0.81	619	8	3			
80	11/4/97	7.4	7.2	3.1		1.3	712	2.6	1846*	7.4	140	
81	**Average**	**6.5**	**7.2**	**3.1**		**1.1**	**666**	**3.9**				
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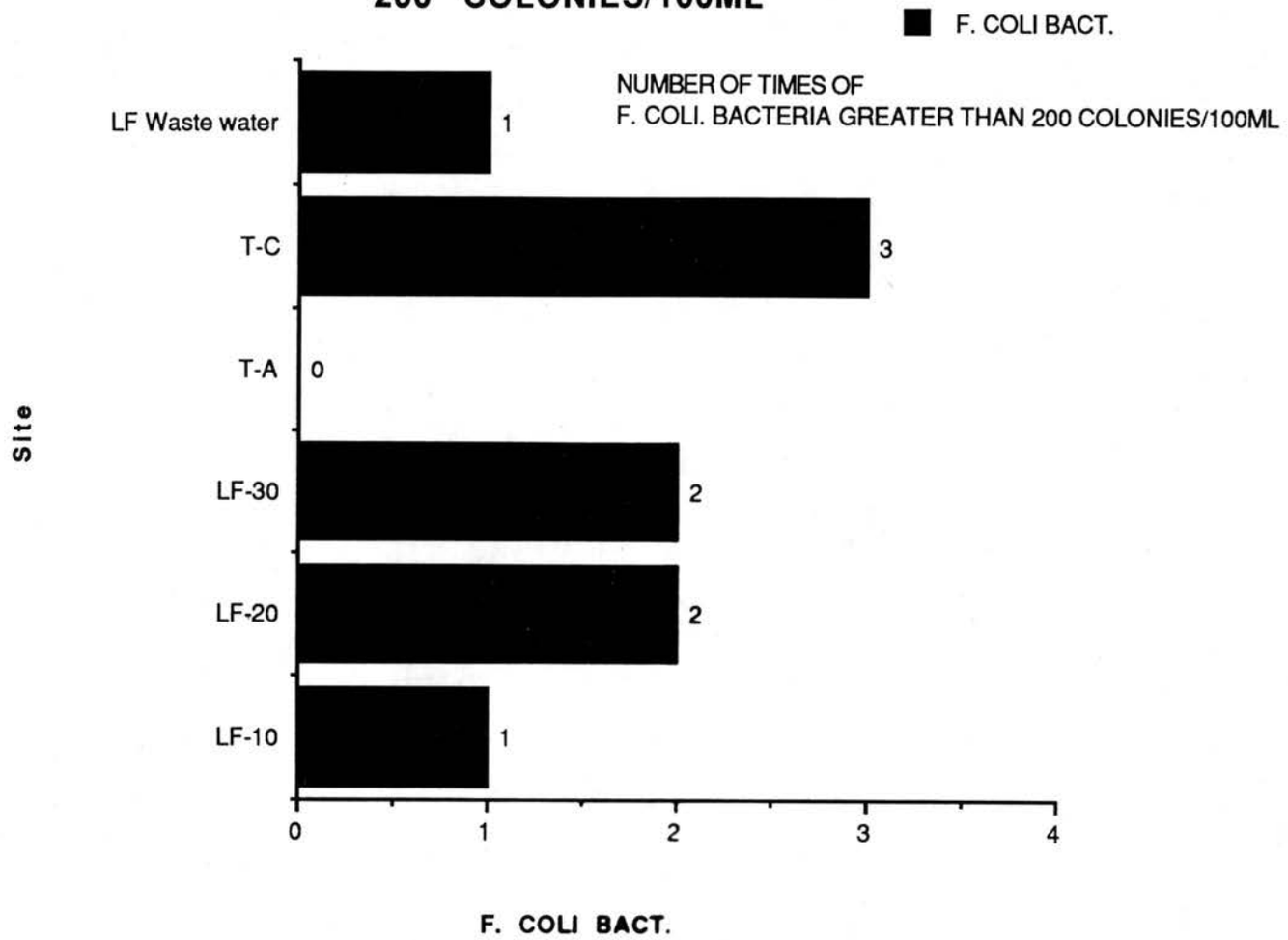
TOTAL PHOSPHORUS LEVELS
LF RIVER WATCH DATA 1997



NITROGEN LEVELS
LF RIVER WATCH DATA 1997

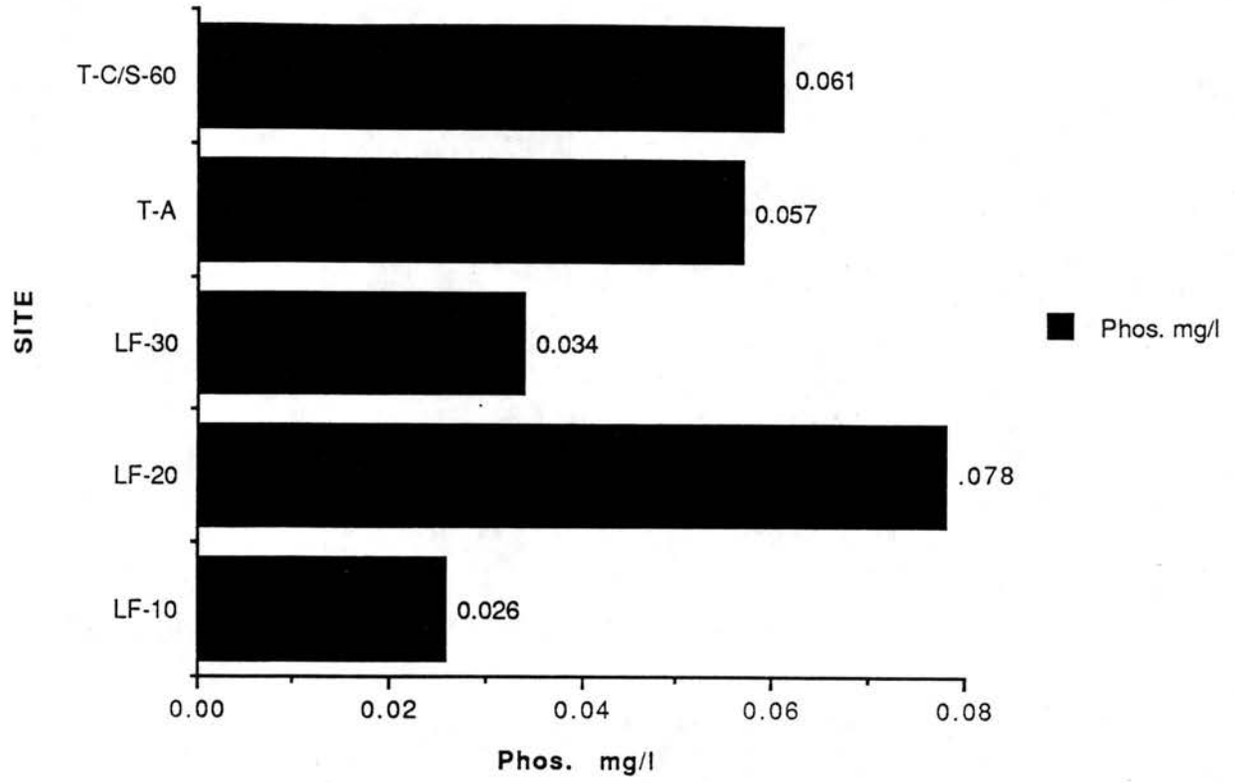


FECAL COLIFORM BACTERIA
OF TIMES OF LEVELS ABOVE
200 COLONIES/100ML

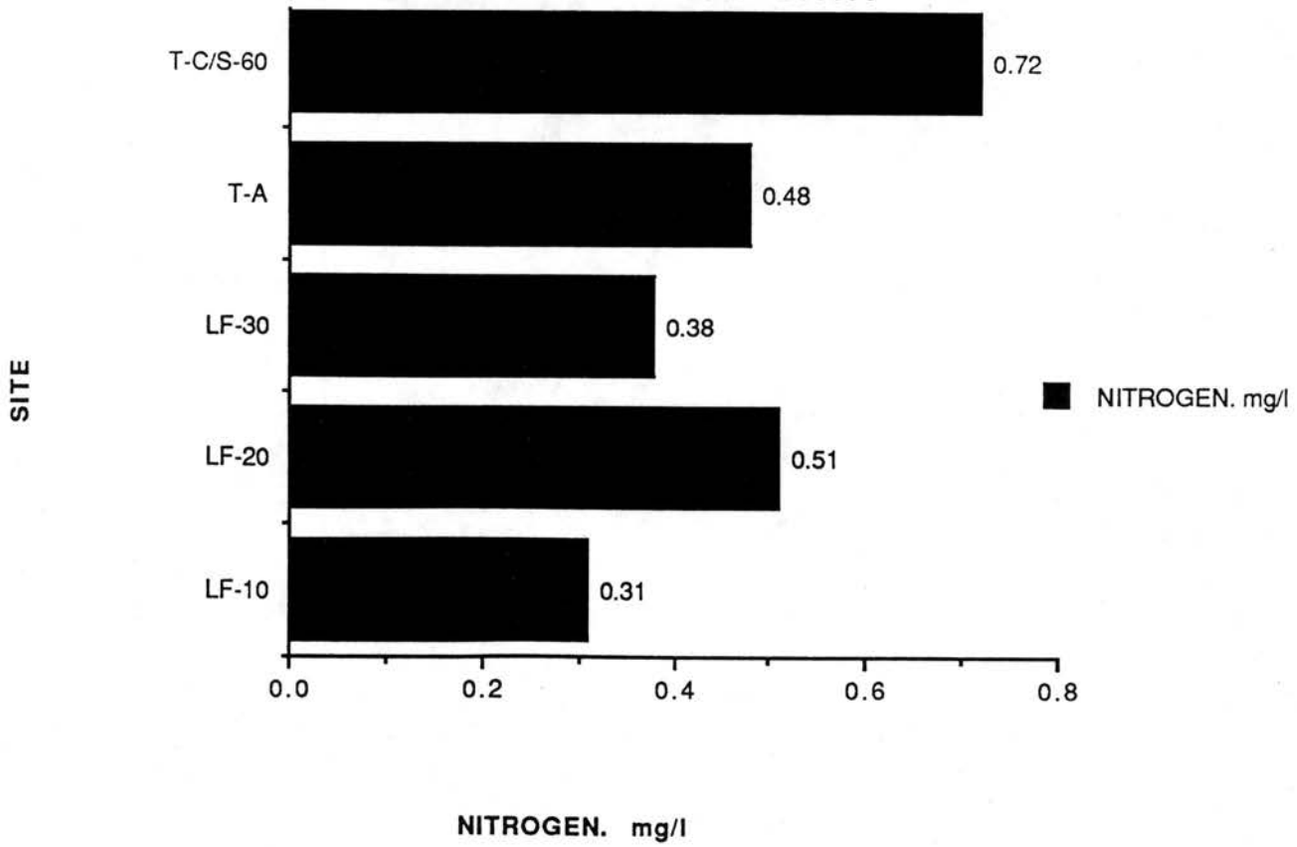


	A	B	C	D	E	F	G	H	I
1		**NITRATE NITROGEN LEVELS 1994--1997**							
2	SITE	1994	1995	1996	1997	AVERAGE			
3	LF-10	0.32	0.28	0.38	0.27	0.31			
4	LF-20	0.41	0.48	*.72	*.43	0.51			
5	LF-30	0.37	0.33	0.48	0.33	0.38			
6	TRIB. A	0.47	0.54	0.49	0.43	0.48			
7	TRIB C	0.85	0.71	**.63	**0.7	0.72			
8				*LOCATION CHANGED TO BOAT LANDING					
9				**LOCATION CHANGED FROM S-60 TO TRIB C					
10									
11		**TOTAL PHOSPHORUS LEVELS 1994-1997**							
12	SITE	94	95	96	97	AVERAGE			
13	LF-10	0.027	0.03	0.03	0.02	0.026			
14	LF-20	0.031	0.05	*.1	*.13	0.078			
15	LF-30	0.031	0.03	0.04	0.036	0.034			
16	TRIB. A	0.078	0.04	0.04	0.07	0.057			
17	TRIB. C	0.083	0.05	**.05	**.06	0.061			
18									
19									
20									
21		**NUMBER OF TIMES FECAL COLIFORM COUNTS EXCEEDED 200 COLONIES**							
22	SITE	94	95	96	97	**TOTAL**	TOTAL # OF SAMPLINGS		**%**
23	LF-10	1	0	0	2	**3**	28		**11 %**
24	LF-20	0	3	*2	*2	**7**	26		**27 %**
25	LF-30	0	0	2	2	**4**	26		**15 %**
26	TRIB. A	1	0	0	0	**1**	28		**3.5 %**
27	TRIB-C	7	3	**2	*3	**15**	34		**44 %**
28									

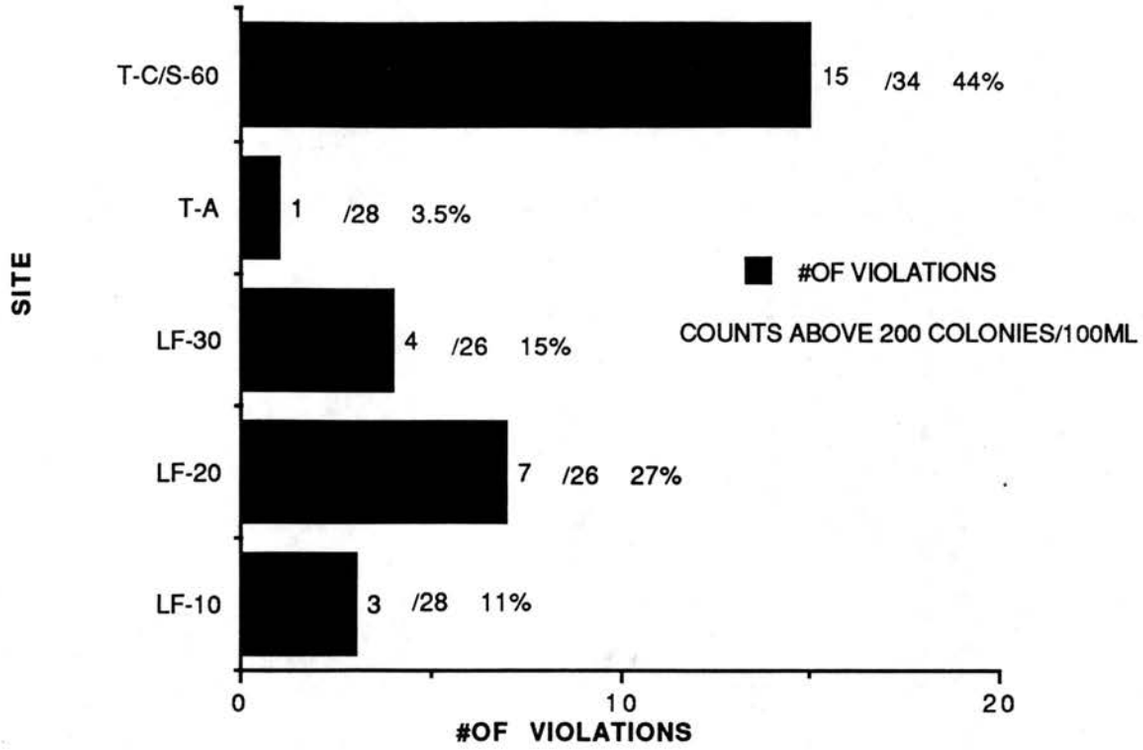
PHOSPHORUS LEVELS
1994-1997 RIVER WATCH DATA



NITROGEN LEVELS
1994-1997 RIVER WATCH DATA



1994-1997 FECAL COLIFORM LEVELS
NUMBER OF TIMES COUNTS ABOVE SAFETY LEVEL



Red River Valley River Watch Program - Sand Hill River Results

Project Coordinator: Wayne Goeken, RR 3 Box 75A, Erskine MN 56535 218-574-2622 e-mail: wrg@maplebay.means.net

Lead Agency: Red River Water Management Board **Supporting:** Sand Hill River Watershed District, Mississippi Headwaters Board, Climax School, Fertile-Beltrami School, Win-E-Mac School, Fosston School, MN Pollution Control Agency, East and West Polk SWCDs, University of Minnesota-Crookston, Rivers Council of Minnesota.

Description of Accomplishments:

Accomplishments relate to achieving the goals of the project. **One goal was to establish baseline water quality data** for the Sand Hill River. This has been achieved as this was the third year of chemical monitoring involving monthly collection and analysis (May through October) of 10-12 sites in the Sand Hill Watershed District including a county ditch and one site on the Red River for comparison. Sites were chosen to provide a good representation of land and water conditions in the District. Parameters monitored included turbidity, pH, conductivity, dissolved oxygen, total phosphorus, nitrate nitrogen, fecal coliform and air and water temperature. Benthic macroinvertebrate monitoring was done 1-2 times during the year by each school at these sites also.

A second goal of providing students with real world hands-on science experiences was clearly achieved as annually approximately 60 high school students and their science teachers from the four schools involved with the program (Fosston, Win-E-Mac, Fertile-Beltrami and Climax) perform the monthly sample collections and analysis on the sites in "their backyard." This led to achievement **of the third goal of the program—an increased awareness of land and water stewardship practices affecting water quality**. This was achieved by agency resource people interacting with the students as they analyzed their data. Students prepared and presented poster displays and verbal reports of their findings to a local forum of all participants of the Sand Hill River Watch Program held in Crookston each spring and to a statewide Rivers Youth Congress of Minnesota in the spring of 1997.

Regarding data results, conductivity and nitrate nitrogen levels are the only parameters that are consistently higher than expected values for both ecoregions. Turbidity levels of the Sand Hill River in the Red River Valley ecoregion is also higher than ecoregion standards. This may be due to intensive farming practices, ditch management and the finer soil types in the Red River Valley. Some of the variation is also due to the timing of when samples were taken with turbidity and nutrient levels being considerably higher immediately following rainfall events.

Fecal coliform levels were occasionally high at sites near pastured areas—again especially following significant rainfall events. Students from Climax noted an unusually high fecal coliform count on one occasion at their site downstream from the City of Climax. They had noted a pipe discharging into the river during their field collection and upon notifying the City it was discovered that an error had been made in routing of the sewer system infrastructure following a summer bridge construction project resulting in improper sewage discharge. The City of Climax took immediate corrective actions to remedy the situation.

Caution needs to be exercised when making any inferences from only three years of data due to annual fluctuations in weather conditions and the influence of rainfall events on monthly sample results. However, based on 1995-97 sampling results, water quality conditions of the Sand Hill River in general appeared to be quite good compared to respective ecoregion values. The goal of initiating collection of baseline water quality data has been achieved but additional data needs to be collected over a longer period of time to provide a representative long-term average.

Test results have generally been consistent from year to year but there is still a need for improvement in meeting the program's quality assurance/quality control standards. A great deal of confidence is put in the results of all the tests except for the phosphorus and nitrate tests which seem to be providing reasonable results but the quality control standards are not always being consistently met. The lab procedures for these two tests are very precise and we will continue to troubleshoot to try to get all our standards within the acceptable range. The equipment and procedures for the other tests are less complicated and the results are believed to be very reliable.

Red River Valley River Watch—Activities Projected for 1998:

-Continue providing coordination and technical assistance to four schools in Sand Hill River Watch Program

-Provide training and technical assistance to four schools who will be involved with Red Lake County River Watch Program which will begin in the spring of 1998.

-Coordinate Spring River Watch Forum at UMC (early April)

-Assist preparation of Red River Valley display and presentation for River Monitors Youth Congress of MN in April

-Broaden student's perspective of resource management issues by bringing in more resource people to interact with classes such as watershed district managers, agri-business reps, farmers, engineers, city water/waste managers, SWCD and other agency personnel, etc. Develop working partnerships between students and these resource people. These resource people react to program data gathered by students as management options discussed.

-Establish Program Advisory Committee comprised of representatives from above group plus students and teachers to review program progress and direction and identify needs and opportunities for strengthening and expanding the program throughout the Red River Valley (consider basin wide options--North Dakota and Manitoba).

-Address Quality Control through arrangement to do split samples with UMC's water lab or with other state certified labs. Also arrange for additional training of program participants.

-Improve communication and awareness via technology/computer linkages between schools, watersheds, agencies and beyond. Help students develop and maintain web page. This will include data management and access. Option of doing this in coordination with MAWD, UMC, and/or individual schools existing web pages.

-Work on more communication of results to the public with students presenting data, analysis and interpretation to school boards, resource management boards, community meetings (eg. service clubs) and open community forums. Provide more news releases regarding program purpose, findings, etc. Extend to all watersheds as they become involved in River Watch program.

-Incorporate program into school's curriculum: Examples: watershed reps do social studies class on drainage laws, importance of drainage to ag operations, watershed operations/projects. Also give presentation to vo-ag classes re: drainage laws, needs...English class do papers, interviews, etc. on various aspects of river—logging/saw mills; flour mills; fishing; recreation.... Arts options for video, performance, other media...

-Peer teaching opportunities—Sr. High students teach younger students—collection, analysis, understanding. Older students assist with special events in the community such as river clean-up and storm drain stenciling whereby they would work with teams of younger kids and youth service clubs. Senior students also review/make use of/evaluate Rivers related curricula from Project Wet, etc.—recommend best units for peer learning

-Provide for more travel/training/networking opportunities for students/teachers/project manager. Do student watershed tours similar to tours that MAWD and local watershed districts coordinate.

-Work with UMC, MSU, BSU students as interns on program. A good application would be to have post-secondary students take charge of macroinvertebrate monitoring with high school students serving as assistants. College students could also assist/teach high school students how to set up and maintain a web page.

Sand Hill River Watershed(SHRW) Characteristics and Sampling Site Locations: The SHRW is about eight miles wide and 55 miles long encompassing 442 square miles of the central Minnesota portion of the Red River Basin--nearly wholly in the south end of Polk County. Seventy-six percent of the watershed is under cultivation according to 1989 land use data. Nearly one-third of the river has been channelized, primarily in the Beltrami area and also near its headwaters. Below is a general description of the Sand Hill River based on a MN DNR Fisheries report *"Stream Fish Population Assessment of the Sand Hill River"* which was released in March of 1996. The river has been divided into five similar reaches based on sinuosity, gradient, and land use.

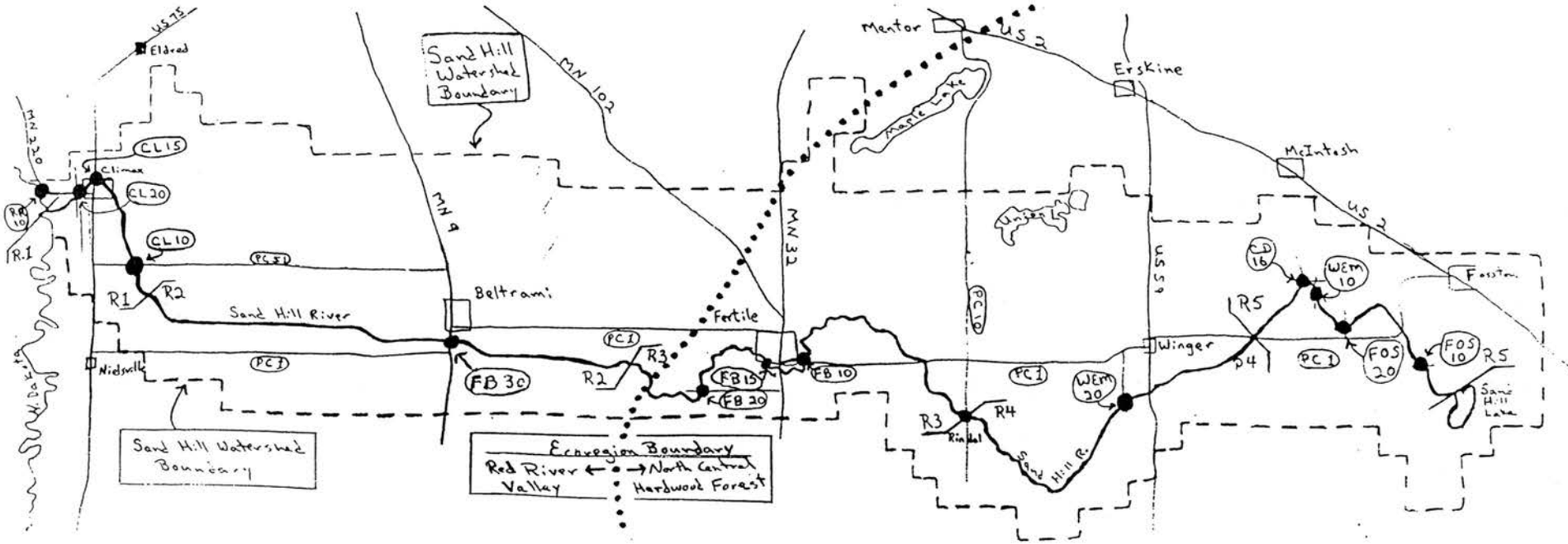
Reach One: From end of channelization 12.4 miles to mouth of SHRiver at Red River. Natural, meandering stream with mostly clay bottom. Stream banks from 5 to 70 feet high. Adjacent land primarily cropland, but wider buffer zones than in Reach Two. Streambank vegetation primarily mixed hardwoods with some grassy cover.

Reach Two: From where the river drops out of the sand hills area onto the flatter glacial lake bed. This reach is entirely channelized and contains four drop structures with dam heads of three to six feet. Sugarbeet and small grain cropland. Bottom substrate mostly clay. Ditch banks are steep, grass covered and approximately 15 to 20 feet high. Sinuosity decreases from 2.8 to 1.1.

Reach Three: Meandering 36.4 mile stretch through rolling, beach ridge area of Glacial Lake Agassiz near Fertile. Overall stream gradient in this reach is 5.1 feet per mile, but is considerably steeper in the middle of this reach. Steep, hardwood covered banks from 5 to 75 feet high. Limited ag use and relatively unaltered channel Numerous pools, riffles, snags, rootwads, logjams and boulders.

Reach Four: 20.5 mile stretch through a half-mile wide marshy valley to the crossing of Polk Co. #10 at Rindal. Stream gradient is lowest in this reach at 1.7 feet per mile. Low streambanks with ag predominant on adjacent upland. Minimal channel disturbance.

Reach Five: From the headwaters at Sand Hill Lake 13.9 miles downstream to the culvert crossing under Polk Co. #1. Approximately 65% channelized. Adjacent land use primarily ag(small grain & pasture) with low banks. Flow may be intermittent. Streambank vegetation primarily grasses and sedges with very few trees.



Sand Hill River Watch - 1995-1997 Data Summary by Site

Sample Dates	Turb NTUs	pH	Cond uS/cm	DO mg/l	TP mg/l	NO3 mg/l	Temp-C Air	Temp-C Water
Fos 10 Site - 1995 Sampling Season								
5/3/95	4.0	6.99	544	8.38	0.04	.3	16.3	11.6
6/8/95	0.8	7.26	430	3.29	0.02	.3	11.0	14.0
7/6/95	18.0	7.20	500	4.22	0.07	3.4	14.0	15.0
8/10/95	1.2	8.75	417	2.72	0.12	0.2	20.0	20.0
9/22/95	16.0	7.87	752	5.7	0.20	0.6	na	2.0
10/18/95	3.2	7.76	620	7.16	0.00	0.2	3.0	3.0
95 Mean	**7.2**	**7.64**	**544**	**5.25**	**0.08**	**0.8**	**12.9**	**10.9**
Fos 10 Site - 1996 Sampling Season								
5/2/96	1.3	7.21	400	9.35	0.07	.1	6	8
5/20/96	2.9	8.02	415	6.18	0.02	.3	16	19
6/25/96	1.5	7.85	425	5.35	0.02	.2	13	15
7/16/96	2.8	8.08	446	4.1	0.09	0.3	21	19
8/20/96	8.8	7.82	515	5.15	0.15	0.6	20	17
9/24/96	na	na	na	na	na	na	na	na
10/29/96	5.8	6.80	1006	10.8	0.13	0.4	6	3
96 Mean	**3.9**	**7.63**	**535**	**6.82**	**0.08**	**0.3**	**14**	**13**
Fos 10 Site - 1997 Sampling Season								
5/27/97	2.1	8.00	474	7.83	na	0.3	21.0	14.0
6/26/97	10.1	7.97	368	4.89	0.04	0.5	22.0	19.5
7/24/97	1.7	7.72	448	1.93	0.01	0.3	26.0	25.0
8/21/97	2.2	7.83	382	3.51	0.11	0.3	17.5	17.5
9/24/97	6.4	na	450	4.56	0.05	0.3	16.5	11.0
10/28/97	11.5	7.75	605	8.07	0.06	0.3	5.0	4.0
97 Mean	**5.7**	**7.85**	**455**	**5.13**	**0.05**	**0.3**	**18.0**	**15.2**

Sample Dates	Turb NTUs	pH	Cond uS/cm	DO mg/l	TP mg/l	NO3 mg/l	Temp-C Air	Temp-C Water
Fos 20 Site - 1995 Sampling Season								
5/3/95	0.8	6.82	423	8.16	0.01	.2	17.5	12.9
6/8/95	3.3	7.03	660	8.40	0.17	.6	15.0	10.0
7/6/95	21.0	7.10	550	4.59	0.27	2.9	13.5	14.0
8/10/95	1.7	8.06	532	3.26	0.08	0.3	19.0	18.0
9/22/95	5.0	7.85	852	9.12	0.05	0.1	-1.0	3.0
10/18/95	4.7	7.79	910	7.50	0.08	0.5	4.0	5.0
95 Mean	**6.1**	**7.44**	**655**	**6.84**	**0.11**	**0.8**	**11.3**	**10.5**
Fos 20 Site - 1996 Sampling Season								
5/2/96	6.5	7.18	456	9.42	0.12	.2	7	5
5/20/96	6.4	7.95	556	6.67	0.04	.5	14	16
6/25/96	2.4	7.93	592	7.17	0.04	.2	12	12
7/16/96	4.2	7.50	779	2.82	0.06	0.4	21	15
8/20/96	3.1	7.62	847	5.76	0.00	0.1	17	14
9/24/96	4.9	7.86	930	8.07	0.02	0.2	5	8
10/29/96	4.4	6.80	908	10.80	0.06	0.3	6	6
96 Mean	**4.6**	**7.55**	**724**	**7.24**	**0.05**	**0.3**	**12**	**11**
Fos 20 Site - 1997 Sampling Season								
5/27/97	5.1	8.01	607	8.59	na	0.3	18.0	13.0
6/26/97	22.2	7.72	440	4.04	0.20	1.1	23.0	18.0
7/24/97	7.4	7.75	481	4.15	0.04	0.3	25.0	23.5
8/21/97	8.4	7.85	518	6.77	0.10	0.2	17.5	16.5
9/24/97	13.9	na	709	8.11	0.08	0.3	15.0	10.5
10/28/97	15.3	7.92	841	10.23	0.07	0.4	5.0	4.0
97 Mean	**12.1**	**7.85**	**599**	**6.98**	**0.10**	**0.4**	**17.3**	**14.3**

Sand Hill River Watch - 1995-1997 Data Summary by Site

Sample Dates	Turb NTUs	pH	Cond uS/cm	DO mg/l	TP mg/l	NO3 mg/l	Temp-C Air	Temp-C Water
WEM 10 Site - 1995 Sampling Season								
5/9/95	8.4	7.80	612	9.00	0.07	.3	6.9	8.8
6/15/95	4.5	7.47	658	4.84	0.13	.5	23.5	20.0
7/12/95	5.4	7.65	540	4.76		.5	24.0	23.5
8/18/95	3.3	7.80	628	5.89	0.09	0.5	27.5	24.0
9/14/95	2.2	8.10	763	8.58	0.07	0.3	10.0	11.0
10/25/95	3.1	8.17	840	12.46	0.05	0.4	5.0	7.5
95 Mean	**4.5**	**7.83**	**674**	**7.6**	**0.08**	**0.4**	**16.2**	**15.8**
WEM 10 Site - 1996 Sampling Season								
5/1/96	5.3	7.93	496	8.79	0.05	.3	4	6
6/6/96	3.8	8.04	547	8.67	0.04	.3	15	15
7/9/96	3.0	8.09	708	7.91	0.04	0.5	14	14
8/14/96	5.1	7.6	746	7.03	0.03	0.4	15	18
9/18/96	3.4	8.13	802	8.90	0.02	0.7	14	10
11/1/96	29.0	7.0	882	11.05	0.09	0.9	-6	0
96 Mean	**8.3**	**7.8**	**697**	**8.73**	**0.05**	**0.5**	**9**	**11**
WEM 10 Site - 1997 Sampling Season								
5/22/97	7.0	8.20	576	8.06	0.01	0.2	10.0	12.0
7/1/97	13.4	7.71	471	4.03	0.12	0.5	22.0	23.0
7/23/97	10.1	7.96	495	5.64	0.06	0.4	22.0	26.0
8/19/97	7.4	8.02	541	7.70	0.12	0.4	16.0	18.0
9/23/97	9.7	na	681	8.99	0.05	0.4	4.0	10.0
10/24/97	19.3	8.09	708	10.72	0.08	0.4	-1.0	4.0
97 Mean	**11.2**	**8.00**	**579**	**7.52**	**0.07**	**0.4**	**12.2**	**15.5**

Sample Dates	Turb NTUs	pH	Cond uS/cm	DO mg/l	TP mg/l	NO3 mg/l	Temp-C Air	Temp-C Water
CD 16 Site - 1995 Sampling Season								
5/9/95	3.5	7.74	755	7.97	0.08	.7	6.9	7.4
6/15/95	3.3	7.49	785	6.48	0.07	.8	24.0	18.0
7/12/95	9.1	7.41	790	4.82		1.0	24.0	23.0
8/18/95	6.9	7.20	787	4.95	0.15	0.8	27.5	20.0
9/14/95	2.6	7.98	874	7.22	0.12	1.3	10.0	9.0
10/25/95	3.0	7.92	959	12.50	0.07	0.9	6.0	4.0
95 Mean	**4.7**	**7.62**	**825**	**7.3**	**0.10**	**0.9**	**16.4**	**13.6**
CD 16 Site - 1996 Sampling Season								
5/1/96	3.1	7.60	656	7.77	0.09	.6	4	4
6/6/96	3.6	7.78	728	7.73	0.08	.5	15	13
7/9/96	5.2	7.86	780	6.13	0.06	0.3	15	12
8/14/96	1.6	7.2	815	5.33	0.09	0.6	16	14
9/18/96	8.8	7.94	840	7.47	0.08	0.9	13	10
11/1/96	4.2	7.2	949	10.91	0.06	0.8	-8	1
96 Mean	**4.4**	**7.6**	**795**	**7.56**	**0.08**	**0.6**	**9**	**9**
CD 16 Site - 1997 Sampling Season								
5/22/97	5.0	7.94	633	8.17	0.04	0.3	10.0	10.0
7/1/97	10.0	7.56	508	3.94	0.10	0.5	25.0	22.0
7/23/97	8.1	7.90	665	5.68	0.13	0.8	22.0	20.0
8/19/97	8.9	7.94	684	6.78	0.11	0.4	16.3	16.0
9/23/97	4.0	na	687	8.56	0.07	0.2	11.0	10.0
10/24/97	5.2	7.86	789	9.85	0.11	0.6	-2.0	4.0
97 Mean	**6.9**	**7.84**	**661**	**7.16**	**0.09**	**0.5**	**13.7**	**13.7**

Sand Hill River Watch - 1995-1997 Data Summary by Site

Sample Dates	Turb NTUs	pH	Cond uS/cm	DO mg/l	TP mg/l	NO3 mg/l	Temp-C Air	Temp-C Water
WEM 20 Site - 1995 Sampling Season								
5/9/95	3.4	7.80	697	6.50	0.07	.3	7.1	9.8
6/15/95	1.3	7.24	749	4.05	0.13	.4	25.0	23.0
7/12/95	0.5	7.35	635	1.26	na	.6	25.5	24.5
8/18/95	1.2	7.30	724	0.99	0.31	0.5	28.0	24.0
9/14/95	0.5	7.65	870	2.67	0.17	0.1	12.0	14.0
10/25/95	0.8	7.98	963	10.98	0.02	0.2	5.4	3.8
95 Mean	**1.3**	**7.55**	**773**	**4.4**	**0.14**	**0.4**	**17.2**	**16.5**
WEM 20 Site - 1996 Sampling Season								
5/1/96	1.5	7.71	591	6.04	0.03	.2	4	8
6/6/96	1.9	7.78	640	5.59	0.09	.3	14	15
7/9/96	5.6	7.90	654	5.01	0.31	0.3	16	18
8/14/96	1.4	7.2	836	2.76	0.11	0.4	16	18
9/18/96	1.4	7.62	906	5.26	0.08	0.4	14	13
11/1/96	2.3	7.0	1047	8.46	0.08	0.2	-7	1
96 Mean	**2.4**	**7.54**	**779**	**5.52**	**0.12**	**0.3**	**10**	**12**
WEM 20 Site - 1997 Sampling Season								
5/22/97	4.0	8.05	641	6.96	0.03	0.2	10.0	12.0
7/1/97	1.3	7.46	435	1.83	0.13	0.4	24.0	23.0
7/23/97	1.0	7.64	563	1.47	0.19	0.4	24.0	22.0
8/19/97	1.4	7.76	615	3.50	0.14	0.4	16.0	16.2
9/23/97	3.9	na	697	6.43	0.07	0.2	11.0	12.0
10/24/97	5.8	8.02	827	10.06	0.05	0.2	-1.0	4.0
97 Mean	**2.9**	**7.79**	**630**	**5.04**	**0.10**	**0.3**	**14.0**	**14.9**

Sample Dates	Turb NTUs	pH	Cond uS/cm	DO mg/l	TP mg/l	NO3 mg/l	Temp-C Air	Temp-C Water
FB 10 Site - 1995 Sampling Season								
5/11/95	7.4	7.43	662	9.36	0.08	.4	17.3	11.3
6/17/95	2.6	8.01	683	5.40	0.16	.3	29.0	23.0
7/7/95	13.5	7.85	429	7.32	0.17	1.8	18.5	17.0
8/19/95	3.4	7.20	688	6.72	0.07	0.3	18.5	19.0
9/20/95	7.0	8.11	753	9.88	0.06	0.1	3.0	6.0
10/30/95	3.5	8.07	820	12.24	0.04	0.3	1.0	4.5
95 Mean	**6.2**	**7.78**	**673**	**8.5**	**0.10**	**0.5**	**14.6**	**13.5**
FB 10 Site - 1996 Sampling Season								
7/18/96	9.2	7.96	665	6.46	0.06	0.6	21	21
8/26/96	5.1	8.11	767	7.17	0.04	0.3	17	18
10/2/96	6.4	6.8	805	9.65	0.04	0.1	5	6
11/7/96	7.2	8.5	948	11.83	0.04	0.2	-1	2
96 Mean	**7.0**	**7.84**	**796**	**8.78**	**0.05**	**0.3**	**11**	**12**
FB 10 Site - 1997 Sampling Season								
5/22/97	9.0	8.26	645	8.68	0.03	0.2	12.0	12.0
7/15/97	9.0	7.97	567	5.73	0.14	0.4	20.0	23.0
8/27/97	6.5	8.19	654	7.22	0.17	0.2	24.0	21.0
9/26/97	12.6	na	697	7.66	na	0.1	18.0	14.0
10/29/97	11.1	8.11	747	11.08	0.04	0.2	-6.0	3.0
97 Mean	**9.6**	**8.13**	**662**	**8.07**	**0.10**	**0.2**	**13.6**	**14.6**
FB 15 Site - 1997 Sampling Season								
7/15/97	10.0	8.06	570	6.16	0.14	0.5	20.0	23.0
8/27/97	5.9	8.03	670	7.16	0.15	0.6	24.0	20.0
9/26/97	9.4	na	678	7.94	na	0.1	19.0	14.5
10/29/97	9.4	8.13	734	10.97	0.03	0.2	-4.0	4.0
97 Mean	**8.7**	**8.07**	**663**	**8.06**	**0.11**	**0.4**	**14.8**	**15.4**

Sand Hill River Watch - 1995-1997 Data Summary by Site

Sample Dates	Turb NTUs	pH	Cond uS/cm	DO mg/l	TP mg/l	NO3 mg/l	Temp-C Air	Temp-C Water
FB 20 Site - 1995 Sampling Season								
5/11/95	6.7	7.28	658	9.68	0.07	.5	19.2	11.6
6/17/95	2.3	8.02	670	6.12	0.11	.3	28.0	23.0
7/7/95	14.0	7.98	533	7.36	0.16	1.6	18.0	17.0
8/19/95	2.0	7.20	670	7.3	0.07	0.3	20.0	19.0
9/20/95	3.8	8.30	729	9.86	0.04	0.1	6.0	7.0
10/30/95	2.9	8.27	800	13.06	0.01	0.4	1.0	5.0
95 Mean	**5.3**	**7.84**	**677**	**8.9**	**0.08**	**0.5**	**15.4**	**13.8**
FB 20 Site - 1996 Sampling Season								
7/18/96	10.1	8.13	659	6.8	0.12	0.6	22	21
8/26/96	4.1	8.24	740	7.25	0.04	0.3	18	17
10/2/96	4.0	6.8	770	9.69	0.04	0.2	5	8
11/7/96	5.6	8.5	877	11.78	0.03	0.3	3	3
96 Mean	**6.0**	**7.92**	**762**	**8.88**	**0.06**	**0.4**	**12**	**12**
FB 20 Site - 1997 Sampling Season								
5/22/97	7.0	8.38	627	8.69	0.01	0.1	13.0	12.0
7/15/97	11.4	8.11	585	6.52	0.17	0.5	19.0	23.0
8/27/97	7.6	8.01	675	7.05	0.25	0.3	25.0	20.0
9/26/97	7.4	na	661	8.31	na	0.1	18.0	14.0
10/29/97	9.8	8.26	707	12.01	0.02	0.3	-3.0	5.0
97 Mean	**8.6**	**8.19**	**651**	**8.52**	**0.11**	**0.3**	**14.4**	**14.8**
FB 30 Site - 1997 Sampling Season								
5/22/97	28.0	8.45	599	8.51	0.04	0.2	12.0	13.0
7/15/97	45.9	8.21	554	7.31	0.15	0.6	21.0	24.0
97 Mean	**37.0**	**8.33**	**577**	**7.91**	**0.10**	**0.4**	**16.5**	**18.5**
CL 15 Site - 1996 Sampling Season								
8/21/96	48.0	8.30	656	7.05	0.12	0.2	23	20
9/17/96	34.0	8.37	670	8.52	0.07	0.2	15	14
10/23/96	18.0	6.80	1018	10.65	0.05	0.3	1	4
11/13/96	22.0	8.4	844	13.7	0.06	0.3	-7	0
96 Mean	**30.5**	**7.97**	**797**	**9.97**	**0.08**	**0.3**	**8**	**10**

