



Minnesota Board of Water and Soil Resources.
Minutes.

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February 1999



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DATE: February 12, 1999

TO: Board of Water and Soil Resources Members, Advisors, Staff

FROM: Ronald D. Harnack, Executive Director

SUBJECT: February 24, 1999 BWSR Meeting

The Board of Water and Soil Resources (BWSR) will meet on Wednesday, February 24, 1999, beginning at 9:00 a.m. The meeting will be held in the BWSR conference room at One West Water Street, St. Paul. The following is some background information regarding the agenda items:

Committee Recommendations

1. City of Burnsville Comprehensive Wetland Protection and Management Plan Approval - The City of Burnsville has developed a Comprehensive Wetland Protection and Management Plan over the past year and are bringing it to the Board for review and approval. This Plan has been evaluated by Metro Region and wetland staff and by the Wetland Committee at their January 22, 1999 meeting. A committee recommendation will be presented. **DECISION**
2. Wetland Law Consolidation Report - Minnesota Laws of 1998, Chapter 312, Section 7 required that the Commissioner of the Department of Natural Resources in conjunction with the Board of Water and Soil Resources submit a report to the House and Senate Environment and Natural Resources Committees regarding a simplification of wetland law by consolidating Public Waters Wetlands laws with the Wetland Conservation Act. This report, due by March 1, 1999, shall include a discussion of the problems and benefits of a consolidation. The DNR Division of Waters and BWSR staff have developed a report to meet these obligations in conjunction with a limited number of outside interest groups and other agencies. The report was reviewed in detail by the BWSR Wetland Committee on January 22nd, and a recommendation will be forthcoming to the full Board. **DECISION**

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3. Public Road Wetland Replacement Strategy - BWSR staff, after collaboration with the Interagency Wetland Banking Committee and the RIM Advisory Committee, have developed a strategy that will accomplish the road mitigation necessary to meet statutory requirements of Minnesota Statute 103G.222, subdivision 1(m). This strategy (subject to future modification after one year) includes three options for developing credits:
 1. Development of projects using the internal state easement acquisition processes;
 2. Purchase of existing wetland banking credits;
 3. Development of projects through partnerships with local governments and other public entities.

The Wetland Committee will review this strategy at their February 22, 1999 meeting and a recommendation will be forthcoming. DECISION

4. FY00 Feedlot Water Quality Management Grants - For FY99, the legislature appropriated \$2 million to the BWSR to allocate to SWCDs for cost-sharing on water quality management grants for feedlots. The BWSR then adopted policies and allocation procedures. For FY00, the legislature appropriated \$1 million for this program. The BWSR Cost-Share/Soil Conservation Committee is recommending policy and allocation procedures for FY00. The Board will be requested to adopt these policies and allocation procedures. DECISION
5. FY00 State Cost-Share Program Allocation Policies - The State Cost-Share Program allocations are grants to Soil and Water Conservation Districts (SWCDs) to cost-share with landowners the application of soil and water conservation and water quality improvement practices. The annual legislative appropriation to BWSR for this program is \$1,620,000. This appropriation is allocated to SWCDs via the base grants and special project grants programs. The Board will be requested to decide the appropriate amount to allocate for each program and establish certain policies for FY00. DECISION

Old Business

1. Grants to SWCDs for Implementation of the Conservation Reserve Enhancement Program- Since the December meeting, staff have been visiting with SWCDs and discussing ways to increase their capacity to work with landowners and enroll land in the Conservation Reserve Enhancement Program. Staff recommends approval of 11 grants totaling \$308,093. These grants will result in an additional 11 positions in SWCD offices. Although \$450,000 was available, negotiations are ongoing with several SWCDs. Staff further recommends that April 1st be established as the deadline to complete negotiations. A recommendation concerning the remaining funds will be ready for the April meeting. DECISION