Sample Dates	Turb NTUs	pH	Cond uS/cm	DO mg/l	TP mg/l	NO3 mg/l	Temp-C Air	Temp-C Water
CL 10 Site - 1995 Sampling Season								
5/5/95	28.0	na	650	9.52	0.05	.2	9.5	12.1
6/7/95	31.0	8.45	620	7.18	0.03	.5	12.0	17.0
7/10/95	29.0	7.43	476	5.92	0.17	.9	25.0	23.0
8/16/95	26.0	8.29	621	6.86	0.06	0.3	25.5	24.5
9/13/95	16.0	8.51	698	7.54	0.06	0.1	21.0	16.5
10/23/95	19.0	8.36	744	11.20	0.07	0.4	0.0	3.0
95 Mean	**24.8**	**8.21**	**635**	**8.04**	**0.07**	**0.4**	**15.5**	**16.0**
CL 10 Site - 1996 Sampling Season								
4/23/96	226.0	8.04	382	10.39	0.26	1.9	2	4
5/30/96	26.5	8.34	604	8.31	0.08	.3	20	17
7/17/96	75.0	7.87	811	6.59	0.12	0.5	24	24
8/21/96	25.0	8.21	665	6.93	0.07	0.2	22	21
9/17/96	29.5	8.36	665	8.17	0.08	0.2	16	15
10/23/96	22.0	6.80	906	10.93	0.08	0.2	6	5
11/13/96	20.5	8.4	856	13.49	0.14	0.3	-7	0
96 Mean	**60.6**	**8.00**	**698**	**9.26**	**0.12**	**0.5**	**12**	**12**
CL 10 Site - 1997 Sampling Season								
5/20/97	56.4	8.46	603	10.16	0.11	na	10.0	8.0
7/15/97	66.9	8.24	561	6.20	0.16	0.6	28.0	25.0
8/18/97	49.7	8.47	609	8.20	na	0.4	25.0	20.0
9/17/97	67.2	8.60	597	8.06	0.08	0.3	13.0	15.0
10/22/97	46.4	8.25	682	12.00	0.16	0.6	0.0	4.0
11/26/97	26.1	8.24	746	13.00	0.07	0.3	-1.0	0.0
97 Mean	**52.1**	**8.38**	**633**	**9.60**	**0.12**	**0.4**	**12.5**	**12.0**
CL 15 Site - 1997 Sampling Season								
5/20/97	72.2	8.46	608	9.56	0.21	na	9.0	9.0
7/15/97	84.6	8.25	560	6.24	0.18	0.6	28.0	25.0
8/18/97	52.6	8.45	613	8.38	na	0.4	24.0	22.0
9/17/97	55.1	8.60	591	7.70	0.09	0.4	16.0	16.0
10/22/97	43.6	8.30	687	11.30	0.14	0.6	0.5	4.5
11/26/97	29.6	8.20	733	12.60	0.09	0.3	5.0	1.0
97 Mean	**56.3**	**8.38**	**632**	**9.30**	**0.14**	**0.5**	**13.8**	**12.9**

Sand Hill River Watch - 1995-1997 Data Summary by Site

Sample Dates	Turb NTUs	pH	Cond uS/cm	DO mg/l	TP mg/l	NO3 mg/l	Temp-C Air	Temp-C Water
CL 20 Site - 1995 Sampling Season								
5/5/95	32.0	na	650	9.84	0.07	.2	11.5	12.8
6/7/95	45.0	8.33	620	7.26	0.04	.8	10.0	18.0
7/10/95	66.0	7.05	438	5.64	0.60	1.2	25.0	23.0
8/16/95	29.0	8.31	641	8.24	0.07	0.2	26.0	22.0
9/13/95	18.0	8.53	713	7.88	0.07	0.1	21.0	17.0
10/23/95	23.0	7.82	776	11.30	0.07	0.6	1.0	4.0
95 Mean	**35.5**	**8.01**	**640**	**8.36**	**0.15**	**0.5**	**15.8**	**16.1**
CL 20 Site - 1996 Sampling Season								
4/23/96	248.0	8.03	375	10.54	0.31	1.3	2	4
5/30/96	46.0	8.35	611	7.91	0.09	.4	21	18
7/17/96	78.5	7.90	829	7.27	0.16	0.6	25	23
8/21/96	45.5	8.33	640	7.18	0.09	0.3	22	20
9/17/96	35.5	8.40	672	7.74	0.07	0.2	16	14
10/23/96	19.0	6.80	1008	10.62	0.08	0.2	3	5
11/13/96	31.5	8.5	857	13.5	0.09	0.3	-8	0
96 Mean	**72.0**	**8.04**	**713**	**9.25**	**0.13**	**0.5**	**12**	**12**
CL 20 Site - 1997 Sampling Season								
5/20/97	90.8	8.44	611	9.64	0.21	na	7.0	10.0
7/15/97	90.1	8.23	560	6.22	0.18	0.6	29.0	25.0
8/18/97	53.4	8.46	617	8.51	na	0.5	23.0	22.0
9/17/97	74.0	8.59	594	7.88	0.08	0.4	16.0	16.0
10/22/97	45.3	8.29	680	11.70	0.13	0.6	0.0	5.0
11/26/97	28.7	8.18	728	12.70	0.01	0.3	2.0	1.0
97 Mean	**63.7**	**8.37**	**632**	**9.44**	**0.12**	**0.5**	**12.8**	**13.2**

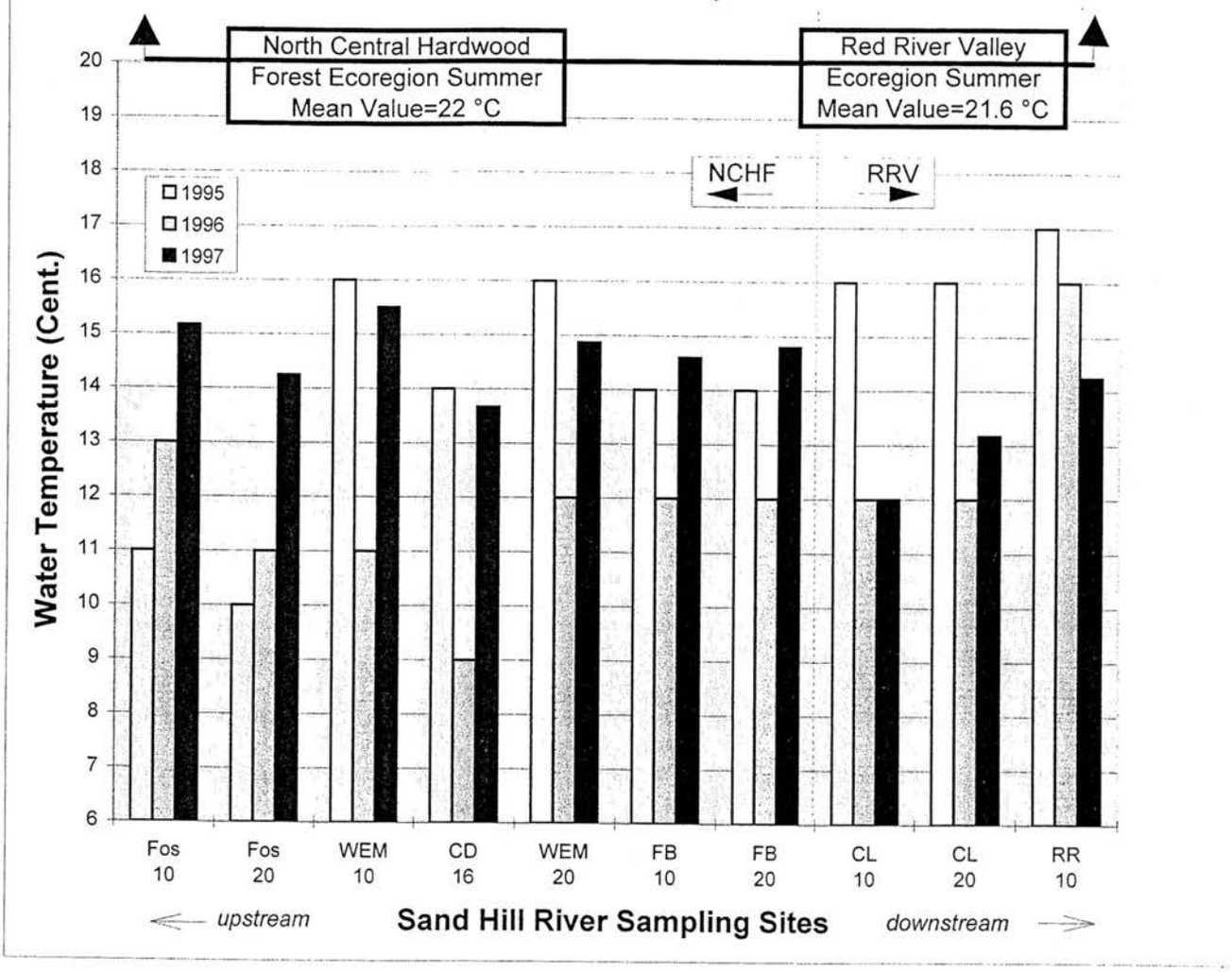
Sample Dates	Turb NTUs	pH	Cond uS/cm	DO mg/l	TP mg/l	NO3 mg/l	Temp-C Air	Temp-C Water
RR 10 Site - 1995 Sampling Season								
5/5/95	82.0	na	810	9.88	0.16	.6	13.6	11.7
6/7/95	18.0	8.13	903	6.52	0.02	.8	10.0	20.0
7/10/95	91.0	7.49	542	5.90	0.41	1.9	24.0	22.0
8/16/95	83.0	8.22	906	7.20	0.23	.1	27.0	24.0
9/13/95	62.0	8.37	916	8.38	0.25	0.4	20.0	18.5
10/23/95	36.0	8.24	981	11.14	0.27	0.6	0.0	4.0
95 Mean	**62.0**	**8.09**	**843**	**8.17**	**0.22**	**0.7**	**15.8**	**16.7**
RR 10 Site - 1996 Sampling Season								
4/23/96	149.0	7.97	536	9.95	0.40	1.1	2	4
5/30/96	53.0	8.07	888	7.03	0.21	.6	19	18
7/17/96	100.0	7.78	799	6.86	0.23	.7	25	25
8/21/96	63.5	8.40	995	8.18	0.25	0.6	21	20
9/17/96	46.0	8.46	1,051	8.93	0.26	0.9	17	15
96 Mean	**82.3**	**8.14**	**854**	**8.19**	**0.27**	**0.8**	**17**	**16**
RR 10 Site - 1997 Sampling Season								
5/20/97	184.0	8.13	724	8.06	0.57	na	7.0	12.0
7/15/97	129.0	8.00	471	5.11	0.33	0.6	30.0	25.0
8/18/97	191.0	8.39	685	7.99	na	0.6	25.0	21.0
9/17/97	153.0	8.60	701	7.98	0.27	0.6	16.0	18.5
10/22/97	98.9	8.25	765	11.10	0.21	1.0	0.0	8.0
11/26/97	23.5	8.26	863	12.80	0.16	0.4	0.0	1.0
97 Mean	**129.9**	**8.27**	**702**	**8.84**	**0.31**	**0.6**	**13.0**	**14.3**

Sand Hill River Watch - 1995-1997 Data Summary by Site

Sample Dates	Turb NTUs	pH	Cond uS/cm	DO mg/l	TP mg/l	NO3 mg/l	Temp-C Air	Temp-C Water	N=
Sand Hill River Watershed 1995 Summer Mean Values									
Fos 10	7.2	7.64	544	5.24	0.08	0.8	10.6	10.9	6
Fos 20	6.1	7.44	654	6.84	0.11	0.8	11.3	10.5	6
WEM 10	4.5	7.83	674	7.59	0.08	0.4	16.2	15.8	6
WEM 20	1.3	7.60	773	4.41	0.14	0.4	17.2	16.5	6
FB 10	6.2	7.79	672	8.49	0.10	0.5	14.6	13.5	6
FB 20	5.3	7.84	677	8.90	0.08	0.5	15.4	13.8	6
CL 10	24.8	8.21	635	8.04	0.07	0.4	15.5	16.0	6
CL 20	35.5	8.01	640	8.36	0.15	0.5	15.8	16.1	6
RR 10	62.0	8.09	843	8.17	0.22	0.7	15.8	16.7	6
CD 16	4.7	7.62	825	7.32	0.10	0.9	16.4	13.6	6
Sand Hill River Watershed 1996 Summer Mean Values									
Fos 10	3.9	7.63	535	6.82	0.08	0.3	14	13	7
Fos 20	4.6	7.55	724	7.24	0.05	0.3	12	11	7
WEM 10	8.3	7.80	697	8.73	0.05	0.5	9	11	6
WEM 20	2.4	7.54	779	5.52	0.12	0.3	10	12	6
FB 10	7.0	7.84	796	8.78	0.05	0.3	11	12	4
FB 20	6.0	7.92	762	8.88	0.06	0.4	12	12	4
CL 10	60.6	8.00	698	9.26	0.12	0.5	12	12	7
CL 15	30.5	7.97	797	9.97	0.08	0.3	8	10	4
CL 20	72.0	8.04	713	9.25	0.13	0.5	12	12	7
RR 10	82.3	8.14	854	8.19	0.27	0.8	17	16	5
CD 16	4.4	7.60	795	7.56	0.08	0.6	9	9	6
Sand Hill River Watershed 1997 Summer Mean Values									
Fos 10	5.7	7.85	455	5.13	0.05	0.3	18.0	15.2	6
Fos 20	12.1	7.85	599	6.98	0.10	0.4	17.3	14.3	6
WEM 10	11.2	8.00	579	7.52	0.07	0.4	12.2	15.5	6
WEM 20	2.9	7.79	630	5.04	0.10	0.3	14.0	14.9	6
FB 10	9.6	8.13	662	8.07	0.10	0.2	13.6	14.6	5
FB 15	8.7	8.07	663	8.06	0.11	0.4	14.8	15.4	4
FB 20	8.6	8.19	651	8.52	0.11	0.3	14.4	14.8	5
FB 30	37.0	8.33	577	7.91	0.095	0.4	16.5	18.5	2
CL 10	52.1	8.38	633	9.60	0.12	0.4	12.5	12.0	6
CL 15	56.3	8.38	632	9.30	0.14	0.5	13.8	12.9	6
CL 20	63.7	8.37	632	9.44	0.12	0.5	12.8	13.2	6
RR 10	129.9	8.27	702	8.84	0.31	0.6	13.0	14.3	6
CD 16	6.9	7.84	661	7.16	0.09	0.5	13.7	13.7	6

Sample Dates	Turb NTUs	pH	Cond uS/cm	DO mg/l	TP mg/l	NO3 mg/l	Temp-C Air	Temp-C Water
Ecoregion Summer Mean Values(1970-1992)								
NCHF=North Central Hardwood Forest; RRV=Red River Valley								
NCHF	8.2	8.20	278	na	0.13	0.08	na	22
RRV	21.8	8.30	538	na	0.30	0.1	na	22

Water Temperature - Sand Hill River
Summer Mean Values, 1995-1997

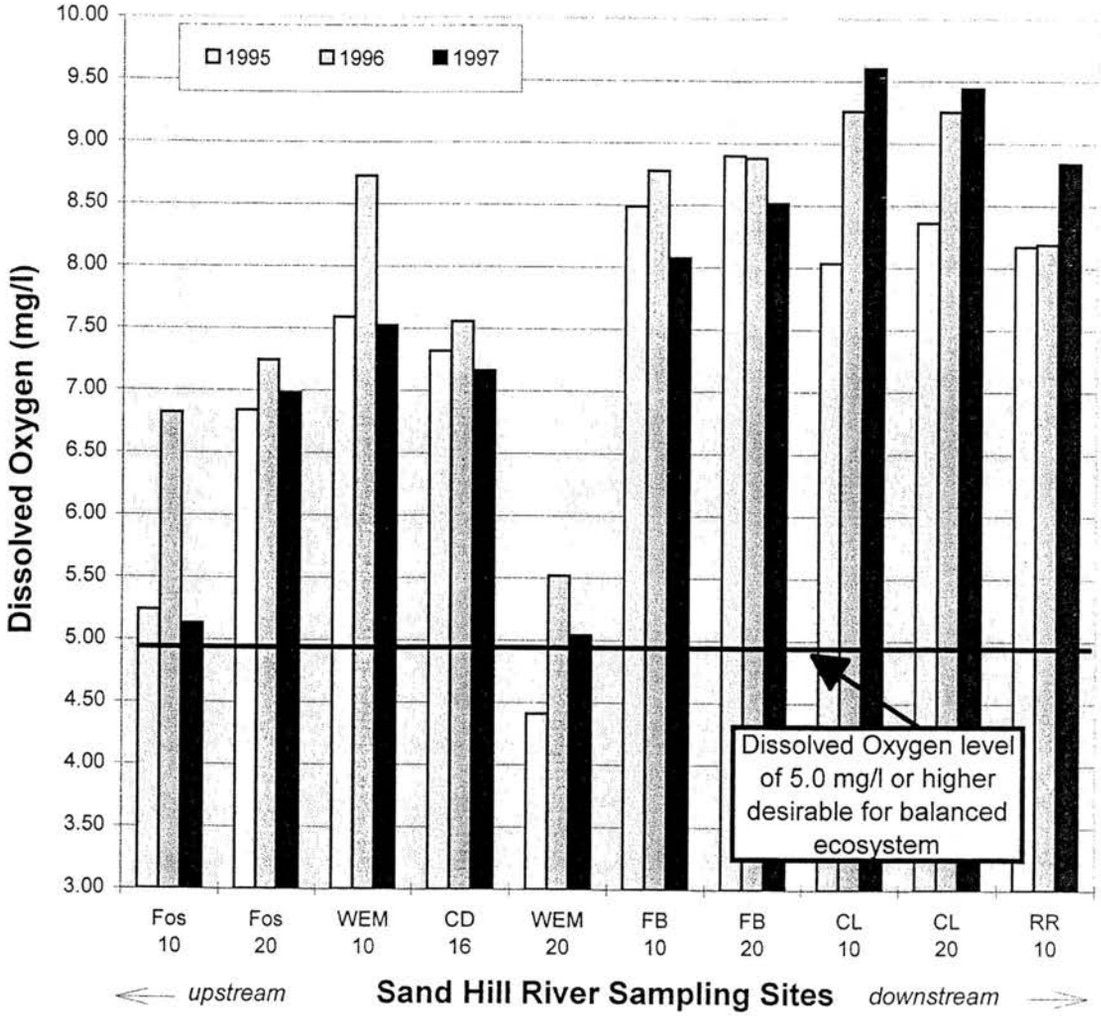


Water Temperature - Summer Mean Values (Centigrade)

	1995	1996	1997
Fos 10	11	13	15.2
Fos 20	10	11	14.3
WEM 10	16	11	15.5
CD 16	14	9	13.7
WEM 20	16	12	14.9
FB 10	14	12	14.6
FB 20	14	12	14.8
CL 10	16	12	12.0
CL 20	16	12	13.2
RR 10	17	16	14.3

Notes: Water temperature is very important as many of the river's physical, biological, and chemical characteristics are directly related to temperature. Higher water temperature is inversely related to the ability of water to hold dissolved oxygen. High turbidity levels generally produce higher water temperatures as the higher concentration of suspended solids absorb more sunlight. Water temperature is also important as a determinant of the type of fish that a stream can support as each fish species has a preferred temperature range.

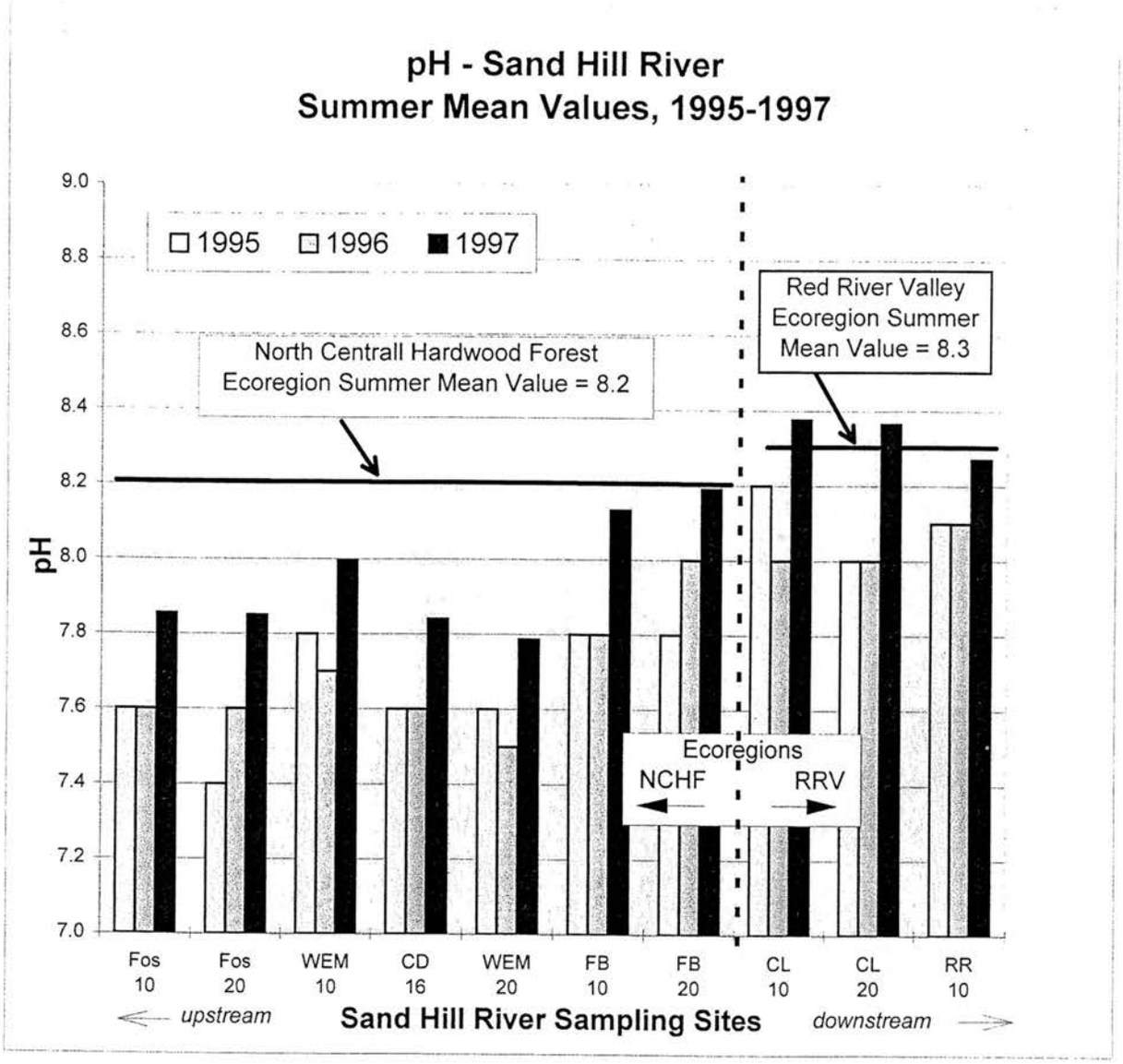
Dissolved Oxygen - Sand Hill River
Summer Mean Values, 1995-1997



Dissolved Oxygen - Summer Mean Values (mg/l)

	1995	1996	1997
Fos 10	5.24	6.82	5.13
Fos 20	6.84	7.24	6.98
WEM 10	7.59	8.73	7.52
CD 16	7.32	7.56	7.16
WEM 20	4.41	5.52	5.04
FB 10	8.49	8.78	8.07
FB 20	8.90	8.88	8.52
CL 10	8.04	9.26	9.60
CL 20	8.36	9.25	9.44
RR 10	8.17	8.19	8.84

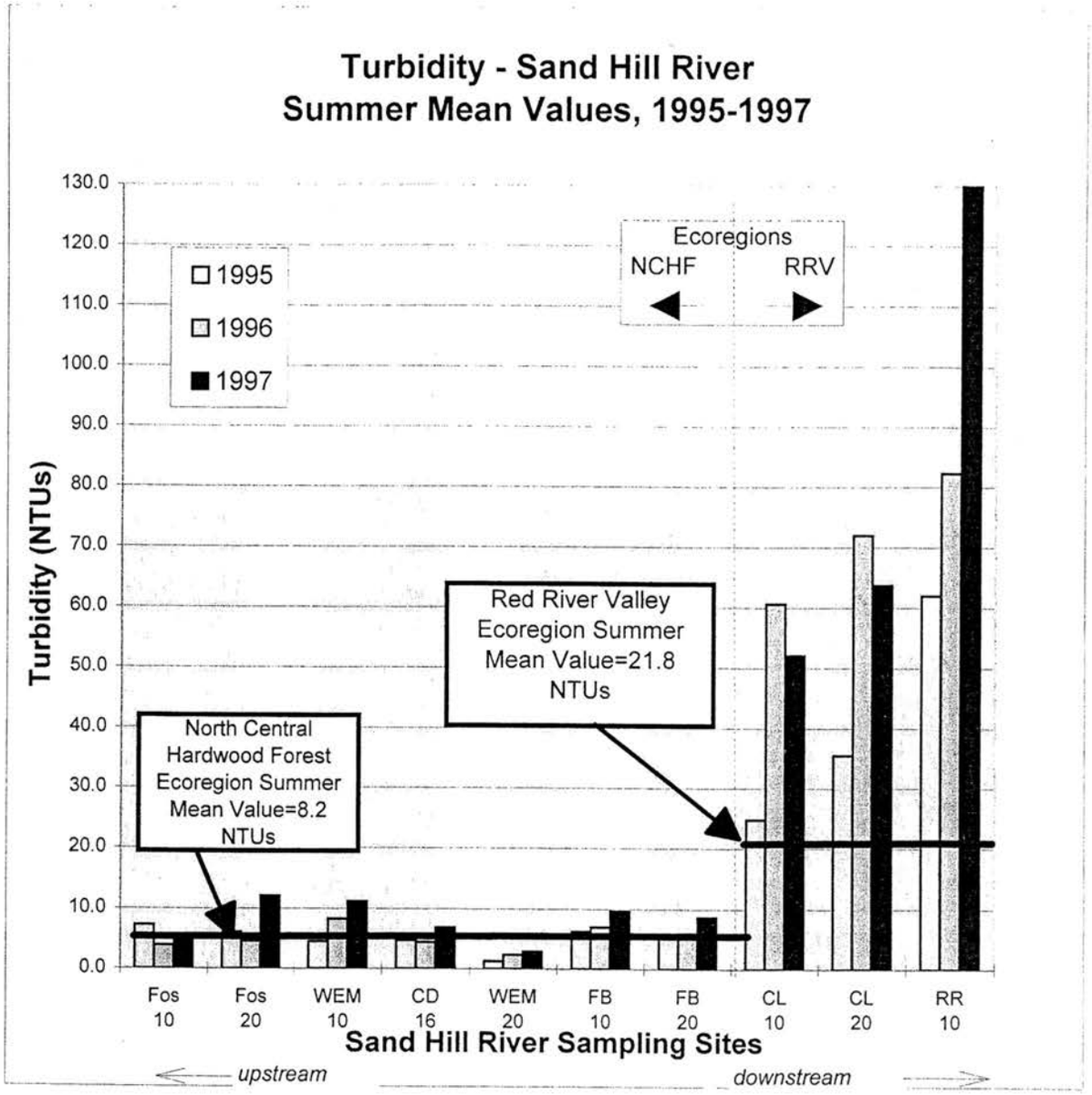
Notes: Dissolved Oxygen (DO) is of critical importance for a healthy ecosytem. DO enters the water via photosynthesis of aquatic plants and aeration with the atmosphere. DO is consumed by the respiration of animals, plants, and bacteria. Build up of organic wastes significantly contributes to changes in DO levels. Like all gases, oxygen is soluble inversely proportional to the temperature of the water. No ecoregion means are available for DO, rather a level of 5 mg/l is considered the threshold to support a viable fish community. DO levels below 2 mg/l can result in fish-kills



pH - Summer Mean Values

	1995	1996	1997
Fos 10	7.6	7.6	7.85
Fos 20	7.4	7.6	7.85
WEM 10	7.8	7.7	8.00
CD 16	7.6	7.6	7.84
WEM 20	7.6	7.5	7.79
FB 10	7.8	7.8	8.13
FB 20	7.8	8.0	8.19
CL 10	8.2	8.0	8.38
CL 20	8.0	8.0	8.37
RR 10	8.1	8.1	8.27

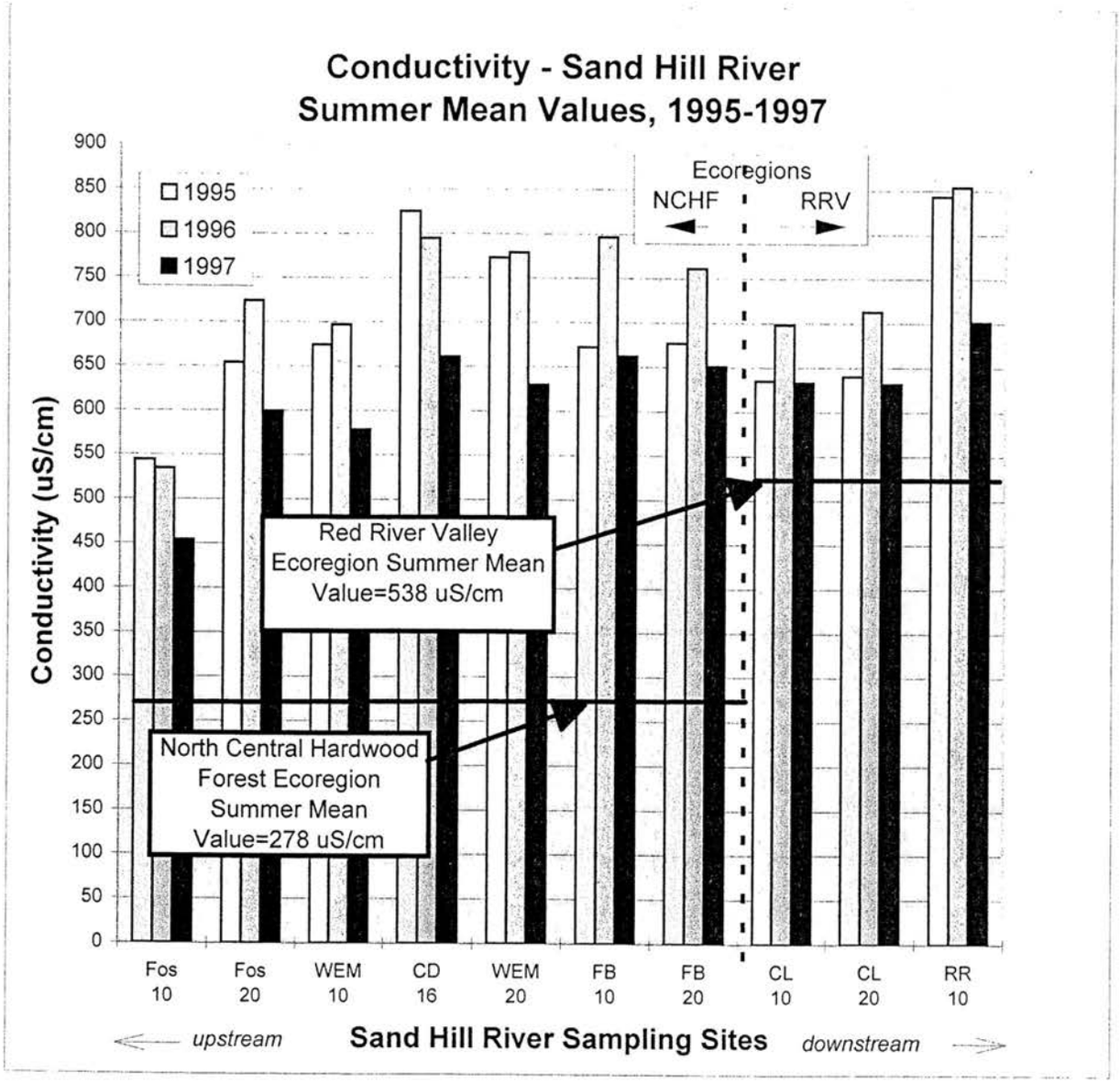
Notes: The acidity, or alkalinity, of water is measured by the pH scale ranging from zero to fourteen. Water with a pH of less than 7 is acidic; if it is greater than 7, alkaline and equal to 7 is neutral. The pH scale is logarithmic, each whole number represents a ten-fold change in how acidic or basic the sample is. Rain and snow tends to be slightly acidic because of contact with atmospheric carbon dioxide. The type of rocks and minerals present is a major determinant of the pH of local water. If limestone is present, the alkaline (basic) limestone neurtralizes the effect acids might have on lakes and streams.



Turbidity-Summer Mean Values (NTUs)

Sites	1995	1996	1997
Fos 10	7.2	3.9	5.7
Fos 20	6.1	4.6	12.1
WEM 10	4.5	8.3	11.2
CD 16	4.7	4.4	6.9
WEM 20	1.3	2.4	2.9
FB 10	6.2	7.0	9.6
FB 20	5.3	6.0	8.6
CL 10	24.8	60.6	52.1
CL 20	35.5	72.0	63.7
RR 10	62.0	82.3	129.9

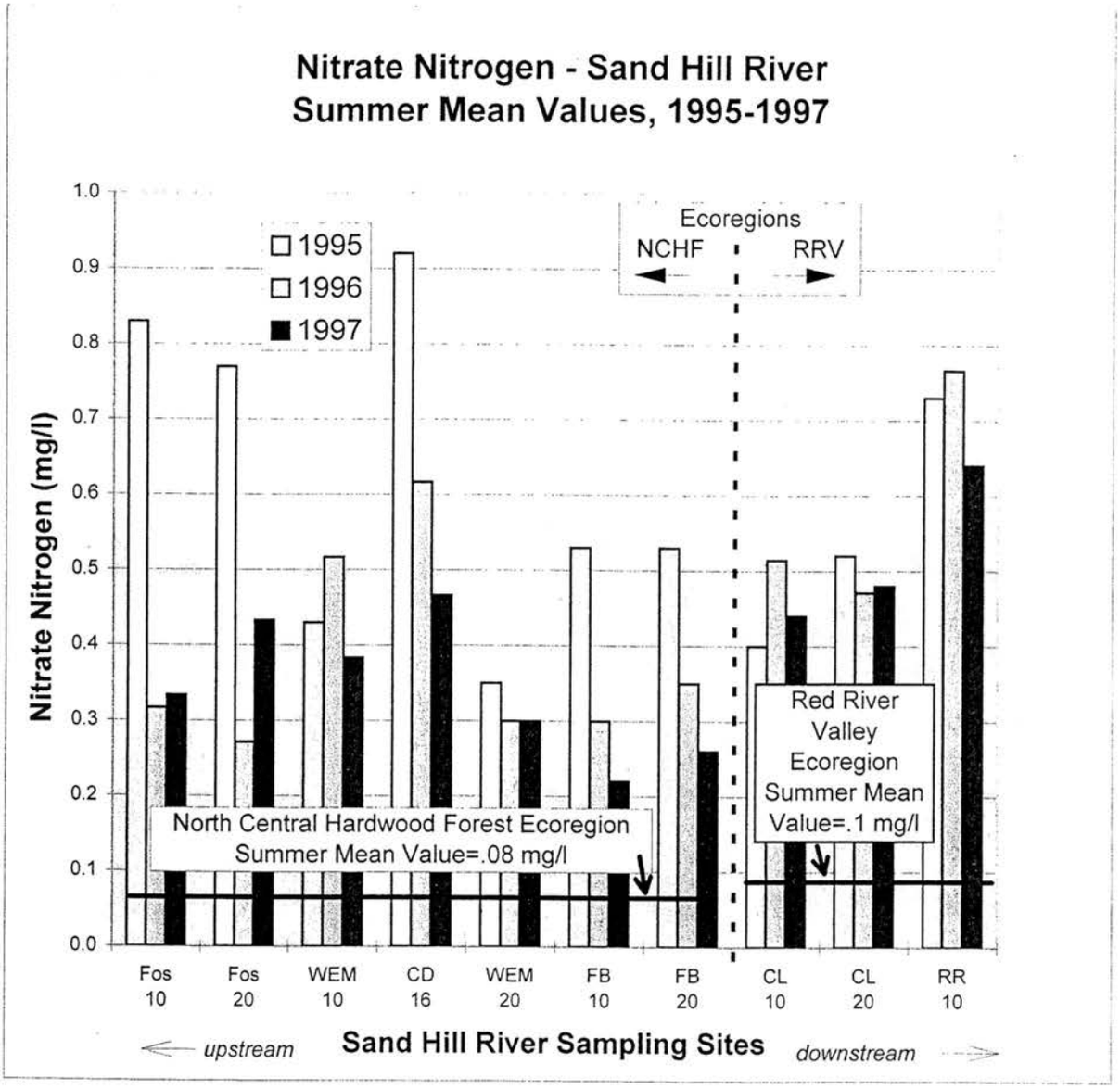
Notes: Turbidity is a measure of water clarity--the clearer the water the lower the turbidity. Turbidity is suspended, undissolved material in water which may be caused by soil erosion, partially decomposed organic matter, waste discharge, bottom feeders (such as carp) that stir up bottom sediments, and algal growth. Higher turbidity levels throughout the testing season often coincided with spring runoff and rainfall events which resulted in sediment being washed into the Sand Hill River. Possible impacts associated with higher turbidity may be warmer water, lower dissolved oxygen, siltation and habitat degradation, and reduced aesthetic enjoyment for human recreation.



Conductivity-Summer Mean Values (uS/cm)

	1995	1996	1997
Fos 10	544	535	455
Fos 20	654	724	599
WEM 10	674	697	579
CD 16	825	795	661
WEM 20	773	779	630
FB 10	672	796	662
FB 20	677	762	651
CL 10	635	698	633
CL 20	640	713	632
RR 10	843	854	702

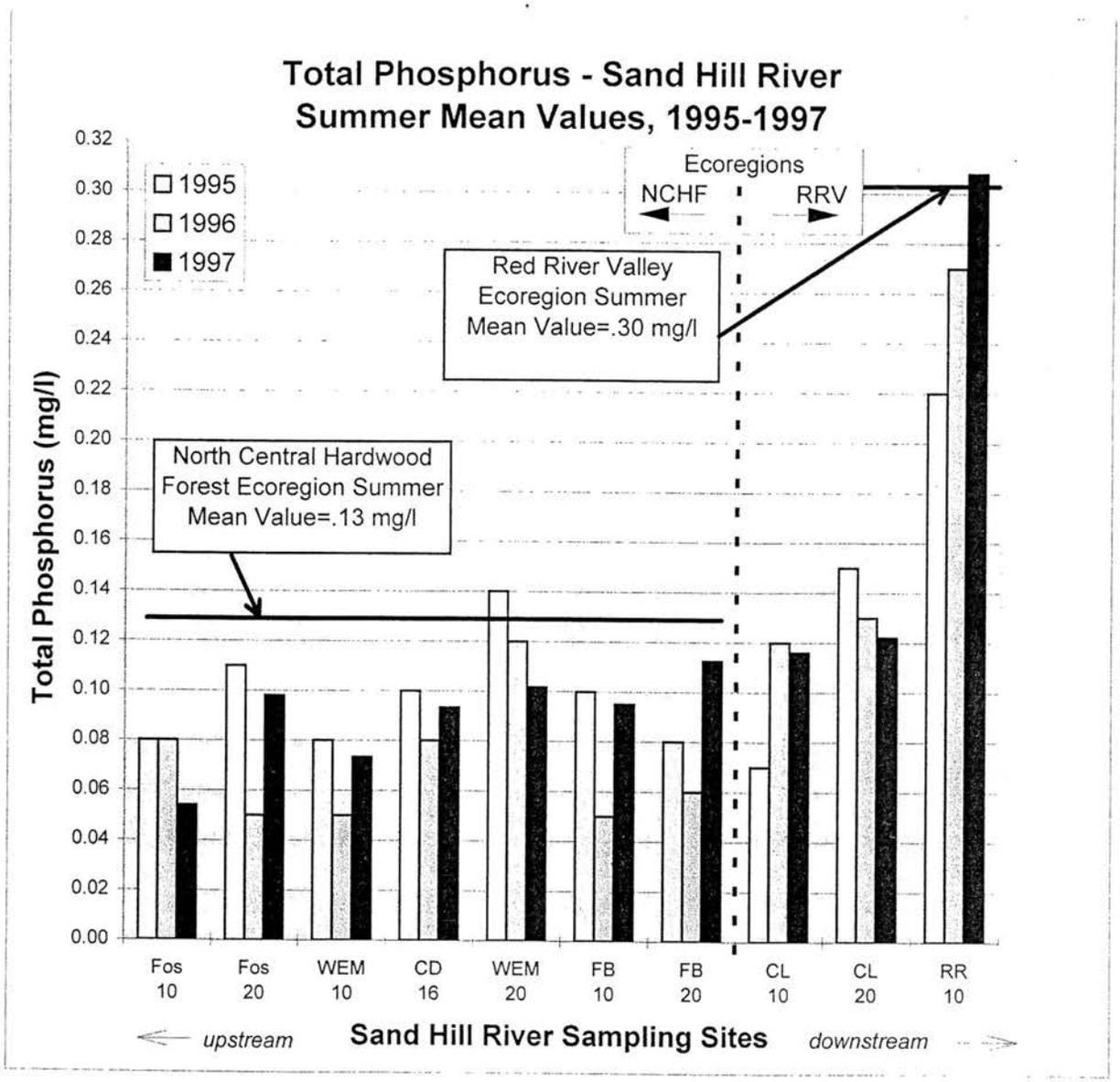
Notes: Conductivity provides an index to the amount of solids dissolved in water. It is the electrolytic capability of the water--or the ease at which an electric current can pass through water and is correlated to the concentration of ionic dissolved solids in water. Ions are present in many forms including chloride, nitrates, phosphates, sulfates, etc. (anions-negative ions) and sodium, calcium, iron, aluminum, etc. (cations-positive ions) dissolved solids in water. Natural soil characteristics and land use practices including municipal storm drainage impact conductivity.



Nitrate Nitrogen - Summer Mean Values (mg/l)

	1995	1996	1997
Fos 10	0.8	0.3	0.3
Fos 20	0.8	0.3	0.4
WEM 10	0.4	0.5	0.4
CD 16	0.9	0.6	0.5
WEM 20	0.4	0.3	0.3
FB 10	0.5	0.3	0.2
FB 20	0.5	0.4	0.3
CL 10	0.4	0.5	0.4
CL 20	0.5	0.5	0.5
RR 10	0.7	0.8	0.6

Notes: Nitrogen is an essential nutrient required by all plants and animals to build protein. In aquatic ecosytems, nitrogen is present in many forms. Sources of nitrogen may include waste water treatment effluent, storm drain discharge, malfunctioning septic systems, fertilizers, and the runoff from cattle feedlots and dairies. High nitrogen levels detected in July of 1995 coincided with heavy rainfall and its associated runoff. This runoff relects land use practices in the contributing watershed.



Total Phosphorus-Summer Mean Values (mg/l)

	1995	1996	1997
Fos 10	0.08	0.08	0.05
Fos 20	0.11	0.05	0.10
WEM 10	0.08	0.05	0.07
CD 16	0.10	0.08	0.09
WEM 20	0.14	0.12	0.10
FB 10	0.10	0.05	0.10
FB 20	0.08	0.06	0.11
CL 10	0.07	0.12	0.12
CL 20	0.15	0.13	0.12
RR 10	0.22	0.27	0.31

Notes: Phosphorus is a plant nutrient needed for growth, and a fundamental element in the metabolic reactions of plants and animals. In most waters, phosphorus functions as a "growth-limiting" factor because it is usually present in low concentrations while other nutrients are usually abundant. Algae are especially quick to respond to phosphate enrichment often resulting in algae blooms—the "pea green soup" which is characteristic of nutrient-rich waters. Total phosphorus is a measure of all forms of phosphorus with sources including human, animal and industrial wastes, and land use practices causing soil erosion and loss of fertilizers.

August 1998

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BOARD OF WATER AND SOIL RESOURCES
CONFERENCE ROOM, ONE WEST WATER STREET
ST. PAUL, MINNESOTA 55107
AUGUST 26, 1998

BOARD MEMBERS PRESENT: Kathleen Roer, Lee Coe, Paul Krabbenhoft, Marv Tripp, Allan Oehlke, Barb Cobb, Darrell Bruggman, Ginny Imholte, Rod Sando, Dwain Otte, Jim Dahlvang, Glenn Annexstad, Jim Anderson, Mark Dittrich for Sharon Clark, Kelli Johnson, Rod Massey.

BOARD MEMBERS ABSENT:
Barbara Uppgaard

OTHERS PRESENT:
Rick Reimer, MACDE
Wayne Edgerton, DNR
Ray Bohn and Vern Johnson, MAWD

STAFF PRESENT: Ron Harnack, Jim Birkholz, Ron Struss, Wayne Zellmer, Pete Waller, Bruce Sandstrom, Mary Jo Anderson

Chair Roer called the meeting to order at 9:00 a.m.