New Business

1. Comfort Lake-Forest Lake Watershed District Establishment Petition - A citizen Petition for Establishment of the Comfort Lake-Forest Lake Watershed District was received on November 20, 1998. The Chisago County Auditor provided written certification on January 20, 1999, that the Petition was signed by more than 50 resident owners in the

proposed watershed district. However, of particular note is that Washington County is nearing completion of a Water Management Governance Study. If the Study is completed in March or April, as projected, the results should be considered in the possible establishment of a watershed district. Although there are concerns about the management of water resources in these areas, it appears prudent to delay the hearing for up to three months in order to consider the results of the Study. Staff recommend the Board order an Establishment Hearing to be scheduled by the Executive Director in accordance with the timely conclusion of the Study, but not later than June 30, 1999, per the draft Order (attached). DECISION

If you require additional information, please feel free to give me a call. If bad weather conditions exist in your area and you are unable to attend the meeting due to travel restrictions, please notify the board office by noon on Tuesday, if possible. Travel safely, I look forward to seeing you on the 24th!

**BOARD OF WATER AND SOIL RESOURCES
CONFERENCE ROOM, ONE WEST WATER STREET
ST. PAUL, MINNESOTA 55107
FEBRUARY 24, 1999**

PRELIMINARY AGENDA

9:00 a.m. Call Meeting to Order

Adopt Agenda

Approval of Minutes of January 27, 1999

Reports

- Chair - Kathleen Roer
- Executive Director - Ron Harnack
- Dispute Resolution Committee - Glenn Annexstad
- Education and Public Relations - Paul Krabbenhoft
- Cost-Share/Soil Conservation Committee - Dwain Otte
- Wetlands Committee - Darrell Bruggman
- Financial Oversight Committee - Ginny Imholte
- Administrative Advisory Committee - Kathleen Roer

Agency Reports

- Jim Anderson, Minnesota Extension Service
- Pat Bloomgren, Department of Health
- Sharon Clark, Department of Agriculture
- Rod Massey, Pollution Control Agency
- Wayne Edgerton, Department of Natural Resources

Committee Recommendations

1. City of Burnsville Comprehensive Wetland Protection and Management
Plan Approval - John Jaschke - DECISION
2. Wetland Law Consolidation Report - John Jaschke - DECISION
3. Public Road Wetland Replacement Strategy - John Jaschke - DECISION
4. FY00 Feedlot Water Quality Management Grants - Wayne Zellmer -
DECISION
5. FY00 State Cost-Share Program Allocation Policies - Wayne Zellmer -
DECISION

Old Business

1. Grants to SWCDs for Implementation of the Conservation Reserve Enhancement Program - Greg Larson - DECISION

New Business

1. Comfort Lake-Forest Lake watershed District Establishment Petition - Jim Haertel - DECISION

Advisory Comments

- Minnesota Association of Conservation District Employees (MACDE)
- Minnesota Association of Soil & Water Conservation Districts (MASWCD)
- Minnesota Association of Townships (MAT)
- Minnesota Association of Watershed Districts (MAWD)
- Natural Resources Conservation Service (NRCS)

Upcoming Meetings

- MASWCD Legislative Briefing, February 24, Kelly Inn, St. Paul
- MAWD Legislative Breakfast, March 12, Kelly Inn, St. Paul
- Next BWSR Meeting, March 24, 1999 in St. Paul

Noon**Adjourn**

DRAFT

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

DRAFT

In the Matter of the Establishment of the
Comfort Lake-Forest Lake Watershed District
in Chisago and Washington Counties pursuant
to Minnesota Statutes § 103D.221, Subd. 1

**ORDER
ESTABLISHMENT
HEARING**

Whereas, more than fifty (50) resident owners residing in the proposed Comfort Lake-Forest Lake Watershed District in Chisago and Washington Counties filed a Petition dated November 18, 1998, with the Board of Water and Soil Resources (Board) on November 20, 1998, to establish a watershed district pursuant to Minn. Stat. § 103D.205, and;

Whereas, the Board has completed its review of the Petition;

Now Therefore, the Board hereby makes the following Findings of Fact, Conclusions, and Order.

FINDINGS OF FACT

1. **District Name.** The name of the proposed district shall be the "Comfort Lake-Forest Lake Watershed District".
2. **Property Description.** The territory to be included in the watershed district is the area in NEWMO, approximately 21.2 square miles in six communities, which includes the entire Forest Lake WMO and the Comfort Lake drainage area in Chisago County, generally the drainage area previously managed by the Joint Washington and Chisago County Ditch Board No. 1, per the map attached to the Petition and made a part of this Order hereof.