** 98-54 **Adopt Agenda** - Moved by Lee Coe, seconded by Glenn Annexstad, to adopt the agenda as presented. Motion passed on a voice vote.

** 98-55 **Minutes of July 22, 1998 -** Moved by Ginny Imholte, seconded by Barb Cobb, to approve the minutes of July 22, 1998 as circulated. Motion passed on a voice vote.

Reports

Chair's Report - Chair Roer reported that she attended the Environmental Quality Board (EQB) meeting. The next EQB meeting is scheduled for September 30, at which time the GEIS feedlot scoping document will be reviewed by the EQB. Chair Roer announced the upcoming ~~attended~~ the citizens advisory committee meeting.* A technical advisory committee is being established with BWSR representation. Chair Roer attended the environmental cluster meeting, discussions on the environmental education issue were addressed. She also attended the wetland committee meeting.

*9/10/98 in St. Paul; 9/21-22/98 in Plymouth.

Executive Director's Report - Ron Harnack visited the Marshall BWSR field office and met with Lincoln County and Murray County local units of government. Ron attended the Red River Basin Board meeting. Ron is involved in the Red River mediation. Ron presented an outline for the "Drainage Forum" on November 19-20, at the St. Cloud Civic Center. Discussion followed.

Ron Harnack stated that the budget process is moving forward both internally and externally with the environmental agencies, collaboratively with the lakes initiative, drainage initiative, RIM report, and environmental education. Ron stated that BWSR initiatives include: adjustment to base grant, road replacement, non-point engineering, and nutrient management.

Barb Cobb stated that she attended the MASWCD Board of Directors' meeting yesterday. MASWCD is concerned that they are not represented on the GEIS feedlot technical advisory committee. Chair Roer stated that she will follow-up on this issue.

Dispute Resolution Committee (DRC) - Marv Tripp reported that four WCA appeals have come before the DRC; two of the appeals are the same in Scott County. There is an appeal with DNR, and also an appeal from BWSR with the City of Rochester. Ron stated that BWSR's appeal is partly to hold the system accountable. Discussion followed.

Ron Harnack introduced Ron Struss, newly hired metro region BWSR/MES watershed education coordinator. Ron Struss presented his ~~biography~~. resume

Cost-Share Committee Report - Dwain Otte reported that farmstead windbreaks is an issue that the cost-share committee is dealing with, the committee will review the rules and will bring a resolution before the full Board at the September meeting.

Wetlands Committee - Darrell Bruggman reported that the wetlands committee met on August 20, the minutes from the meeting were distributed. The committees recommendations will be discussed later on the agenda.

Agency Reports

Jim Anderson, Minnesota Extension Service (MES), reported that MES has been involved with BWSR and MDA regarding a budget initiative for research and education for the drainage issue. Jim reported that by the end of September all three BWSR/MES education positions will be in place. The New Ulm position will be filled on September 17. MES has made an offer for an extension educator at the West Central experiment station in Morris. Jim stated that Minnesota has now built education capacity in soil and water conservation issues in Minnesota.

Mark Dittrich, Minnesota Department of Agriculture (MDA), reported that MDA is working on an LCMR project "Reinventing the Ag Preservation Program." MDA has four LCMR projects. The Feedlot Manure Management Committee is meeting next month. Mark reported that MDA is involved in a biological control study, they are involved in pesticide issues such as grasshoppers and gypsy moth, and MDA is working with composting of pigs. MDA is working with BWSR on RIM.

Kelli Johnson, Minnesota Department of Health (MDH), reported that MDH is addressing the food borne illness outbreaks statewide. MDH is working on the environmental budget preparation. Kelli reported that public facilities authority has issued the first check for wells.

Rod Massey, Pollution Control Agency (PCA), reported that the physical reorganization of PCA has taken place. Rod now has a counterpart in the north, Roger Bork, who may attend BWSR meetings on Rod's behalf. Rod reported that PCA is considering adding a co-location facility in Willmar.

Rod Sando, Department of Natural Resources (DNR), reported that DNR's "Natural Resources Issues Day" will be held this evening at the Kelly Inn in St. Paul; he invited board members to attend. Rod stated that DNR received press regarding meeting facilities. DNR would like to see more focus on better management of Minnesota lakes. DNR chief of fisheries, Jack Skrypek, will be retiring as chief, and reassigned on lake issues. Rod reported that the Minnesota Outdoors Heritage Alliance has polled citizens, DNR has received positive response. Rod met with Dennis Anderson, reporter, and discussed the Minnesota River, Rod asked for BWSR and PCA assistance in summarizing a report and circulate this report to the press stating the positive aspects and accomplishments that have been made to the Minnesota River. Rod reported on the trout kill in West Indian Creek in Wabasha County, significant resource loss, need to focus. Wolf round table continues to meet, their next meeting is this week in Duluth. GEIS citizens advisory committee has ~~five~~ meetings scheduled ~~before the 15th of~~ in September, EQB will review the scoping document on September 30.

Allan Oehlke thanked DNR for their assistance with the grant for seeding in southeastern Minnesota.

Chair Roer called for a break in the meeting at 10:40 a.m. The meeting reconvened at 10:55 a.m.

Committee Recommendations

Bear Valley Watershed District Management Plan - Allan Oehlke reported that the southern subcommittee met to review the Bear Valley Watershed District Management Plan, the committee recommends approval. Moved by Allan Oehlke, seconded by Marv Tripp, to approve the Bear Valley Watershed District Management Plan. Motion passed on a voice vote.

** 98-56

Freeborn County Comprehensive Local Water Plan Update - Glenn Annexstad reported that the southern subcommittee met to review the Freeborn County Comprehensive Local Water Plan update, the committee recommends approval. Moved by Glenn Annexstad, seconded by Marv Tripp, to approve the Freeborn County Comprehensive Local Water Plan Update. Motion passed on a voice vote.

** 98-57

Lower Rum River Water Management Organization Watershed Management Plan - Barb Cobb reported that the metro subcommittee reviewed the plan and recommends approval. Moved by Barb Cobb, seconded by Dwain Otte, to approve the Lower Rum River Water Management Organization Watershed Management Plan. Motion passed on a voice vote.

** 98-58

Old Business

Wetland Road Replacement Funding Allocation Recommendation - John Jaschke distributed the 1998 appropriation for the public road wetland impact replacement. Darrell Bruggman commended John for his work on this issue. Moved by Darrell Bruggman, seconded by Kelli Johnson, to approve the appropriation, to proceed with funding the metro projects presented, and to establish a mechanism to provide credits to the non-metro projects. Discussion followed. Rod Sando stated that it's important to provide information regarding private land vs. public land payments. Ron Harnack asked that the wetland committee address the issue of private vs public at their next meeting. Motion passed on a voice vote.

** 98-59

GP/LOP-98 Proposal Update from the Army Corps of Engineers (USACOE) - John Jaschke distributed information on this federal proposal that would simplify project sponsors, eliminate duplicative review for agencies, and equal or greater environmental protection.. John explained that this is the only issue that hasn't been agreed upon regarding the level of impact which would require mitigation. At the present time the USACOE is proposing a requirement to mitigate all impacts greater than 400 square feet. Some agencies support this level while others support a level that is consistent with the state WCA "de minimis" exemption amounts. Discussion followed. Statewide comments are significant. John will develop a draft letter to USACOE for their decision.

Wetland Law Consolidation Study - John Jaschke stated that DNR/Waters is taking the lead on the wetland law consolidation study that will address two issues: 1) boundary determinations, and 2) public road project impacts/permitting/mitigation. Ron Harnack stated that the expectations are to have the draft report by December.

New Business

Proposed Policy for Habitat Management on RIM Reserve and PWP Easement Lands - Tim Fredbo presented the proposed policy of wildlife habitat management on conservation easement lands. Lee Coe suggested stewardship of the easements. Chair Roer stated this management plan would be incorporated into management of conservation easements. LGUs would be educated that this new policy is in effect; the sign-off/enforcement on this is done by the LGU. Moved by Rod Sando, seconded by Allan Oehlke, to approve the proposal of RIM Reserve lands. Motion passed on a voice vote.

** 98-60

FY99 Non-Point Engineering Assistance (NPEA) Base Grant - Wayne Zellmer presented the FY99 NPEA base grant allocations. Staff recommends approval of the base grants as presented. Moved by Allan Oehlke, seconded by Dwain Otte, to approve the FY99 NPEA base grants as presented. Motion passed on a voice vote.

** 98-61

Soil and Water Conservation Society (SWCS) and American Farmland Trust (AFT) Proposal Regarding the Purchase of Agricultural Conservation Easements (PACE) Conference - Julie MacSwain, president, Minnesota Chapter of Soil and Water Conservation Society, asked BWSR for support. Mark Dittrich stated that MDA is in support of the conference. Lee Coe stated that the Northern Land Use would be interested. Allan Oehlke stated that the fall BWSR ~~meeting~~ tour in southeastern Minnesota will ~~tour~~ focus on land use issues. Moved by Allan Oehlke, seconded by Lee Coe, to endorse the conference in 1999. Ginny Imholte suggested taking this outside the metro area. Motion passed on a voice vote.

** 98-62

Middle River Snake River Watershed District PL566 Project - Vic Ruhland, NRCS Resource Conservationist, reported that an application was presented to BWSR in the late 1970's, the PL566 process was determined to be ceased, but at this time, it's time to resurrect the PL566, it's time to review the application process for PL566. Moved by Rod Sando, seconded by Lee Coe, to approve the application for the PL566 project sponsored by the Middle River Snake River Watershed District. Motion passed on a voice vote.

** 98-63

Chair Roer called for a lunch break at 12:25 p.m. The meeting reconvened at 1:15 p.m.

Watershed District Water Quality Overview - Vern Johnson, president of MAWD, stated that various watershed districts will be presenting water quality projects to the Board. Ray Bohn introduced Cliff Aichinger, who presented the Ramsey-Washington Metro WD: objective is to improve water quality. Ray introduced Allan Kuseske who presented projects in the North Fork

Crow River Watershed District, he distributed "Aquatic Update" the Lake Association's newsletters and other information regarding the watershed district. Ray introduced Mark Deutschman, Ph.D., consultant with Houston Engineering, and reviewed Red Lake Watershed District and Wild Rice Watershed District non-point implementation activities. Jerry Bennett, administrator of the Wild Rice Watershed District presented a systems approach to water management. Kathy Draeger was introduced, project manager for MAWD, presented an evaluation of watershed based water quality management funded by LCMR and the McKnight Foundation. Chair Roer thanked the presenters for coming before the Board today.

Upcoming Meetings

Ron Harnack stated that the next BWSR meeting is September 23, it will be held in Room 5 of the State Office Building in St. Paul. This meeting will focus on local governance, with presentations from various states. This meeting is an outgrowth of "Crosscurrents" which suggests eliminating barriers, the presentations will do that as they concentrate on watershed issues.

Ron stated that the BWSR meeting in October will be a tour of southeastern Minnesota on October 28, with the meeting in Lanesboro on October 29.

Glenn Annexstad adjourned the meeting at 3:05 p.m.

Respectfully submitted,

Kathleen Roer

Kathleen Roer, Chair

SNAKE RIVER WATERSHED
PL-566 PROJECT
MARSHALL, POLK AND PENNINGTON COUNTIES
MINNESOTA

BACKGROUND

The Snake River Watershed is being planned under the authority of the Watershed Protection and Flood Prevention Act. The project sponsors are the Middle River Snake River Watershed District and the City of Warren, Minnesota. In June 1996 the sponsors requested the Natural Resources Conservation Service to provide assistance with the planning and implementation of flood control works in the Snake River Watershed. A formal application was submitted to the NRCS State Conservationist in January 1997. The Project had previously been authorized for planning by NRCS in 1980. Considerable planning was conducted during the 1980's developing a project that would meet the sponsors objectives of reducing flooding in the watershed. However, the project lacked broad support and resulted in planning being terminated in 1989. Due to the severity of flooding in the Snake River Watershed and in the Red River valley during the winter and spring of 1996-97 along with stronger local leadership, strong local support for a flood prevention project has resulted.

LOCATION

The Snake River Watershed is located in Northwestern Minnesota in Marshall, Pennington, and Polk Counties. For purposes of the PL-566 Project, the area of the Snake River Watershed includes the Snake River Tributaries plus the drainage area on the west side of Snake River downstream from the village of Alvardo to the outlet with the Red River. This area amounts to 166,400 acres or 260 square miles.. This includes 129,300 acres in Marshall County, 9,600 acres in Pennington County, and 27,500 acres in Polk County. The Snake River outlets into the Red River of the North about 45 miles south of the Canadian border.

The western half of the watershed consists of a very flat glacial lake plain which slopes gently west to the Red River. The eastern half of the watershed is level to undulating and consists of a series of glacial beach ridges which trend in a north-south direction.

The City of Warren is located on a broad flat floodplain. The Snake River meanders in a general southwest direction through the city. Extensive residential development has taken place along the river.

PROBLEMS

The major problem in the watershed is flooding in the City of Warren. Warren has a history of flooding. Recent floods occurred in 1998, a devastating flood in the spring of 1997, and two major floods during the spring and summer of 1996. Other floods have occurred in 1965, 1966, 1968, 1969, 1975, 1978, 1979 and several in the 1980's. Analysis shows that the 100 year frequency flood causes damages to over 690 residences and business in the city. Floodwaters also cause damages to transportation facilities, force schools and businesses to close, commit various resources to fighting floods, and destroy agricultural crops. Floods are also stressful for those people directly affected and cause untold negative impacts of a psychological nature.

The number of buildings impacted by frequencies are:

Storm Freq.	Buildings Flooded
.2	716
1.0	695
2.0	674
4.0	626
10.0	492
20.0	333
50.0	3
54.0	2

Average annual monetary damages to residences exceed $732,000. Total average annual damages to all resources in the watershed are estimated to be in excess of $1,129,000.

SOCIAL DATA

The 1990 population of Warren was 1,813. This is a decline of 292 persons from the 1980 population. There are 837 male and 976 female. The median age of the population is 38.8 years. Twenty six percent of the population, or 475 persons, are over sixty five years of age. The population of the watershed is approximately 4,073 which includes the City of Warren.

The population diversity in 1990 consisted of 1,791 Caucasians, 1 African American, 9 American Indians, 6 Asian Pacific Islanders, 19 Hispanic, and 6 people of other races.

The median household income in 1990 was $22,000 while the median family income was $30,000. Per capita income was $10,088. Approximately 11% of the residence have income below the poverty level. There are 33 families, 6.9%, living below the poverty level.

PROPOSED PROJECT

The proposed project consists of an off-channel floodwater retarding structure, approximately 10 miles northeast of Warren, located in Sections 14 and 15 of Comstock Township and a 4.2 mile floodway on the east and south sides of Warren. (See attached maps). The floodwater retarding structure design will allow for a portion of the floodwaters to be diverted into it, thereby reducing flooding downstream. The floodway is designed to handle large floods up to a 100 year frequency event. Low flows will remain in the Snake River channel through the City. Considerable planning efforts have been made to minimize any adverse environmental impacts resulting from the off-channel floodwater retarding structure or the floodway.

ESTIMATED PROJECT COST

Final project costs have not been developed, however, it is estimated that installation cost for this project is approximately $9,685,100. This includes $6,912,400 of PL-566 cost and $2,772,700 of other cost. Other costs are for:

- Approximately 800 acres of land for the floodwater storage area.
- Approximately 240 acres of land for the floodway.
- Cost associated with bridges and culverts for crossing of two railroads a federal highway, a state highway and a township road.

Annual O&M cost is estimated to be $16,600. Total annual cost is approximately $712,800. Average annual benefits are approximately $1,129,400. The benefit cost ratio is 1.6:1 and a net benefit of $400,000.

PROJECT SUPPORT

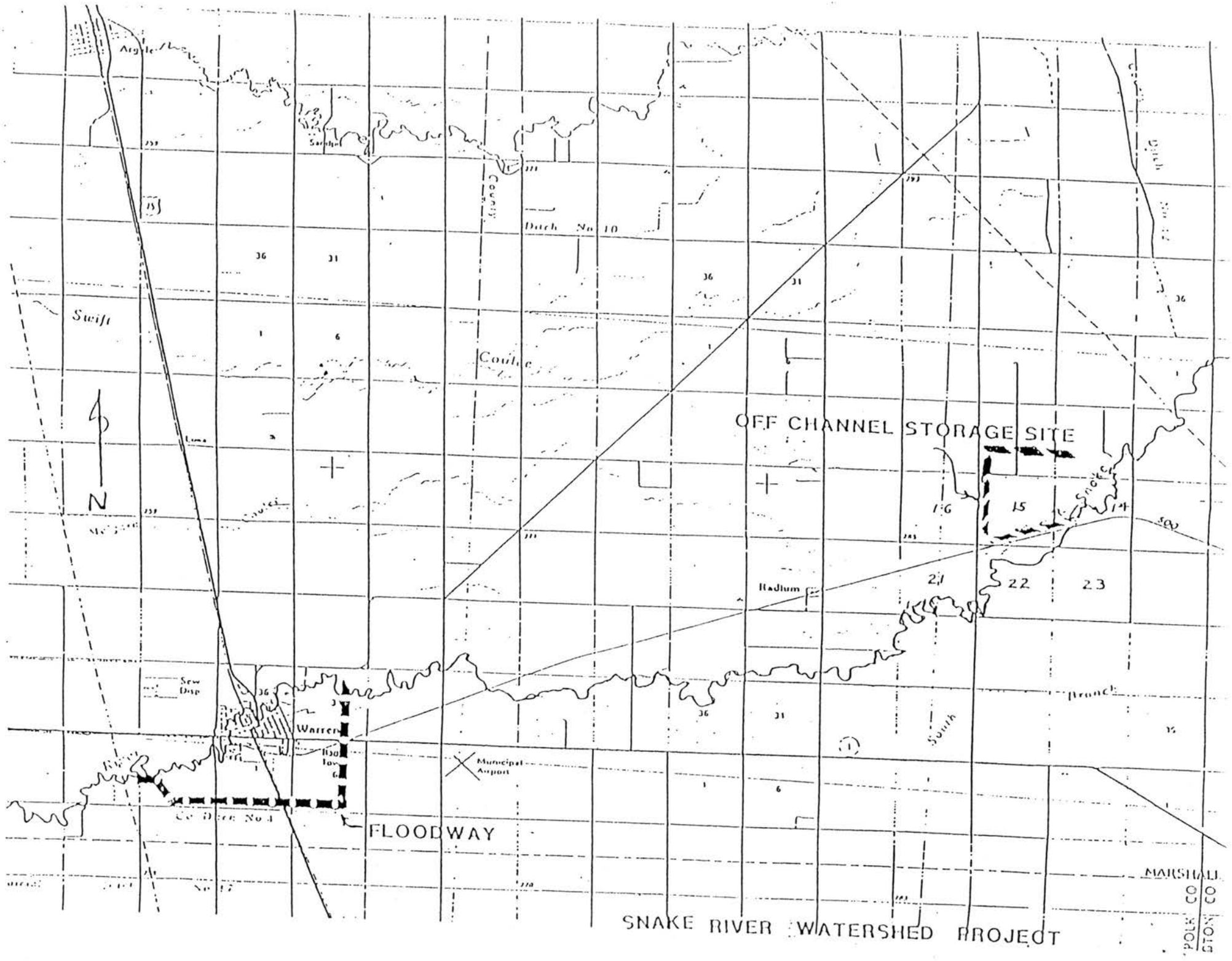
The Snake River Watershed Project is receiving very favorable support from the local communities and the State of Minnesota. Some of the recent activities taken place to accelerate planning are:

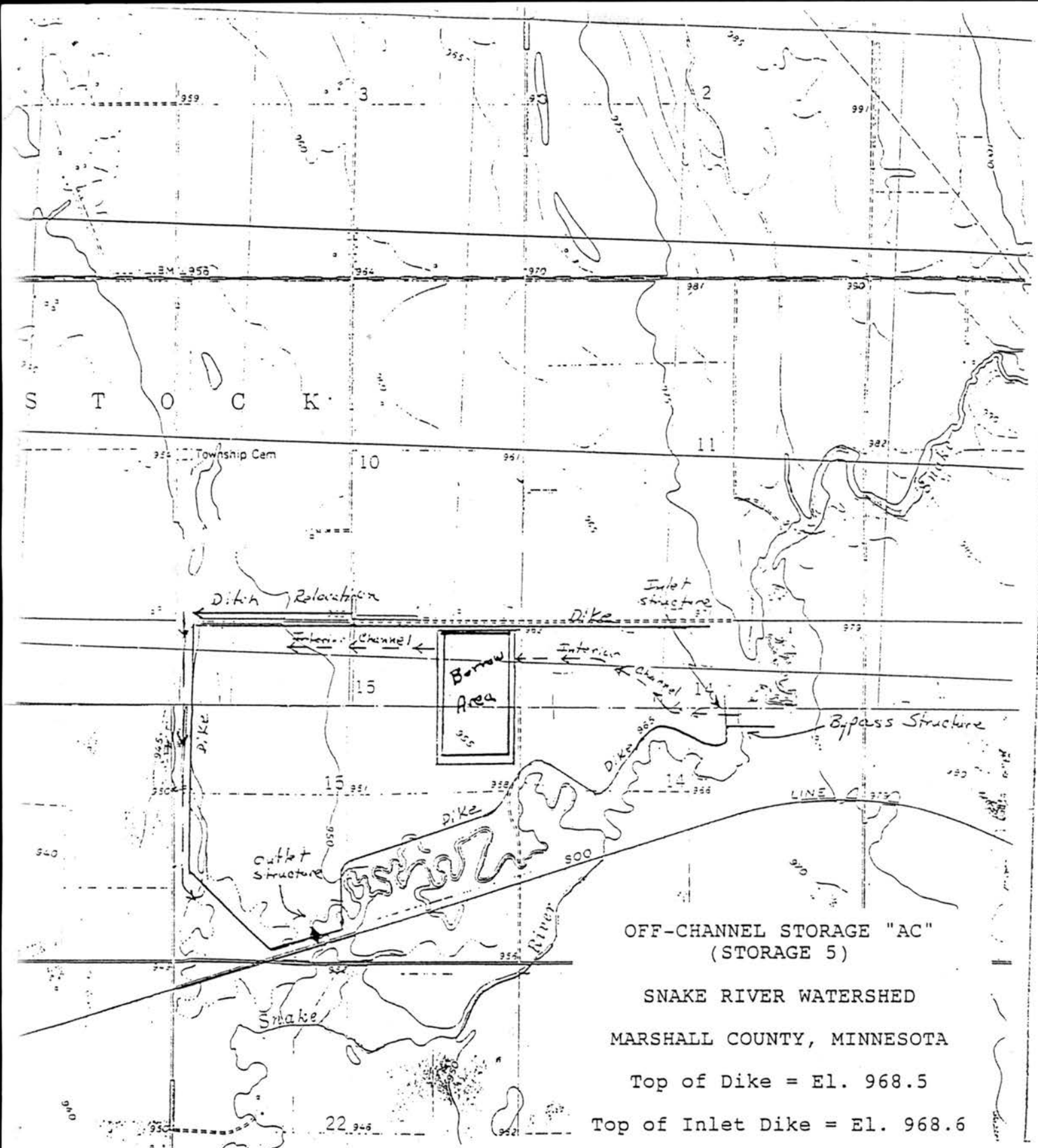
- In June of 1997, the sponsors organized a trip with the Minnesota NRCS Watershed Planning Team to Carman, Manitoba, to tour a similar, and very successful floodway project around an agricultural community very similar to Warren in size and relief. Since then, NRCS planning and engineering teams have compiled seven revised project alternatives and presented them to the sponsors for review and decisions.

- In January of 1998, NRCS Engineering Team surveyed the off channel storage structure. In March of 1998, an environmental review team with MDNR, USFWS, and COE evaluated possible environmental impacts of the various project alternatives.

- During April 20 - 23, 1998, NRCS Engineering Design and Watershed Planning Team met with the project sponsors and the MDNR to conduct field investigations of the two preferred project alternatives.

The schedule for project completion (Timeline for Completion) is attached.


OFF CHANNEL STORAGE SITE
FLOODWAY
SNAKE RIVER WATERSHED PROJECT
Radium
Warren
Municipal Airport
Dutch No. 10
Coulee
Swift
Creek
Branch
South
MARSHALL
POLK CO
STON CO
N



OFF-CHANNEL STORAGE "AC"
(STORAGE 5)

SNAKE RIVER WATERSHED

MARSHALL COUNTY, MINNESOTA

Top of Dike = El. 968.5

Top of Inlet Dike = El. 968.6

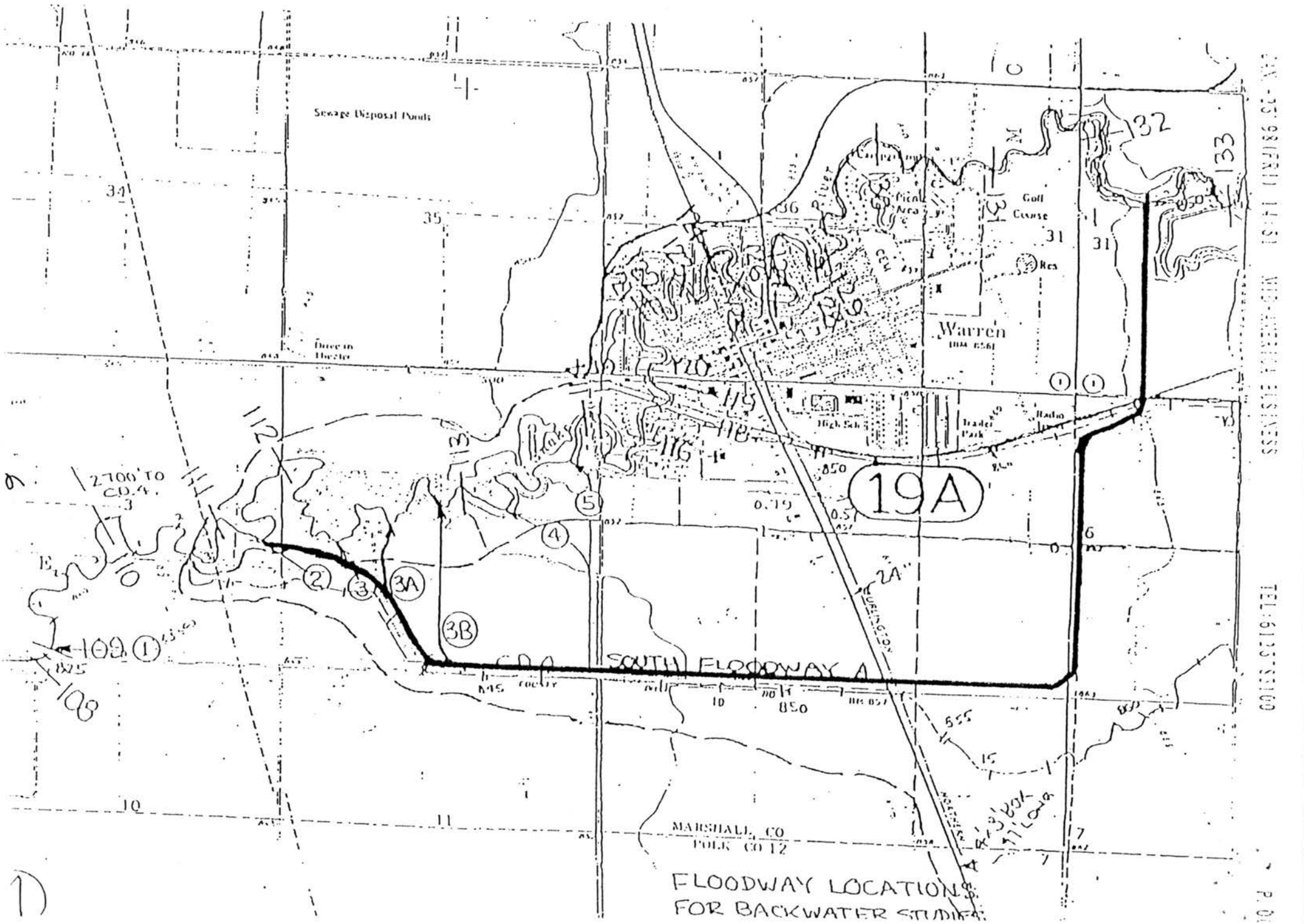
Outlet Structure = 6' Weir & 2'H x 3'W Orifice

Downstream Discharge = 1193 cfs

Max. Storage = 6707 Acre-Feet

Cost = $4,008,000

Cost/AF = $598


Sewage Disposal Ponds
Drive-in Theatre
Warren
Golf Course
Res
Trailer Park
Radio
2700' TO CO. 4
19A
1
2
3
3A
3B
4
5
6
CO. 4 SOUTH FLOODWAY A
MARSHALL CO
POLK CO 12
FLOODWAY LOCATIONS
FOR BACKWATER STUDIES

any proposed structural measure, such as an irrigation or drainage canal, floodway, or floodwater retarding structure, included in the plan. The types of watershed areas eligible for assistance under the Act are illustrated in exhibit 503–5.

If structural measures are considered as a potential solution, local organizations having the authority under State statutes to acquire land, raise money, and operate and maintain works of improvement should become the sponsors at the outset. If no such organizations exist, one must be formed before planning can be authorized. For watershed plans that include only land treatment measures, a soil and water conservation district organized under appropriate State law may qualify as an SLO.

503.23 Applications from two or more States

An application covering a watershed including non-Federal land in two or more States must be submitted to the designated State agencies and the Single Point of Contact for Federal Assistance of each State concerned. The application will be processed in accordance with arrangements mutually satisfactory to the concerned state conservationists and the designated State agencies.

503.24 Submission of application

The original and one copy of the application should be sent by the SLO to the designated State agency, one copy to the State Single Point of Contact for Federal Assistance, and one copy to the state conservationist. (The designated State agency is the agency having supervisory responsibility over programs provided for in the Act, or the Governor if no State agency has such responsibility.) The State Single Point of Contact may be omitted if only technical assistance is being sought. Application must be made on Form SF-424, "Federal Assistance" (exhibit 503–1).

An application must be approved by the designated State agency, who should then forward the original, signed application to the state conservationist along with a statement of the State's priority rating for the watershed. If the designated State agency disapproves an application, SCS will take no further action.

Upon receipt of an application for assistance, the state conservationist will assign a 9000 series number to the watershed. This number will be used throughout the planning process to monitor planning costs.

503.25 Acknowledging the application

The state conservationist will acknowledge receipt of the application by letter to the designated representative of the SLO after ascertaining that the application is valid. One copy of the letter of acknowledgment is to be sent to the Chief of the Soil Conservation Service. The state conservationist will provide the Forest Service (FS) area or regional office with a copy of the application and any subsequent amendments and will notify other concerned Federal agencies that a valid application has been received.

An information sheet containing a list of the SLO, county(ies), congressional district(s), Water Resources Council's region and subregion, assigned 9000 series code number, and watershed size along with a map are to be enclosed with the National Headquarters copies of the acknowledgment letter.

503.26 Amendment to an application

An amendment to the application should be submitted in the same manner as the original application. The SLO can be officially added or dropped by an amended application. This can also be accomplished when a watershed plan is prepared by a supplement thereto. Unless a change in SLO will affect a watershed's priority rating, there is generally no advantage to using an amended application to reflect only a change in sponsorship. Changes that only modify or supplement the information in the application can be handled by correspondence. Amendments are used primarily to change the size of the area considered by adding or deleting part of the watershed area. The SLO should send a letter to the state conservationist, through the designated State agency, stating what the change consists of and why it is needed.

Exhibit 503–1 Application form

OMB Approval No. 0348-0043

APPLICATION FOR FEDERAL ASSISTANCE

2. DATE SUBMITTED	Applicant Identifier
3. DATE RECEIVED BY STATE	State Application Identifier
4. DATE RECEIVED BY FEDERAL AGENCY	Federal Identifier

1. TYPE OF SUBMISSION:
Application: ☐ Construction ☐ Non-Construction
Preapplication: ☐ Construction ☐ Non-Construction

5. APPLICANT INFORMATION

Legal Name:

Organizational Unit:

Address *(give city, county, state, and zip code)*:

Name and telephone number of the person to be contacted on matters involving this application *(give area code)*

6. EMPLOYER IDENTIFICATION NUMBER (EIN): ☐☐ – ☐☐☐☐☐☐☐

7. TYPE OF APPLICANT: *(enter appropriate letter in box)* ☐

A. State
B. County
C. Municipal
D. Township
E. Interstate
F. Intermunicipal
G. Special District
H. Independent School Dist.
I. State Controlled Institution of Higher Learning
J. Private University
K. Indian Tribe
L. Individual
M. Profit Organization
N. Other (Specify) _____

8. TYPE OF APPLICATION:
☐ New ☐ Continuation ☐ Revision
If Revision, enter appropriate letter(s) in box(es): ☐ ☐
A. Increase Award B. Decrease Award C. Increase Duration
D. Decrease Duration Other *(specify)*:

9. NAME OF FEDERAL AGENCY:

10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER: ☐☐ . ☐☐☐
TITLE:

11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT:

12. AREAS AFFECTED BY PROJECT *(cities, counties, states, etc.)*:

13. PROPOSED PROJECT:
Start Date | Ending Date

14. CONGRESSIONAL DISTRICTS OF:
a. Applicant | b. Project

15. ESTIMATED FUNDING:

a. Federal	$	.00
b. Applicant	$	.00
c. State	$	.00
d. Local	$	.00
e. Other	$	.00
f. Program Income	$	.00
g. TOTAL	$	.00

16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?
a. YES. THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON
DATE _____
b. NO. ☐ PROGRAM IS NOT COVERED BY E.O. 12372
☐ OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW

17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT?
☐ Yes If "Yes," attach an explanation ☐ No

18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT, THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED

a. Typed Name of Authorized Representative	b. Title	c. Telephone number
d. Signature of Authorized Representative		e. Date Signed

Previous Editions Not Usable

Standard Form 424 (REV. 4-88)
Prescribed by OMB Circular A-102

Authorized for Local Reproduction

1998 Appropriation - Public Road Wetland Impact Replacement

$2,750,000
$ - 400,000 (Administration from legislation)
$2,350,000
$ - 275,000 max. (Metro drained wetland inventories 75/25 c-s)
$2,075,000

CAPITAL PROJECTS:

Metro	Non-Metro
$1,037,500	$1,037,500
$ -286,000 (Walls Bros. Ph. II)	$
	$ -100,000 (Swenson)
$ 751,500	*$ 937,000* up to half can be used to existing to buy existing credits

September 1, 1998 M:\BRDSUM.JJ

New Business #1

August 6, 1998

TO: BWSR Members

FR: Tim Fredbo, Easement Program Manager

RE: Habitat Management on Easement Lands - Proposed Policy

ISSUE

Management activities that may take place on easement lands with established vegetative cover conservation practices is not clearly understood by easement holders, SWCDs or BWSR. For many years we have been operating under the unwritten policy that no grazing or harvesting of any grass or trees is allowable on easement lands. Some have even understood the easement terms to not allow controlled burns. We need to clarify things so that vegetative management activities for wildlife habitat improvement are promoted and utilized.

BACKGROUND

1. Management of easement lands does not end with successful establishment of conservation practices. Vegetation, be it trees or grass, need to be managed to maintain stand longevity and enhance wildlife habitat. It is the responsibility of the easement holder to maintain the perennial cover on the easement for soil and water conservation and wildlife habitat purposes for the duration of the easement.

2. RIM Reserve statute and rule prohibit alteration of wildlife habitat, grazing, and agricultural crop production unless specifically approved by the Board. To date we have allowed food plots and some tree harvesting on easements but have not allowed any grazing or haying except during periods of severe drought.

3. It has been perceived in some areas of the state that no trees can ever be cut from easement lands and prescribed burning is not allowed. This is not the case but it has been the accepted mode of operation. This has worked to make the RIM Reserve program less desirable to landowners in these locations.

4. The NRCS Wetland Reserve Program (WRP) allows some haying and grazing activities to take place on their easement lands, when done according to their practice specifications. The wetland restoration partnership that BWSR has entered into with the NRCS necessitates that BWSR establish a policy for haying and grazing on our jointly held RIM / WRP easements.

5. The Heron Lake WD has requested that the RIM easement landowners in their watershed be allowed to hay their flood prone and riparian lands as a water quality improvement practice (biomass removal). The watershed also feels that the ability to occasionally remove a hay crop from an easement area will make the RIM Reserve program more attractive to landowners they

are working with who are not yet enrolled. The Heron Lake WD group made a presentation to the RIM Reserve Advisory Committee on 9-3-97 to lay out what they would like to be able to do. This began the process of developing the current proposed policy.

6. A subcommittee of members from the RIM Advisory Committee was assembled to develop a habitat management policy. The following people served on this committee:

Mark Oja, Wildlife biologist, NRCS
Jim Lemmerman, Forester, BWSR
Richard Kimmel, Wildlife Biologist, DNR
Larry Himanga, Forester, DNR
Tom Kalahar, Technician, Renville SWCD
Jim Schafer, Supervisor, Renville SWCD
Todd Lein, Project Coordinator, American Rivers
Kevin Lines, Farmland Wildlife Program Leader, DNR
Darrin Newville, Technician, Martin SWCD
Howard Moechnig, Conservation Planner, BWSR

The subcommittee was led by Howard Moechnig who was instrumental in the development of this policy. The enclosed draft policy was brought to the full RIM Advisory Committee on April 21,1998. A few minor changes were made and it was approved.

ANALYSIS

The habitat management policy is needed to provide direction to SWCD personnel as they work with their easement landowners on long term maintenance of vegetative practices. Overall control of management activities will be the responsibility of SWCDs. The intent of this policy is to provide a framework for vegetative management on conservation easements that will maintain established conservation practices and benefit the wildlife species being managed for.

attachment

POLICY (DRAFT)
7-29-98

WILDLIFE HABITAT MANAGEMENT ON CONSERVATION EASEMENT LANDS

Wildlife habitat management on conservation easements includes the practices of mowing, haying, grazing, prescribed burning, establishment of native grasses to replace introduced grasses, and forest land management.

Management of easement lands is addressed in the Operation and Maintenance (O&M) section of the conservation plan that is developed for each easement. The Operation and Maintenance section of the conservation plans are working documents that will change as the easement site matures, as habitat patterns in the general area of the easement change over time, and as the interest level of the owners change in regard to how intensely they want to manage their land for wildlife.

Management activities on easement lands will be carried out for the purpose of improving habitat, or for preventing degradation of habitat for wildlife. The proper practices to use, how often to treat an area, and the details of the management practice will be determined on a case by case basis by resource managers at the local level. Representatives of the DNR Forestry Section, DNR Wildlife Section, and the technical representative of the local SWCD will sign the management plan, as appropriate.

The management plan will be reviewed at the local level by the local RIM Steering Committee. If approved, it will be submitted to the local SWCD for final approval.

There will be no cost sharing for management practices on RIM easement lands using RIM Reserve funds.

The following considerations must be made for each of the wildlife habitat management practices. Exceptions to these general criteria may be allowed after review of the management plan by BWSR. Management practices not discussed in this policy may be approved by submitting the plan to the BWSR for review and approval prior to final approval by the local SWCD.

I. Grassland Management: To develop and maintain grassland habitats in prairie, transition, and forest areas. Done to improve habitat for certain target species such as waterfowl and other grassland nesting birds. Areas may be developed or maintained by one or a combination of the following methods:

A. Mechanical (mowing, haying)

Mechanical methods can successfully manipulate successional stages of habitat. Annual mowing and mowing of entire stands is not allowed without technical justification from the resource manager preparing the maintenance plan. Generally, the mowing will be done no more frequently than once every third year, and only one third of the acreage will be mowed each year.

Mowing and/or haying is restricted to August 1 through August 20 for

cool season grasses, and July 15 thrugh July 30 for warm season grasses. Mowing and haying that cannot be performed within these timeframes will not take place.
Minimum stubble heights are 4 inches for cool season grasses, and 8 inches for warm season grasses.

B. Grazing

Livestock may be used to manage health and vigor of permanent vegetative cover when done in accordance with a grazing plan. Grazing on easement lands requires very careful management to assure the site is not overgrazed. Grazing should not be recommended unless the landowner fully understands the plan and is capable of managing the system. Grazing plans are to be developed according to NRCS practice standard 528A, Prescribed Grazing.
Generally, grazing will not be done more often than once every three years on the same acres, and only one third of the area will be grazed each year. The dates when grazing is allowed are the same as for mowing/haying. Minimum stubble heights are 4 inches for cool season grasses, and 8 inches for warm season grasses. Livestock will be removed from the site when the grass on the site is grazed to these stubble heights.

C. Prescribed Burning

Improvement of plant species diversity, control of brush, and recycling of nutrients can be achieved by controlled burning. Burning will be allowed on cool season as well as warm season grass stands. The maintenance plan will indicate the timing of burns for the area being treated, and will include a "Burn Plan". Appropriate permits must be obtained by the landowner prior to performance of a prescribed burn. NRCS practice standard 338, Prescribed Burning, must be adhered to when performing this practice.

D. Establishment of Native Grasses to Replace Introduced Grass Stands

Quality of habitat can be increased by conversion of introduced grass stands to native grass stands. Follow the guidance in NRCS practice standard 645, Wildlife Upland Habitat Management.

II. Forest Land Management: Necessary to provide regeneration, maintenance, or conversion of species to manage forest stands for wildlife benefits and stand density.

Easement lands planted to trees need to be managed to maintain and improve preferred species that are critical to providing specific wildlife habitat. When tree cover is requested in the RIM conservation plan and established, the planting should not be considered the final product. The planting should be viewed as a component of the desired future condition to retain tree cover on the site.To best address landowner and habitat objectives

on forested acres, a forest management plan should be developed, with the assistance of a forester and/or wildlife professional.

Existing RIM statutes and tree planting practice specification (RR-3, RR-4) allow harvesting, if necessary, to maintain existing cover or to enhance wildlife habitat, provided the harvest activity is approved by the BWSR. It has been the policy of the BWSR to allow these activities, but forest management has not been encouraged. Harvesting can be done for a variety of purposes such as to create wildlife openings, manage browse for specific wildlife species, and for forest stand improvement.

The RIM Reserve program should promote management of existing forest land under easement more actively than has been done in the past. Forest management plans developed by foresters in consultation with DNR Wildlife personnel (both should sign the plan) must be incorporated into the RIM Reserve conservation plan. Forest management plans will be approved by the BWSR forester. A harvest will be allowed if done in accordance with the forest management plan. The landowner must follow the plan to ensure the re-establishment of the cover type, at their expense (other non RIM cost share programs may apply), to ensure proper forest regeneration and goals described in the forest management plan.

The harvest plan, specific to the activity being proposed, must be a component of the forest management plan in the conservation plan. The conservation plan must contain a harvest specific plan or one must be developed to amend the conservation plan. This conservation plan must be approved by the SWCD, BWSR, DNR forester and DNR wildlife personnel before any activity takes place.

FY 99 NON POINT ENGINEERING ASSISTANCE BASE GRANTS

BACKGROUND

Non Point Engineering Assistance (NPEA) funds were first appropriated to the BWSR for FY 95, coinciding with the launching of the State Revolving Fund Loan Program for non point pollution abatement. These NPEA funds were then granted to the 11 newly organized SWCD joint powers boards (JPB). It is the intent of the BWSR to fully fund the employment of an engineer and technician in each JPB, to the extent that funds will allow.

During the winter of 1997, the BWSR convened the NPEA Committee. This action began a series of meetings with representatives of all JPBs, the MASWCD, and the BWSR. The primary purpose of this Committee was to cooperatively determine the FY 98-99 NPEA allocation procedure/method to recommend to the BWSR. On May 30, 1997, this Committee recommended an allocation procedure for BWSR consideration. On August 28, 1997, the BWSR approved the present allocation procedure.

TODAY

The basis of this JPB allocation procedure is to annually reconcile base grants by reducing current grants by any portion of past grants that remain unspent. This procedure will avoid JPBs building up large fund balances that are not utilized for providing local technical assistance. The allocation procedure also includes the following features:

* Each JPB will complete and submit a one page annual budget request form and a financial report, which must be approved by their Board Conservationist and the BWSR SWCD Accounting Coordinator, respectively. Budget requests are then reviewed by Central Office staff.

* All JPBs will be allowed $5,500 for administrative expenses. This is the maximum amount of the grant that can be used for administration. It is up to each JPB to decide how this amount will be spent. The BWSR will not be involved in micro-managing JPB administration costs.

* Any remaining BWSR base grant funds from a previous year will be subtracted from the FY 99 JPB request.

* All grant agreements will begin at the start of the fiscal year (July 1, 1998) and end two years later (June 30, 2000). The two-year grant agreement provides a one-year grant period overlap that allows unspent funds from a prior grant to be utilized during the current grant year, thus, current grants can be annually reconciled.

* This Committee will continue to meet at least twice a year to communicate NPEA program issues.

* For FY 99, all JPBs will be allowed a $20,000 operating reserve. The primary purpose of this reserve is to pay for operating expenses between the end of a fiscal year (June 30), and the

receipt of current year base grant funds in early September. This is a $10,000 decrease for each JPB from the FY 98 grant.

The total amount available for the FY 99 NPEA Base Grant is $1,171,112.

Staff requests that the BWSR approve the FY 99 NPEA Base Grants as summarized on the enclosed spreadsheet. BWSR staff will coordinate with the NPEA Committee to develop guidance regarding base and challenge grant funding for major capital equipment and non-employee services.

Note: At their June 25, 1998 Meeting, the BWSR established Feedlot Water Quality Management Grants Allocation Policy. This policy addressed JPB NPEA technical assistance needs for Feedlot Water Quality projects and stated that *"After FY 99 NPEA Base Grants are allocated, any remaining NPEA funds should be available statewide for NPEA Challenge Grants."* These proposed FY 99 JPB NPEA Base Grant Allocations allow $131,259 for statewide NPEA Challenge Grants.

H.99NPEABG

PROPOSED FY 99 NPEA BASE GRANT ALLOCATIONS

JPB	AMOUNT REQUESTED	AMOUNT APPROVED	+	OPERATING RESERVE	+	ADMIN. EXPENSES	–	BASE GRANT BAL. ON 6/30/98	=	BASE GRANT
1	$109,250	$106,150		$20,000		$5,500		$32,421		**$99,229**
2	$114,426	$110,926		$20,000		$5,500		$24,211		**$112,215**
3	$118,542	$116,542		$20,000		$5,500		$38,236		**$103,806**
4	$108,464	$108,214		$20,000		$5,500		$40,390		**$93,324**
5	$119,751	$119,051		$20,000		$5,500		$50,485		**$94,066**
6	$122,621	$119,621		$20,000		$5,500		$37,698		**$107,423**
7	$124,550	$104,550		$20,000		$5,500		$50,736		**$79,314**
8	$125,776	$120,276		$20,000		$5,500		$42,198		**$103,578**
9	$130,119	$122,219		$20,000		$5,500		$43,585		**$104,134**
10	$127,345	$102,345		$20,000		$5,500		$84,599		**$43,246**
11	$116,582	$116,425		$20,000		$5,500		$42,407		**$99,518**
TOTALS	$1,317,426	$1,246,319		$220,000		$60,500		$486,966		**$1,039,853**
AVERAGES	$119,766	$113,302		$20,000		$5,500		$44,270		**$94,532**

H:99NPEABG

August 19, 1998

DRAFT

DRAINAGE FORUM

PURPOSE:

* to bring drainage interests together to share issues & concerns;
* to better understand the positions of various interests;
* to create a greater understanding & awareness of differing views;
* to better assess participants understanding of the public drainage law;
* to inform and educate interests on the public drainage law;
* to create an understanding and awareness of strategies that interests believe will address thier issues and concerns;
* *is <u>not</u> to form any agreement or consensus;* and
* *is <u>not</u> to debate or discuss any specific legislative proposal.*

PARTICIPATION:

* involve key local government, special interests and state agencies with interest in public drainage; and
* ensure a regional perspective as drainage has unique regional orientation, northwest, southern, metro, central, northeast.
* suggested groups:
  - Association of Minnesota Counties, AMC
  - Minnesota Association of Watershed Districts, MAWD
  - Minnesota Association of Townships, MAT
  - Minnesota League of Cities, MLC
  - Minnesota Association of Soil & Water Conservation Districts, MASWCD
  - Minnesota Lakes Association, MLA
  - Minnesota Farm Bureau, MFB
  - Minnesota Farmers Union, MFU
  - Minnesota Chapter, National Audobon
  - The Nature Conservancy, TNC
  - Pheasants Forever, PF
  - Minnesota Waterfowl Association, MWA
  - State Agencies: DNR, PCA, AGR, BWSR, EXTENSION
  - Federal Agencies: Corps of Engineers (COE), Natural Resources Conservation Services (NRCS), Fish & Wildlife Service (USF&WS), Farm Services Agency (FSA);
  - Minnesota Property Rights organizations
  - Minnesota Center for Environmental Advoquacy, MCEA
  - Minnesota Viewers Association
  - American Society of Farm Mgrs. & Rural Appraisers
  - County Auditor representative
  - County Assessor representative

DRAFT

- other conservation or environmental organizations

Technical Panel:

Technical panel will provide expertise on the interpretation of the public drainage law so that the issues, concerns and strategies can be presented in proper context. Options, not necessarily exclusive.

* Legal: Kurt Deter
  Tibor Gallo
  Arvid Wendland
* Engineering: DNR - Waters

* Viewing: Viewers Association

Place, time & location:

* November 19 & 20
* 9:30am to 4:30pm on the 19th
* 8:30 till noon on the 20th, if second day is formalized (see below)
* St Cloud Civic Center

Facilitator:

* Roger Williams, professional facilitator, mediator.

The has been interest in some formal presentations on some activities that may be directly and indirectly related to drainage ie, McLeod County drainage inventory presentation, Uof M presentation on hypoxia, U of M's economic perspective on drainage. If people are available this would be scheduled for the second day.

Clean Water Act (1972)

U.S. Army Corps of Engineers

*Section 10: Navigable Waters

* Section 404: Waters and Wetlands - regulates discharges (fill)

- Nationwide Permits
- Individual Permits
  - no or lessened review
  - presently 40+ based on activity
  - Letter of Permission/General Permit 98

Purpose: 1. simplification for project sponsors via size thresholds and links to WCA
2. eliminate duplicative review for agencies
3. equal or greater environmental protection

Joint State Agency response letter

The only issue that hasn't been able to be agreed upon is the level of impact which would require mitigation. At the present time the USACOE is proposing a requirement to mitigate all impacts greater than 400 square feet. Some agencies support this level while others support a level that is consistent with the state "de minimis" exemption amounts.

Wetland Law Consolidation Study

Sec. 7. [WETLAND LAW CONSOLIDATION REPORT.]

By March 1, 1999, the commissioner of natural resources, in conjunction with the executive director of the board of water and soil resources, shall submit a report to the house and senate environment and natural resources committees regarding the simplification of wetland law by consolidating public waters wetlands laws with the wetlands conservation act. The report shall include a discussion of the problems and benefits of a consolidation.

Examples of two points likely to be addressed:

- boundary determinations: OHWL vs. 1987 Federal Manual
- Public Road project impacts/permitting /mitigation

M:\BRDSUM.2

Wetland Committee Meeting Minutes
August 20, 1998

Attendees: See attached list.

I. Overview of 1996 Road Replacement Projects:

John Jaschke gave the summary of the various projects that have been initiated under the 1996 $3M appropriation. The attached spreadsheet shows the list of these projects and the funding amounts thus dedicated. The 1998 capital appropriation totals $2.35M of which the only criteria is that half of it goes to the seven county metropolitan area. The Committee approved continued funding from 1998 for the following projects:

Walls Brothers Home Farm - Phase II, Anoka County	$286,000
Swenson Restoration, Grant County	$100,000
Vesledahl Farm Project, Polk County	$400,000

The Committee also recommended an allocation of a maximum amount of $275,000 to support metro area drained wetland inventories. The criteria would be a 75% state, 25% local match (cash or in-kind) and would be limited to the metropolitan seven county area for the initial allocation. Criteria for the metro drained wetland inventory allocations will be developed by staff and reviewed and approved by the Committee before implementation. This left $751,500 to allocate among metro projects and $537,500 allocate among non-metro projects. The Board also discussed the possibility of using some of the funds from non-metro to buy existing credits in the wetland bank to stimulate the wetland banking entrepreneurial market to see if this approach was cost-effective and to quickly establish some credits that could be used to offset the current deficit balance. They also noted that there should be some criteria established for quality, location, amount, cost and benefits for these credits that were to be purchased and that there should be state review of the project in the field and legal review of the easements that would be acquired. The Wetland Committee decided that there would be no credits purchased in the metropolitan area but that all of the remaining $751,000 would be allocated using the RFP process similar to the previous year. They stated that no more than half of the non-metro allocation could be used to purchase existing credits from the bank.

II. Drainage Roundtable:

Wetland Committee members were provided with copies of an article by Steve Taft discussing the economics of drainage systems and a copy of a review prepared by Kurt Deter of previously proposed drainage law legislation. The Committee reviewed an outline for the Drainage Roundtable and endorsed the concept as proposed and will be involved in attending the meeting likely to held on November 10 - 20 in St. Cloud.

III. Wetland Planning Update:

Jaschke noted that Martin County is a new addition to those doing wetland plans in the southern part of the state. Dan Eklund provided a summary of the significant amount of wetland planning going on in the northern region. Koochiching county is on the way to

getting their local "flexibility plan" completed and sent out for review. There will be a decision by the Board necessary, perhaps in October, on whether this plan meets the guidelines in the Rule and Law and for how long it will be effective. St. Louis County will likely have their plan before the Board in November. Lake County is getting started and is following a model established by Cass County. Beltrami and Marshall Counties are moving forward, however it is likely that they will split and Beltrami County will continue on their own leaving Marshall County to deal with their watershed based approach independently. Lake of the Woods County is likely to return the wetland plan grant money upon seeing that there is little interest or need to develop one at this time.

IV. Regulatory Simplification Update:

Jaschke explained the draft Letter of Permission/General Permit-98 joint state response (see attachment) drafted to the U.S. Corps of Engineers (USACOE) from the four state agencies (BWSR, DNR, PCA and MDA). The only issue that hasn't been able to be agreed upon is the level of impact which would require mitigation. At the present time the USACOE is proposing a requirement to mitigate all impacts greater than 400 square feet. Some agencies support this level while others support a level that is consistent with the state "de minimis" exemption amounts.

The DNR Protected Wetlands/Wetland Conservation Act integration study required by the 1998 legislature is about to begin with a goal of having the study completed by the time the legislature meets in January. DNR - Division of Waters is taking the lead on coordinating the develop of this report. Among the items that will be included in it are the possibility of having wetland impacts to public waters wetlands from local government road projects be mitigated by the state through the BWSR banking system.

Postscript:

A discussion with Kathy Roer, BWSR Board Chair, after the meeting centered on ways to use the current or amended procedures to address quality control for WCA administrative decision making using the appeals process and establishing an alternative "appeal process" for technical decisions. Some of this might eventually be added to Rule but could also be implemented more quickly as it would offer a service to both the resolution committee, board conservationists and local government units.

Minutes prepared by John Jaschke JJ

attchs.

m:wetcom.aug

Wetland Comm. Hear Mtg 8/20/98

Name	phone #
John Janke	(651) 297-3432
Dawn Otto	307-645-4370
Jim Arnt	507-246-5207
Dave Ehlke	218-825-3015
Jim Dahlberg	320-269-8493
Darrell Bruggeman	218-426-3330
Barb Cobb	612-436-8953
Kathleen Doer	6124750789
Greg Larson	651-296-0882

Wetland Replacement Proposals for Public Road Impacts - Status Report

Category: 7-County Metro Area

"Urban Renewal" Projects:

Sponsor	Project Name	County	NWC Ac	NWC Type	PVC Ac	PVC Type	1996 Appropriation $1,000,000 — 1996 Funding	*1998 Approp.(tent) $600,000 — 1998 Funding*	Approx. $/Credit	Est. Project Start Date
MCDA	SEMI	Henn	2	complex	1	SW	$322,000		$107,333	9/99
St. Paul/CBE	Lower Phalen Cr.	Ramsey	13	1,2,4,6	2	5	$322,000		$21,467	6/99
Boys/Girls SP	Sackett Memorial	Ramsey	0		3	6,3		*$33,000*	$11,000	9/98
St. Paul	Ames Lake	Ramsey	5.82	2,3,4	0			*$323,000*	$55,498	6/98
		TOTALS:	**20.82**		**6**		**$644,000**	***$356,000***		

General Metro-wide Projects:

Sponsor	Project Name	County	NWC Ac	NWC Type	PVC Ac	PVC Type	1996 Appropriation $1,000,000 — 1996 Funding	*1998 Approp.(tent) $575,000 — 1998 Funding*	Approx. $/Credit	Est. Project Start Date
RCWD	Walls Bro. Home Farm - Phase I	Anoka	10.18	2,3	21.06	2,3, Buff	$432,900		$13,857	8/98
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Chanhassen	Wetland Restoration "2D"	Carver	8.6	3,4	25.2	3,4, Buff		*$257,010*	$7,604	6/99
Dakota SWCD	Fredrickson/Thompson	Dakota	11.76	2,3,4	8.81	Buffer	$223,915		$10,886	10/98
		TOTALS:	**35.86**		**74.76**		**$956,815**	***$257,010***		
		Total Metro:		**137.44**						

Category: Critical Areas Outside 7-County Metro Area

Areas with Less than 50% of Presettlement Wetlands Remaining:

Sponsor	Project Name	County	NWC Ac	NWC Type	PVC Ac	PVC Type	1996 Appropriation $1,000,000 — 1996 Funding	*1998 Appropriation $1,175,000 — 1998 Funding*	Approx. $/Credit	Est. Project Start Date
Rochester	Wetland Restoration "CC-3B"	Olmsted	24	2,3	2	1,2		*$221,200*	$8,508	9/98
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Grant County	Swenson Restoration	Grant	25	3,4	15	buffer	$139,000		$3,475	9/98
Polk SWCD	Vesledahl Farms**	Polk	100	1,2,3,4,5	100	buffer	$447,000		$2,235	6/99
		TOTALS:	**214**		**127**		**$863,000**	***$221,200***		
		Total Acres:		**341**						

Areas with 50 to 80% or greater than 80% of Presettlement Wetlands Remaining:

Sponsor	Project Name	County	NWC Ac	NWC Type	PVC Ac	PVC Type	1996 Funding	*1998 Funding*	Approx. $/Credit	Est. Project Start Date
DNR Wildlife	Aurzada Prairie	Todd	12	1,2	25	1,2,3	$82,900		$2,241	9/97
		TOTALS:	**12**		**25**		**$82,900**			
		Total Acres:		**37**						

Metro Drained Wetland Inventories = $275,000 max.

	Total Appropriation	
	$3,000,000	***$2,350,000***
	1996 Obligated Funding	***1998 Proposed Funding***
	$2,546,715	***$834,210***
Balance	**$453,285**	***$1,515,790***

Average $/Credit
$6,559

Grand Total = **515.44** credits

August 24, 1998

Col. Kenneth S. Kasprisin
District Engineer
U.S. Army Corps of Engineers
Attention: CO-RMMW
Army Corps of Engineers Centre
190 East Fifth Street
St. Paul, MN 55101

RE: Proposed Section 404 Alternative: General Permit/Letter of Permission - 98 for Minnesota

We believe that the GP/LOP-98 proposal issued on July 22, 1998 will simplify the federal wetland regulatory program in Minnesota as compared to the current system of nationwide permits and associated Section 401 conditions. Among the features that we particularly support are; 1) the thoroughness of the review increases with the size of the project, 2) the review categories are primarily based on project size instead of the project type, and 3) certain types of sensitive or high quality resources such as calcareous fens and trout waters are protected by special provisions or elevated review procedures.

The State of Minnesota -- through its Department of Natural Resources (DNR), Pollution Control Agency (PCA), Department of Agriculture (MDA), and Board of Water and Soil Resources (BWSR) -- submits the following comments in response to the GP/LOP-98 proposal issued on July 22, 1998.

General:

1. The approach of describing activities via size thresholds is much more straightforward than the long list of activity-based criteria of the Nationwide Permits. While project size is not a certain indicator of the level of environmental impacts, the inclusion of these easily understood size thresholds will allow landowners to more easily understand which category they are permitted to operate within, thus simplifying coordination with state permitting activities. We believe the proposed exclusions and interagency review components will address issues of significance that are unrelated to project size.

2. The provision which is noted in item 5.e. which connects the Wetland Conservation Act (WCA) procedures to the GP/LOP is a very positive step forward to minimize duplication and provide coordination of delivery for both state and federal wetland protection programs. However, we view this as a first step in that the proposal as currently structured will require that these decisions occur sequentially rather than simultaneously. With some experience and training, we believe that these programs can be merged even more effectively in the near future.

3. The idea of having a conditional LOP rather than requiring an individual permit for projects that do not exactly meet one of the criteria categories is a very positive option for both the Corps of Engineers and landowners in that it allows them to negotiate an acceptable outcome without requiring a separate and potentially lengthy paperwork process.

4. We support the idea contained in item 5.f. which gives public road authorities doing road maintenance and repair projects a more streamlined process for accomplishing their regulatory approval while meeting the environmental protection standards of the Clean Water Act. We believe this portion can also be more effectively consolidated, via a separate agreement, with the current state Wetland Conservation Act provisions which provide for a state collective mitigation option for these road authorities if viable and environmentally preferable options are not available on site.

5. We support the plan to have three public information meetings around the state to explain the proposed changes and integration efforts to agency field staff, local governments and affected citizens.

6. We support the proposal to have a review of the GP/LOP-98 after one year and suggest that additional review be initiated if there are changes to the Clean Water Act or state Wetland Conservation Act that would substantively alter conditions in the GP/LOP.

Specific:

1. *Option A:* The requirement for compensatory mitigation for any activity impacting more than 400 square feet is intended to provide additional environmental protection beyond that which is typically found using the standard nationwide permits (1/3 acre = 14,487 s.f.) and will provide a statewide threshold which is consistent with the minimum "de minimis" amount in the WCA for shoreland and all type 3,4,5,8 wetlands. This means that the discussion on Compensatory Mitigation in part 3 (at the top of page 3) and part 7 (at the bottom of page 9) must be made consistent. This section indicates that ". . . compensatory mitigation would *generally* be required . . ." for projects that impact more than 400 square feet of water/wetland. We recommend that the word "generally" be omitted on the bottom of page 9 to be consistent with the last sentence of Part 3.

   Option B: The requirement for compensatory mitigation for any activity impacting more than 400 square feet is intended to provide additional environmental protection beyond that which is typically found using the standard nationwide permits (1/3 acre = 14,487 s.f.). While protection is important, it is also in some cases contrary to the notion that certain parts of the state and certain types of wetlands are more abundant or have greater importance. Recognizing the regional diversity and distribution of wetlands in Minnesota is critical to acceptance of regulatory controls, thus, we believe that the thresholds for this component should mimic those that have been subjected to considerable public debate

and scrutiny and adopted in the state Wetland Conservation Act provisions for the "de minimis" exemption (see attachment). That is, we support the idea that the Corps of Engineers should have the discretion to accept all official Minnesota Wetland Conservation Act "de minimis" exemption determinations which would have been similarly allowed to occur without mitigation under the Clean Water Act Section 404 nationwide permit system threshold of 14,487 s.f. -- which is more than the *maximum* state "de minimis" amount of 10,000 s.f.

2. Part 4.c. Utility Line Discharges – It's our understanding that all of the non-reporting general permits for minor activities are based on existing nationwide permits (NWP). Existing NWP 12, upon which the utility line discharge provision is based, requires that the Corps of Engineers be notified of <u>any</u> mechanized land clearing in forested wetlands. The NWP has <u>no</u> acreage threshold, contrary to the 1-acre threshold as proposed in the non-reporting GP. We recommend that the provision for utility lines in this proposed GP be modified to be consistent with existing NWP 12 (delete the phrase "more than one acre of"). Because of the important habitat values of forested wetlands, as well as other values, we believe it's appropriate that mechanized land clearing in forested wetlands be subject to the notification and review requirements specified in Parts 5.c and d. of the LOP.

3. Part 4.d. U.S. Coast Guard Approved Bridges – Existing NWP 15, which covers Coast Guard approved bridges contains the following provision: "Causeways and approach fills are not included in this NWP and will require an individual or regional Section 404 permit." We recommend that similar language be added to this non-reporting GP. Without this provision, we are concerned that the extent of wetland fill under the proposed GP is too open-ended.

4. Part 5.b.4. Wetland and Riparian Restoration. We recommend that the St. Paul District consider adopting language from NWP 27 as proposed in the July 1, 1998 Federal Register. This proposed NWP includes provisions authorizing stream restoration, which is not explicitly covered in the proposed LOP language.

<u>Section 401 Water Quality Certification Specific Issues (MPCA)</u>

1. Project proposals for activities that would impact greater than 400 square feet and that would otherwise be eligible for a non reporting GP (category 5. a. and 5.b.) or not require interagency review (category 5.c.) should be required to comply with provisions for interagency review (category 5.d.) when the project impacts these listed waters, or are in water or wetland areas which are within 500 feet of the waters listed below.

   - Outstanding Resource Value Water (ORVW) Minn. R. 7050.
   - Trout Waters as designated by DNR Commissioners Order 2450 and Minn. R. 7050.

- Water or wetland that is adjacent to a lake as designated by MDNR Public Waters/Wetland Inventory.

2. In addition, permit application and Interagency Review Process procedures should be required for projects that involve:

   - Structures that cause or effect a new waste discharge.
   - Structures or fill that result in new channelization or diversion of flowage.
   - Projects that include demolition material as defined by Minn. R. 7035.0300, Subp. 30 or known contaminated or polluted sediments.

3. Item 8.d. should specifically state for authorization under GP/LOP that every application must be in compliance with 404(b)1 guidelines and Minnesota Water Quality Standards Minn. R. 7050.0186 for Avoidance and Minimization of wetland impacts and for Compensatory Mitigation as determined by the MPCA.

4. The Section 404 GP/LOP General Condition number 6 should include a statement referencing appropriate Best Management Practices (BMPs) for Minnesota for guidance on the details of erosion control techniques. Best management practices means state-approved and published practices as defined in M. S. 103H, Subd. 4. (e.g., "Protecting Water Quality in Urban Areas - Best Management Practices for Minnesota").

5. The Section 404 GP/LOP General Conditions should include a condition that if applicable, the applicant must apply for and comply with state issued National Pollutant Discharge Elimination System (NPDES) discharge or stormwater permit, a State Disposal System (SDS) sewer extension or dredge disposal permit, or other required MPCA permits.

6. The Section 404 GP/LOP General Conditions should include that any authorized project that include provisions for dewatering that is required for the construction effort, a plan should be developed that includes provisions to assure water quality standards are not violated by the discharge of dewater to downstream waterbodies; wetlands, rivers or lakes. Best Management Practices such as utilizing a temporary pond or overland flow system for the dewater discharge should be required to reduce the solids content of the water before discharge.

7. The Section 404 GP/LOP General Conditions should include a requirement for any bridge authorization, that stormwater and surface water deck drainage should be directed to an off end drainage system that includes provisions for containment of toxic or hazardous material spills that will prevent direct runoff of such substances to waters of the State.

8. The general conditions should include a requirement that any coffer dams that are placed within waters of the state for the purposes of project construction shall be constructed and maintained in such a manner as to not allow erosion into the water. If earthen material is used for the construction of the coffer dam either sheet piling, armoring with riprap or a synthetic cover must be included to prevent erosion on the of the structure. The cross section of the water bed in the coffer dam placement area should be measured prior to the installation of the structure and remeasured upon removal of the structure to assure return of the area to preconstruction contours. The amount of material placed for the coffer dam shall be measured during placement and remeasured upon removal to assure complete removal of all material.

9. The Corps of Engineers should allow the MPCA to have revocation discretion for 401 certification on individual project applications. Such a provision should state that the COE would be notified by the MPCA that a project proposal exceeds the expectations of water quality impact considered by the MPCA in the general certification of the GP/LOP and, therefore, in order to assure compliance with water quality standards must receive an individual certification from the MPCA in order for the GP/LOP to be valid.

We look forward to further discussing any of the components of your proposal and our ideas for specific language changes in the near future as we are hoping that this proposal in its final form is enacted by the first of the year.

Sincerely,

Rod Sando, Commissioner
Department of Natural Resources

Gene Hugoson, Commissioner
Department of Agriculture

Peder Larson, Commissioner
Pollution Control Agency

Ronald Harnack, Executive Director
Board of Water and Soil Resources

c: Interagency Wetland Group

ATTACHMENT

MN Rule 8420.0122, Subp. 9. **De minimis.**

A. Except as provided in items B to D, a replacement plan for wetlands is not required for draining or filling the following amounts of wetlands as part of a project, regardless of the total amount of wetlands filled as part of a project:

(1) 10,000 square feet of type 1, 2, 6, or 7 wetland, excluding white cedar and tamarack wetlands, outside of the shoreland wetland protection zone in a greater than 80 percent area;

(2) 5,000 square feet of type 1, 2, 6, or 7 wetland, excluding white cedar and tamarack wetlands, outside of the shoreland wetland protection zone in a 50 to 80 percent area;

(3) 2,000 square feet of type 1, 2, or 6 wetland, outside of the shoreland wetland protection zone in a less than 50 percent area;

(4) 400 square feet of wetland types not listed in subitems (1) to (3) outside of shoreland wetland protection zones in all counties; or

(5) 400 square feet of type 1, 2, 3, 4, 5, 6, 7, or 8 wetland, in the shoreland wetland protection zone, except that in a greater than 80 percent area, the local government unit may increase the de minimis amount up to 1,000 square feet in the shoreland wetland protection zone in areas beyond the building setback if the wetland is isolated and is determined to have no direct surficial connection to the public water. To the extent that a local shoreland management ordinance is more restrictive than this subitem, the local shoreland ordinance applies.

B. The amounts listed in item A may not be combined on a project.

C. This exemption no longer applies to a landowner's portion of a wetland when the cumulative area of the landowner's portion drained or filled since January 1, 1992, is the greater of:

(1) the applicable area listed in item A, if the landowner owns the entire wetland;

(2) five percent of the landowner's portion of the wetland; or

(3) 400 square feet.

D. Persons proposing to conduct an activity under this subpart shall contact the board at a toll-free telephone number to be provided for information on minimizing wetland impacts. Failure of the person to call does not constitute a violation of this subpart.

E. This exemption may not be combined with another exemption on a project in this part.

COE Permitting

St. Paul District

Summary of Proposed GP/LOP-98-MN Alternative to Nationwide Permits

Permit Type	GP/LOP/98-MN Section 404 Activities in MINNESOTA	Applicable Waters	Maximum Acreage	PCN Threshold
GP	Maintenance, bank protection, utility line, 404 activities for USCG-approved bridges, return water, oil spill cleanup, structural discharges, completed enforcement actions and minor discharge activities • non-reporting (no application required) if standard conditions and GP limits (similar to present NWPs) are met	all 404 waters except fens, trout waters, and Federal Wild/Scenic Rivers	• 1/3 acre for maintenance activities • 400 square feet for minor discharges	no PCN or reporting to COE required
LOP A/B	(A) Bank protection and utility line projects that fail to meet GP limits and/or standard conditions, listed GP activities that affect trout waters or certain other state-designated waters; and (B) moist soil management, temporary construction/ access/dewatering, toxic waste management, and wetland restoration/creation activities • application to COE required • COE internal review only	all 404 waters except fens and Federal Wild/Scenic Rivers	none	all
LOP C	Activities that impact more than 400 but less than 10,000 square feet of wetland/water area • application to COE required • COE internal review only • appropriate compensatory mitigation required	all 404 waters except fens and Federal Wild/Scenic Rivers	10,000 square feet	all
LOP D	Activities that impact more than 10,000 square feet but less than 2.0 acres • application to COE required • 30-day interagency review period • appropriate compensatory mitigation required	all 404 waters except fens and Federal Wild/Scenic Rivers	2 acres	all
LOP E	Activities regulated and approved pursuant to Minnesota Wetland Conservation Act (programmatic LOP) • applicants must elect to apply for this LOP • application to COE and/or state required • COE internal review if impacts are under 10,000 square feet, otherwise 10-day interagency review period • appropriate compensatory mitigation required	all 404 waters except fens and Federal Wild/Scenic Rivers	2 acres	all
LOP F	Public road projects to improve/upgrade existing roads • application to COE required • 30-day interagency review period if impacts exceed 10,000 square feet • appropriate compensatory mitigation required	all 404 waters except fens and Federal Wild/Scenic Rivers	5 acres	all

Old Business #2

HQ NWPs - Summary of Proposed Nationwide Permit Changes

COE Permitting

NWP	Title	Applicable Waters	Maximum Acreage	PCN Threshold
A	Residential, Commercial, and Institutional Activities • mitigation required	non-tidal	indexed; 1/4 - 3 acres no stacking	1/3 acre; all below OHWM
B	Master Planned Development Activities • environmental protection required in master plan • conservation easements required	non-tidal	indexed; 3 - 10 acres no stacking	all
C	Stormwater Management Facilities • no construction in perennial streams	non-Section 10	2 acres (construction); none for maintenance	1/3 acre; 500 linear feet
D	Passive Recreational Facilities • only activities that are integrated into the natural landscape with low impact, such as trails, campgrounds, and environmentally designed golf courses or ski areas • no playing fields, basketball and tennis courts, race tracks, stadiums, or arenas	non-tidal	1 acre	1/3 acre; 500 linear feet
E	Mining Activities • sand and gravel (aggregate) mining • hard rock and mineral mining	non-tidal	1 or 2 acres for mining activity plus 1 acre for support activities	all
F	Reshaping Existing Drainage Ditches • purpose of activity is to improve water quality • cannot increase drainage or flows or relocate the ditch	non-Section 10	restricted to minimum necessary	sidecast into waters of U.S.
3	Maintenance • add removal of accumulated sediment from existing structure • add activities associated with replacing uplands lost due to storm event	all waters	200 linear feet from structure; 50 cubic yards	all except repair or replacing existing structures
7	Outfall Structures and Maintenance • add removal of accumulated sediments from intakes, outfalls, and canals	all waters	restricted to original configuration	all
12	Utility Activities • add access roads normally constructed at grade • add substations and foundations for overhead lines	non-Section 10 (access roads, substation); all waters (others)	1 acre for substations; 1 acre for access roads; minimum necessary for foundations	1/3 acre (substation); 500 linear feet (access road constructed above grade)
14	Linear Transportation Crossings • no change for private roads • add larger crossings for public projects only	all waters	1 or 2 acre(s) (public) 1/3 acre (private)	1/3 acre; discharges in special aquatic sites
27	Stream and Wetland Restoration Activities • add stream restoration • no channelization • must restore to natural conditions	non-Section 10	minimum necessary	public or private land (no agreement)
40	Agricultural Activities • no change to farm buildings • add Food Security Act Minimal Effects exemptions • add minimal effects with mitigation	all non-tidal	1 acre (building); 1 or 1/3 acres (FSA exemption); indexed 1/4 - 1 acre for certain waters; indexed 1/4 - 3 acres for most non-tidal waters	1/3 acre; 500 linear feet

Wetland Replacement Proposals for Public Road Impacts - Status Report

Category: 7-County Metro Area

"Urban Renewal" Projects:

Sponsor	Project Name	County	NWC Ac	NWC Type	PVC Ac	PVC Type	1996 Appropriation $1,000,000 — 1996 Funding	*1998 Approp.(tent) $600,000 — 1998 Funding*	Approx. $/Credit	Est. Project Start Date
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Grant County	Swenson Restoration	Grant	18.5	3,4	5	buffer	$39,000		$1,660	?
Polk SWCD	Vesledahl Farms	Polk	100	1,2,3,4,5	50	buffer	$379,900		$2,533	6/99
Polk SWCD	Vesledahl Farms**	Polk	100	1,2,3,4,5	50	buffer	$400,000		$2,667	6/99
		TOTALS:	**307.5**		**117**		**$1,095,900**	***$221,200***		
		Total Acres:		**424.5**						

Areas with 50 to 80% or greater than 80% of Presettlement Wetlands Remaining:

Sponsor	Project Name	County	NWC Ac	NWC Type	PVC Ac	PVC Type	1996 Funding	*1998 Funding*	Approx. $/Credit	Est. Project Start Date
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		TOTALS:	**12**		**25**		**$82,900**			
		Total Acres:		***37***						

* Walls Brothers Home Farm: Additional funding needed to complete project

** Vesledahl Farms: Additional funding needed to complete project

Total Appropriation	
1996 (Bond) $3,000,000	*1998 (Cash) $2,350,000*
1996 Obligated Funding $2,765,790	*1998 Proposed Funding $834,210*
Balance $234,210	***$1,515,790***

Grand Total = **598.94** credits — **Average $/Credit: $6,011**

Old Business #1

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SAVING THE HEARTLAND

Protecting Land and Resources in the Midwest

A regional conference on farmland, forest, and resource protection.

Conference Overview:

The American Farmland Trust (AFT) in conjunction with the Minnesota Chapter of the Soil and Water Conservation Society are working together to organize a Midwestern-regional conference on farmland protection. It is anticipated that the conference will be held in the in the Minneapolis/St. Paul area and is targeted for late October in 1999.

Several organizations and agencies have expressed a strong interest in helping to organize this conference, including the Department of Agriculture, Dakota and Washington Counties, Minnesota Association of Soil and Water Conservation Districts, local Soil and Water Conservation Districts, Minnesota Chapter of the American Planning Association, Land Stewardship Project, Wisconsin Farmland Conservancy, Minnesota Land Trust, to name a few.

The goal of the conference is to identify common ground and develop linkages among the wide range of individuals and organizations that benefit from farmland and natural resource protection. To do this the conference will:

1) Begin a process that will identify farmland as the highest and best use of certain lands and recognize farmland as a threatened resource that must be protected.
   - *Improved dialogue will be created among urban, suburban, and rural interest groups.*
   - *Support for legislation to provide the resources for farmland protection will be generated.*
2) Discuss what has and has not worked in states and communities elsewhere in the United States with successful farmland protection programs.
   - *Nationally recognized experts in farmland and natural areas protection will be invited to speak on the "how" and "why" of land preservation.*
   - *Improved coordination and continued dialogue on what can work in the Heartland to protect farmland and natural resources.*
3) Provide techniques that planners, resource managers, policy makers, and grass roots organizations can use to protect farmland and natural areas.
   - *Participants will learn how to develop community support, develop plans, and implement policies to protect land and promote sustainable resource-based economic development.*
4) Better define the role of farmland in a sustainable community.
   - *Participants will leave with an improved understanding of how farmland preservation an important component of diverse and sustainable local and*

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regional economies, how it protects the public's investment in urban core areas, how it reduces the need for expensive public infrastructure costs, how it protects high value soils and cropland, how it protects the social fabric of rural areas, and how it can provide habitat for a variety of plants and animals.

5) Create an understanding of the relationship of farmland and natural area protection to protecting urban areas, controlling sprawl, reducing potential property tax increases, avoiding land use conflicts, and protecting the economic viability of farming.
   - *Recent studies will be presented that shows the important roles that farmland and land preservation planning play in urban fringe areas.*

6) Showcase what can be done and what some of the problems that we are facing in the Midwest (or in Minnesota).
   - *See and hear first hand the problems, potential problems, and some solutions to urban sprawl.*

A two-day conference is planned, with the possibility of field trips preceding the conference.

The conference will be promoted to a wide range of individuals, organizations, and agencies with an interest in protecting agricultural land but will **be targeted to policy makers and elected officials, farmers and community leaders, agri-business and banking, planners, resource managers, and land preservation organizations.**

Other agencies and organizations will be encouraged to attend, especially those whose missions or goals are to:

Protect the family farm,
Promote rural economic development,
Manage growth or promote sustainable communities,
Protect the integrity of urban core areas,
Protect and manage natural resources,
Promote innovative housing development designs.

Next Steps:

1) Identify local and regional participants to help organize the conference.
2) Formalize a conference planning structure and organize committees for:
   - Program planning,
   - Facility planning,
   - Sponsorship and endorsements,
   - Promotion, and etc.
3) Finalize dates and location.
4) Next organizing meeting September ~~4th~~ 11th – St. Paul. – MDA
   9 - Noon

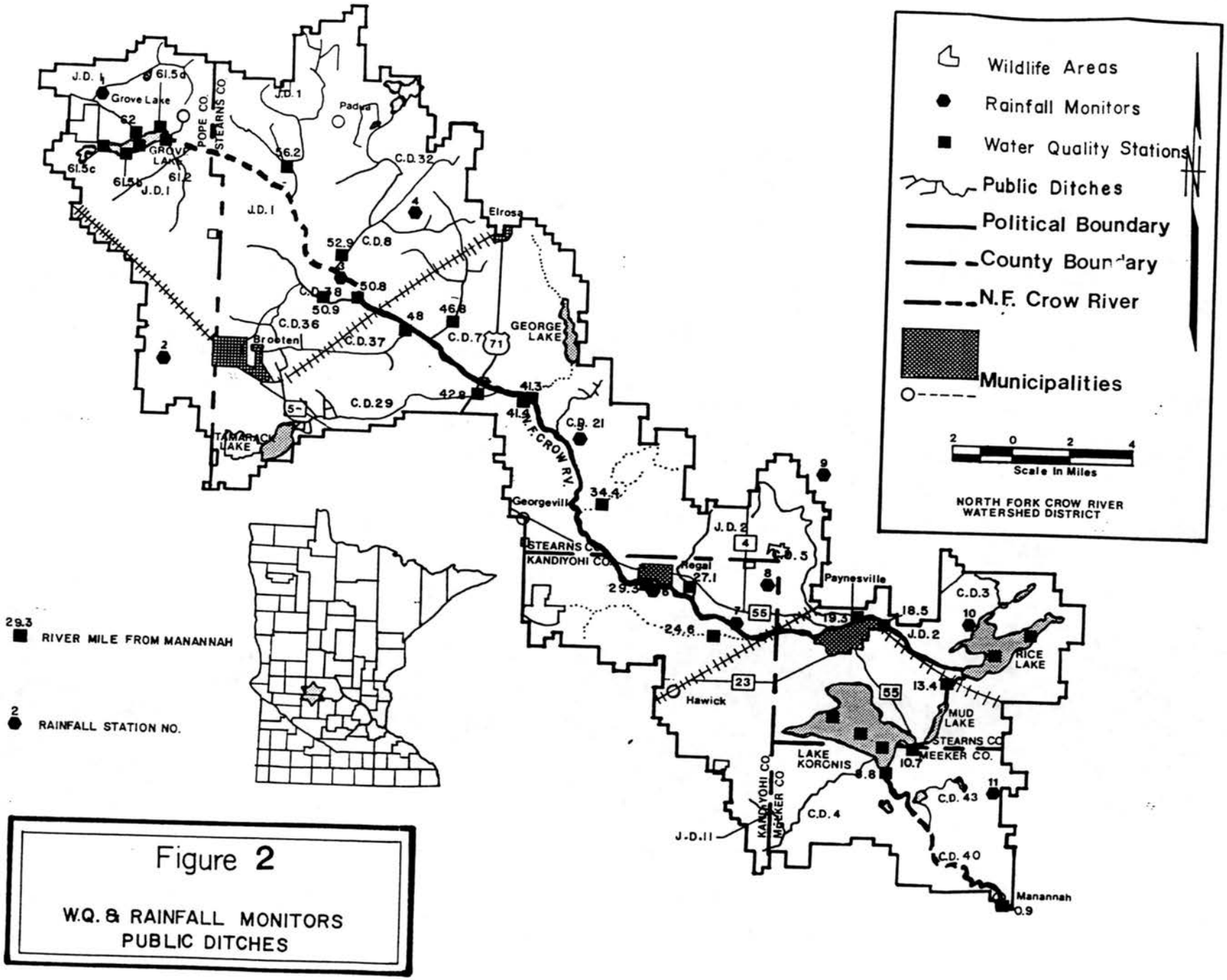


Figure 2

W.Q. & RAINFALL MONITORS
PUBLIC DITCHES

North Fork Crow River Watershed District

Established May 10, 1985

Overall Plan completed 1987

Grove Lake Phase I Project 1990 (MPCA sign off 1995)

Rice and Koronis Lakes Phase I project 1991 (MPCA sign off 1995)

Judicial Ditch # 1 Grove Lake turned over to Watershed District 1991

Watershed District contracted a Ditch Inspector 1992

Watershed District hired an Administrator - Ditch Inspector 1993

County Ditch # 38 turned over to Watershed District 1994

Septic Inspection Rice and Koronis Lakes 1995 and 1996

County Ditch # 5 turned over to Watershed District 1995

Watershed District hires part time secretary 1996

County Ditch # 37 turned over to Watershed District 1996

County Ditch # 21 turned over to Watershed District 1996

Grove Lake CWP Phase II 1996

Rice and Koronis Lakes CWP Phase II 1996

Judicial Ditch # 2 turned over to Watershed District 1996

Watershed District awarded BWSR Challenge Grant 1996 for 1997

Watershed District Technician 1997

County Ditch # 7 turned over to Watershed District 1998

County Ditch # 7A turned over to Watershed District 1998

County Ditch # 32 turned over to Watershed District 1998

Watershed forms Joint Powers with Sauk River Watershed District, Pope and Douglas Counties for Beaver Control Grant from Dept. of AG 1998

WHAT HAS WORKED FOR THE DISTRICT

1. **The use of the BWSR Joint Powers Engineer through the SWCD's.** (This has been a big help on the smaller projects that do a lot for water quality but the engineering cost would be two to three times the cost of doing the project.)

2. Working with BWSR staff to implement a project process that has shortened the length of time and expense in approving SRF Loan applications and projects.

3. Open line of communication with the three Lake Associations in the District.

4. The Lake Associations helping the Watershed District with funds for contract employee.

5. Watershed attending the Lake Associations annual and special meeting.

6. Having a Watershed Board that understands drainage as well as water quality and quantity issues. Being open to work with farmers and Lake Associations alike.

7. Qualified staff that listens to problems and are willing to work with landowners to correct the problems.

8. Having the Watershed District make contacts with farmers and lakeshore owners.

9. Being able to work with the NRCS, SWCD, Environmental Services, Lake Associations and other sources to fund projects, that no single agency or organization could do on their own.

10. MPCA's CWP Grant and SRF Loan Program at 0% interest.

11. The Watershed taking the lead role in projects with assistance from the Lake Associations.

12. End of the year project advisory meetings so everyone that is involved knows where the projects stand.

North Fork Crow River Watershed District

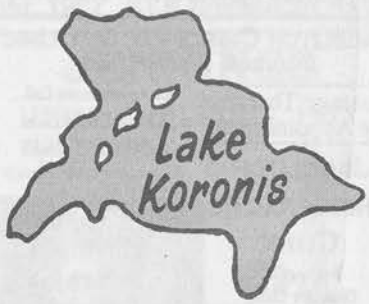
Manure Pit Project

Total Grant Funds	**$45,892.95**	**74.61%**
Watershed District	$7,100.00	
FSA Cost Share (50%)	$30,753.95	
Stearns SWCD	$8,039.00	
Total SRF Loan	**$15,639.95**	**25.39%**

Project Total **$61,507.90**

Koronis Lake Association

Aquatic Update



"An association formed to promote the protection and improvement of Lake Koronis" November, 1997



Conservation project completed...

A farm conservation project which will help protect the North Fork Crow River from pollution was completed this fall on the Richard Pflueger farm west of Paynesville. A 818,993 gallon lagoon was built to catch run-off from the farm feed lots and cattle sheds. In addition, the lagoon will also hold all the liquid manure from the dairy barn. A trough system and clean water perimeter tile line was also installed to route all the run-off from the farm site into the manure lagoon.