DRAFT

3. **Necessity for Watershed District.** Minn. Stat. § 103B.231, Subd. 1(a) requires a watershed management plan for all watersheds within the metropolitan area.
4. **Contemplated Improvements.**
 - A. Conduct necessary studies to obtain pertinent data for evaluation and design of comprehensive water management projects within the proposed watershed district.
 - B. Provide a means to control pollution and to control the growth of nuisance algae and other undesirable organic matter in the lakes and watercourses within the proposed watershed district.
 - C. Prevent flooding of private property within the proposed watershed district,.
 - D. Provide comprehensive enforcement of regulations across political jurisdictions within the proposed watershed district.
 - E. Assist local governments in planning surface water management efforts.
5. **Number of Managers.** The number of managers for the proposed watershed district is five (5) with three (3) from Washington County and two (2) from Chisago County.
6. **Signatures.** The Establishment Petition dated November 18, 1998, was filed with the Board on November 20, 1998. The Petition was signed by more than fifty (50) resident owners in the proposed watershed district pursuant to Minn. Stat. § 103D.205, Subd. 3 (4). On January 20, 1999, Dennis J. Freed, Chisago County Auditor, pursuant to Minn. Stat. § 103D.211 certified that more than fifty (50) petitioners were resident owners within the proposed watershed district.
7. **Filing.** The Petition was filed with the Chisago County Auditor and the Board of Water and Soil Resources. Prior to the hearing the Petition will need to be filed with the Washington County Auditor, the Commissioner of the Department of Natural Resources, and the Director of the Division of Waters of the Department of Natural Resources.
8. **Hearing Location.** The hearing should be held at the Forest Lake City Hall or, if unavailable, at such other handicap accessible facility located in the proposed watershed district..

9. **Hearing Panel.** The Board's Metro Water Planning Subcommittee should preside over the hearing due to their familiarity with the issues.
10. **Hearing Time.** Since Washington County is nearing completion of their year-long Water Management Governance Study, the hearing time should be scheduled by the Board's Executive Director in accordance with the timely conclusion of the Study, but not later than June 30, 1999. While the Board is concerned about the management of the water resources in these areas, it appears prudent to delay the hearing for up to three months in order to consider the results of the Study.

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CONCLUSIONS

1. The petition for establishment of the Comfort Lake-Forest Lake Watershed District is valid in accordance with Minn. Stat. § 103D.205.
2. All relevant substantive and procedural requirements of law and rule have been fulfilled.
3. The Board has proper jurisdiction in the matter of ordering a watershed district establishment hearing.

DRAFT

ORDER

The Board hereby orders that the hearing on the establishment petition for the Comfort Lake-Forest Lake Watershed District be heard by the Metro Water Planning Subcommittee at a time and place to be scheduled by the Board's Executive Director in accordance with the timely completion of the Washington County Water Management Governance Study, but not later than June 30, 1999.

Dated this 24th day of February, 1999.

MINNESOTA BOARD OF WATER AND SOIL RESOURCES

DRAFT

By: _____
Kathleen M. Roer, Chair

March 1999



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DATE: March 15, 1999
TO: Board of Water and Soil Resources Members, Advisors, and Staff
FROM: Ronald D. Harnack, Executive Director
SUBJECT: March 24, 1999 BWSR Meeting

The Board of Water and Soil Resources (BWSR) will meet on Wednesday, March 24, 1999, beginning at 9:00 a.m. The meeting will be held in the BWSR conference room at One West Water Street, St. Paul. The following is some background information regarding the agenda items.