On the inside....

Goodbye summer	Page 2	Rice Lake conservation ..	Page 8
Ditches.....	Page 4	Water Monitoring	Page 11
Grove Lake.....	Page 5	Rice/Koronis Partnership .	Page 12
Farm Conservation	Page 6	Septic Systems	Page 14-15

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A note from the President

By Peter Jacobson

As you can tell from the size of this newsletter a lot of things have been happening in and around the North Fork Crow River Watershed area.

We apologize for the lateness of this publication, however there were many improvements taking place this fall that we wanted to make sure the membership was aware of.

If you live in the Paynesville area you have probably seen several of the articles that appear in the newsletter already in the *Paynesville Press.* We did want our other KLA members to also get this information.

Several projects in our watershed are just completed. The improvements, from new feedlots, manure management, and erosion and water runoff control will make a big difference in the number of nutrients that will end up in Rice Lake and ultimately in Lake Koronis.

These improvements came as a result of many hours of pro-activity meetings and planning on the part of your board of directors, along with the cooperation of the NFCRWD.

We also would like to thank our technical liaison, Pat Corrigan. The watershed and KLA membership dues helped to pay for his work. Corrigan went to landowners and discussed how different management practices could be a financial benefit. He discussed which agency could help them best with design, and he found financial help for the job to get done properly and in a timely fashion.

The North Fork Crow River Watershed Administrator Allan Kuseske, the new water quality technician Dave Kaufman, the NFCRWD board of managers, and the MPCA representative Tim James were also very beneficial in getting projects done in our area. We are very grateful to Roger Ramthun, the MPCA representative who really got the ball rolling to clean up the water in our area. We are grateful to all these individuals for their hard work. Only when we all work together can any meaningful action take place.

Water quality on Lake Koronis has improved remarkably, according to reports from our neighbors on Lake Koronis. Secchi disc readings, taken by KLA Treasurer Dwight Putzke also verify this information.

On behalf of your KLA board of directors, we want to wish you a wonderful holiday season, a prosperous new year, and an enjoyable winter. We'll see you next summer on Lake Koronis.

Goodbye Summer of '97

By Darlene Thyen

It seems like only moments ago we were all looking forward to the prospect of another wonderful summer at Lake Koronis. But, like a newspaper, or a young child, it's time to put this one to bed.

Late in October I saw a bald eagle soaring above the trees at the Assembly Grounds. My husband Wally and I watched as it did a few broad, lazy circles and then made its way over Second Island and out of sight. On Halloween two mature bald eagles sat high in the trees in the Assembly Grounds. I'm sure their presence will diminish when the lake freezes over.

We also have had a Koronis Kingfisher (my name for it) who has been sitting on a dead tree limb on the corner of our property and likes to do his daily fishing during our breakfast/dinner hours. I guess we're on the same eating schedule. This is one of my favorite birds, and I shall be sorry to see his feeding stop for the winter as he goes south.

Wally put some new suet out for the pileated woodpeckers, and they have started making daily visits to the feeder.

As I was cleaning my windows recently and cleaning my flower garden, a loon called out his breathy song. His notes helped to lighten my work, as I worked in anticipation of more communication from him. One afternoon we saw three loons swimming together.

Earlier this fall, hundreds, if not thousands, of black birds, or ravens, came to our area. It reminded me of Alfred Hitchcock's movie *The Birds*, as the ground was black on both sides of our yard with their black bodies eagerly looking for food. They really did a number on the acorns. They were quite

Goodbye summer/
continued on page 3

Goodbye summer...continued from page 2

aggressively searching all areas of our yard and patio for anything edible. Then they all left, as one, as quickly as they had come.

This past summer I made a trip to the Paynesville Historical Society with some of the grandkids. We had a great time and learned about the early days of Lake Koronis.

One of the things I learned was that the Native Americans in the area, the Sioux, called the lake Raven Feather Lake. I like that name and I'm going to use it more in the future. A name like that shouldn't be forgotten.

As we carefully tuck away our memories of this past summer, I am already looking forward to making more fond memories next summer, the summer of '98.

I want to ride around the lake and inhale the intoxicating fragrance of the basswood trees in bloom. There is no smell on earth to compare. (Well, maybe a brand new baby who has just been bathed and creamed and powdered runs a close second, though they are two distinctly different scents).

I also look forward to watching a certain group of campers at the Assembly Grounds. I think they are from Iowa.

This group has been coming for over 10 years--and they are singular in their sounds and activities.

Every afternoon, after lunch, the young people line up on the dock and await their turn at the big yellow banana. They go for hours, all afternoon, every afternoon, and I never tire of their squeals of delight. The boat goes around and around the very same area giving all an equal ride. They ride. They squeal and fall off.

I have to get one of those bananas because I truly feel I am missing something. I rode on a banana in Acapulco several years ago, with my daughter and her sister-in-law holding me on. But that was different. The driver of the boat took off and never once looked back, no matter how loud I screamed.

I would like to do the banana Lake Koronis style, with no fear if I should fall off, and knowing there would be someone watching to see if that actually happened.

There have been early reports that El Nino may have a negative effect on our friends and neighbors on the west coast and the east coast, and the snow birds who join them every winter. We are hopeful the winter will not do you or your property harm, and that you will return to us in good health.

We are also hopeful of a mild winter in Minnesota--one like the winter of'82. I never wore a winter coat that year. When my sister-in-law and I flew to Acapulco in January, the temperature in Minneapolis/St. Paul was 60 degrees. I could take another winter like that, especially after last years winter from hell.

Speaking of El Nino, one cannot help but wonder if this is a naturally occurring event, an event that has occurred for centuries, or if it is more likely an event rising from the degradation of the atmosphere. An event that we are helping to create.

My own opinion is that it is caused from ozone depletion, caused from too much carbon dioxide in the atmosphere, caused by too much burning of fossil fuels, without enough regard to cleaning the emissions adequately. And the United States is responsible for two-thirds of these emissions.

In my opionion, our government must start to concern itself with investing more research money in alternative power (not spending billions to get involved in Desert Storms and perpetuating our dependence on other countries and fossil fuels) and figuring out how to use the natural power we already have and waste. It's just my opinion, but I'm willing to share it with you.

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Ditches

What has been done and is it good?

By Allan Kuseske

There has been recent action taken by the North Fork Crow River Watershed District (NFCRWD) board of managers regarding several of the County Judicial Ditches within the watershed.

County Judicial Ditch 5 which is north west of the city of Paynesville, now has land enrolled into the CRP ditch buffer program, and this area will be used for water retention for large storm and runoff events. As work is completed on repairing County Ditch 5 landowners will be required to install and maintain a 161/2 foot buffer strip (grass) along both sides of the ditch.

The watershed district board has been asked by two landowners to make a change in the channel of County Ditch 5, by rerouting the ditch from the middle of their farm field and wetland area. The ditch channel, after changes, would run parallel to the county road about 50 feet away from the road right of way with rip rap being installed in high erosion areas. The road ditch has natural vegetation to filter and slow water flow.

The retention area will also help filter nutrients, suspended solids, sediments, inorganic (things that cannot be broken down) and organics (vegetation). As sedimnents and solids collect, maintenance will berequired to remove solids from the retention area.

Part of County Ditch 21 had maintenance done this past summer removing sediments from the bottom of the ditch. There was a high erosion area where damage to the corner of a manure pit and township roadbed had occurred during high water flows. Adding 30 feet of culvert plus aprons to an existing culvert repaired this area of the ditch. The center of the ditch was moved 80 feet from the road and the old channel was filled with soil taken from the new channel. Rip rap and the filter blanket was installed in the bottom of the ditch for the first 300 feet from the end of the culvert to prevent future erosion. This area was also a safety concern for the township board due to a 15-foot drop off the edge of the road.

Judicial Ditch 2 will have sediments removed from the bottom this fall as soon as landowners harvest crops. Areas of land will be used for water filtration and will not require cleaning. One of these areas will be 500 feet from the river.

County Ditch 37 near Brooten had some work done on the upper end to help Brooten lower water levels under the city. Over 50 percent of the homes in Brooten are pumping water from their basement as well as creating overloading of the city sewage lagoons.

County Ditch 38 had some new tile installed to replace a section of old damaged tile. This will help reduce the sediment loads entering the river.

According to Dave Kaufman, NFCRWD water quality tech, some ditch cleaning is necessary to eliminate debris and overgrowth causing blockage to occur. When blockage occurs, sediments begin to agitate causing nutrient loads to increase. Also ditch maintenance can help prevent debris from entering lakes where it can become a health and safety hazard to those individuals using the lake for recreation.

As the need to show income becomes more important to farmers, property drainage will increase the profit margins needed to keep the farmer in business. As the watershed district works with the landowners in repairing the ditch systems, areas of retention and flow control will be looked for and installed. These measure will help keep the farmers in business as well as improve the quality of water entering the rivers and lakes.

Allan Kuseske is the administator of the North Fork Crow River Watershed District. His Office is in Brooten.

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Grove Lake-- the headwaters of the North Fork Crow River

By Darlene Thyen

Grove Lake--it sounds so tranquil and pastoral--that one could think of nothing bad or ominous coming from it. But whatever is happening in the water at Grove Lake is sure to impact us on Rice and Koronis.

Well rest assured, things are happening on Grove Lake--and it is all for the good. This is due mostly because of a group of dedicated environ- mentalists living on its shores, and farmers and landowners who are willing to make some sacrifices to make the lake better.

First of all, Grove Lake is small, about a 10,000-acre watershed. It lies approximately 30 miles upstream from Rice Lake.

Towns along the area of the North Fork Crow River (not necessarily along the banks) include the village of Grove Lake, Sedan, Brooten, Belgrade, Regal, and Paynesville. These areas also impact the North Fork Crow River.

There are less than 15 septic systems that are not in compliance (not necessarily failing) on Grove Lake. Four of these have been updated in the past two years, and two more this fall.

But the really big thing they are currently working on includes two large wetland restoration projects. The area had been drained around the turn of the century. It is ironic that at the end of this century they are going to put things back the way they were.

One project involves eight dedicated landowners-who are ready to restore their land to its original, intended usage.

Preliminary plans are being assessed for a second, very large wetland restoration project in the Grove Lake watershed.

Some farmers are also working on water exclusion projects, clean water diversion, and grass waterways for filtering nutrients. Another farmer is working on a manure storage project.

The shore line around Grove Lake also is taking on a different look. Lake shore owners do not work for that "manicured-to-within-an-inch-of-its life" look, but are actively participating in shoreline best management practices.

Some shore line areas are left in there more natural state, or they are being "worked" in a far more environmentally friendly manner (i.e. rip rap, natural plantings, etc.)

Grove Lake area residents, we salute your efforts to minimize water quality degradation, and we applaud your efforts to preserve the pristine areas around your lake.

Grove Lake received Clean Water Partnership (CWP) loan and grant money at approximately the same time as the Rice/Koronis CWP assistance. We are glad they are using their funds so wisely. Keep up the good work!

Information for this article was provided by Dave Kaufman, NFCRWD.

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Farm conservation practices help clean up rivers, lakes

By Linda Stelling

This is the first of two stories being written on projects being done in the Paynesville area to improve water quality in the North Fork Crow River, Rice Lake and Lake Koronis. Next week stories covering projects on Rice Lake and Lake Koronis will be featured.

Minnesota farmers are applying conservation and environmental practices to their land at record rates.

With the financial help of Farm Service Agencies, Soil and Water Conservation Districts, and Watershed Districts, farmers are finding conservation choices more feasible.

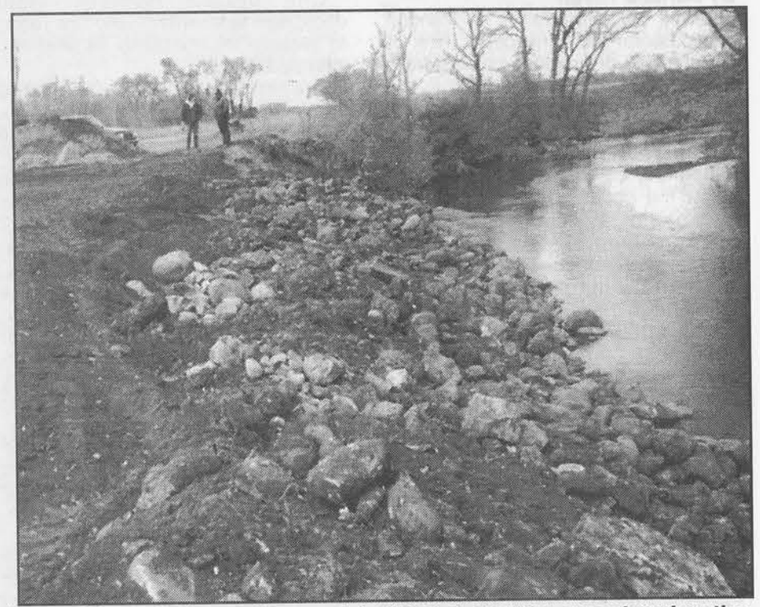
In the North Fork Crow River Watershed (NFCRWD) District, seven different projects along the river have been or are in the process of being completed, which will help improve the water quality of Rice Lake and Lake Koronis in the future.

"We have a water quality program which aids landowners, providing them assistance to improve the quality of water with manure handling facilities, grass waterways, segregation of water, terraces, shore land stabilization projects, storm water retention projects, and on-site sewage treatment systems, (septic systems) etc.," Dave Kaufman, water quality technician with NFCRWD, said.

Kaufman explained the rivers have changed in so many different ways over the years. Due to flooding, and strong currents, the rivers have been getting wide and islands have formed in many areas. In many instances, the course of the river has changed due to obstructions like trees which have fallen into the river and forced the water to seek an alternative route.

In 1995 Rice Lake and Koronis Lake Diagnostic Feasibility Study identified several high priority feed lots that should be targeted for cleanup and manure management.

Among the projects under way along the North Fork Crow River from Highway 4 to Rice Lake are Eldon Hoefts and Vern Soines, both stream bank stabilization; Richard Pflueger, a manure management storage facility; Gerald Kennedy, river bank restoration; and Eugene Schultz, manure manage-ment storage facility.



At the Vernon Soine residence, about150 feet of riprap was placed on the banks of the North Fork Crow River. For the past three to four years, they have lost about 18 feet of river bank into the river.

The first stop on the river route, headed east from Highway 4, is the Hoeft and Soine farms. Both lost a large section of the river bank into the river.

The Soines had about 150 feet of rock riprap and filter fabric installed along the river banks to help prevent the banks from eroding into the water.

"In the past three to four years, we have lost about 18 feet into the river. The banks are 13 feet high," Soine said. "That is a lot of dirt to lose into the river."

The Soine project has been completed while the Hoeft project is still in the planning stages for next spring.

A mile downstream is the Richard Pflueger farm. Prior to the project, all the run-off from the feed lot, loafing shed, animal lean-to shelters, a young stock pasture area all directed toward the river. The farm buildings and feed lot setbacks from the top of the river bank range from zero to 80 feet.

The object of the project was to reduce the amount of phosphorus entering the river and ultimately Rice Lake and Lake Koronis; design and construct a manure storage pond to allow for 12 months of storage capacity; develop a nutrient management plan that will utilize the livestock manure in an efficient and environmentally sound manner and to improve the overall management of the livestock operation.

Pfluegers installed an 818,993 gallon manure storage facility, to catch all the animal waste run-off from the farm. A trough system and clean water perimeter tile was also installed to route all the run-off from the farm site into the manure pit instead of the river.

Farm conservation/
continued on page 7

Farm conservation..continued from page 6

These projects were made possible with the state, federal, and private assistance of the NFCRWD, Farm Services Agency, Stearns County Soil and Water Conservation District, and Land Care Environmental Services. The design was a joint effort done by Natural Resources Conservation Service, and Central Minnesota Joint Powers Agency and Farm Service Agency.

On the west side of Paynesville, the Federal Emergency Management Agency has agreed to cover the cost of cutting out several large trees which are down in the river. "The trees need to be removed to prevent agitation to the river bank. The trees are blocking the flow of the water and making severe cuts into the river banks," Kaufman said.

At the Gerald Kennedy farm on the north edge of Paynesville, plans are to install a riparian CRP program along the river. The river bank itself will be restored with rock riprap and bioengineering; a practice where willow and dogwood bundles are placed into the bank to re-establish vegetation. The bundles are staked to the river bank promoting natural vegetation growth.

A livestock exclusion (no cattle on the river bank) is also planned. "We are looking forward to restoring the river bank," Mrs. Kennedy said. "We are planning to plant some trees and hope to restore the river bank and eliminate some of the damage cattle have done to its shore line."

Downstream, closer to Rice Lake, is the Eugene Schultz farm where a manure management storage livestock facility was designed. Schultz said he had a 10- acre pond behind the barn which feeds into the river. This pond was only located 500 feet from the barn and everything from the barnyard fed into the pond.

With cold winter winds blowing, Schultz was enjoying the idea of not having to haul manure in the winter. All the manure on the farm is being routed to the 650,000 gallon lagoon which he plans on emptying once a year, probably in the fall after harvest. "The nutrients from the lagoon will be better for the land as they are applied more directly than left on top of the snow," Schultz said. Work started on his lagoon in early June and was completed in two months.

Funds from the NFCRWD, Stearns County Soil and Water Conservation District, and Farm Service Agency helped Schultz finance his project.

All manure from these livestock operations will be stored and applied to crop land in a timely manner with a proper manure application plan. These facilities will also store feed lot run-off, eliminating it from entering surface waters.

"All the projects are done on a voluntary basis," Kaufman said. "We are here to help and want to extend a big thanks to those who have worked to protect the river and the environment."

KLA mailing list

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Conservation practices help clean up area lakes

This is the second of two stories being written on projects underway in the Paynesville area to improve water quality in the North Fork Crow River, Rice Lake and Lake Koronis.

By Linda Stelling

Conservation practices being implemented by farmers and lake home owners are helping in the effort to clean up Lake Koronis and Rice Lake.

"Conservation works when everybody works together," Patrick Corrigan, Sauk Rapids, said. Corrigan of Land Care Environmental Services has worked with the North Fork Crow River Watershed District (NFCRWD) on several projects.

Among the projects implemented this year was a manure management storage facility on the Dennis Fink farm near Rice Lake, sediment control basin structures on the Vince Miller and Tony Eull property, shore line stabilization on the Rick Brock property and a water retention control project on Lake Koronis on the Grant Herfindahl property.

The Miller and Eull projects consisted of installing water and sediment control basin structures, grassed waterways, and tile lines on their cropped land. The control basin structures are embankments built across a depression area of concentrated water run-off to act similar to a terrace. Grassed waterways are natural drainage ways seeded to sod-forming grasses. Both help prevent gully erosion and trap sediment and water running off farm land.

The Miller project was developed with the USDA Natural Resource Con-servation Service and with assistance from the Stearns County Soil and Water Conservation District (SCSWCD)

The Millers have contracted to keep their land in the project for five years. They have four basins or earthen dikes constructed across waterways. An underground tile system leads the water from the waterway to a stable outlet near Rice Lake. "Instead of surface water creating a large gully, the water is diverted underground," Brad Wenz, SCSWCD, said.

"Miller went through a lot of expense and time to take care of a serious problem," Wenz said. "One gully (250 feet long) extended from his farm land down onto residential land along Rice Lake. The three basins eliminated grass waterways and enabled Miller to clean up a lot of brush which had grown up in the waterway. The fourth basin eliminated a gully which ran from the field to Rice Lake and made the field more farmable."

The Millers have constructed and are maintaining the grass waterways. Without the grass waterways, a gully would form. They are also maintaining a buffer strip (33 feet wide) close to the contour and have placed the land in the CRP program. They are leaving crop residue on the fields to prevent erosion and practice conservation tillage; they are farming the land perpendicular to the slope to reduce erosion and plan conservation crop rotations.

"The Millers are thinking to the future," Dave Kaufman, NFCRWD water quality technician, said.

Eull lives south of Miller and is working on a three-acre piece of land

Conservation/
continued on page 9



Vince Miller has installed sediment basins to control erosion. Above is the view from the Miller farm before the project was started.



The gully on the Miller farm extended 250 feet toward Rice Lake. The finished project eliminated the three to four-foot deep gully and left a grassy area.

Conservation... continued from page 8

to concentrate the flow of water, installing grass waterways to slow down erosion. Both projects received funds through Farm Service Agency and NFCRWD, as well as the landowner covering a portion of the expense.

Dennis and Debbie Fink, southeast of Rice Lake, are constructing a new 40 by 60-foot farrow to weaning hog facility. As a part of the project, they have constructed a manure management storage facility under the building. All manure from the operation will be stored in the facility and applied to crop land in a timely manner with a proper manure application plan.

They also have a smaller farrowing barn with a pit which will be pumped into the larger pit. "We plan on doing more with our feed lot. We have moved the calves away from the creek to prevent run-off. We also want to do more fencing near the creek," Mrs. Fink said.

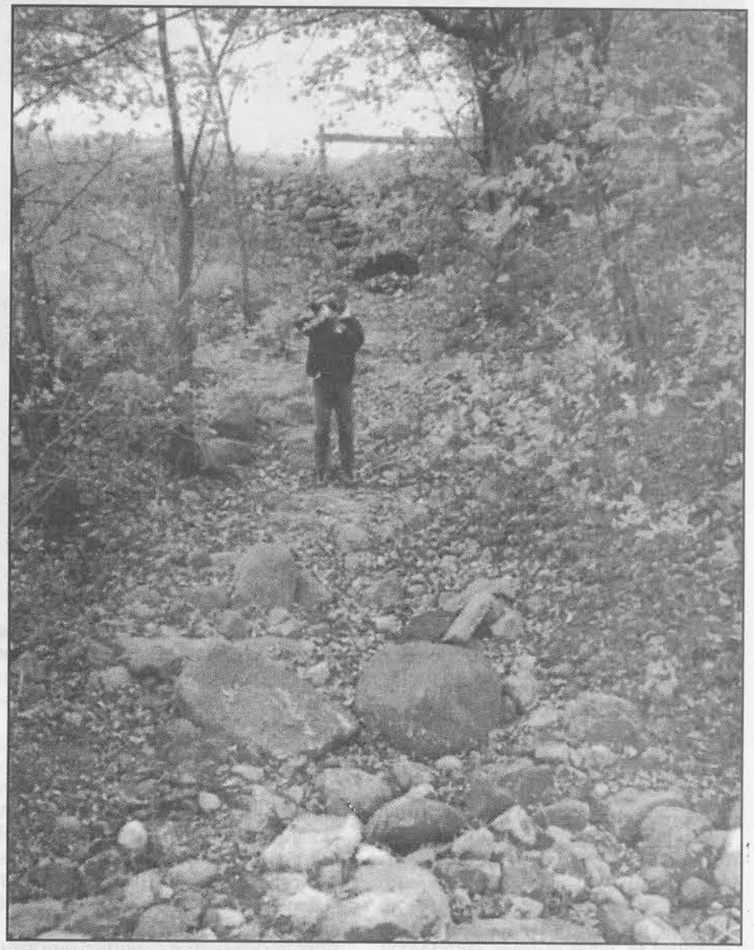
Grant Herfindahl, rural Litchfield, has a cabin on Lake Koronis with a steep embankment.

With the aid of the NFCRWD, he installed a storm water retention/ erosion control project. This project prevents peak flows from directly discharging nutrients and sediments into the lake. A retention pond at the top of the hill, along County Road 20, collects and traps the nutrients and sediments prior to a regulated flow piped underground 150 feet to the lake's edge.

The Herfindahl project eliminated a gully three to four feet deep which had formed down the hillside.

Besides the above mentioned projects, several property owners on

Conservation/
continued on page 10

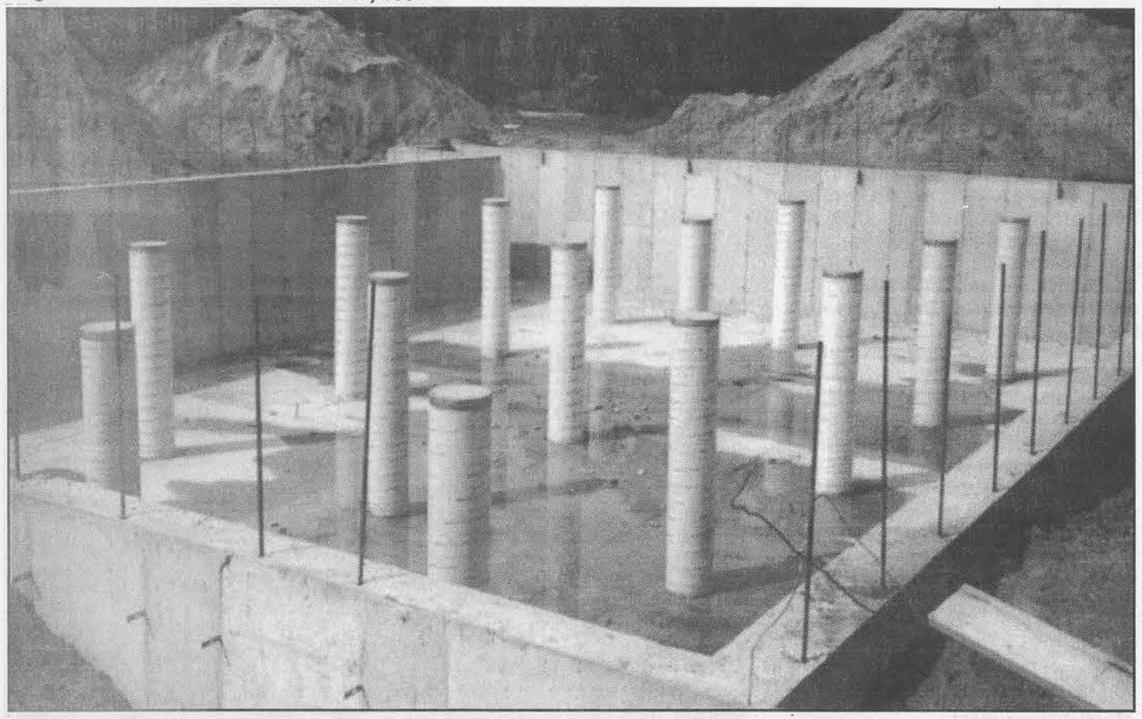


The Hefindahl project on Lake Koronis consisted of filling in a gully and forming a sediment basin at the top of the hill. Pictured is Pat Corrigan inspecting the basin along County Road 20.

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Dennis and Debbie Fink are in the process of constructing a 40 by 60 foot-farrow to weaning hog facility with a manure management storage facility under the building.

Conservation... continued from page 9

Rice Lake and Lake Koronis have taken it upon themselves to upgrade their septic systems.

A study by the NFCRWD had found 26 noncomplying systems on the two lakes and 21 have been updated to meet current standards. In addition, many other lake residents have upgraded their septic systems.

The Rice Lake Improvement Association and Koronis Lake Association have been educating lake shore owners on ways to improve water quality. They have informed lake shore owners of different shore land management practices which will help reduce pollution in the lakes. The practices include bank stabilization, lawn management (proper fertilizer application and disposal of lawn clippings), residue control, septic systems and natural vegetation.

"Farmers and lake shore owners working together is an important part of preserving the lake shore and other areas of the watershed district," Kaufman said. "Nutrient loading of the river and lakes comes from a variety of sources: feed lots, run-off from fields, lawn fertilizer, failing septic systems and shore line erosion, to name a few."

"It takes everybody working together to improve the lakes and rivers. Even visitors to the lakes on weekends need to make sure they don't spread exotic species from lake to lake. Boaters need to practice environmentally safe usage of gas and oil in their boats. They are also advised to stay out of shallow areas so they won't disturb vegetation, and boating slowly through a no wake zone," Kaufman said.

"Personal water craft and water skiers need to keep to the middle of the lake and not on the edges to prevent shore line erosion," Kaufman added.

A variety of funds are available to landowners through the Clean Water Partnership. A state revolving loan fund has designated $500,000 at three percent interest for any water quality practice. In addition, there are a limited amount of grant dollars available which don't have to be paid back through the NFCRWD and SCSWCD, Kaufman added.



Water monitoring
It's critical and cruical

Monitoring is a critical element in the Clean Water Partnership (CWP), according to Dave Kaufman, NFCRWD water quality tech.

"It can help pinpoint areas where pollution might be coming from," Kaufman states.

The NFCRWD, with the assistance of Tim James, MPCA, has taken monthly samples from lakes, rivers, and streams within this watershed. Three months of sampling have been completed for Lake Koronis, with lab results in from two months of sampling.

Sampling has been done at the Rice Lake inlet and outlet, and the inlet of Lake Koronis (at both bridges between Rice and Koronis on Mud Lake). Sampling has also been done at County Ditch 5 (north of Koronis), County Ditch 4 (south shore of Koronis), and the outlet of Lake Koronis.

The Parameters sampled were:

TSS (Total Suspended Solids):

Direct measurement of the concentration of suspended particulates, inorganic, and organic, in water.

TP (Total Phosphorus):

The analysis for total phosphorus provides a measure of the total concentration of phosphorus present in a water sample.

Chlorophyll *A*:

Chlorophyll *A* is the most commonly used parameter for measuring algal biomass.

Secchi Disk:

A secchi disk is a 20 cm disk that is either painted white or divided into alternating black and white quadrants used to measure clarity through depth of penetration into the water.

The following information is the result of several monitoring samples taken from the deepest point of Lake Koronis.

Graph--see below

** A temperature and dissolved oxygen (DO) profile was also done. Water temperature affects aquatic productivity, lake stratification, and water chemistry. DO concentrations are needed for the growth and reproduction of fish and aquatic life. Both of these profiles were normal and well within desirable ranges.

The watershed plans to take monthly "grab" samples during the months of May, June, July, August, and September. A sample may also be taken during April.

Continuous flow recording sites are also going to be a part of future water monitoring. These will be placed on water courses entering the river, as well as the inlets and outlets of Lake Koronis.

(This article was written jointly by Dave Kaufman, NFCRWD and Darlene Thyen, KLA.)

Here is some additional information from the DNR about oxygen demand, so that you might understand the term better.

Oxygen-Demanding pollutants

While land animals extract oxygen from the air, aquatic life depends on oxygen dissolved in water. The oxygen consumed by aquatic life is naturally replenished through photosynthesis by living aquatic plants, and through reaeration, which occurs when the layer of oxygen-depleted water contacts surface air. Reaeration takes place more quickly in fast-moving, shallow streams where the rate of air/water interchange is greater than in quiet lakes.

Pollutants, such as inadequately treated sewage, manure, crop residue, and natural loadings of leaves and algae, create an oxygen demand on a water body. A discharge of organic nitrogen or ammonia can also create an oxygen demand through the process of nitrification.

When oxygen-demanding pollutants enter a water body as a result of poor land use practices and waste disposal activities, they upset the delicate balance between oxygen-consuming aquatic life and the oxygen replenishing process. The pollutants can increase the rate of oxygen consumption to a level higher than the water body can adequately replenish. As a result, the oxygen content of the water will fall below what is needed to support aquatic life.

Results of Lake Koronis water testing

Date	Parameter	Location	Result	Averages
07/24/97	Chlorophyll *A*	LK – Surface	29 ug/l	7-37 ug/l
07/24/97	TSS	LK – Surface	6 mg/l	2-6 mg/l
07/24/97	TP	LK – Surface	32.7 ug/l	23-50 ug/l
07/24/97	Secchi Disk	LK – Surface	4.0	4.9-10.5 ft.
08/25/97	Chlorophyll *A*	LK – Surface	12 ug/l	7-37 ug/l
08/25/97	TSS	LK – Surface	3 mg/l	2-6 mg/l
08/25/97	TP	LK – Surface	28 ug/l	23-50 ug/l
08/25/97	Secchi Disk	LK - Surface	5 ft.	4.9-10.5 ft.

Rice/Koronis partnership attacks pollution

By Stephanie L. Everson

Lakes Koronis and Rice have been a significant part of their communities history, providing many lasting memories for those who have found enjoyment from the waters of the two lakes, either through recreational activities such as fishing or water sports, or simple relaxation on the shores.

With the large role the two lakes play in the Paynesville area, it would be a reasonable assumption that area residents don't set out to pollute either lake, but because of misinformation and lack of practical and available alternatives, many of those who would rather protect the lakes end up contributing to their demise.

The Rice/Koronis Clean Water Partnership is a locally sponsored voluntary program. Their intent is to improve and protect the water quality of the two area lakes by reducing the impact of various pollution sources. After a comprehensive study of nutrient sources and declining water quality in the North Fork Crow River Watershed, they began the implementation phase of their project in 1996.

The implementation phase affected various management practices on area lands, including septic system upgrades, crop land protection, and feed lot run-off and lake shore erosion control, in an effort to reduce nutrient loading in the lakes by 25 percent within a three to five-year time period.

Major nonpoint pollutants

Pollution carried by run-off is referred to as nonpoint source pollution. Although some livestock producers feel the run-off from their feed lot wouldn't be noticed, when combined with the many operations in the area, livestock waste can become one of the largest contributors to nonpoint pollution.

In a recent study of the North Fork Crow River Watershed District, 10 out of 29 feed lots within the immediate watershed may have been contributing excessive concentrations of phosphorus, sediment, and chemical oxygen demand to Lake Koronis.

The major nonpoint source pollutants regarding agriculture are sediments, water damaging nutrients, pesticides, bacteria, and oxygen-demanding substances. **Sediment** from fields, ditches, and stream banks, which may also carry nutrients and heavy metals, make water turbid and damage fish and aquatic plant habitat.

Nutrients, such as phosphorus and nitrogen, are carried in animal waste and not only cause excessive algae and weed growth in lakes, but high concentrations of nitrates in drinking water can pose a very real health risk to infants.

Pesticides and other agricultural chemicals can wash off crops and fields into area lakes and streams, often causing toxic reactions to fish and other aquatic life. Some agricultural chemicals also present a public heath problem if they reach drinking water.

Bacteria run-off or seepage from feed lots can carry coliform bacteria into surface and ground water, a problem if in drinking water or body contact.

Oxygen demanding substances such as manure, sewage, crop residue, and other decaying organic material can use enough oxygen to deprive and affect fish populations.

Nonpoint prevention

According to a publication series entitled "Shoreland Best Management Practices," published by the Minnesota Extension Service, there are several practical ways to prevent these types of pollutants. Called "Best Management Practices (BMP)," they are measures that can be taken to protect water quality, and ultimately, the life of the lakes.

Cropped land erosion control cannot only preserve local waters, but also enhance an agricultural operation. These include mulch tillage, no-till and ridge till systems, contouring and grass field borders, and strip cropping. Crop rotations and seeding fragile and drainage areas with grass can also greatly reduce sediments.

Diversions, a permanently vegetated ridge constructed at the base of a slope, can effectively redirect run-off away from an animal barnyard.

Manure containment structures allow for the build up of manure, and channel liquid manure to a single outlet where it can either be stored and used to fertilize fields, or can be treated by a grass filter strip.

Grass filter strips are permanent grass sod that filter nutrients from the manure containment area, which can be enhanced by a buffer strip between a grass filter strip and the stream.

Buffer strips along lakes and streams, which consist of trees, can remove excess nutrients. The buffer strip stabilizes soil, traps nutrients by filtering the run-off, and provides shade and cools the water, improving aquatic habitat.

Stream crossings make a low-flow gravel crossing for animals to reach pasture on the opposite side of a stream through the use of fencing. Culverts and bridges are sometimes needed and can be built to allow machinery to cross.

Pasturing livestock in a rotational grazing method can provide better forage and improve sod and soil coverage between grazing cycles, as well as reduce erosion.

Unusable land conversion can provide benefits both financially and environmentally by converting highly erodable and marginal fields into various uses. Possibilities include intercropping trees and pasture, planting nut trees or timber, planting Christmas trees, or using native and imported species for wildlife habitat.

Fuel, fertilizer, and pesticides can contaminate a large volume of water, even if only a small amount. Storage options include locating fuel tanks away from other buildings and water, dike areas around above ground tanks to contain possible spills, and properly dispose of outdated unused chemicals.

Silage and haylage, if improperly contained, can contaminate ground and surface water. Some BMPs that could minimize this risk include: storing silage away from water sources, provide impermeable surface soil around the storage, install a seepage collection system, divert clean water away from the area, and adequately cover the silage.

Just one of these measures can have a positive affect on lakes Koronis and Rice, and the streams that feed them, and engineering and other professional assistance is available to property owners free of charge through the Clean Water

Rice/Koronis/
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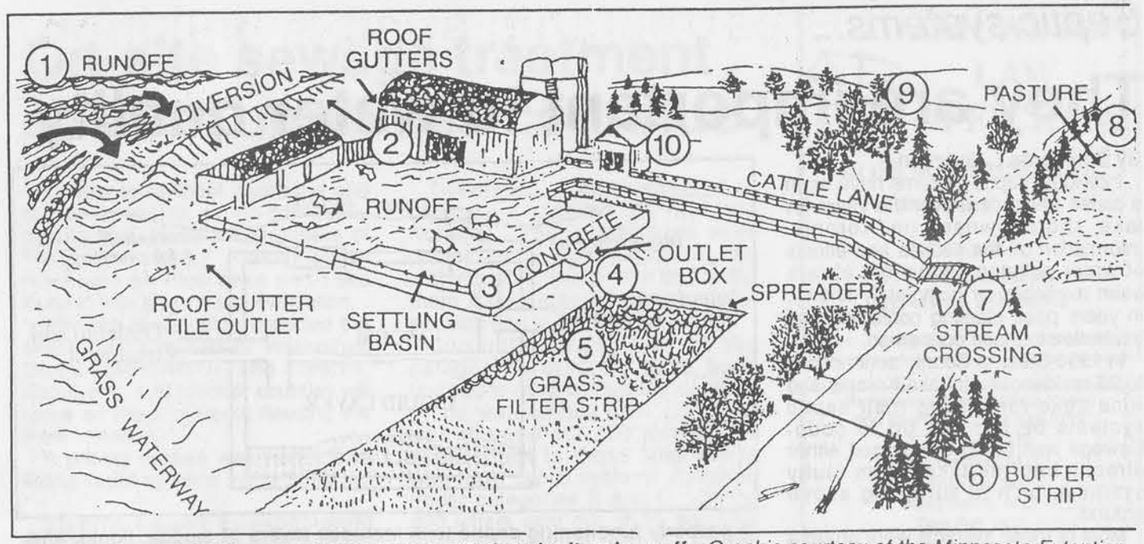


Figure 1: Several BMPs work together to control agricultural runoff. *Graphic courtesy of the Minnesota Extention Service*

Rice/Koronis...

continued from page 12

Partnership.

For those in need of assistance, three percent loans, as well as cost sharing, are available to those who wish to make these types of improvements on their land. For information on various water quality improvement measures, contact Patrick Corrigan at the Land Care Environmental Services in Sauk Rapids, or Allan Kuseske at the office of the North Fork Crow River Watershed District in Brooten. Dale and Lora Lorenz and Rich and Kathy Olmscheid, shoreland volunteers, also have informational resources available to anyone who desires information on other lake shore Best Management Practices.

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Projects throughout the Rice/Koronis Clean Water Partnership area

The Rice/Koronis Clean Water Partnership Phase II was under way May 1, 1997 with MPCA approval of the work plan. Through hard work and dedication from federal, state, local and private agencies, as well as the KLA and RLIA, projects are being implemented. Here is a summary of what has been accomplished thus far.

*** On Site Sewage Treatment system upgrades**

*** Monitoring**

Completed projects:
* Livestock exclusion project adjacent to Rice Lake.
* Fall of 1997, three manure management storage facilities will have been installed.
* Fall of 1997, two farms will have installed water and sediment control basin structures on their cropped land.
* Fall of 1997, two shore line/stream bank stabilization projects will have been completed.

Projects in progress:
* Two storm water retention/erosion control projects.
* Preliminary plans for a large gully erosion site on Rice Lake.
* A wetland restoration project.

Projects ahead:
We will continue to capitalize on projects similar to those above, as well as other water quality improvements. However, we need landowner cooperation and commitment in order for these projects to take place. We would like to thank those who were and are concerned about our future environment.

Submitted by Dave Kaufman, NFCRWD Water Quality Tech

Septic systems...

They are important to water quality

By Stephanie L. Everson

Individual septic systems have been a cause of concern over the years for lake shore owners on Koronis. Information on the causes and effects of water pollutants have not always been available, or completely known, in years past, causing confusion and frustration to those concerned.

In 1996 Stearns County sent notices to 26 residences on Lake Koronis and Rice Lake requesting their septic systems be brought up to code. Sewage was being discharged either directly into the lakes from faulty systems, or was surfacing above ground.

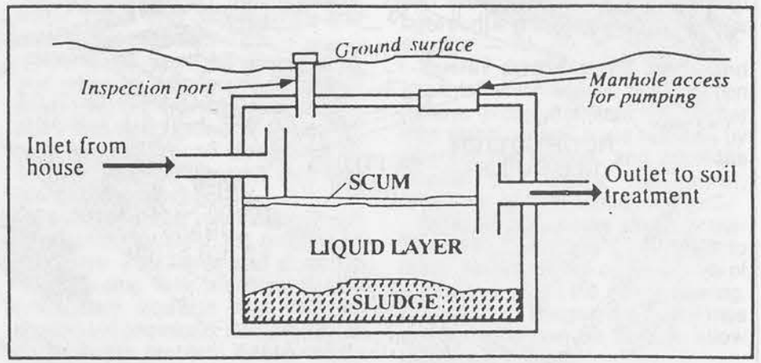
Most of those systems were brought up to code, and many more residents in the area have repaired or purchased new systems, but privately owned septics still pose a need for more readily available information for lake shore property owners.

Water quality in Lake Koronis and Rice Lake has become a mission for the Koronis Lake Association, a local organization of lake shore owners and concerned citizens. They have researched and provided information on better lake shore management for 27 years, and continue to seek out information from reliable sources such as conservation and governmental and regulatory agencies.

A major concern for the Koronis Lake Association is faulty septic systems on lake shore properties, a major cause for many lake contaminants. According to Dave Gustafson, a sewage treatment specialist with the University of Minnesota, a properly designed, installed, operated, and maintained septic system is better than a municipal. Unfortunately, an individual system can also become a high risk if left unattended.

Misinformation is most often the cause of poor septic system performance. According to Dale and Lora Lorenz and Rich and Kathy Olmscheid, shore land volunteers with the Koronis Lake Association, water conservation is a good way to maintain a properly functioning septic system.

The Lorenz' and Olmscheids received two days of extensive lake shore conservation training from several governmental regulatory agencies, such as the Department of Natural Resources and the Minnesota Extension Service. They learned that in some instances, a practice that appears to be logical can have the opposite outcome of what is expected.



A properly functioning septic tank includes layers of sludge, liquid, and scum. Newer septic tanks have access ports for pumping and older tanks usually have a manhole cover for that purpose, but inspection ports on older tanks should never be used for pumping.

For instance, it would seem that water flushed through a drain into a septic system would work to flush out the system. In actuality, the more water that runs down the drain in the shower, bath, washing machine, sink, or other drain, stirs up the layer of sludge at the bottom of the septic tank. That in turn washes those solids to the top of the tank which could plug the pipes and back up the system.

The shore land volunteers commented that water efficiency does not have to mean water deprivation. For example, using the suds saver option on a washing machine will save a considerable amount of water, which not only helps the septic system to function properly, but could also save on the utility bill. Also, turning off the faucet while brushing one's teeth can save gallons of water.

According to Gustafson, there are several important factors to keep in mind in maintaining a septic system. Each property owner should insure their system is large enough for their lifestyle. Since people tend to use more water than in years past, septics need a larger capacity. For smaller systems, water saving devices such as various shower heads or suds savers on washing machines are a good measure as they don't release as much water, but achieve the same thing.

Septics can also have improved functioning when low-phosphate (less than 11 percent) dishwasher and laundry soaps are used. Liquid soaps are also better for the systems than powdered because liquids don't accumulate fine particles in the sludge.