New Business

1. Minnesota River Basin Joint Powers Board (MRBJPB) Report: Steve Hansen, Executive Director of the MRBJPB, will overview what the Board is about, review their accomplishments in 1998 and plans for 1999. BWSR's relationship with the MRBJPB is through staff assistance, a \$125,000 biannual grant to them for administrative purposes, and administer a \$475,000 grant for water quality improvement projects (see attached). PRESENTATION AND DISCUSSION

Old Business

1. RIM Reserve 1998 Sign-Up Results - Tim Fredbo will present a status report for the Conservation Reserve Enhancement Program (CREP); RIM/WRP Wetland Restoration Partnership; and RIM Reserve (see attached). INFORMATION
2. Flood Storage Easements Pilot, Draft Proposal from Wild Rice Watershed District: Representatives of the Wild Rice Watershed District will present a draft proposal for using flood storage easements to create dispersed flood water detention sites. This program would provide an alternative to drainage improvements for flood damage reduction in subwatersheds, as well as provide water quality and other resource management benefits. Watershed district managers and staff have received positive response from landowners about this concept and have identified a number of potential sites. The watershed district would be the easement holder and would assume future operation and maintenance responsibilities. BWSR and watershed district staff are working on a number of policy and procedure issues. This will be on the agenda for formal endorsement in April. DISCUSSION

If you require additional information, please feel free to give me a call. If bad weather conditions exist in your area and you are unable to attend the meeting due to travel restrictions, please notify the board office by noon on Tuesday, if possible. Travel safely, I look forward to seeing you on the 24th!

MINNESOTA RIVER BASIN JOINT POWERS BOARD

DRAFTEstimate of Revenue and Expenses
January, 1999 - December, 1999**DRAFT**

Revised October 20, 1998

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Y-T-D
Revenue: Grant- MCES	25,000				35,000						40,000		100,000
Grant- BWSR							125,000						125,000
Conference								4,000					4,000
Carryover													0
Dues		20,000						20,000					40,000
Forums			2,000									2,000	2,000
Total	25,000	20,000	2,000		35,000		125,000	24,000			40,000	2,000	273,000
Expense: Salaries	11,500	11,500	11,500	11,500	11,500	11,500	11,500	11,500	11,500	11,500	11,500	11,500	138,000
Benefits	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	14,400
Per Diem Pay	420	420	420	420	420	420	420	420	420	420	420	420	5,040
Meeting Expense	1,300	6,200	1,300	1,250	1,250	1,250	1,300	11,000	2,200	1,250	3,250	1,250	32,800
Auto Expense	250	320	250	250	250	250	300	450	250	250	300	250	3,370
Telephone	440	440	480	520	540	680	560	580	480	440	440	440	6,040
Copies and Post	460	620	460	460	460	580	630	460	460	460	520	460	6,030
Office Supplies	170	170	170	170	170	170	170	170	170	170	170	170	2,040
Dues and Sub.	50	50	50	50	50	50	50	50	50	50	50	50	600
Computer Upgrade	270	270	270	270	270	270	270	270	270	270	270	270	3,240
Accounting Exp.	390	390	390	390	390	390	390	390	390	390	390	390	4,680
Insurance	2,500												2,500
Misc. Expense	840	840	840	840	840	840	840	840	840	840	840	840	10,080
Total Expense	19,790	22,420	17,330	17,320	17,340	17,600	17,630	27,330	18,230	17,240	19,350	17,240	228,820

Assumptions:

One (1) additional part-time Clerical Staff @ \$8.00/hr.

COLA @ 3%.

Computer upgrade estimated to be \$3,240.

No LCMR project dollars incorporated in this budget estimate.