It was also mentioned that septic additives and cleaners are not necessary in a properly maintained and functioning system since naturally occurring bacteria breaks down the solids to be released into the drain field. Harsh chemicals from various additives can pollute the treatment process. Even wash water from latex paint on brushes or rollers have similar effects when washed down a drain. Chemical products should be disposed through hazardous waste recycling, never into the septic system.

A system should be pumped, cleaned, and inspected every two years. In addition to being the most effective means of spotting problems and maintaining the system, it's also much less expensive than a repair bill which could run anywhere from $2000 to $10,000.

For property owners who need repairs or replacements of old septic

Septic system/
continued on page 16

On-site sewage treatment system upgrades continue

Thanks to Michael Jacobson and Nancy Oestreich, an on-site septic survey took place the summers of 1995 and 1996. Almost every residence on Rice Lake and Lake Koronis was given a site evaluation.

With the survey data collected the North Fork Crow River Watershed District (NFCRWD), and Stearns, Kandiyohi, and Meeker counties will focus on those systems needing the most attention.

A priority system was worked out listing septic systems into a category.

Stearns County Environmental Services classified systems into six different categories:

A- Discharging to surface or directly to water

B- Installed since 1972, but does not have a permit or inspection from Stearns County

C- The system consists of a cesspool, seepage pit/tank, or leaching pit

D- Less than 3 ft. separation of drain field to high water table

E- Does not meet setback requirements of county ordinance

F= Conforming system

The watershed and counties started out by contacting high priority system landowners that had their system evaluated A, B, or C.

Twenty-six landowners had category A systems (on Rice and Koronis). These individuals were contacted by letter explaining the problem with their system and giving them a timetable as to when their systems had to be upgraded.

Currently, twenty-one of the category A systems have been updated to meet current standards.

The watersheds next approach was to send out 200 letters and applications to those landowners who have septic systems classified under categories B and C. Of the 200 letters sent out, there has only been a response from 22 whose systems have been updated and/or are conforming.

Less than 15 landowners have taken advantage of the three percent low interest money available through the watershed. The money comes with a seven-year payback, being assessed on their property taxes if the landowner wishes.

The money is part of a Clean Water Partnership (CWP) loan available only for the next two years.

The watershed is hopeful that landowners will take advantage of this loan money and upgrade their systems.

(This article was written jointly by Darlene Thyen, KLA and Dave Kaufman, NFCRWD.)

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Septic systems... continued from page 14

systems, the office of the North Fork Crow River Watershed District in Brooten has made available low interest loans at three percent to Koronis and Rice lake property owners, as well as to others in the watershed district.

Shore land volunteers, Lorenz' and Olmscheids are also available for those who desire information on better methods of maintaining a septic system, or just need an answer to a specific question.

Spread thinly in a drain field from a properly functioning septic system, sewage is less harmful, but in concentrated areas above ground, it can pose a very real health threat to both humans and the lake. According to the shore land volunteers, regular maintenance and proper use is the secret to a properly functioning septic system. With information readily available between neighbors and residents, Lake Koronis will continue to provide the beauty and purity that originally brought many home owners to its shores.

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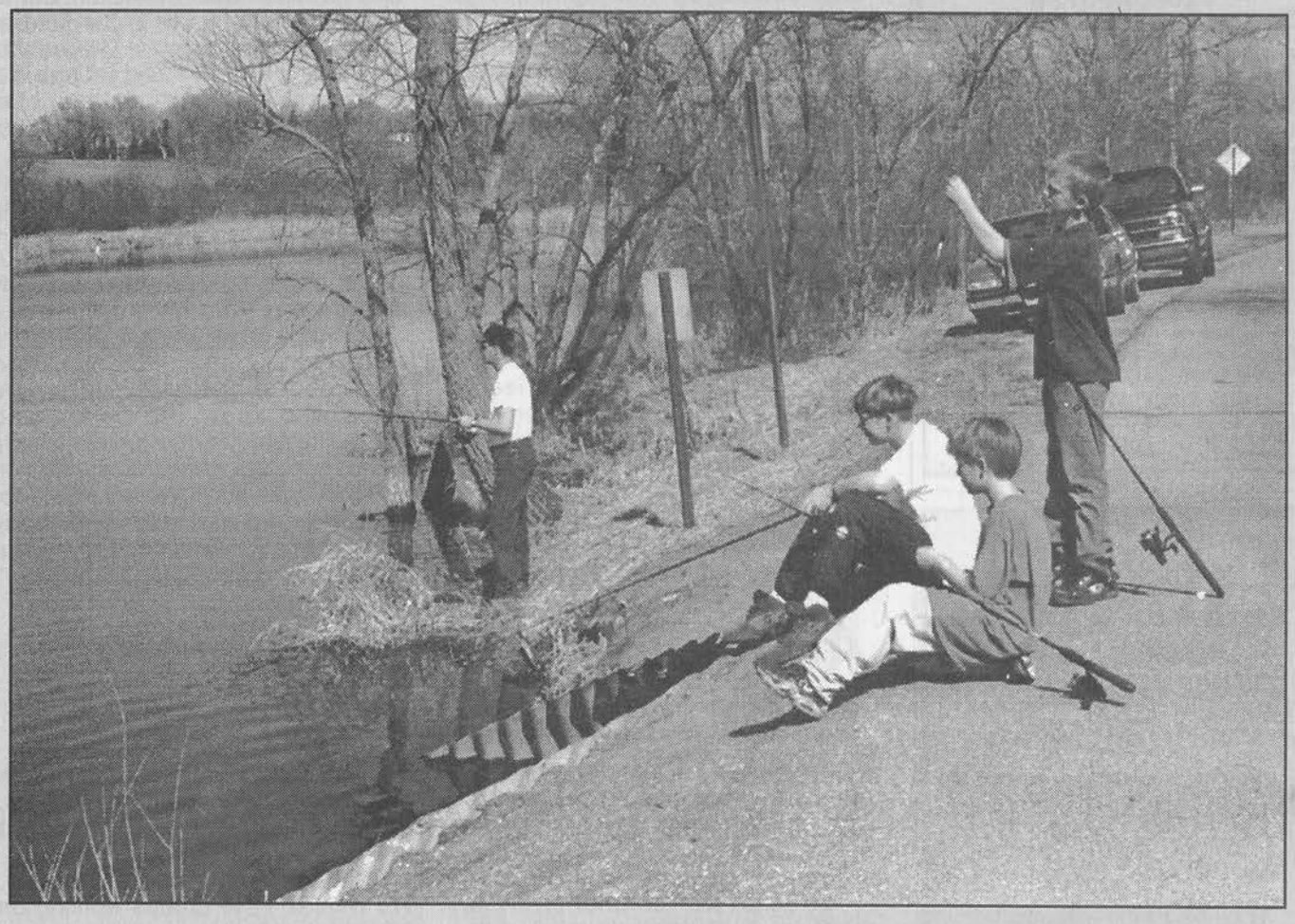
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Koronis Lake Association Aquatic Update

"An association formed to promote the protection and improvement of Lake Koronis"

April, 1998



Spring brings out fishermen of all ages....

Warm spring temperatures have brought out fishermen of all ages to Lake Koronis. This group enjoyed the sunshine and tried their luck at fishing on the west end of the lake near Adams Landing on Baywater Road.

On the inside....

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Spring 1998

Welcome back to the lake!

By Darlene Thyen

If you haven't been back yet for that early springtime check on the cabin, we know you will be back soon. Nothing claims the cabin owner or resort or campground visitor more than making sure the ice is off the lake and that everything is just as we left it, and as we remember it.

What plans do you have for the summer of 1998? Some will no doubt have a family reunion planned. It is a good time to share your home or cabin with family members as you remember your past and look forward to the future. Family time is great. Nobody puts on any "airs," dressing down and comfortable is the norm, and there seems to be more good homemade food than can be eaten. And, there is magic in watching the little ones swing on the swing set, play make believe with their stick guns, and put their feet in the clear blue water of Lake Koronis.

Entertaining friends is a very big part of summer life at the lake. You can't take a boat ride without smelling grills cooking the various cuts of dinner, as friends mingle and sip their predinner lemonades or cocktails. Nothing compares to sharing your table with friends and then topping off the evening with a good game of something--cards, dice, dominoes (our new game of choice), or some board game.

Another fun way to spend the summer is to do all the things you dreamed of all winter. Get up early and go nine holes before breakfast, bike until lunch, play in the lake all afternoon, and then take a walk in the cool of the evening. That is a dream isn't it? I could do that. I just don't think I could do it two days in a row.

Summers are wonderful at Lake Koronis. They simply don't last long enough. Take a moment during the hustle and bustle of opening your cabin, or getting your property ready for spring, to just look at the awesome wonder we are allowed to enjoy in this beautiful place. Know that you are one of the fortunate ones who know the peace and tranquility and the energy that is ours in this beautiful area. Whatever you do, don't take it for granted. (And for goodness sake--don't tell anybody else about it. It can be our little secret.)

Annual Meeting set for July 18 at Area Senior Center

The Koronis Lake Association Annual Meeting is set for Saturday July 18, 1998 at the Paynesville Area Senior Center.

Check-in will be at 8:30 a.m. followed by refreshments. The meeting will convene at 9 a.m. Treasurer Dwight Putzke will be available to collect dues.

There will be an election of officers. The following board member terms expire: Peter Jacobson, Lloyd Peterson, and Don Wiese. These are three-year terms. Nominations for these positions will be accepted from the floor. If you would like to be a member of the board of directors, please inform one of the present directors.

We are in need of volunteers, also. We want to have groups working on education, shoreland management, and watershed laision. We also have the need to update our mailing list by having individuals from different areas of the lake do an every member visit. Many places have been sold and new members are unknown.

911 Tips

- Call 911 in an emergency
- Tape your address on the phone
- Request Paynesville medical, fire or police
- Put your house numbers in a conspicuous place for emergency personnel to see

Association dues are needed to continue work

Many new projects are "in the works" and more will be started this summer. Your association has never been more active in improving water quality on Lake Koronis. But your dues are needed to continue our efforts.

Our association members have been very generous in their financial support in the past, and we are hopeful your generosity will continue.

Most of our membership sends in $20 as their portion of dues, however there are many who generously give $50, $100, or $250 to continue our work of protecting Lake Koronis.

In the June newsletter we will have a complete update on all of the projects we are financially involved in getting started or completed.

Please use the enclosed blank and envelope to mail your dues to Dwight Putzke, association treasurer.

We are also sending out the 1998 KLA membership decal with this newsletter. Display your membership decal proudly.

The KLA board of directors thanks you for your cooperation and generosity.

Lake Koronis was ice free on Sunday, April 5

Ice out occurred on Lake Koronis on the afternoon of Sunday, April 5.

Ice out is based on the standards of the Gray Freshwater Biological Institute, which states a lake must be 90 percent free of ice and one must be able to drive a small boat from any one shore across to the other shore. Koronis was probably 90 percent ice free a few days earlier, but because the west bay of Lake Koronis was full of ice, one could not have driven a small boat from the Adams Landing across the lake until Sunday.

This year is the sixth earliest ice out since 1962. Koronis' earliest ice-out was March 24, 1987, followed by March 27, 1981; March 31, 1968; April 2, 1973; and April 4, 1966. The ice-outs are based on records kept by Genevieve Koenig from 1962 to 1993 and the Press since then.

1962	April 26	1981	March 27
1963	April 30	1982	April 20
1964	April 16	1983	April 15
1965	April 17	1984	April 14
1966	April 4	1985	April 15
1967	April 9	1986	April 11
1968	March 31	1987	March 24
1969	April 19	1988	April 8
1970	April 26	1989	April 20
1971	April 17	1990	April 10
1972	April 27	1991	April 8
1973	April 2	1992	April 10
1974	April 20	1993	April 19
1975	May 3	1994	April 15
1976	April 9	1995	April 15
1977	April 11	1996	April 24
1978	April 18	1997	April 22
1979	April 25	1998	April 5
1980	April 19		

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What to do, what to do!

By Darlene Thyen

There are times during the summer when finding something to do seems necessary. Unexpected friends drop in, you forgeot to shop, or it's raining and you've already finished that good book.

What now? Not to worry! Paynesville has lots of things to do and lots of places to go. Where to start is a better question.

One of the easiest ways to remedy the problem of unexpected guests at lunchtime is by letting the cooks at the Wishin' Well or Tucks Cafe do the cooking for you. These restaurants serve up a real bargain and take care of the hungries fast.

They both serve a home cooked meal that will probably be more than you can eat comfortabley, but that probably won't stop you from ordering pie. Go ahead and indulge, and tell yourself it was just too good of a bargain to pass up. Hill Top Restaurant also has a great noon buffet, with all you care to eat. The Dog Haus is also very good at lunch.

Oh, oh, you've got kids, and they don't think roast beef or roast chicken is a big deal? There's Cenex for the Taco Bell Express, A & W, or the Dairy Queen. Or, there's Jimmy's Pizza. If you live on the north shore you can probably even get it delivered to your door. Is this a wonderful town or what!

A good nighttime dining spot if Bernie's Barn--now known as Northern Lights. This place is under new ownership and they'd like to see you. Give them a try. You can even kick up your heels with a little weekend dancing.

An out of the way spot, just six miles west of Paynesville on Highway 55, is Regal, and the Pilgrim Inn. They serve lunch and dinner items every day but Sunday--that's town team baseball day. They also serve a great Wednesday night all-you-can-eat buffet. Go early and stay late. The atmosphere is very laid back, the service is great, and families are encouraged. The kids will like the games and music. The parents will appreciate the value.

You say your idea of a good meal is cooking it up yourself? Let Tom Thumb, Jerry's or Wally's help you out.

During your visit to Lake Koronis try to include a visit to the Paynesville Historical Society. A small donation will take you on a guided tour through our area's past, with information and artifacts that will amuse and amaze you. They really have a variety of items on display. Plan on a couple of hours.

Make some time for a visit to the city library. If you don't have a card they will make one for you on the spot. They have everything--books, magazines, and videos.

Speaking of movies, you can rent them at three locations: Hilltop Video, Paul's Place, or PJs. Ask anybody for locations.

You will be amazed at the Koronis Cinema. This is one of the town's best bargains. Two top rate movies every night, the best popcorn, and at a price you won't believe.

If you have little ones in your household you have to spend some time at the Paynesville Elementary School playground--Chutes and Ladders. I guarantee your kids are going to want to go back time after time. Trust me on this one.

If you have kids a little older, try putting a tennis racket in their hand and drop them off at the Paynesville Area High School tennis courts.

If mom and dad are getting a little antsy, try going a few rounds on Paynesville's expanded golf course. The price is right, there's hardly any waiting, and there is just the right amount of challenge.

You can also schedule a manicure or a new hairdo at one of the many salons in Paynesville.

For the ultimate treat, make arrangements to have a therapeutic massage or foot reflexology treatment. (No, you haven't arrived at some exotic location in the Carribbean, it's Paynesville.) Go on, pamper yourself. This is truly a bargain.

You may want to browse through some of the area antique shops as well. There are several downtown and two on the east end of Lake Koronis.

And last but certainly not least, all of the area churches welcome you to come and worship with them. As Martha Stewart says, "It's a good thing!"

We are confident you will enjoy the time you spend in our area. The natives are friendly, the women are pretty, and oh, yes, the kids really are way above average.

RLA, NFCRWD, KLA

Groups work together to protect surface water quality

By Peter Jacobson

Those of us in the lower portion of the NFCRWD watershed, specifically residents around Rice Lake and Lake Koronis, realize it is important that the prime agricultural land in the upper portion of the watershed be supplied with the proper drainage to enable the farmers to obtain the peak production from their land. Most farmers do have a concern and an appreciation for the fact that they are stewards of the land. My hope is they continue to care for their land and are concerned about the impact of their surface water on those who reside downstream from them.

There will potentially be four or five ditch cleanout projects studied and constructed in our upper watershed during the next five to ten years. These are ditch systems that were originally dug in the early part of this century and have fallen into a state of disrepair.

When these cleanout projects are undertaken, I believe it is extremely important to include the following features in the design and construction of these cleanout projects: reslope all ditch banks that have a slope greater than 2:1, installation of side channel drop pipes, provide buffer zones on both sides of repaired and newly constructed ditches, provide water retention in the ditch system, and provide livestock exclusion from the channel.

These suggested improvements are the result of discussions between representatives of the North Fork Crow River Watershed District, the Rice Lake Association, and the Koronis Lake Association.

We in the lower watershed are ultimately concerned about water quality and the quantity of water reaching the lower portion of the watershed district, which includes Rice Lake and Lake Koronis.

Let's look at these improvements in more detail.

Slope of the ditch bank: Most ditches were constructed with a slope of 1:1, that is, one foot rise for each one foot of horizontal displacement. These ditches are very susceptible to erosion and slides from the ditch bank into the bottom of the ditch. The ditch becomes partially plugged, and particulate material is carried downstream, along with nutrients. Resloping the ditch banks to 2:1 or 3:1 will prevent this erosion and allow the ditch to function properly. These ditch slopes also allow for better vegetative cover.

Buffer zones: Buffer zones on the sides of the ditch system allow surface water and nutrients to slow down and be absorbed by the soil before they reach the ditch. These are extremely beneficial in highly cultivated areas. Buffer zones are also eligible for the Conservation Reserve Program [CRP], where the farmers are paid for this environmental protection. Buffer zones that are enrolled in the CRP program can be anywhere from 33 to 200 feet wide, and can pay a farmer in the neighborhood of $60.00 to $80.00 per acre.That is about what the farmer could make if he actually farmed the land.

Water retention: Temporary water retention is vitally important for water quantity considerations. In a typical ditching situation, water is released from the land and into the major waterways very quickly, following a rain event. This is because all of the natural water storage areas have been removed, namely wetlands. Programs are in place for payments for wetland restoration and wetland expansion. These need to be used extensively to retain surface water. It is vitally important to have these temporary water retention areas located near the sources of the runoff, before the water gets to the major waterways.

Livestock exclusion: Livestock need to be excluded from the rivers and ditch systems to prevent erosion of the stream banks and ditch slopes. It is also important to keep their wastes from entering the surface water directly.

I believe all of us: the NFCRWD, Rice Lake Association and Koronis Lake Association, and the agricultural community; need to work together to accomplish the goal of having our area profitable for agriculture, as well as an economically viable tourist and recreational area.

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Call 911 in an emergency

When you dial 9-1-1 in Stearns County your address is automatically displayed on a screen at the dispatch center.

Will the emergency responders be able to find your address when they arrive at the scene?

According to Stearns County emergency personnel, there are many homes and businesses in Stearns County which have not adequately displayed their addresses. Personnel from police, fire and ambulance services have all identified this as a common problem.

Clustered mailboxes or mailboxes not numbered present difficulties for emergency responders. In an emergency, minutes spent locating an address may be the difference between life and death.

Make sure you have reflectorized (not reflecting, such as chrome numbers) or highly contrasting numbers displayed on your mailbox or house. These numbers should be displayed on both sides of the box. These numbers should be at least 4 to 6 inches high.

If you put your numbers on the garage, make sure they are still visible when the garage door is open.

Make sure your house numbers are visible from the road, or mark your driveway adequately so there is no problem knowing where to go.

Trees should not obstruct the view of your numbers.

If you do not live in Stearns County, you must give the 9-1-1 dispatcher your address to get service. It is a good idea to specifically request *Paynesville* ambulance or fire department to get the closest, fastest service available. Those minutes can mean the difference between life and death. Write your address down on a slip of paper and tape it to your phone. If you are having an emergency, your guests will be able to help you.

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Incentive program for farmers will benefit lakes

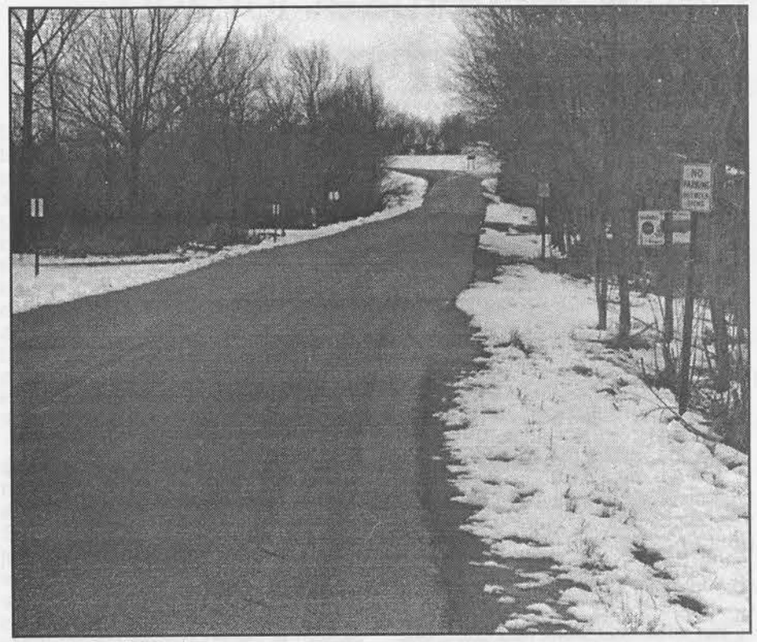
The Stearns County Commissioners approved a $25,000 bonus for the USDA-Conservation Reserve Buffer Initiative Program which is part of the Conservation Reserve Program. The Buffer Initiative Program encourages landowners to plant buffers adjacent to environmentally sensitive areas. Buffers are areas or strips of land along water bodies maintained in permanent vegetation of grasses or trees. Some examples of conservation buffers are filter strips, riparian (streambank) forest buffer strips, contour strips, field wind-breaks, living snow fences, and farmstead shelterbelts.

Under the Buffer Initiative, farmers can receive payments of $30 to $80 per acre annually (depending on soil type) with an option of a 10 or 15-year contract. USDA has added a 20 percent incentive payment to the annual payment for certain practices such as filter strips. The one-time county incentive payment will be on a first-come first-serve basis at a rate of $50 or $100 per acre depending on the site location. A 50 percent cost-share rate is established to help defray the cost of site preparation, seed, and planting.

Steve Sellnow, Natural Resources Conservation Service (NRCS)District Conservationist, said "This is an excellent program for the farmers who would like to enroll marginal areas of their land in the program. The county receives the water quality benefits and the farmers receive a good rental rate for land enrolled."

Dennis Fuchs, Stearns County Soil and Water Conservation District (SWCD) District Administrator adds, "The water quality benefits are substantial and, as an added bonus, fish and wildlife habitat is improved." Many farmers in the county that have land adjacent to ditches, streams, and lakes have been identified. They will be receiving a letter from the NRCS soon explaining the Buffer Initiative Program, estimated rental rates, acreage, and an aerial photograph delineating the area on the farm. Interested farmers should call the USDA-Farm Service Agency at 320-251-2092 for additional information or to make an appointment.

This notification from the Stearns County News was printed in the March 18, 1998 issue of the *Paynesville Press.*



The west shoulder of Baywater Road will be widened to accommodate parking for Adams Landing

Adams Landing parking to get update

By Peter J. Jacobson

The parking for the Adams Landing on Baywater Road at the west end of Lake Koronis will be updated this summer, according to Paynesville Township officials.

The township board has obtained a conditional use permit from the Stearns County Planning Commission to construct a parking area parallel to and on the west side of the road. The parking area will be 10 to 12 feet wide and 250 feet long. The plans are to construct the area this summer, and to pave it in the summer of 1999. It will also be striped to indicate parking areas, and have posts and a chain on the west shoulder, if necessary.

"No Parking" signs will remain up on the lake side [east side] of Baywater Road as a safety measure, according to the plan approved by the planning commission. Parking at the access will be in the designated area only.

The township still needs to obtain approval for the plan through the Wetland Conservation Act, which requires replacement of wetlands filled in at a minimum of a 2-1 ratio, according to Greg Berg, Stearns County Environmental Services.

The Paynesville Township will also be required to remove the fill they placed in the wetland to the west of Baywater Road in the summer of 1997 in an attempt to expand the current parking area at that site.

Increased signage will also be included in the plan to warn motorists of the boat landing and pedestrian traffic.

Boaters will also be asked to observe a "no wake" area in Lake Koronis near the Adams Landing.

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Septic systems

Why treat sewage?

The area lake associations and members can be proud of the work done during the summer of 1997 concerning septic systems. Over 100 new systems were installed on Rice and Koronis. This represents fully one-eighth of our population.

We still need to be vigilant in our endeavor to make sure every septic system within our area functions efficiently and effectively to keep our environment safe.

It has been 25 years, about the same amount of time the Koronis Lake Association has been in existance, since the federal Clean Water Act was passed. Since that time the state of Minnesota has been very successful at cleaning up water pollution caused by untreated sewage from cities and industries, according to the Minnesota Pollution Control Agency.

"But while that work was going on, the number of septic systems in the state kept growing," according to an MPCA fact sheet of February 1997. "That's not necessarily bad; installed and maintained correctly, septic systems are a proven method for treating sewage. But the problem is that many of the more than 400,000 septic systems now in use in Minnesota are not adequately treating sewage. The result is a widespread potential for harm to human health and the environment."

According to the report, exposure to sewage through ingestion or bodily contact can cause disease. Sewage contains bacteria, viruses, nutrients and some chemicals. Bacterial organisms from humans who are infected with or are carriers of disease can be transmitted through water systems. While the vast majority of people who contract bacterial infections recover quickly, severe illness and deaths do occur, according to the MPCA fact sheet.

"Illnesses caused by waterborne microorganisms are difficult to assess because the vast majority of cases go unreported. The acute gastrointestinal symptoms of a waterborne illness may often be disregarded as merely a case of the stomach flu. Although deaths caused by waterborne micro-organisms have decreased in the United States during the twentieth century, documented cases still number in the thousands, according to the report. The number of illnesses and deaths actually may be as much as 10 times higher because the national reporting of waterborne disease outbreaks is voluntary," according to MPCA.

One problem with the reporting system is the Minnesota Department of Health (MDH) investigates disease outbreaks primarily in areas within its jurisdiction, such as restaurants, resorts, and other MDH facilities. The department does not actively investigate whether the disease is actually sewage-related.

The MPCA objectives for sewage treatment are to:

*Keep inadequately treated sewage away from human contact to prevent disease

*Reduce levels of pathogenic bacteria and viruses discharged to the environment

*Reasonably and cost-effectively prevent ground-water contamination

*Develop clear direction for design, construction and maintenance of sewage treatment facilities

*Strive for cost-effective methods of sewage treatment to maintain or improve property values

KLA Mailing List

Do you have a new neighbor, or know someone on Lake Koronis who does not get the newsletter? Please let us know so we can add them to the list!

Send their name and mailing address to ...

Koronis Lake Association, P.O. Box 11, Paynesville, MN 56362

Or Call: 320-243-3772 or 320-243-4955.

Tips for feeding birds during springtime

The lengthening days and milder temperatures of spring mean it is time to adjust bird feeding systems to accommodate springtime migrants as well as the winter birds and permanent resident birds that have been at feeders all winter. One of the most delightful aspects of spring bird feeding is that there may be different species present every day, and all the birds can be enjoyed in their stunning spring breeding plumage, according to Carrol Henderson, DNR Nongame Wildlife Program supervisor.

The biggest change necessary for spring is to increase the proportion of millet mix provided both in feeders and on the ground, Henderson said. Spring migrants include dark-eyed juncos as well as while-throalted, white-crowned, Harris' and fox sparrows en route to northern breeding grounds. These birds and returning mourning doves all prefer the small seeds of millet-type mixes. By early May the millet can also attract indigo buntings.

Black oil sunflower seeds and cardinal mixes should also be provided for northern cardinals, blue jays, chickadees, house finches and purple finches, Henderson said. Suet is another staple that should be provded throughout the spring. It may even bring in yellow-rumped warblers and kinglets. Keep finch feeders stocked with niger thistle, or use tube feeders stocked with finch mixes (a combination or niger thistle, peanut hearts, and fine sunflower chips) to attract goldfinches, and any redpolls or pine siskins that linger from their winter visits to your feeders.

The best way to present all of these bird foods is to have several "clusters" of three to four feeders each, Henderson said. These should be at several locations. A cluster of feeders offers the opportunity to provide different bird food in each feeder as well as on the ground near or under these feeders. This arrangement allows room for more birds as well as occasional visitors like squirrels.

"Spring is an excellent time to make a temporary brush pile near feeders," Henderson said. "Brush piles should be about 10 feet from a feeder cluster. Trim some shrubs or smaller tree branches and make a pile of branches perhaps 6 to 8 feet wide and 3 to 4 feet high. No need to use heavy limbs; small brances with lots of twigs are fine. This provides small birds with hiding places where they can avoid being caught by migrating birds of prey."

It is also very important to have water available for migrating birds, Henderson noted. A shallow bird bath or shallow pool with a recirculating water pump can provide dripping or splashing water that is especially appealing to birds. The best bird baths are shallow pools no more than 1-1/2 to 2-1/2 inches deep.

"By the first of May, put out tray feeders with grape jelly, overripe bananas, orange halves, chunks of suet, finely crushed eggshells, corn bread, and small containers of mealworms," Henderson advised. "This is a catchall combination of foods for a variety of migrating birds that include everything from Tennessee and yellow-rumped warblers to house wrens, Baltimore orioles and scarlet tanagers. Hummingbird and nectar feeders should also be put out by May first because they may be visited by warblers as well as early-returning hummingbirds and Baltimore orioles."

"At a time when many people traditionally put away their bird feeders at the end of winter, you can be discovering that spring is a wonderful time to attract species that you never realized would come to bird feeders," Henderson said. "People should give it a try. I think they will be pleased with the visitors at their feeders."

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Cleanout on Judicial Ditch 1 to begin soon in NFCRWD

By Darlene Thyen

Judicial Ditch 1 is at the northwestern edge of the North Fork Crow River Watershed District.

J. D. 1 comprises approximately 45 miles of open ditch and drains about 23,000 acres of highly cultivated agricultural farmland. A major cleanout has been in the planning stages for some time now, and it will become a reality this summer.

I can hear a collective moan of "Oh, no," as this news is imparted to our membership. But, if the job is done correctly, it may actually help the quality of water coming into the North Fork Crow River.

Recently several KLA board members, Peter Jacobson, Dale Lorenz, and Bev Thornquist took a tour of the area with Allan Kuseske, NFCRWD Administrator. They all came away with the belief that the ditch work could actually improve water quality for the NFCRWD.

One benefit will be buffer strips. Imagine farmland that abuts the ditch. The land on both sides of the ditch will have a berm that will act as a levee for the nutrients, pesticides and water that would otherwise run right into the ditch. Cultivation cannot take place any closer than 16 i/2 feet from the berm.

Another plus will be that the actual berm and sloping land of the ditch will be planted with vegetation. Grass or some other permanent vegetation will slow the runoff flow, trap sediment from the crops, and increase water infiltration into the soil. This will not only prevent the nutrients from reaching the ditch, it will also reduce erosion.

Resloping the ditch will also help. A less steep grade will slow water from rushing into the ditch. Vegetation planted on the slope will slow the water flow, reduce erosion, improve water quality, and will help provide cover and habitat for small birds and animals.

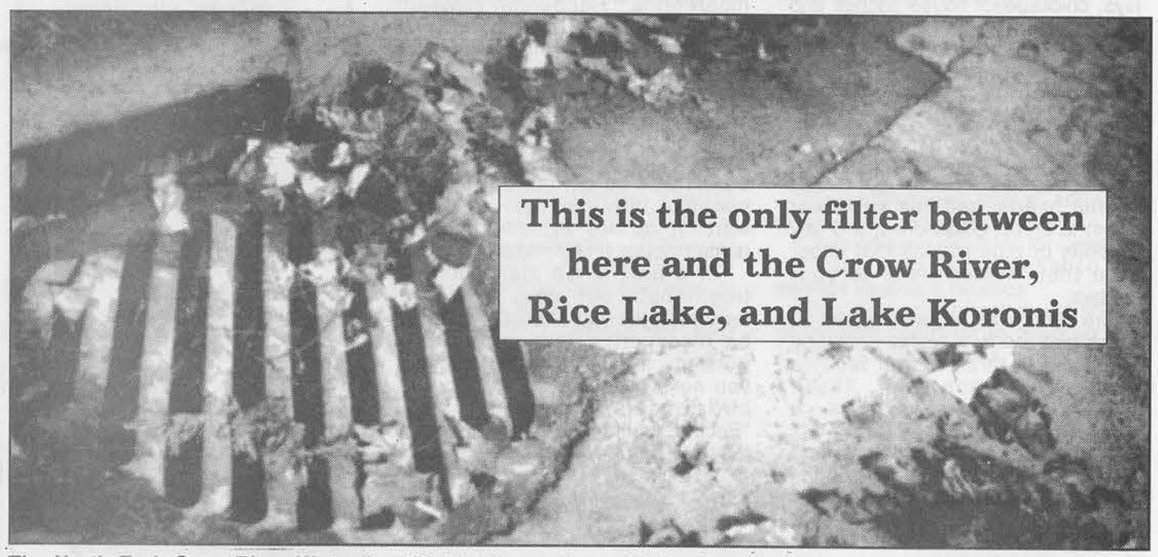
Cattle exclusion will also be a benefit of the new ditching. Cattle should be excuded from ditch slopes as they trample banks, destroy vegetation and stir up sediment in the ditch bottom. They also indiscriminately provide unwanted nutrients of their own to the area, causing a lot of unwanted manure to be washed through the ditch and into waterways.

Water retention areas will be encouraged. Retention areas slow down water flows and allow sediment to filter out of the water.

There is currently a dam on Grove Lake, at the beginning of the watershed, that is in need of repair. It is scheduled to be replaced in the near future (i.e. 0-10 years).

The Grove Lake Association has been very active recently. They have completed several water quality and water quantity projects in the past year and several more projects are planned. Most of the projects have been a result of the Clean Water Partnership.

Another main component in ditching is to make sure the rules are enforced after the ditch cleanout is completed. We will definately be watching to make sure everyone follows the law.



The North Fork Crow River Watershed District is working with local communities to help educate and prevent pollution from entering the river and lakes through storm sewers. In Paynesville, as new storm sewer drains are installed, alert emblems (No Dumping) are being embedded into the concrete curbs by the drains.

Stearns County sewage treatment requirements changed March 1

Stearns Count's requirement to have individual sewage treatment systems certified when property gets transferred became effective on March 1.

This requirement, which is currently in place in most of the counties surrounding Stearns, significantly changes the way in which real estate professionals conduct their business. The certifications will be the same as those required by many lending institutions for the past several years.

To satisfy the point-of-sale certification requirement, a property transfer certification form must be submitted to the county auditor whenever a certificate of real estate value is required. The compliance section of the form need not be completed if the sale or transfer involves one or more of the following circumstances:

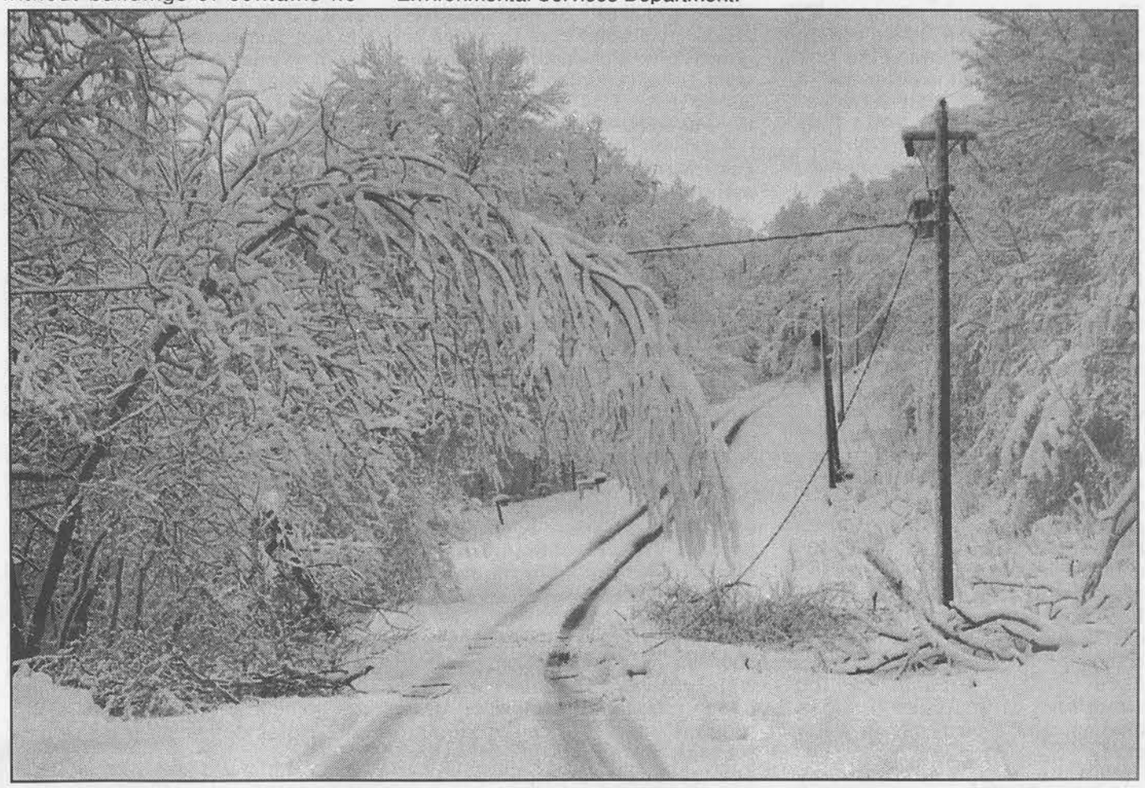
1. The affected tract of land is without buildings or contains no dwellings or other buildings with plumbing fixtures;
2. The transfer is a foreclosure or tax forfeiture;
3. The sale or transfer conpletes a contract for deed purchase agreement entered into prior to March 1, 1998. This subsection applies only to the original seller and buyer on such a contract.
4. Any dwellings or other buildings that are connected exclusively to a municipal wastewater treatment system.

Transfers which do not require a certificate of real estate value need not include the property transfer certification form.

Under the provisions of the ordinance, only Stearns County Environmental Services staff may conduct compliance certifications. Requests for certifications should be submitted to Stearns County Environmental Services Department.

If the transfer occurs during the winter months, the compliance portion of the certification form must be completed by June 15 of the following spring. The buyer and seller must agree upon which party will be responsible for any necessary upgrade should the system fail to pass the complaince inspection.

According to Stearns County Environmental Services staff the county's goal is to make the process as smooth as possible while eliminating older nonconforming systems. Staff wants to work with representatives of buyers and sellers before the 11th hour to make sure they satisfy the ordinance requirement. The county encourages anyone who has questions regarding the point of sale certification process to call Stearns County Environmental Services Department at 320-656-3613 or 1-800-450-0852.



The roads around Lake Koronis were single lane paths following an April 2 snow fall.

Aquascaping -- The latest wave in lakeshore design

By Margaret A. Haapoja

The flutelike notes of a red-winged blackbird float on the soft summer air.A breeze ruffles the lake's surface as a mallard hen leads a train of downy ducklings through the wild rice. Eileen Keen lounges on her front lawn, watching a monarch butterfly feast on milkweed flowers near the water's edge. Retired to the home where she grew up on the shores of Big Sandy Lake near McGregor, Keen says she's concerned about the changes she's seen in her lifetime. Her parents were area pioneers who began operating Wotring's Resort on the property in 1918. "We had nine cabins that stretched along the lakeshore," she says. "We could see across the lake, and there was not a house. Now you look out there at night, and there are all those lights."

Bob and Barb Greifzu live across the lake. After working in St. Paul for 32 years, the couple retired to Big Sandy in 1992 and soon fell into the familiar routine of mowing the lawn all the way down to the water--just as they had done at their suburban home. Then in May 1994 Bob, president of the Big Sandy Lake Association, attended a shoreland volunteer workshop presented by Itasca and Aitkin counties, the University of Minnesota Extension Service, and other agencies. There he learned about the far-reaching effects of shoreline development on lake waters, and he learned about steps shoreland owners could take to reduce or eliminate those impacts. "My eyes were opened, and a fire was lit under me," he says.

Spurred on by Bob Greifzu, members of the Big Sandy Lake Association looked at the lake and decided to do something about the problems they saw. Development on Big Sandy had gone from 30 resorts and 300 residences in 1956, to four resorts and 1,150 homes in 1995. Each new home has led to removal of more vegetation along the lake's shoreline. Long-time lake residents have noticed erosion of the shoreland, an increase in algae blooms, and a decrease in water clarity.

With the help of Aitkin County extension educator Jean Pitt, Greifzu and the association obtained grants totaling about $90,000 to conduct a demonstration and research project to test methods to reduce erosion and runoff. It has come to be called the Big Sandy Lake Shoreland Revegetation Project.

Colaborating on the project with Pitt are others from the University of Minnesota and dozens of agencies, organizations, and volunteers, including the Department of Natural Resources. Four private landowners, including Keen and the Greifzus, were chosen to participate in the revegetation project. A fifth private site, which is undeveloped, is being used to demonstrate how to landscape shoreline properties with minimal impact. Four nearby sites with similar terrain, exposure to wind and sunlight, and development serve as "control" sites, and four undeveloped sites with natural vegetation that is intact serve as "reference" sites. Several thousand plants, purchased from nurseries or grown at the University of Minnesota from seed collected from the Big Sandy area, were transplanted onto the four demonstration properties.

According to Carrol Henderson, DNR Nongame Wildlife Program supervisor, a multitude of benefits accrue from lakeshore planting. "The concept of putting in a buffer zone and re-establishing native plants both on shore and in the water is kind of a package deal," he says. "All of a sudden a whole bunch of headaches go away at the same time. You're spending less time mowing and less money on chemicals and fertilizer, and you've got more time to go fishing or canoeing on the lake. The ultimate goal is to get the vegetation back where it used to be so that the vegetation does the work for you: purifies the water, provides fish habitat, and breaks up the wave action."

The Big Sandy project aims to demonstrate that a naturalized shoreline minimizes erosion, protects water quality, enhances wildlife habitat, improves aesthetics, and reduces maintenance. Although plantings will require years to mature and spread, participants have already learned a great deal about shoreline revegetation. Meanwhile, lake associations across the state are fielding questions from lakeshore owners interested in naturalizing their properties.

"If you're interested in doing this kind of work, we're interested in coming up with ways to support you," says Pitt, "but you're probably still going to be a pioneer because there's a lot we don't know. You have to consider it an adventure in gardening."

Here's a look at the most frequently asked questions and the responses of various experts.

* How do I plan a naturalized landscape?

Terry Ebinger, DNR aquatic plant management specialist, encourages lakeshore owners to contact their local DNR office, especially when they want to replace plants in the water. "We'll help them locate transplants. We'll help them locate sites for re-establishment," he says. "In fact, sometimes we'll even assist them in putting the plants in. We make it as easy on people as we possibly can."

Seek out other landowners who have restored shoreline on your lake. Also look for people who have not disturbed the natural state of their lake lot. Attend a lake association meeting or contact the DNR for a list of people who have naturalized their shoreline. Visit Big Sandy near McGregor to see native plantings. (Call the Aitkin County extension office for directions.)

* How can I have a beach and dock as well as native plantings?

Henderson suggests that people who own 100 feet of lakeshore frontage try naturalizing 75 feet of shore and using the remaining 25 feet for lake access, such as a boat dock or swimming area.

When you remove vegetation from the water to make way for recreation, landscape designer Kathryn McFadden recommends clearing a path through aquatic plants at an angle so that plants remaining will help break the waves coming into the shoreline. To reduce erosion, she avoids designing trails to run

Aquascaping/ continued on page 13

Aquascaping... continued from page 12

straight downhill to the shore. Instead, she runs trails so they angle across the slope to the shoreline. That might require locating the dock at the edge of the property.

* How can I plant some native species and retain my scenic view?

With the proper landscaping, you can plant trees and shrubs without spoiling your view of the lake, says Susan Galatowitsch, assistant professor of horticulture at the University of Minnesota. She calls the process a matter of "editing" your shoreline by removing as little vegetation as you can. By planting or leaving in place particular plant material, you can often screen undesirable views and frame attractive ones. According to McFadden, shrubs or trees on a seven percent slope, for example, can grow as high as eight to 10 feet without blocking a view of the lake from a deck.

*How do I decide which plants are best suited to my site?

"Find places on your lake or neighboring lakes where the shoreline hasn't been developed and see what grows there. Cruise the shoreline and take pictures," says Henderson. "If you don't know what the plants are, take close-ups and show them to someone from the DNR who can identify them for you."

Once you have decided on the exact site you wish to plant, you need to determine the average water level. (Call the DNR or conservation district to find out.) Some plants tolerated dry and wet seasons, but many will die if they are too wet or too dry.

Next, identify the shoreline zones--aquatic, wet meadow, and upland forest. Aquatic plants generally grow in less than seven feet of water. The wet meadow fringe runs along the water's edge and forms a transition between aquatic vegetation and the upland forest.

Try to select natives that grow in your immediate area. "A person's first priority should be to try to get Minnesota plants," says Henderson. "The closer you can get--let's say 50 to 75 miles from where you are--that's even better."

Choose perennial plants that offer aesthetically pleasing color and texture, tolerate various soil conditions, and grow vigorous rhizomes that will hlep stabilize your shoreline. By choosing a variety of perennials, you can have flowers blooming from spring through fall.

Before selecting plants, answer the fowwing questions, because all these factors affect how well a plant will do on a particular site:

1. What is my property's soil type? A soil-testing kit from your county extension office will help you determine texture, pH, percent of organic matter, and moisture content. Each plant has specific requirements.

2. What direction does my property face? Some plants thrive in the sun on a south-facing shore while others prefer a shady northern exposure.

3. From which direction are the prevailing winds? Plant or preserve aquatic vegetation at the proper angle to shield the shore from these winds.

4. How big are the waves that break on my shore? Aquatic vegetation might not thrive on the wind-swept shore of a large lake. But on a relatively calm site with waves no higher than 2 feet, aquatic plants can help stabilize the shore. Bulrush, a perennial with vigorous rhizomes that grow bigger each year, withstands winds better than wild rice, an annual with a small root system.

5. How steep is the slope of my yard? It is especially important to choose vegetation with roots that bind the soil and stabilize steep banks.

Big Sandy project participants selected non-aggressive perennial plants, which are not likely to to spread too far or too fast, from regional flora. (Research found 507 species in the area.) They chose greenhouse-propagated specimens rather than those collected in the wild, and they made sure all plants were hardy and appropriate to the site conditions.

* Which plant species will attract wildlife, and which will deter nuisance animals?

Riparian zones--areas of vegetation adjacent to rivers or other waters--are among the most prolific wildlife habitats. Plants here provide food and cover for animals of all kinds.

Books such as Henderson's Landscaping for Wildlife can help you find plants preferred by wildlife. For example, Henerson says, 66 species of wildlife use smartweed, 40 species use pondweed, 23 go for wild rice, and 17 for cattails. Henderson refers to elderberry as a summer fruit, or an "ice cream plant," because birds eat the berries as soon as they're ripe. On the other hand, American high-bush cranberry is an excellent example of a winter fruit, or "spinach plant," because its fruit is bitter when it first appears but hangs on throughout the winter months, becoming sweeter after a couple of hard frosts.

Bob Greifzu cites one of the biggest benefits of planting a buffer zone between his lawn and the lake: no more geese on the mowed grass. Because the geese suspect predators are hiding in the tall grass along shore, they avoid the Greifzuz' yard.

*How can I establish aquatic plants?

Here are some special considerations for planting in the water:

1. Before planting, wash the roots of aquatic plants with a garden hose to remove all soil and seeds of exotic plants such as purple loosestrife. Keep the roots in water until you are ready to plant.

2. Leave the tops on aquatic plants. "These aquatic plants are sort of like snorkelers," says Galatowitsch. "They need to take air in through their stalks, and the air goes down through chambers and aerates the root zone. If you cut off the stalks when you transplant them, water will go down through those channels and suffocate the plants."

3. Anchor or stake each plant to secure it to the lake bottom. Carolyn Dindorf, limnologist with Hennepin County, has experimented with coconut fiber mats when she plants aquatic species. "We cut slits in the coconut fiber, insert the plants, and anchor the fiber to the lake bottom with either rocks or wood stakes," she says. "The fiber mats last a couple years before they decompose, and by then the plants

Aquascaping/ continued on page 14

Aquascaping...continued from page 13

should be well-established. We've also used metal staples on upland sites, and we've experimented with coconut fiber logs as wave breaks."

4. Install a structure to break waves. Such structures are critical when establishing aquatic vegetation, according to Dawn Magnusen, community program assistant with Aitkin County extension service. Big Sandy project participatns use simple PVC frames glued around 2-by-8-foot panels of marine plywood. They install them in 18 inches of lake bottom as soon as the ice goes out, and remove them right before freeze up. Magnusen expects they'll need to use the structures for three or four years until the plants are well-established. You can pick up a fact sheet on how to build a wave-break structure from your county extension office.

* Where can I obtain these native plants?

Nurseries specializing in native plants offer many species suitable for wet meadows and uplands, but aquatic plants are harder to find. Because you might need to order by mail, allow plenty of lead time. For a list of native plant sources, consult your county extension office.

Locating plant sources sometimes takes extra energy and creativity. For example, individuals may harvest some submergent plants from local wetlands and lakes with permission from the property owner. Check with the DNR for permits required for digging wild vegetation in Minnesota. The permits require that you guarantee such plants are weed-free to ensure you're not transporting exotic species such as purple loosestrife or Eurasion watermilfoil from one lake to another.

Aquascaping is not a panacea for the problems of every lakeshore landscape, warns Galatowitsch, and patience is essential during the awkward, messy stage while the plants are getting established.

"It's a fair amount of work, and it may draw some odd looks from your neighbors," Galatowitsch says. "But don't give up. It's well worth the wait. People who do decide to naturalize are people who love their lake as much as they love their own property."

For more information about aquascaping, including fact sheets, titles of publications and videos, and sources of seed and plants, call your county extension office.

Aquascaping Do's

* Maintain a natural shoreline or restore an altered one.

*Include a three-story, native plant buffer zone at least15-25 feet wide.

*Add native trees to help stem runoff, reduce erosion, frame or edit views, and provide habitat for wildlife.

*Plant native grasses and wildflowers instead of high-maintenance lawns.

*Cultivate aquatic plants to stabilize shoreline and make a home for more aquatic wildlife.

*Clear no more than 25 percent of shoreline for boat docks or beaches.

This article ran in the March-April issue of The Minnesota Volunteer, a publication of the Minnesota Department of Natural Resources. The author, Margaret A. Haapoja, is a free-lance writer from rural Bovey, and we thank her for granting permission to reprint it for our members.

Your local shoreland volunteers are Rich and Kathy Olmscheid and Dale and Lora Lorenz. They will be happy to assist in making decisions about aquascaping on Lake Koronis. They can also help put you in touch with the proper agencies and professionals who will also provide assistance.

Help protect the lake...

Landowners urged not to burn near lake

Landowners by the lake are urged not to burn near the water's edge where unwanted nutrients can feed into the lake.

The Koronis Lake Association is also urging people not to rake leaves, grass clippings or garden residue toward the lake, as they will also add unwanted nutrients into the water.

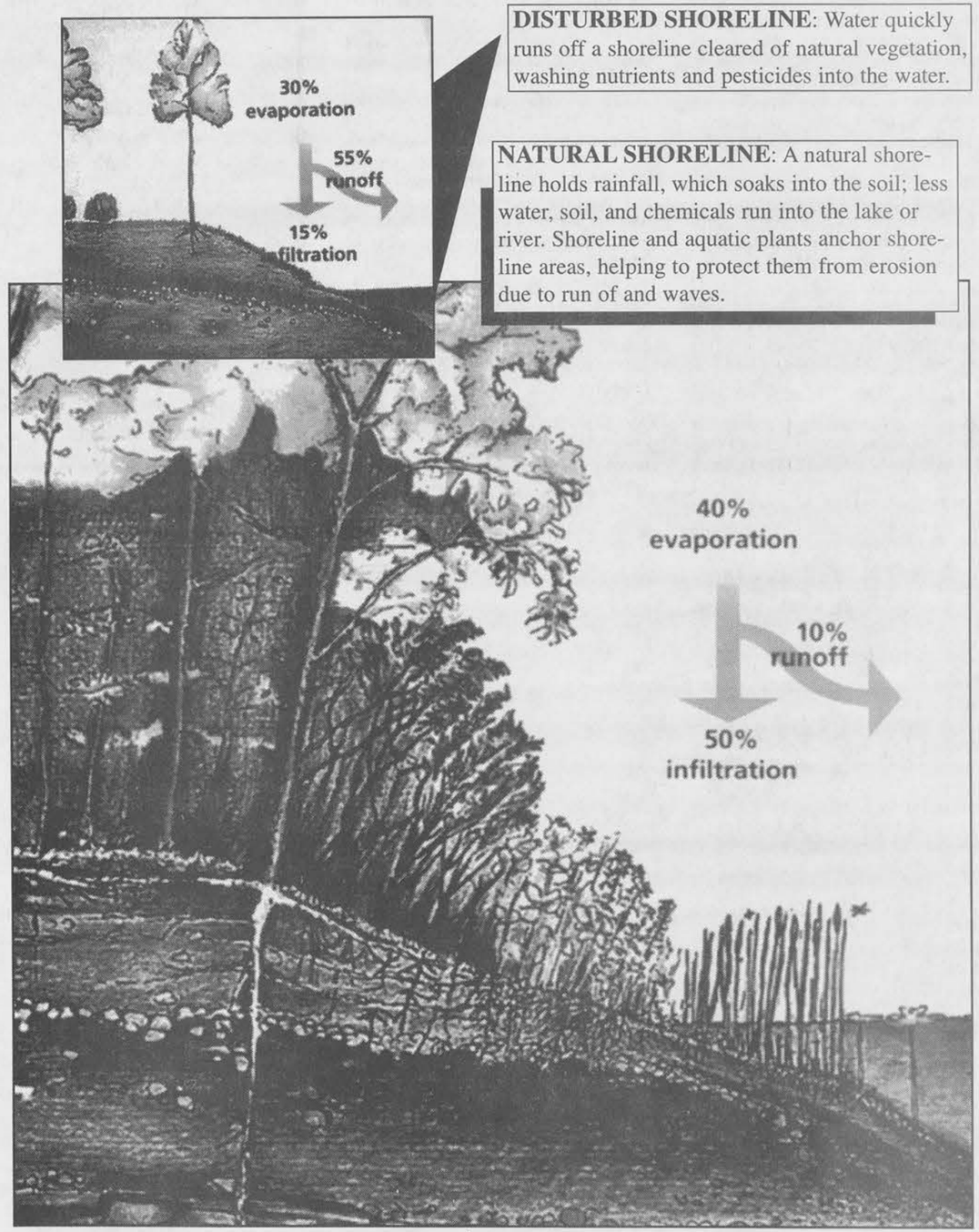
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AQUASCAPING



DISTURBED SHORELINE: Water quickly runs off a shoreline cleared of natural vegetation, washing nutrients and pesticides into the water.

NATURAL SHORELINE: A natural shoreline holds rainfall, which soaks into the soil; less water, soil, and chemicals run into the lake or river. Shoreline and aquatic plants anchor shoreline areas, helping to protect them from erosion due to run of and waves.

Buoys mark hazards

The buoys on Lake Koronis mark danger areas, not the areas that are safe to use. They specifically mark the shoals between the islands, and between the islands and shore.

Boaters need to use caution when moving from one area of the lake to another. During the spring and early summer there is usually little danger from hitting the rocks, however the threat increases in mid and late summer as water levels start to go down. At that time rocks are just below the surface of the water.

The shoal between shore and First Island is mainly sand with some smaller rock. The shoals between First and Second Island, and between Second and Third Islands have large boulders which are capable of causing extensive damage if hit.

The shoal extending from shore toward Second Island also has large boulders.

Ocassionally, during strong winds or bad storms, the buoys have become dislodged. If you see a buoy that has become dislodged, please call Don Wiese at Stone Gate Lodge, and give the buoys present location. Don will see to it that it gets put back in its proper position as soon as possible.

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Koronis Lake Association Aquatic Update

"An association formed to promote the protection and improvement of Lake Koronis"

June 1998



Support the fireworks on Lake Koronis

See story on page 2

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Annual Meeting is set for July 18 at the Area Senior Center

The Koronis Lake Association Annual Meeting is set for Saturday July 18, 1998 at the Paynesville Area Senior Center.

Check-in will be at 8:30 a.m. followed by refreshments. The meeting will convene at 9 a.m. If you would like to pay your dues at that time, Treasurer Dwight Putzke will be available.

One important agenda item includes an election of officers.

The following board member terms expire: Peter Jacobson, Lloyd Peterson, and Don Wiese. These are three-year terms. Lloyd Peterson has asked that his name be removed from the list of nominees. We certainly want to thank Lloyd for his many years of faithful service to the Koronis Lake Association. Lloyd said he will still offer his expertise in the future when needed.

Nominations for these positions will be accepted from the floor. If you would like to be a member of the board of directors, please inform one of the present directors.

We are in need of volunteers. We want to have groups who are meeting regularly on issues dealing with education, shoreland management, and watershed liaison.

We also have the need to update our mailing list by having individuals from different areas of the lake do an every member visit. Many places have been sold and new members are unknown. It is important to let the secretary know of any changes in ownership.

Fireworks
Your response is critical

By Darlene Thyen

The Paynesville Area Jaycees are once again planning a big blowout Fourth of July celebration. They have been in charge of this activity for years, and they would like to see the tradition continue.

Lakeshore owners are the ones who benefit the most from the fireworks display off First Island. We are the ones with ring-side seats, complete with personal flotation devices. We can sit on our front yards, docks, or get really up close and float --practically under the fallout--but do stay a safe distance away.

The Jaycees are a bunch of young, eager, enthusiastic people who have the excitement and energy to put on a good show. What they lack are funds.



The fireworks usually cost about $7,000 including insurance for the certified pyrotechnician and the supplies.

One of the sayings used frequently by the Jaycees is G.O.Y.A. This does not refer to the painter. This refers to Get Off Your Aspirations. And that is what we hope you will do.

If you like watching the Fourth of July fireworks from the comfort of your lake home, you have to help out financially. Get out your wallet and pull out a few big bills, or start writing in your checkbook. Let the Jaycees know that you are willing to help back this event with your financial support.

We have enclosed an envelope to make it easy for you to send your donation immediately to the Jaycees.

Thanks for your help in the past! We hope you and your family and friends enjoy the fireworks.

Chemicals...

Don't use them

By Darlene Thyen

Since I was a little girl, swimming in the weeds has been a real problem for me. I think that was the single biggest reason I became a strong swimmer--because I couldn't stop swimming and stand in the water--I just couldn't touch the weeds. So, it was either glom unto some friend for a moment of rest or continue swimming.

I am still the same way today. The only thing that has changed is that now we have a boat, and we usually swim out in the middle of the lake. I also am not the strong swimmer I once was, so I now frequently hold onto a life preserver as I paddle around in the cool clean water.

I was initially interested in the resources of Lake Restoration, Inc. when they came out with a weed harvester. The harvester would go through the water cutting off the top one-half to one-third of the weeds and would transport the cut weeds onto a holding area and then take them out of the lake. Initially this soulded like a good idea to me, however, I got to thinking about the process. I mow my lawn and a nice new growth soon appears, which once again needs to be mowed.

Then, there's the increased threat of Eurasian watermilfoil being transported from one lake to the other by means of the harvester. It was a scary thought to me.

Then, the company started increasing the use of chemicals to stop weed growth or kill the submerged weeds already growing. Again, in essence it sounds like a good idea.

According to Lake Restoration information, "Most weeds will decompose in about a week, much like dandelions do after you spray them. You can generally expect about 85% kill with a treatment, sometimes more, sometimes less."

Again, it does sound reasonable.

One of the most frequently asked questions asked of Lake Restoration Inc. is "How long [after spraying] before I can swim, fish or use the lake water for my lawn?"

The response is, "Generally, swimming is restricted for zero to one day, fishing is prohibited for one to three days, and lake-to-lawn irrigation should wait two weeks. Exact restrictions will be posted on the notification signs. These restrictions only apply to treated areas."

I am sincerely sorry that I don't find this information encouraging. I would like nothing better than a quick, easy fix to the weed problem. I have nothing against free enterprise or Lake Restoration, Inc. personally.

I just think we have enough chemicals in our lives already. And, if we do anything at all, we should try to use fewer chemicals in the future--rather than more.

Recently a letter to the editor appeared in the *Paynesville Press* from one of our KLA members. Patrick Flanders wrote:

Restoration or degradation?

The company named Lake Restoration, Inc. recently sent out their annual mailing to most of the members of the Koronis Lake Association. Upon reading their brochure, I became rather angry.

Some years back, the [Koronis] Lake Association provided the lake associaiton mailing list to this company for purposes of encouraging weed harvesting as opposed to dumping chemicals into the lake to kill the plant life. At that time, this company had a weed harvester. Since I am in the business of selling real estate, I would regularly refer new lake property owner to them in order to discourage the use of chemicals. Now, the company has evolved away from weed harvesting to the promotion of chemicals. They explain in their mailing that you can expect an "85% kill." They also recommend not swimming for one day after treatment, prohibit fishing for up to three days and to avoid watering your lawn with lake water for two weeks after their application of chemicals.

In talking to a DNR employee, it was explained to me that it would be the DNR's strong preference to not issue permits for these chemical applications. However, due to political pressure from either uninformed, ignorant, orselfish lakeshore owners they feel that they have no choice but

Chemicals/
continued on page 3

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Chemicals in our lake...

from page 2

to issue these permits.

I think we should all take offense to a company that advocates the use of chemicals in our lake particularly when they use our lake association's mailing list and especially when they initially approached us as a weed harvester. My fear is that people on Koronis may use this company because of the false notion that it is okay to do this since the DNR issues permits for it and because it would appear that the lake association had somehow sanctioned this procedure which is obviously not true.

Please do not use chemicals in our lakes.

Signed Patrick Flanders, Paynesville, MN.

An article written by Pauline Schreiber states:

"Minnesota Department of Natural Resources (DNR) Waterville Fisheries staff said Wednesday that the herbicide hydrothol, suspected in a recent fish kill in Lake Mazaska, was not spread in Circle Lake Wednesday.

Lake Restoration, Inc., a private company, did treat a section of Circle Lake for weeds Wednesday, but used two chemicals that are not toxic to fish. Later this week, the firm also planned to spread those chemicals in an area of Roberds Lake to kill weeds, fisheries staff said.

However, Lake Restoration has agreed not to use hydrothol, the chemical linked to the die-off of hundreds of fish in Lake Mazaska.

The private company is hired by lakeshore property owners to treat sections of lakes where excessive weed growth is discovered. Last week, however, following the company's use of the herbicide hydrothol on a section of the northeast corner of Lake Mazaska, property owners around the lake found dead fish washing up on shore.

Hydrothol, a legal herbicide, has been known to be acutely toxic to fish at application levels, acording to Steven Enger, ecological scientist for the DNR.

While there is only circumstantial evidence that the herbicide hydrothol killed the fish, Lake Restoration has voluntarily agreed to not use the chemical until more investigation is done, said Hugh Valiant, director of the DNR Waterville Fisheries.

The company, however, is proceeding with weed control treatments it has been hired to do in area lakes under the supervision of the DNR Fisheries staff, Valiant said.

Any citizens with questions about the situation can contact Valiant at the fisheries."

Probably the very best way to get rid of unwanted weeds on your property is to clear a small area by hand. Hire some young people to do the job, or wade out yourself on a hot day and do the work yourself. It is also imperative that once you pull or cut the weeds, you must remove them from the water.

Remember that you cannot legally clear your whole property of weeds. A good rule is to only clear twenty-five percent of your shoreline of aquatic vegetation. Let the other seventy-five percent remain natural.

Remember, some weeds provide habitat for fish, and some weeds help to clean and filter the lake water. Let some weeds stay to do the job they are intended to do.

Remember...

KLA Annual Meeting

Saturday, July 18, 1998

Lake protection rests with residents

No ordinance, law, rule, regulation or recommendation will keep our lakes safe from pollution caused by people and environmental stresses.

Protection through government is beneficial and necessary, but it's only a framework. Ordinances are only as effective as their ability to be enforced.

Real protection from pollution is based on personal integrity and accountability. It will be only through the willingness of those of us who use our resources to maintain the water quality so it can be enjoyed by our descendants and generations of posterity.

The following tips have been noted as "The Top 10 Ways to Improve Our Lakes." They are not new, but are worthwhile reminders for users of lakes.

1. Eurasian watermilfoil. Learn to identify this plant and keep an eye out for it. The best way to detect the presence of Eurasian milfoil is by looking for fragments washing up on your shoreline.

2. Septic care. Many lakeshore owners have upgraded their sanitation systems to comply with the Hubbard County Shoreland Management Ordinance. The responsibility does not end there. Have your system pumped every two years, or annually if you have a garbage disposal. Do not add chemicals to your system.

3. Fertilizer. If you must use fertilizer avoid those containing phosphorous.

4. Filter strip. Plant a filter strip along your shoreline. They can be created with tall grass, flowers or landscaping timbers. The purpose is to slow and spread out water runoff from the lawn, thereby keeping fertilizers, lawn clippings and herbicides from running into the lake. By simply not mowing within two-to three feet of the water's edge a natural filter strip will establish itself.

5. Catch and release. The No. 1 way to improve fishing on our lakes is to catch the big ones, take pictures then release them. Experts say this will improve fishing more than stocking the lake with fingerlings.

6. Boat safety. In recent years the major safety concern has been with personal watercraft. Become familiar and obey new laws for Jet Skis and similar craft.

7. Landscape. Allow a large percentage of your lawn to return to its natural state, especially along the lakeside of your property. This landscaping can be beautiful, while saving property owners time and money as well as contributing to the health of the lake.

8. Compost. Compost yard waste and lake vegetation. Burning of brush is a good way to dispose of yard and lake wastes, but if the ashes enter the lake, phosphorous levels and weed growth can dramatically increase.

9. Slow down. Reduce boat speed near the shoreline and in shallow water. High speeds near the shoreline increase shoreline erosion and stir up the lake-bottom, causing phosphorous to be re-suspended in the water, thus increasing weed growth.

10. Associations. Many lakes have active associations of shoreland property owners. There are now 23 associations in Hubbard County, some involving groups of lakes. Memebers monitor the lake for signs of increasing turbidity and weed growth, watch public accesses and shorelines for evidence of Eurasian milfoil, develop standards and recommandations for property owners, serve as lake advocates, provide public education and often unite in efforts to affect ordinance changes or in other matters of public policy...

This editorial appeared in the *Park Rapids Enterprise* Wednesday, June 10, 1998.

KLA Mailing List

Do you have a new neighbor, or know someone on Lake Koronis who does not get the newsletter? Please let us know so we can add them to the list!

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Work in the watershed

By Darlene Thyen

An amazing amount of work is being done in the North Fork Crow River Watershed District (NFCRWD), and more is being planned. And, if you need something done in your area, lots of money is still available at low interest. The following is how some of the money is being spent.

Work has been progressing at Grove Lake, the headwater of the North Fork Crow River. According to Allan Kuseske, NFCRWD administrator, six new septic systems have been installed around Grove Lake. These landowners applied for low-interest money available through the watershed. They recieved a combined total of $30,154.50 to complete their projects.

Shoreland stabilization projects were also installed. These projects require that a minimum of 12" size rock, along with filter fabric underneath, be installed along the shoreline. Usually a construction firm will do the work and will know how to do the job correctly. These projects total $2,385 in low interest loans.

Best Management Practices (BMPs) make up $6,350 in the Grove Lake Area.

Grants totaled $3,850.44 to help keep the lake/river clean.

In 1998 five septic systems have been approved for installation at a combined cost of $25,000.

The largest Reinvest in Minnesota (RIM) project is taking place around Grove Lake, according to Kuseske. Eight landowners are implementing a wetland restoration project to the tune of $400,000. This project has been given final approval by the state. The Soil and Water Conservation District (SWCD) needs to get final papers signed and work will commence.

We have been making a lot of headway around Lake Koronis concerning septic systems. As you drive around the lake you can't help but notice all the new pipes standing in the yards and the black dirt surrounding them. They will soon become part of a beautiful green landscape.

One livestock exclusion project along the river at two sites is planned. This project will cost $3,500. It is very important to keep livestock from trampling down the shoreline, creating waste and erosion which flushes directly into the river.

A manure management and water exclusion project that is being planned will also help protect the river.

Every livestock farmer knows his livestock creates manure, but if the manure is stored and incorporated into the soil correctly, there isn't the potential for these nutrients to run directly into the river and lakes. The farmer also saves money by not needing to purchase and apply chemicals to produce an abundant crop.

Money spent in the specific Rice-Koronis Project area is growing. In 1997 $154,311.73 went out in State Revolving Funds (SRF) low-interest money, and $26,866.21 was given as grants to help make the projects work.

Ten new septic systems were installed as of December 31, 1997. Twenty new systems are approved for installation this summer (some have already been installed at print time).

Several BMP projects are also completed. Water basins, which act as little sedimentation basins, or temporary water storage areas have been installed. These areas are critical to allow nutrients to settle out of the water. These projects cost $62,000 in SRF and grants.

Three manure pits have also been installed. These projects cost $159,000 (together) and are being cost-shared with Stearns Soil and Water Conservation (SWCD) the NRCS, and the NFCRWD.

There are eight storm water retention areas scheduled for this summer and fall. These projects help with gully erosion, wetland restoration, riverbank restoration, field erosion control, and livestock exclusion.

"We're right on schedule for dollar amounts," Kuseske said.

If you would like to do some bank stabilization work on your shoreline there is money available. The NFCRWD will give you a $300 grant to do a project--or to put toward a project.

The NFCRWD does not require a permit, however it is always a good idea to check with Stearns

Watershed/
continued on page 7

Ditches

By Darlene Thyen and Allan Kuseske

The North Fork Crow River Watershed District (NFCRWD) was requested by benefited landowners from the Judicial Ditch 1 (JD1) to order a redetermination of benefits of JD-1. The managers for the NFCRWD ordered the re-determination of benefits on April 14, 1998.

The Managers have retained the services of three non interested parties (Viewers) to determine the benefits to landowners property on the 40 miles of ditch system. It is estimated that 39 miles of open ditch have been added to the system since 1907 and unto 1000 miles of tile.

The cost of the redetermination of benefits will be paid by the landowners benefited at a cost of about $35,000.

The cost to repair the JD-1 Ditch system may run as high as $600,000 to be paid by the benefited landowners. As part of the redetermination of benefits a 16.5 foot buffer strip, with cattle being fenced away from the ditch will be required on each side of the ditch for over 40 miles. Filter areas and temporary water holding area will also be added into the repair project when ordered. At present there is about 79 miles of open ditch in the system.

This ditch work, if done correctly and monitored, should greatly reduce the amount of nutrients that come directly into the North Fork Crow River.

Another ditch that needs improvement and is scheduled for work is County Ditch 21. The road culvert will be lowered, as the outlet tile is currently sitting under water. Allan Kuseske, administrator of the NFCRWD states that this work will not add any more water downstream.

How much water, and the quality of the water downstream are probably going to get more action in the future, according to Kuseske.

The Environmental Protection Agency (EPA) has mandated that by the year 2003 plans need to be made that will lessen the amount of phosphorous that enters into the Mississippi. This Mississippi Corridor Planning will undoubtedly affect us, and will help reduce the amount of nutrients in the water.

A monitoring base at Mannannah is being discussed by the NFCRWD managers. This is where our watershed ends. The managers are interested in finding out what the water quality is of the river water we're discharging. This is one area that I don't think anyone has ever sampled.

Watershed work...

from page 6

Environmental Services (if you live in Stearns County) before going ahead with shoreline work. They will give you better details for what you need to do at your location. Construction and excavating firms also know what is legally required and are capable of designing your work or putting you in touch with the right people.

It may sound like a lot of work, but your stabilization project can be just two or three phone calls away--that is the NFCRWD, the county, and an excavation company.

Remember...

KLA Annual Meeting

Saturday, July 18, 1998

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Carp and fish management

By Bruce Gilbertson,
DNR Area Fisheries Supervisor

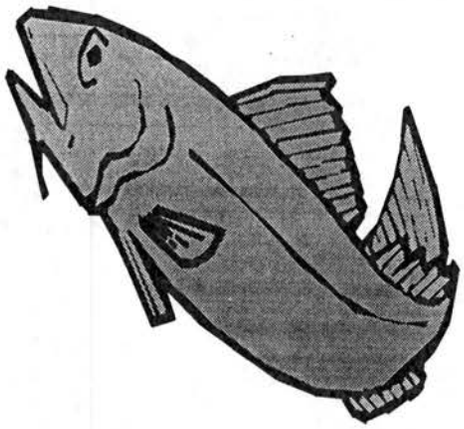
The DNR Fisheries has been working on a project to increase the abundance of bluegills in Lake Koronis.

Historically, Lake Koronis has experienced wide fluctuations in bluegill abundance, from over 36 bluegills per trapnet lift (1982) to 0.14 fish per (1994).

The abundance of bluegills is closely tied to water quality and rooted aquatic plant abundance. When water quality is good and there is abundant vegetation for food and cover for young bluegills, there is good reproduction and survival. When water clarity is poor and rooted plants low in the lake, bluegill numbers drop to low levels as well.

DNR Fisheries had developed a proposal to stock bluegill adults in Koronis to increase the opportunity for reproduction. About 12,000 adults were stocked in 1996 and 7,500 adults in 1997.

Fisheries completed a fish population assessment of Koronis in 1997 in which bluegills were sampled at 5.1 fish per trapnet. This summer



will be the last of the three years of bluegill stocking. We will continue to monitor the Koronis lake fish population, including bluegills.

As a result of the high natural reproduction we have not stocked walleye fingerlings on top of natural fish since 1993. Lake Koronis will be stocked in the future if our monitoring indicates that natural reproduction is not adequate to maintain the walleyes.

Northern pike spawning areas have been operated annually, and estimated production from the Spaeth spawning area was 8,700 fingerlings this spring.

Commercial removal of undesirable fish in the winter of 1996 resulted in several hundred thousand pounds of carp being removed at Rice Lake. However, due to difficult topography and lack of concentrations of carp, under ice removal did not occur on Lake Koronis.

The Paynesville Sportsmen's Club operated the trap at the outlet, removing over 12,000 pounds in 1997. Carp removal provides a protein resource and may have some temporary positive effect on water quality. However, the abundance of carp is probably more of a consequence of Koronis water quality rather than being the cause of poor water quality.

Water quality improvement projects like those described in the Rice and Koronis water qualtiy feasibility study will be the best way to control carp abundance in the long term.

Everyone living in the watershed in some way affects the water quality of the lake. It is important that lakeshore property owners minimize the impact that they have on the lake.

Reducing fertilizer use (especially those with phosphorus) and developing unmown buffer strips between the lake and manicured lawns. Planting perrenial flowering plants in the buffer strip make it appear like a garden rather than a weedy area. Branches and leaves should not be burned on the lakeshore or thrown over the bank. Such actions only increase the nutrient loading and "weed" growth or algae in the lake.

Vegetation cutting along the lake shore should be limited to what is needed for boat access or swimming activities. Mechanical cutting is prefered over use of chemicals as a control method. Leave a portion of the shore with aquatic vegetation to provide the necessary food and cover for gamefish. The rooted aquatic plants also take up nutrients which might otherwise be available for algae blooms.

Association members who would like more information on buffer plantings and ways they can help maintain water quality can contact our Fisheries office at 10590 County Road 8 NE, P.O. Box 457, Spicer, MN 56288 or call 320-796-6282.

New rules took effect June 1

New laws, which went into effect June 1, will affect how and when personal watercraft (water scooters, Jet Skis, Sea Doos, etc.) may be operated.

Kim Elverum, Department of Natural Resources Boat and Water Safety Program coordinator, noted the following summary of the major restrictions, some of which have been in place since 1991:

*Personal watercraft must travel at slow-no wake speed (5 mph or less) within 150 feet of non-motorized boats, shore (unless launching or landing skiers directly to or from open water), docks, swim rafts, or any moored or anchored boat (new);

*Operation of personal watercraft will only be allowed from 9:30 a.m. to one hour before sunset (new);

*Personal watercraft will not be able to jump the wake of another craft within 150 feet of the other craft (new);

*A personal watercraft rules decal issued by the DNR will need to be on the craft in full view of the operator (new);

*All persons on board a personal watercraft must wear a Coast Guard approved life jacket;

*Opeators may not chase or harass wildlife;

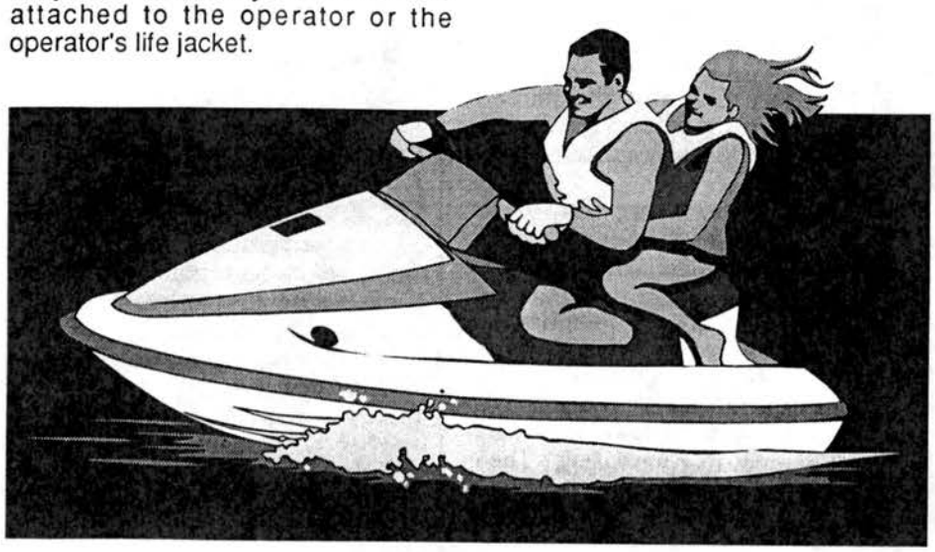
*The age for adults accompanying 13-17-year-olds who do not have a watercraft operator's permit is raised from 18 to 21 years old; those 14 to 17 years old can operate alone with the operator's permit. If they have a permit and are 13, they also need to be in visual supervision of someone at least 21 (new);

*If the craft if equipped with a cutoff lanyard, the lanyard must be attached to the operator or the operator's life jacket.

The DNR mailed each personal watercraft owner a copy of a new personal watercraft pamphlet and a rules decal on May 26, and mailed multiple copies to most personal watercraft dealers and rental operations. Additional copies are available free from the DNR by calling 296-6157 (Twin Cities metro area) or 1-888-MINNDNR (greater Minnesota); at regional DNR offices in Bemidji, Grand Rapids, Brainerd, New Ulm, Rochester and St. Paul; at sheriff's departments; and at most personal watercraft dealers. All DNR conservation officers and most sheriff's departments also have copies of both the rules decal and brochure.

"At this point, our primary goal is to educate the public about the new laws and gain voluntary compliance," Elverum noted. "As with any new requirement, enforcement officers will use discretion in dealing with any violations. As an example, those without a PWC rules decal will probably be given one right on the water."

Some have also asked about the new $50 surcharge that the Minnesota Legislature added to personal watercraft registrations. "This does not go into effect until Jan. 1, 1999," Elverum said. "It will be paid at the time the craft is up for renewal, which could be at the end of 1998, 1999 or 2000, depending on expiration date on the current registration."



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Minutes of the 1997 KLA annual meeting

The 26th Annual Meeting of the Koronis Lake Association, at the Paynesville Area Senior Center, was called to order by President Peter Jacobson after refreshments were served. Fifty-eight members and guests were in attendance.

Secretary's Report: Richard Mathiowetz moved to approve the 1996 report, seconded by Jim Broich and carried.

Treasurer's Report: Dwight Putzke gave a financial report. Mary Ann Erdmann moved approval of the report, seconded by Bud McMillan and carried.

Septic Report: Peter Jacobson reported that the survey done by Michael Jacobson and Nancy Oestreich has been completed, and 26 letters were sent out by Stearns County Environmental Services to landowners who had failing systems. Many of these systems have already been replaced, or are scheduled for replacement. Letters will not be sent out to other landowners. If a landowner has questions or concerns they should check with a licensed designer/istaller to see if they need to upgrade their system.

Pat Corrigan Report: Pat Corrigan has an extensive background working with the Soil Conservation Service in Kandiyohi County and also with the DNR. He now does consulting work.

Corrigan has been hired by the watershed to help find state and federal funding and to provide technical assistance to landowners who have problems with feedlot runoff, manure management, erosion, or septic systems. Corrigan's non-confrontational style has helped get several projects off the ground.

The diagnositic study identified 17 feedlots that may have a discharge potential. There are now only eight high priority feedlots. Some of these may have low-cost ways of solving the problems, such as diverting runoff around the feedlot, or planting vegetative buffer strips.

Corrigan is also available to help design septic systems.

NFCRWD (Watershed) Report: Administrator Allan Kuseske reported that the Clean Water Parnership grant money will be used for projects in our area, not for administration. The watershed works closely with the SWCD and NRCS. The watershed will use what money (grant and loan)they have to leverage more money for projects.

The watershed also controls and administers six ditch systems. Kuseske said they are looking at holding areas so the water has time to settle before it goes into the river.

Dave Kaufman started working for the watershed March 1, 1997. He reported that some landowners have now requested low-interest state revolving funds to install new septic systems. Landowners pay the watershed a three percent fee for their loan and put the payment on their property taxes to be paid off in seven years. Of the 26 systems that were failing, 17 are either fixed or in the process of being fixed. Time is running out for the others--then enforcement takes over.

This low-interest money is also available for you and your projects. Contact Corrigan or the watershed for more details.

Shoreland Volunteer Report: Volunteers Dale and Lora Lorenz and Rich and Kathy Olmscheid were at the meeting to discuss awareness of what's available for members. They reported on septic systems, aquascaping, best management practices, exotics, soil testing, fertilizers,fish consumption advisory, garbage disposals, and the necessity of education for our students.

A video on septic systems was shown and will be available for checkout at the Paynesville Area Library.

If you want to test your soil call 612-625-3101 for directions.

Election of Directors: The three-year terms of Paul Bugbee, Richard Mathiowetz, and Bud McMillan were up for renewal. Also nominated from the floor was Dale Lorenz. The three directors who were elected are Dale Lorenz, Richard Mathiowetz, and Bud McMillan.

Charitable Gambling Report: Gambling Manager Darlene Thyen reported that we have been selling pulltabs at Premiere Bingo in St. Cloud for the past two years. A compliance review was conducted by the Minnesota Gambling Control this spring and found no corrections or problems.

Charitable gambling is down statewide about 50 percent this past year. The board of directors meets the last Thursday of each month at noon at the Wishin' Well Cafe to hear a charitable gambling report. Any KLA member is also invited to attend.

Forest Tent Caterpillar Report: Peter Jacobson reported that 35 southshore acres and part of the regional park were sprayed for a pocket of forest tent caterpillers. The spraying for the regional park was paid for by Meeker County. The other 35 acres was paid for by Paynesville Township.

Paynesville Township: The Paynesville Township Board of Supervisors is proposing a name change to Koronis Township to prevent confusion between the city of Paynesville and the Paynesville Township. A show of hands found that 15 thought it was a good idea, 17 didn't like the idea, and 15 didn't care one way or the other.

Final Comments: Peter Jacobson reminded association members the board will remain vigilant about water quality, septic systems, feedlots, nutrient runoff, residential, commercial, and industrial runoff, and education for our students, friends, neighbors, and ourselves.

Adjourn: Bud McMillan moved adjournment at 11:30 a.m.. The motion was seconded by Rich Olmscheid and carried.

Respectfully submitted,
Darlene Thyen,
KLA Executive Secretary

Help protect the lake...

Landowners urged not to burn near lake

Landowners by the lake are urged not to burn near the water's edge where unwanted nutrients can feed into the lake.

The Koronis Lake Association is also urging people not to rake leaves, grass clippings or garden residue toward the lake, as they will also add unwanted nutrients into the water.

Annual Meeting Agenda
Saturday, July 18, 1998
Paynesville Area Senior Center

8:30 a.m.	Refreshments
9:00	Call to Order Peter Jacobson, KLA President
9:05	Secretary's Report Treasurer's Report
9:15	Septic Survey Report Peter Jacobson
9:20	Tent Caterpillar Report Bud McMillan and Dwight Putzke
9:25	Gambling Report
9:30	Report and Video - Shoreland Management Rich and Kathy Olmscheid Dale and Lora Lorenz
10:00	Feedlot Report Peter Jacobson
10:10	Election of Three Directors - Three year terms Don Wiese Peter Jacobson _____ _____ Nominations will be received from the floor
10:20	Other business
10:30	Adjourn

How to prevent, control Swimmer's Itch

Just like everything else swimmer's itch has arrived a little earlier this year. Each summer many people swimming in Minnesota lakes will be affected with a condition known as "swimmer's itch." Swimmer's itch can appear anywhere from a few hours to a day or so after swimming in a lake. "Chicken pox" like welts will appear on parts of the body that were submersed in the water, the welts will be accompanied by an intense itch.

These symptoms can last a few days or a couple of weeks depending on the severity of the infection and the person's degree of sensitivity. Over the counter remedies such as calamine lotion can help relieve the itch. If you think you have swimmer's itch call your doctor for an accurate diagnosis and additional advice.

Swimmer's itch is caused by the immature life stage (called cercaria) of any of several flat worms, or flukes (trematoda), which are parasites of a variety of birds and waterfowl. Cercaria are released from snails when the water temperature reaches approximately 60 degrees F. Cercaria only live for one or two days while searching for a proper host.

When the cercaria contacts a human, it attempts to burrow into the skin. After slight penetration the immune system responds to this foreign protein and kills the cercaria. The parasite, aside from the itch, causes no other disease or parasitic condition in humans. Roughly 30 to 40 percent of people are sensitive to swimmer's itch to some degree. Much like poison ivy some people react severely to the slightest exposure and others may not respond at all. Also, as with poison ivy, people tend to become more sensitive with each exposure.

As long as waterfowl and shore birds inhabit Minnesota lakes, swimmer's itch is likely to be a source of irritation for swimmers. However, in lakes where swimmer's itch is a problem, there are things people can do to reduce the likelihood of contracting swimmer's itch:

* Avoid swimming or wading in shallow water near shore. If practical swim from a boat or raft out some distance from shore, in deeper water, where you are less likely to encounter the organism.

* Towel off immediately after leaving the water. Cercariae are delicate. A brisk toweling off will kill those that may be attempting to enter your skin and will remove those trapped in water droplets next to your skin. Getting in and out of the water repeatedly, allowing water to dry on your skin, greatly increases the chance of getting "the itch." Cercaria can enter your skin while swimming.

* Do not swim on days when there is an on shore breeze blowing toward your property. Swimmer's itch is more frequently a problem on the south and east shorelines of lakes. You may want to consider not swimming for a while if the wind has been blowing from the direction of a beach where swimmer's itch has been reported.

* Do not encourage waterfowl to loaf on your dock. Many types of birds can harbor adult flukes capable of causing swimmer's itch. Do not attract waterfowl to your dock by feeding them. If you have a bird feeder, make sure it is located where bird droppings will not get in the lake. If ducks and shore birds frequent your dock, you might consider installing a device designed to frighten them away.

When all else fails, homeowners may get a permit from the DNR to treat their swimming area with copper sulfate. Application of copper sulfate can be made by scattering copper sulfate crystals uniformly over the lake bottom in the swimming area, or by dissolving copper sulfate near the lake bottom in a gunny sack towed behind a boat or canoe. To avoid killing fish, the application should be made from the shoreline outward driving fish out of the area.