MINNESOTA RIVER BASIN JOINT POWER BOARD

Statement of Cashflow December 31, 1998

	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98	Y-T-D
Carryover Balance 12/31/97	\$ 33,738												\$ 33,738
Revenue													
Grants	\$ 817		\$ 62,500	\$ 35,000			\$ 62,500		\$ 41,000			\$ 40,000	\$ 241,817
Conference/Meeting	400	3,200	2,069	3,663	150	1,013	4,394	3,429	1,391	603	1,625	100	22,036
Other	5,055										642		5,697
Total Revenue	\$ 6,272	\$ 3,200	\$ 64,569	\$ 38,663	\$ 150	\$ 1,013	\$ 66,894	\$ 3,429	\$ 42,391	\$ 603	\$ 2,267	\$ 40,100	\$ 269,550
Expenses													
Salaries, Fringes, Payroll Tax	\$ 10,835	\$ 11,162	\$ 14,472	\$ 9,959	\$ 9,970	\$ 9,970	\$ 10,230	\$ 11,664	\$ 14,958	\$ 9,633	\$ 10,497	\$ 14,133	\$ 137,485
Per Diem Payments	77	442	304	100	204			490	0			150	1,767
Meeting Expense	1,392	247	6,809	1,136	273	1,469	5,057	10,774	5,226	420	926	733	34,462
Automobile Expense	264	316	292	103	249	219	449	118	222	110	226	186	2,755
Telephone	448	337	484	431	558	521	529	583	440	441	426	481	5,679
Copies and Postage	1,099	337	249	394	356	466	396	303	1,579	990	240	947	7,356
Office Supplies	44	59	101	11	135	183	93	20	20	294	89	246	1,295
Dues and Subscriptions	42	57	37		135		46	100	352	118		79	966
Event Promotion	1,010	1,000	1,049	1,000	1,086	1,142	1,000	1,000	1,000	45	1,000		10,332
Accounting and Office Support	300	300	300	300	380	370	330	345	1,040	300	300	300	4,565
Insurance	3,543	1,440											7,446
Miscellaneous Expense	16	15	48		20	26	530	9	3	14	52	21	754
Assets-Equip,Furniture,Auto										17,283			17,283
Total Expense	\$ 19,072	\$ 15,712	\$ 24,147	\$ 13,433	\$ 13,365	\$ 14,365	\$ 18,661	\$ 25,406	\$ 24,841	\$ 29,648	\$ 13,757	\$ 19,739	\$ 232,144
Month End Cash Balance	\$ 20,939	\$ 8,427	\$ 48,849	\$ 25,230	\$ (13,215)	\$ (13,352)	\$ 48,233	\$ (21,977)	\$ 17,550	\$ (29,046)	\$ (11,490)	\$ 20,361	\$ 71,144

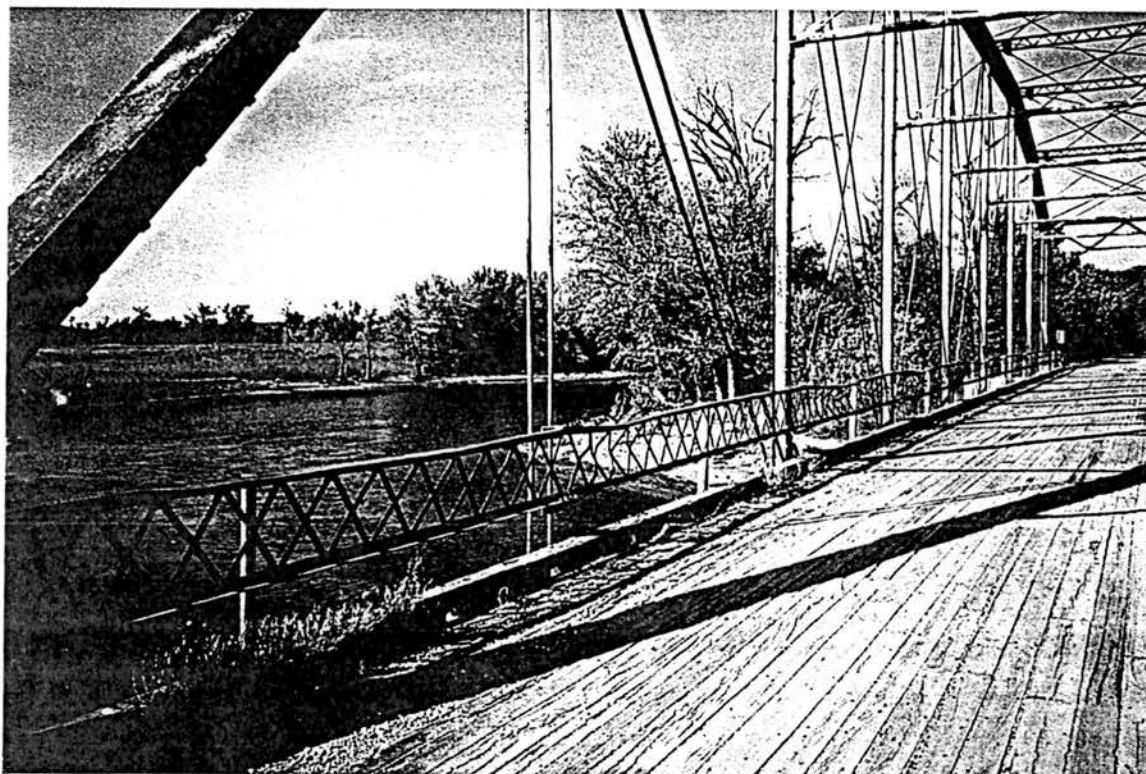
This financial statement is prepared on the cash basis method of accounting. Therefore, receipts and expenses are recorded on the date received or paid respectively.