If copper sulfate is used, the DNR recommends that you not swim in the treated area for a day or two following the treatment. There is evidence that copper sulfate, as it is killing the snails, also stimulates them to release the cercariae they contain. You may avoid a case of "the itch" by refraining from swimming for a couple of days following copper sulfate application.

If you are very sensitive to swimmer's itch, it may be best to abstain from swimming in lakes (or areas of lakes) where swimmer's itch commonly occurs until you determine that there is little risk of exposure. For more information, call the DNR Ecological Services Section at 612-296-0782 or the area or regional DNR Section of Fisheries office.



Boating safety stressed for Minnesota watercraft

Every year, more than one million anglers take to Minnesota's lakes, rivers and streams. For quite a few, it will be their first time as watercraft owners, and thus many are unaware of the hazards awaiting unprepared boaters. Last summer 21 boaters died in Minnesota watercraft accidents, seven of the victims were anglers.

The newest type of life vest to be marketed is the inflatable life jacket. Inflated by a small CO2 cartridge when a lanyard is jerked, the inflatable device is best for use in warmer weather when hypothermia isn't much of a problem. Approved just last year by the U.S. Coast Guard, the inflatable comes in two distinct models. One is a "fanny pack" or belt pack and the other is worn as a pair of suspenders.

"I tried one of the belt pack models and it was great," said Tim Smalley, Minnesota DNR boating safety specialist. "I had to keep checking because I'd think for a second 'Oh my gosh, I forgot to put on my life vest.' Then I'd look down and there it was, ready to go."

Another inflatable life vest advantage is comfort in hot weather, countering the objections of some people that jackets are too warm to wear on hot days. Inflatable life vests are available for less than $50 at many sporting goods outlets.

Alcohol is another hazard to anglers. The common misconception that a swallow or two of an alcoholic beverage warms a person up has taken its share of lives. Actually, alcohol can cause fatal judgment errors.

Another reason to avoid drinking while operating a motorboat is the boating while intoxicated law. Last year, more than 120 people were arrested in Minnesota for operating a motorboat under the influence, and a good number of them were anglers.

Considering penalties of up to $700, 90 days in jail and loss of motorboat operating privileges, intoxication could make an opening day's outing fairly expensive, if not downright deadly.

As of Jan. 1, 1998, anyone caught in a third driving while intoxicated arrest on any kind of motorized vehicle will lose the vehicle being operated.

Anglers should be aware of the other legal requirements for boating, Smalley said. There are a number of items that vary according to the type and size of watercraft, but some are especially important.

LIFE SAVING DEVICES: Every person on board a watercraft (except sailboards) must wear, or have a U.S. Coast Guard approved personal flotation device (life preserver) readily accessible.

The requirements in other states and on federal waters differ, so check ahead.

LIGHTS: Motorboats are required to have a red and green bow light and a white stern light if operating between sunset and sunrise. Even if the boat is anchored or drifting, a white light must be visible at all times. "Nighttime anglers sometimes find this requirement a nuisance, but several unlit anchored boats are involved in collisions every year, because they weren't seen in time by an approaching boat," Smalley said. "Nonmotorized craft need only a white light in sufficient time to avoid a collision. If you're not afraid of the dark, perhaps you should be."

FIRE EXTINGUISHERS: Even though inboard boats, inboard-outboard boats, and outboard-powered craft with built-in fuel tanks are required to carry U.S. Coast Guard approved fire extinguishers, they're good insurance for any power boat. Approved fire extinguishers can often be purchased for under $10; the size varies according to the size of boat.

For more information about boating safety and boating laws and rules, contact the Minnesota DNR and request a copy of the 1998 Minnesota Boating Guide. The DNR's toll free number in Greater Minnesota is 1-888-MINNDNR. Or check the DNR web site at: **www.dnr.state.mn.us**.

Call 911 for emergency help

If you need emergency medical, fire or police attention, dial 911. If you are a resident of Stearns County it is as easy as that. The 911 dispatcher knows the location of the call because of an enhanced system that shows the address of the caller. Help will be sent immediately. It will also save time if you request Paynesville assistance for your emergency.

If you have a telephone prefix of 276, you need to tell the dispatcher your address. If you have a 276 telephone prefix you do not have the advantage of an enhanced 911 system. Write your address down on a piece of paper and tape it to your phone. In an emergency you will not remember this information. If a guest is calling for you, they do not know this information. This can delay the response time to your call for help.



Remember:
***Call 911 in an emergency**
***Tape your address on the phone**
***Request Paynesville medical, fire or police**
***Put your house numbers in a conspicuous place for emergency personnel to see**

Exotics...

Don't introduce them into the area or lake environment

Are you considering buying European frog-bit or Australian stone crop? Planting exotic water lilies at the lake? Releasing mute swants or black carp in a pond? Dumping Chinese mystery snails into a lake? Don't. New state laws make it illegal to do these and many other activities with exotic species of aquatic plants and wild animals.

New permanent rules, which go into effect June 2, regulate the buying, selling, possession, transport and release of many species of harmful exotic fish, animals and aquatic plants.

According to Minnesota Department of Natural Resources officials, these rules are intended to reduce the spread of exotics in Minnesota and prevent the introduction and establishment of more harmful species into the state.

Zebra mussels, Eurasian watermilfoil and purple loosestrife are among well-known harmful exotics already infesting Minnesota waters. "We don't want these species to spread further, and we certainly don't want to see any new ones in the state's waters," said Jay Rendall, coordinator of the DNR Exotic Species Program.

The rules designate several exotic species using a four-tiered classification system established by the Legislature.

Exotic species are classified as prohibited, regulated, unregulated or unlisted exotic species. The classification process establishes the level of regulation and types of allowable uses for each species.

Prohibited exotic species are those of the highest concern because they are the most likely to survive in Minnesota and be harmful to the state's resources or resource use.

The new rules designate several additional prohibited exotic species that may not be possessed, imported, purchased, sold, propagated, transported or introduced except by permits.

People who currently possess, import, transport, sell or propagate any of these species must apply to the DNR for a permit by Aug. 1, 1998. The DNR will review the permit application, determine if the exotic species poses a threat to the state, and determine under what conditions (if any) it may be allowed in the state. (The DNR won't automatically issue a permit.)

Prohibited specis in Minnesota include the following as well as many hybrids, cultivars, or varieties of the species listed below (*indicates new designation):

Aquatic Plants--African oxygen weed (Lagarosiphon major)*, aquarium watermoss or giant salvinia (Salvinia molesta)*, Australian stone crop (Crassula helmsii)*, curly-leaf pondweed (Potamogeton crispus)*, Eurasian watermilfoil (Myriophyllum spicatum), European frog-bit (Hydrocharis morsus-ranae), flower rush (Botomus umbellatus), hydrilla (Hydrilla verticillata), Indian swampweed (Hygrophila polysperma)*, purple loosestrife (Lythrum salicaria, Lythrum virgatum, or any variety, hybrid, or cultivar thereof), water aloe or water soldiers (Stratiotes aloides)*, water chestnut (Trapa natans);

Fish--bighead carp (Hypophthalmichthys nobilis)*, black carp (Mylopharyngodon piceus)*, grass carp (Ctenopharyngodon idella), round goby (Neogobius nelanostomus), rudd (Scardinius erythrophthalmus), ruffe (Gymnocephalus cernuus), sea lamprey (Petromyzon marinus), silver carp (Hypophthalmichthys molitrix)*, white perch (Morone americana), zander (Stizostedion lucioperca)*;

Invertebrates--zebra mussel species (Dreissena spp.);

Mammals--Asian raccoon dog, also known as finnraccoon (Nyctereutes procyonoides), Eurasian swine or European wild boar (Sus scroffa scrofa)*, European rabbit (Oryctolagus cuniculus), and nutria, any strain (Mycocastor coypu).

The rules also designated several specis as regulated exotic species that are legal to purchase and possess, but may not be introduced into a free-living state (including public waters or other sites where the species is beyond the control of a person). The regulated exotic species include:

Aquatic plants--Carolina fanwort* (Cabomba caroliniana), parrot's feather (Myriophyllum aquaticum)8, nonnative waterlilies (Nymphaea spp)*,

Birds--Egyptian goose*, mute swans*, Sichuan pheasant*;

Fish--alewife*, common carp and koi*, goldfish*, rainbow smelt*, and tilapia*;

Invertebrates--rusty crayfish*, Chinese mystery snail and Japanese trap door snail*, spiny water flea*.

Several exotic species have been designated as unregulated exotic species because they are unlikely to survive in the state (tropical fish), they are already widespread (starlings), or they are game species (ring-necked pheasants).

"Many people may assume that because a plant or animal is offered for sale, it is OK to release it into the wild in Minnesota. This is not true," according to Rendall. Unlisted exotic species include most non-native species that have not been evaluated and are not listed as prohibited, regulated or unregulated. Unlisted species are subject to review by the DNR before they may be placed into a free-living state such as into public waters.

The new rules also list infested waters--lakes and rivers that contain populations of Eurasian watermilfoil, round bogy, ruffe, spiny water flea, white perch or zebra mussel. Several existing state laws apply at these waters.

A complete copy of the rules is available from the DNR Exotic Species Program, 500 Lafayette Road, St. Paul, MN 55155-4025, or by calling (612) 296-2835.

DNR issues...
Minnesota lakes aquatic plant guide

Aquatic plants are important to Minnesota lakes, according to Steve Enger, a biologist with the Department of Natural Resources. For that reason, aquatic plant control is regulated.

"Aquatic plants provide important habitat for fish and wildlife and aquatic insects," Enger said. "Aquatic vegetation helps to maintain water clarity by stabilizing the lake bottom and protecting shorelines from erosion. Emergent vegetation along lakeshores may keep Canada geese from becoming a nuisance in yards. However, aquatic plants may also interfere with the ability of lakeshore homeowners to boat, fish or swim adjacent to their property."

For those reasons, lakeshore property owners are reminded by the DNR that a few basic guidelines must be followed to ensure compliance with state rules governing aquatic plant control.

BASIC GUIDELINES FOR AQUATIC PLANT REMOVAL

A permit is not required to cut or pull submerged vegetation, like coontail, under the following conditions:

* the cleared area does not extend more than 50 feet along shore, or more than one-half the frontage width, whichever is less, and the area does not exceed 2,500 square feet;
* all vegetation that is cut or pulled must be removed from the water, and the cleared area must remain in the same location year to year;
* water lilies and other floating leaf vegetation may be cut or pulled to create a channel 15 feet wide extending to open water; more extensive removal requires a permit.

A permit is required to:

* use herbicides to control aquatic plants;
* control any emergent vegetation, like bulrush, cattails or wild rice;
* control floating leaf vegetation (water lilies) in an area larger than a channel 15 feet wide extending to open water;
* control more than 2,500 square feet of submerged vegetation;
* remove or relocate floating bog; or
* use an automatic untended aquatic plant control device, for example the Crary WeedRoller(R). An individual aquatic plant management permit from the DNR costs $20. In most cases permits must be obtained annually.

Lakeshore property owners are becoming more interested in aquascaping, Enger said. This includes a variety of activities intended to make shorelines more natural by re-establishing aquatic plants. A DNR permit is required to transplant aquatic vegetation below the ordinary high water mark on public waters. There is no charge for this permit.

"The DNR strongly supports protection and restoration of shoreline, but projects must be carefully planned so they do not cause more harm than good," Enger said. "The DNR is concerned that individuals considering this approach take steps to be sure that they minimize disturbance to existing native vegetation, maintain the genetic integrity of existing plant species, and are careful not to introduce harmful exotic plants. Just because a plant is offered for sale doesn't mean it's safe to plant it in a lake."

People who are unsure whether or not their plans require a permit, or who would like additional information, may call the area or regional DNR Fisheries office. For more information about aquatic plants, call the DNR at 1-888-MINNDNR and ask for the Ecological Services Section. The free booklet "A Guide to Aquatic Plants Identification and Management" is available to help lakeshore homeowners identify aquatic plants and understand how plants benefit lakes, and to explain aquatic plant control regulations.



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Buoys mark hazards

The buoys on Lake Koronis mark danger areas, not the areas that are safe to use. They specifically mark the shoals between the islands, and between the islands and shore.

Boaters need to use caution when moving from one area of the lake to another. During the spring and early summer there is usually little danger from hitting the rocks, however the threat increases in mid and late summer as water levels start to go down. At that time rocks are just below the surface of the water.

The shoal between shore and First Island is mainly sand with some smaller rock. The shoals between First and Second Island, and between Second and Third Islands have large boulders which are capable of causing extensive damage if hit.

The shoal extending from shore toward Second Island also has large boulders.

Ocassionally, during strong winds or bad storms, the buoys have become dislodged. If you see a buoy that has become dislodged, please call Don Wiese at Stone Gate Lodge, and give the buoys present location. Don will see to it that it gets put back in its proper position as soon as possible.

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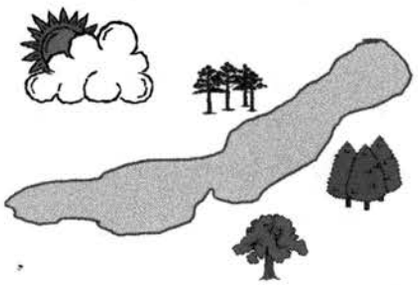
ADMINISTRATOR
Allan Kuseske
Office: 100 Prairie Ave No.
Brooten-320-346-2869
Mobile phone 1-800-930-0507



Address Correction Requested

"An Association formed to promote the protection and improvement of Lake Koronis"

Bulk Rate
U.S. Postage Paid
Paynesville, MN 56362
Permit No. 52



Grove Lake Lakeshore Association

Newsletter Summer/Fall, 1998

NOTICE OF ANNUAL MEETING: Saturday **, SEPTEMBER 5 AT 10 AM**
Grove Lake Town Hall. Come at 9:30 for coffee and rolls. All Lakeshore owners are welcome to attend.

ANNUAL PORK CHOP FEED: Saturday SEPTEMBER 5 - 5 pm.
Tingstads new house, north side. Pork chops are prepared on grills at the beach. (One large pork chop and all the fixings will cost you $4.00). Tickets are available from Carol Warnes, south side, or Phyllis Bakko, north side. **BRING:** A salad or dessert to serve 8 – 10, utensils, beverages & lawn chairs. Coffee is furnished.

BOAT PARADE WOWS MANY

The Fourth of July at 2:00 p.m. marked the start of the rejuvenated annual boat parade. Boats and pontoons gathered near the Dean's cabin to organize. Approximately 20 units moved counter-clockwise around Grove Lake to help us celebrate the freedom we enjoy as Americans. Red, white and blue decorated the floats with flags, banners, hats, and streamers. The groups on shore were very appreciative with waves and cheering. The only one that wasn't visibly smiling was a huge Saint Bernard resting on one pontoon – but he was relaxed! The celebrations continued into the night with bonfires visible all around the lake. There were many fireworks displays that were also enjoyed. We are indeed proud to be Americans!

MAGNUS AND NORMA OLSON SAY GOODBYE TO GROVE LAKE

Magnus and Norma Olson have put their Grove Lake Lakeshore summer home on the market after living on the south shore for 35 years. "The site had been a field for years," said Norma. "We built our cabin in 1963 and our shed a little later. The site has 3 ½ lots with natural woods, prairie area as well as the lawn that includes a variety of trees. The shoreline has 235 feet and has developed naturally." Pat Pederson of the Strecker Agency in Glenwood is handling sale of the property. Mark Zeimer will be auctioneer at the sale of household goods at **11 AM on Saturday, September 5.**

* * * * * * * * * * * * * * * *

MANY CLEANUP PFENINGER FOREST

On Saturday, July 11, volunteers gathered to cleanup the park area, recently named the Pfeninger Forest, on the south side of Grove Lake. The group brought a lawnmower, four-wheeler & cart, saws, shovels, ladder, garbage bags, and lots of energy and enthusiasm. Men and women of all ages mowed around young trees, trimmed older trees, and cut out vegetation that was crowding the young spruce throughout the forest. The men who ventured deep into the willows were pleased that so many young trees are growing so well. (If you see Paul Tingsted, tell him he can quit now!) People scoured the area with garbage bags and emerged with sacks full of all kinds of litter. Signposts were dug in and one sign erected on the west end, identifying the area as the Gordon G. Pfeninger Forest. Another sign is being made and will be added on the east end of the area. We want to give many thanks to Dean Beck of the DNR for providing us with the handsome signs. An ash tree was planted in memory of the Lakeshore Association's past president, Lyle Miller. A sign will be added to the tree soon. The event ended with a hotdog roast at Thoen's – thanks Kathy and Jim! Mark your calendars for **Saturday, June 19, 1999,** when we will have the next cleanup. We'll meet at Thoen's at 9 a.m.!

Postscript: It may just be the editor's imagination, but Saturday night, after the cleanup, she heard a commotion in the Pfeninger Forest. She wandered to the west end and there was a group of animals – deer, skunks, chipmunks, squirrels, birds, a red-tailed hawk, and Toby, Thoen's golden retriever. The animals collectively said, "Thank you for making our home beautiful!" and then Toby lifted his leg on Gordy's sign! All is well in the Pfeninger Forest!!!

HISTORY OF THE PFENINGER FOREST

Last fall, at the meeting of the Grove Lake Lakeshore Association it was agreed that the acreage on the south side of Grove Lake be named the Gordon G. Pfeninger Forest. How did the land come to belong to the lakeshore association and why name it for Gordon?

In 1973-74 there was a move to subdivide the property on the south side of the road that goes around the south side of Grove Lake. Several southside property owners worked hard to keep the land so a second-ring subdivision would not be developed. The Board of Commissioners agreed with the Grove Lake residents considering the soil conditions and the added stress to Grove Lake.

In 1976-1977, a gravel company was permitted to mine the gravel from the land across the road from the south side of Grove Lake. Throughout the summer dump trucks hurried up and down the road filled with the gravel that was being mined from the acreage. It was a nasty, dirty summer for all those south shore residents. When the gravel company hit water they had to quit their mining operation. Now all that was left was a hole in the ground and bad memories of a dirty summer.

One day Gordon Pfeninger asked a county commissioner what was to become of the land. Gordy suggested that the county sell it to the lakeshore association. Gordon and his wife, Bea, had spent a lot of time monitoring the land and the continuing

situation since 1973. The Board of Commissioners in November, 1982, sold the land for $75 to the Grove Lake Lakeshore Association. On a spring day in the 1983, a group of lakeshore association members gathered and planted scores of trees. In a letter from Dean Schluter in Feb., 1983, the trees ordered were: 800 trees for the DNR property, 600 Norway pine adjacent to the DNR property, 500 honeysuckle along the abandoned road, 1,900 trees to be planted by a tractor pulled mechanical planter, and 1,000 Colorado spruce to be planted in three areas by the use of planting bars. In recent years, deciduous trees were planted in tubes on the west end of the forest. The lakeshore association has decided to make the cleanup an annual event.

Many thanks for all who worked hard to make the forest area ours!

GROVE LAKE AND THE INTERNET

There is an Internet site in which you might have interest. It is a way to look at different spots on earth. This location of photographs is courtesy of the United States Geological Survey. The image printed below is from this site. Using this image you are able to zero in on a specific location and receive, and even print, a more magnified area. On the magnified picture, rows of trees, driveways and buildings are distinguishable. Try it! The site is: http://terraserver.microsoft.com



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Photograph courtesy of the United States Geological Survey

The following contributors made TerraServer possible: Microsoft, Compaq, Spin Image, USGS,

COLA INFORMATION

The Pope County Lake Association (COLA) Conference was held July 6, 1998 at the Minnewaska House near Glenwood. Rick Lindberg, Mary Lou Hemstad and Ann Frederickson attended.

Arne Stoen, County Board Chairman, welcomed the large turnout of people and gave the program's general theme of clean water. He told of the progress in the 8 years of lake use plan.

The first speaker was Mark Scheidel, consultant to the Pope County task force. The task force's job is to assess conditions, study land use issues, study the parameters (physical and social rules), and analyze the design and then implement the zoning ordinances. He stated many factors are involved before a final decision is put before the board. One of the main factors is citizen input. Four open meetings allow citizens to give their point of view. Mr. Scheidel also said other factors are population, soil conditions, and existing land use. He hopes the task force will be able to enact a policy that allows city dwellers, farmers and lake home residents to work together.

Kylene Olson, Project Coordinator of the Chippewa River Watershed program, was next on the agenda. This project was funded by the Clean Water Partnership Grant through the MPCA. Their goals are to improve water quality, prevent flooding, and protect the economy. A group of citizens work with the water monitoring program and then the watershed committee analyzes and assesses the data. Education is also a very important part of this program. Talks are given to various groups such as schools, 4-H, and scouts. As most of you know, Grove Lake is the only lake in Pope County not in the Chippewa Watershed.

George Oring, DNR, told about a study of five lakes in Minnesota. These lakes represent a sample of major lake regions in Minnesota. Through this process they hope to seek a balance of economic activity, environmental requirements, and the social needs of people. The plan content studies how much and the kind of shoreline development. Watershed development stresses the type of settlement and what kind of land use is desired. They check water quality, water surface use and water levels, and how the activities of man and nature affect these processes. He also gave a slide presentation of land use in England which illustrated the citizens working with existing conditions and not making changes and disrupting the life of the small farms and tourists.

Craig Bower, NRCS, told of farm programs available to residents of Pope County. These programs allow the farmer to get paid for allowing his land to remain idle and planting ground cover which prevents erosion and over use of the soil.

Bruce Brown, COLA president, gave a synopsis of the monitoring program. As you know Grove Lake has been in this program for quite a few years and will continue this year. Bruce explained the Secci disk and how the testing is done. The same theme of clean water and what you can do is maintained by Bruce.

The last speaker, Jennifer Gallus, spoke about water testing for nitrates. Elevated nitrates can cause illness in young children and some elderly. Most wells don't have high levels of bacteria and nitrates but if they do, some causes could be a septic system too close to the well or lawn fertilizers leaking to the well. Ms. Gallus recommends all home owners will wells should get their water tested. Many times there

are free testing sites but there are also places in Alexandria where it can be done for a small fee.

Bruce Brown completed the program with a thank you to Mike Howe, who retired in July, for his many years of service to Pope County and thanked him for his help to COLA.

COLA presented an informational and educational program. Plan on joining us next year!

Mary Lou Hemstad

WHERE DID THE SUMMER GO?

As fall fast approaches I find my self asking, where has the time gone? It has been a busy time at the North Fork Crow River Watershed District. In the Grove Lake Clean Water Partnership area three Individual septic systems and a water diversion have been completed.

A redetermination of benefits is being done on JD-1. This doesn't sound like a big deal for the water quality in Grove Lake, but it will actually help. When the benefit redetermination is complete the ditch will be cleaned and cattle exclusions and buffer strips will be required. This will reduce the total phosphorus and total suspended solids loads that are entering the lake.

The water monitoring is still on going at Grove Lake through the Pope County COLA and the North Fork Crow River Watershed District. To the people who are participating in the COLA Program a big thank you goes out to you. Those of you who have been down to the dam know that the Watershed District has a monitoring site in operation there. Along with the flow measurements, the Water Quality Technician (me) has been out collecting water samples and reading the staff gauges in the project area.

With the fall fast approaching, lake owners have fall clean up and closing of the cabins to look forward to. I remind you to make use of the compost pile, it will help keep the last of the lawn clippings and the leaves out of the lake. Take a look at your shoreline, is it disappearing? If so the Watershed District has money available to help. With the lower water this fall it would be a good time to do such a project. Is your septic system up to code? Most systems are up to code, but if your system isn't, there are funds available for upgrading. From now to next spring is the time to look and see what improvements can be done. So put the thinking caps to work and if you decide on doing a project and need help funding, or just have questions feel free to call me, Rodger Hemphill, at (320) 346-2869.

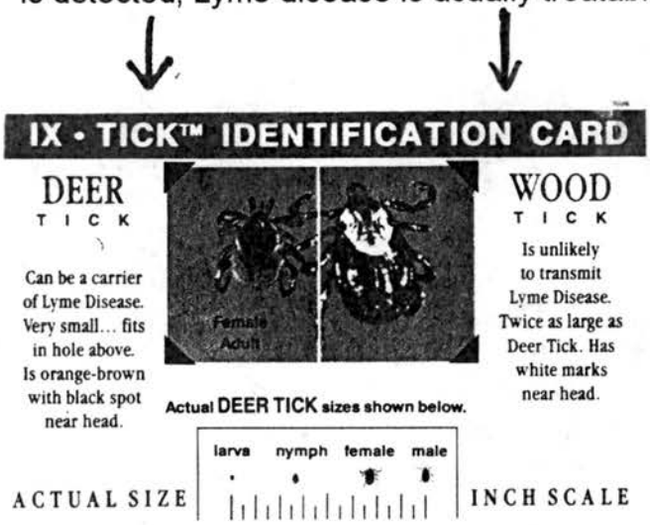
Enjoy the Fall and Winter, from all of us at the North Fork Crow River Watershed District.

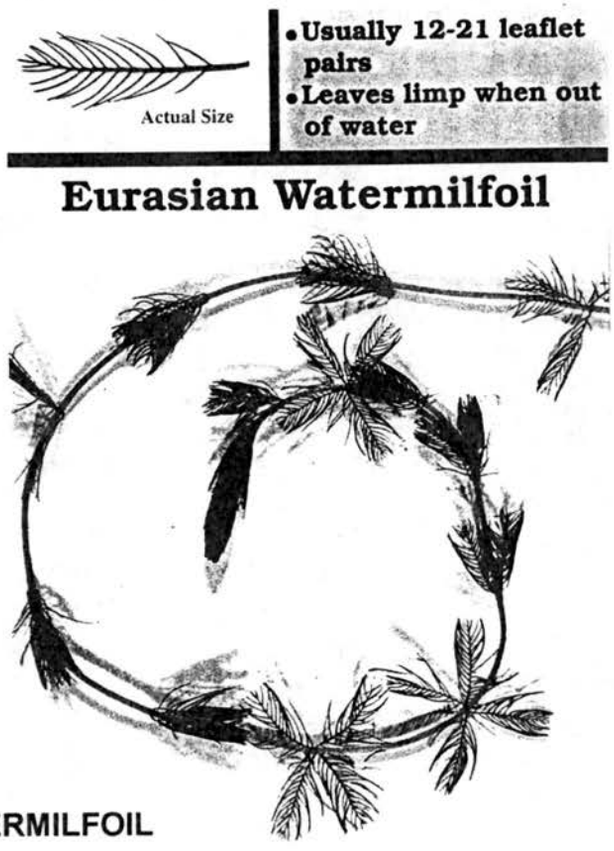
Rodger Hemphill
Water Quality Technician

DEER TICKS AND LYME DISEASE

Lyme disease is a bacterial infection transmitted by the bite of a deer tick, found on all types of vegetation and animals, especially in the woods. The deer tick is the most active in spring and fall, and present throughout the summer. For precaution when you're in the woods, wear long sleeves and pants. An insect repellent such as Deep Woods OFF! Can help repel ticks. Brush off clothing and pets before going inside. Check yourself carefully for ticks. Remove attached ticks at once with fine-jaw tweezers by grasping tick's head as close to the skin as possible and gently pulling straight out. Be careful not to squeeze the tick's body as this may cause it to inject fluid into you. Wash the bite area and apply antiseptic.

The symptoms of lyme disease are a ring-shaped rash that may occur within 4-20 days. Symptoms may include fever, chills, headache, stiffness in joints, weakness and fatigue. Common symptoms of Lyme disease may mimic arthritis. In some cases there are no symptoms. If you suspect you have Lyme disease contact your doctor. If it is detected, Lyme disease is usually treatable with antibiotics.





EURASIAN WATERMILFOIL

Eurasian Watermilfoil has been found in both Minnewaska and Gilchrist Lakes. The milfoil grows so rapidly it clogs waterways and pushes out the native water plants. It usually has 12-21 leaflet pairs. When it is pulled out of water the leaves go limp. Thanks for checking your boats and motors when you pull them out of the lake. Just a piece of milfoil transported from another lake to Grove Lake could create a problem here too.

GROVE LAKE PERMITS
July 1997 – July, 1998

Building Permits

4/6/98	John Stein	Lots 9 & 10 Schroeder's Addn.	New Res./Gar.
4/17/98	Bruce/Ann Frederickson	Lot 15 Breezy Point	Garage
5/11/98	Eugene/Joan Oestreich	Lots 11-13 Schroeder's	Porch/Deck
5/20/98	Richard Lindberg	Lots 7 & 8 Schroeder's	Fam. R. Add.

Sewage Permits

10/6/97	Dave and Mary Winter	Lot 2 Kalina's 1st Addn.	Septic/ Tank Drainfield
10/6/97	Brian Schmieg	Lot 10 Sandy Shores	Septic/ Tank Drainfield
5/20/98	Richard Lindberg	Lots 7 & 8 Schroeder's	Septic/ Tank Drainfield
7/27/98	Richard Friedlein	Lots 4 & 5 Kalina's 1st	Septic Tank/ Drainfield

Administrator's Permits

4/8/98	Larry Bomstad	Lots 6-8 Kalina's 1st	Landscaping
6/15/98	Willie Honebrink	Lot 4 Breezy Point	Rip-Rap
7/8/98	Hilarion Timmers	Lot 1 Sedanville	Rip-Rap

SEDAN'S ONLY BUSINESS HAS A NEW NAME

Sig's Bar and Lounge of Sedan has a new name and new owners as of July 1, 1998. Bob and Jean Nyhammer have purchased the business from Arlene Quam and now call it Bob's Place. They operate an on and off sale liquor establishment serving pizza and snacks. Bob's Place has space available for parties, meetings, wedding receptions, or nearly any occasion. Call them at (320) 268-3276.

Bob is a lifetime resident of the Sedan area and Jean has lived in the area for thirty-three years. They invite you to stop in at 203 Marsh Street in Sedan.

LAKESHORE MEMBERSHIP GROWS

Kathy Thoen, treasurer of the lakeshore association is pleased with the response to the membership requests. As of the middle of July, we have 46 members. We are happy to welcome 4 new members: Shawn and Mari Kay Corder, Michael and Donna Beckmann, Tom and Sandra Pesek, and Michael Swartz. We hope these new members will help us as we work together to improve Grove Lake for all to enjoy!

HEY RALPH, HOW'S THE FISHING BEEN?

(fisherman – any man, woman or child that fishes):

This summer has been quite an active fishing season. By active, I mean 1): an above average number of fisherman on the lake, 2) the high number of fish being caught, and 3) watching the loons.

1.) Fishermen – On any given morning I have counted 12-20 boats either trolling, drifting, or still fishing. Fishing is most active from 7 – 11 a.m. and 6:30 to 9 p.m.

2.) Catching fish –
Sunfish – Some beautiful sunfish have been caught. I've observed some boats anchored at the same spot for 2-3 hours.
Walleyes – Many small one (8-10") have been caught and released. It is my understanding that 7,000 fingerling walleyes were stocked last fall. I've caught a number of 1 ½ to 2 pounders. Three to four pounders have been caught by other fishermen.
Northerns – The northerns have been caught with regularity. Many small ones caught and also a few larger ones.
Bass – I don't fish for bass but some people have mentioned an o.k. season.
Perch and bullheads – Some have been caught. If there is a tap, tap, tap – it must be the perch.

3.) Other Sights – Loons – If you have fished on the west side you have seen the two adult loons and the youngster. It is marvelous to watch the loons for their beauty and daily habits. The boats on Grove Lake don't bother the loons and that's why the threesome seem so calm and relaxed.

It is a joy to fish on Grove Lake because of the sportsmanlike conduct of fishermen on the lake, only catching a meal or two and watching the neat sights of our lake. We have a nice recreational lake and fishing is a splendid part of it.

Remember: Big Otis hadn't been caught by press time!

Ralph Johnson (a fisherman)

NEWS FROM THE SCHROEDER ADDITION

The Schroeder's addition on the north side of Grove Lake is peaceful. Not always quiet because of Lindberg's construction which includes a new sewer system and a large room.

Joan and Gene Oestreich have taken a few trips in their motorhome. We miss Mary Jane Stein who passed away last winter.

We have a great variety of birds and all share in the feeding of them.

Rose Lindberg

NEWS FROM THE NORTH SIDE OF THE LAKE / SEDANVILLE

Things are quiet on the north side. About the only excitement was the removal of Tingstad's old cabin. For a laugh ask Cliff Bakko about the best way to plant onions with the help of a 2-year old granddaughter, Sarah Sue! Also, Tom the Cat, Bakko's cat, had tooth surgery. (So you know that if we're reporting on ill cats, it's been a quiet summer.) The only complaint, the weeds are so thick there is no fishing from the docks.

NEWS FROM THE SOUTH SHORE OF GROVE LAKE

We are pleased to have Mari Kay and Shawn Corder and their son of Redwood Falls, MN, on Grove Lake. They purchased their lake shore home from his parents. We wish the best of health to Ervin Dohmeier as he battles different health problems. Bruce and Ann Frederickson have added a garage that matches their cabin. We all wish Magnus and Norma Olson our best as they sell their cabin, land, and household possessions. Cathy Thoen says all is the same and going well on their end of the south shore. Pat Dean says the same about the west end. (Great boat parade, Pat!)

ENHANCED 911

The Sheriff's office and the County Coordinator's office are working together to set up our enhanced Emergency 911 service. In the past when you called 911, you had to identify your property location by using your fire number. With the new service, when you call 911, the dispatcher will have your address on their computer screen. You will be asked to verify the information. The address will not be your fire number. I had not been informed about our new address so I called Bill Schalow, the County Coordinator. I explained that we had no mailbox at Grove Lake and no post office box in Brooten, so how would we be informed of our new address. He contacted Geo Comm with my question. Geo Comm is a company that works with the enhanced 911 system building databases. Geo Comm said that after the residents with mailboxes are notified of their addresses, then they will work with the telephone listings and tax records to locate and inform the other residents. The address information will be sent to the resident's permanent home address. Mr. Schalow said that residents that have no mailbox or phone will be the last to be notified because they will only have the tax records for reference. I also asked what would happen if I call 911 now, before I have an address. He said the dispatcher's screen would be blank and we would have to explain our location. So check your mailboxes, your new Grove Lake address is on the way.

Ann Frederickson

HISTORY BOOK OR NO HISTORY BOOK

A year ago Ann Frederickson proposed that the Grove Lake Lakeshore Association members compile a book of individual property histories. Each lakeshore family was asked to write their own property's history, long or short, and give a copy to Ann for the book. Two members have given her a copy of their history. This makes for a very short book and limited interest. If you think you will write a history some time in the next year, please contact her – 612-786-2723 or 7571 Brigadoon Place NE, Fridley, MN 55432, so she knows if this is a worthwhile project. Thanks.

GROVE LAKE LAKESHORE ASSOCIATION OFFICERS AND COMMITTEES 1997-98

President –

Vice President – (acting President) Ralph Johnson 558 Juergens Rd. Hutchinson, Mn 55350

Secretary – Bev Tingstad 520 Kelly Drive Golden Valley, Mn 55327

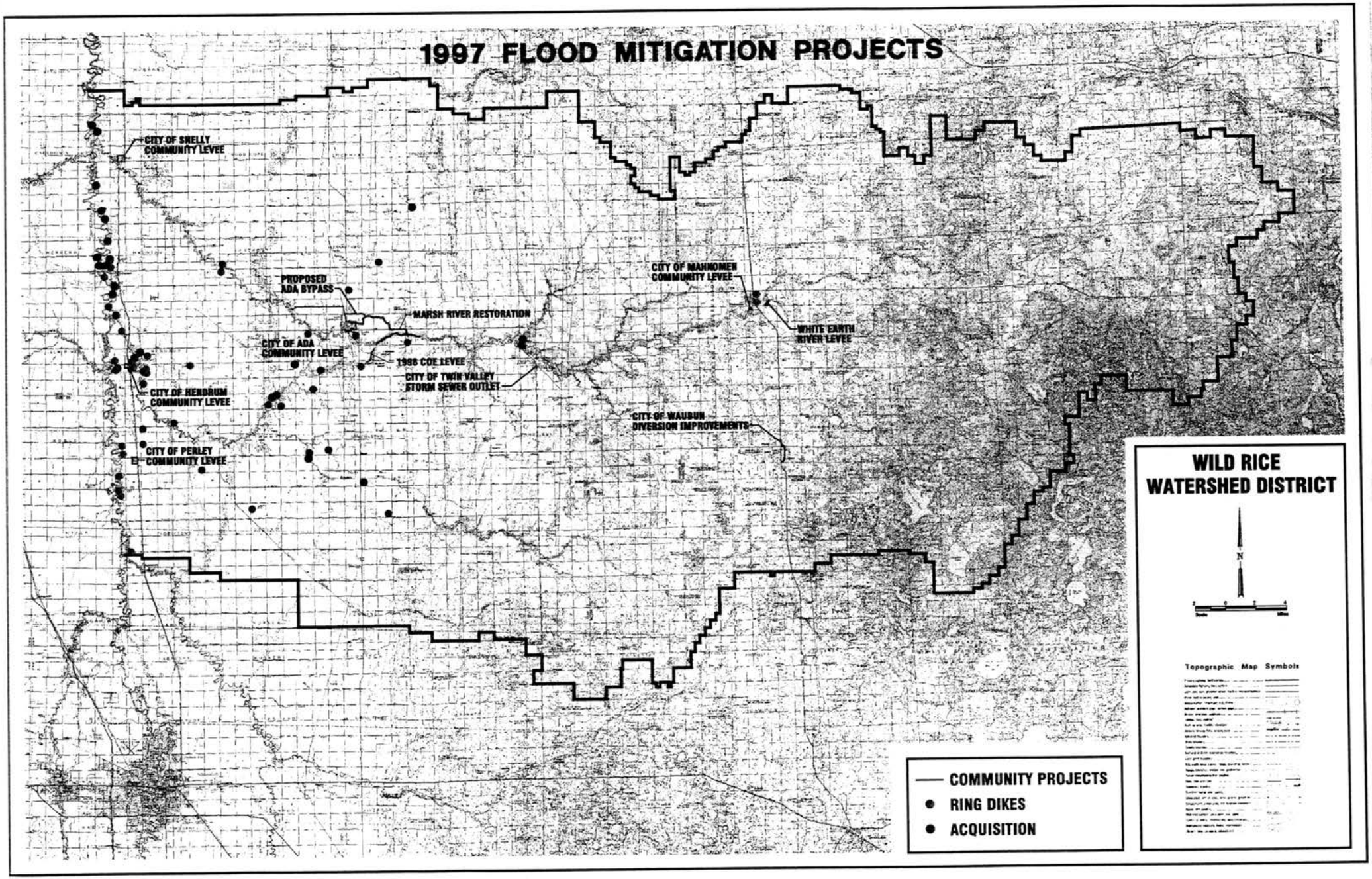
Treasurer – Cathy Thoen Route 1 Brooten, Mn 56316

Fourth of July Parade – Pat Dean
Labor Day Pork Chop Feed – Bev Tingstad
Newsletter Editor – Ann Frederickson
COLA Representative – Mary Lou Hemstad

THANKS!!!

Many thanks to Carol Unzen, NFCRWD Secretary, for her help in compiling and printing the Grove Lake Newsletter. It is great to have competent assistance and up-to-date technology. Thanks a lot, Carol!

*** Added note from Carol: I commend Ann Fredrickson for taking on this enormous project. She has put a lot of work and time into this newsletter---all I can take credit for is the production.


1997 FLOOD MITIGATION PROJECTS
CITY OF SHELLY COMMUNITY LEVEE
PROPOSED ADA BYPASS
MARSH RIVER RESTORATION
CITY OF ADA COMMUNITY LEVEE
1986 COE LEVEE
CITY OF TWIN VALLEY STORM SEWER OUTLET
CITY OF HENDRUM COMMUNITY LEVEE
CITY OF PERLEY COMMUNITY LEVEE
CITY OF MAHNOMEN COMMUNITY LEVEE
WHITE EARTH RIVER LEVEE
CITY OF WAUBUN DIVERSION IMPROVEMENTS
COMMUNITY PROJECTS
RING DIKES
ACQUISITION
WILD RICE WATERSHED DISTRICT
N
Topographic Map Symbols

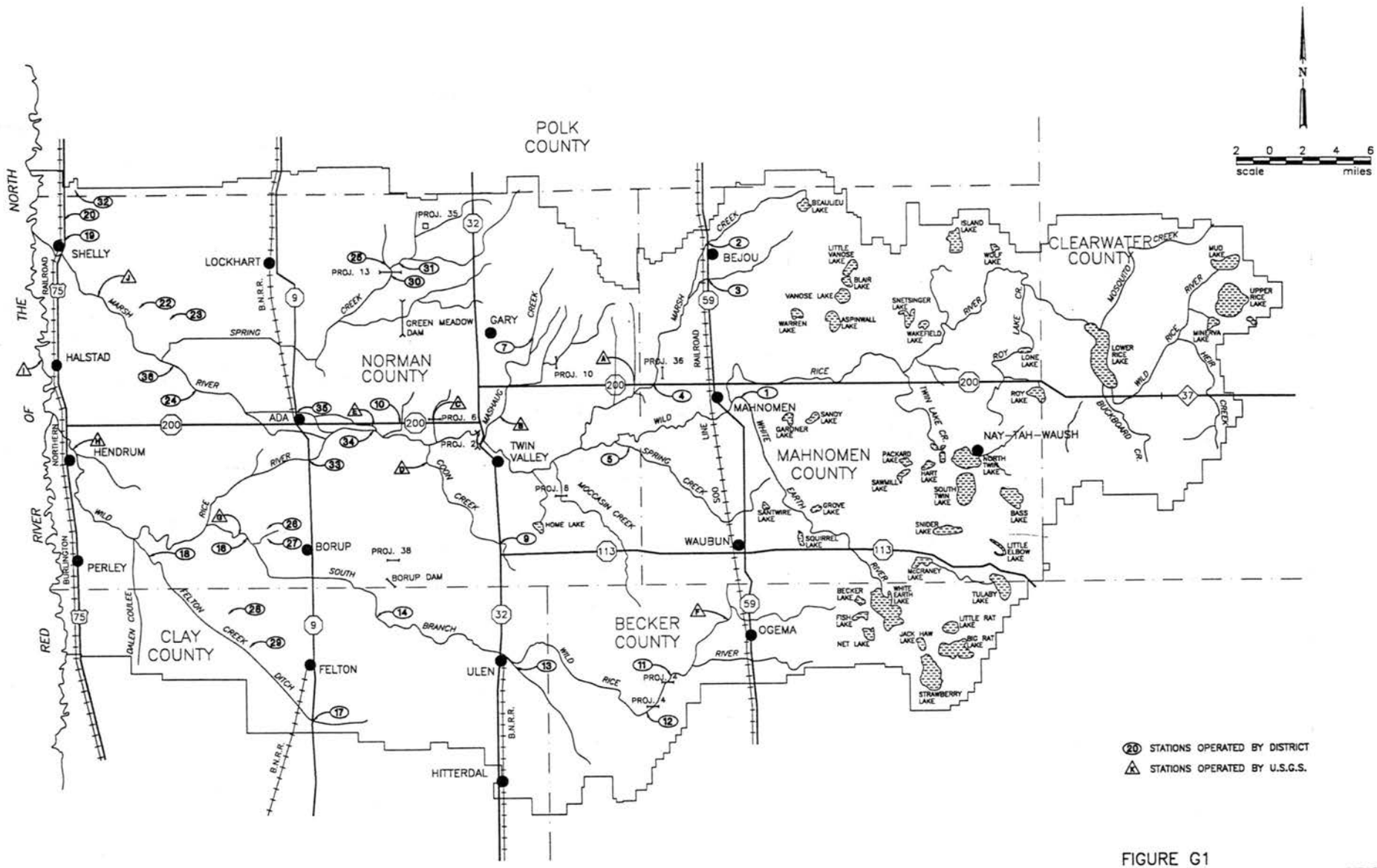


FIGURE G1
SURFACE WATER GAGING STATIONS