1999 Minnesota River Basin Legislative Initiatives



Sponsored by

The Minnesota River Basin Joint Powers Board
"Coordinating the Clean Up of the Minnesota River Basin"



December 1998

MINNESOTA RIVER BASIN

MAJOR WATERSHEDS AND COUNTIES

MAJOR WATERSHED NUMBERS AND MAJOR WATERSHED NAMES

- 22 Upper Minnesota River Major Watershed
- 23 Pomme De Terre River Major Watershed
- 24 Lac Qui Parle River Major Watershed
- 25 Hawk Creek - Yellow Medicine River Major Watershed
- 26 Chippewa River Major Watershed
- 27 Redwood River Major Watershed
- 28 Middle Minnesota River Major Watershed
- 29 Cottonwood River Major Watershed
- 30 Blue Earth River Major Watershed
- 31 Watonwan River Major Watershed
- 32 Le Sueur River Major Watershed
- 33 Lower Minnesota River Major Watershed



Major Watershed Boundary

County Boundary

Prepared for: The Minnesota River Basin
Joint Powers Board.

Prepared by: Mankato State University
Water Resources Center
Cartographic and GIS Section.

Authors: Cis Berg and John Rongstad

Date: January 15, 1996

Data for this map was prepared using
ESRI ARC/INFO software and composed
using ARC/INFO ARCPLT.



**Minnesota River Basin Joint Powers Board
1999 Legislative Initiatives**

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The Minnesota River Basin Joint Powers Board

Member Counties:

**Big Stone, Blue Earth, Brown, Carver, Chippewa,
Cottonwood, Dakota, Douglas, Faribault, Freeborn,
Grant, Hennepin, Jackson, Kandiyohi, Lac qui Parle,
Le Sueur, Lincoln, Lyon, Martin, McLeod, Murray,
Nicollet, Pipestone, Pope, Ramsey, Redwood, Renville,
Rice, Scott, Sibley, Steele, Stevens, Swift, Traverse,
Waseca, Watonwan, Yellow Medicine**

Staff:

- **Stephen C. Hansen, Executive Director**
- **Anne Ludvik, Program Manager**

Offices:

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St. Paul, MN 55103-2108**

**Carver County Gov't Center
600 East 4th Street
Admin. Bldg. #14
Chaska, MN 55318-2102**

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The Evolution of the Minnesota River Basin Joint Powers Board

Definition

The Minnesota River Basin Joint Powers Board (MRBJPB) is comprised of county commissioners from each of 37 counties in the state of Minnesota that drain into the Minnesota River. Each county has signed into a Joint Powers Agreement as allowed under Minnesota Statute. The Board is advised by several standing committees and is continually striving to represent every sector of the drainage basin.

The Evolution

Why did this group of counties decide to work together to clean up the Minnesota River? Historically many groups have formed and studies have been completed to assess a variety of problems with the river. What makes the Minnesota River Basin Joint Powers Board different? To answer this question it is important to note some specific events that were catalysts to its development.

1989

In 1989 interest in cleaning up the Minnesota River was escalated by a potential threat from the United States Environmental Protection Agency to sue the State of Minnesota if it did not improve the water quality of the Minnesota River which drains into the Mississippi River and ultimately into the Gulf of Mexico. This triggered a four-year long study known as the "Minnesota River Assessment Project" (MNRAP). Over 30 local, state and federal agencies participated in this assessment of how pollution enters and affects the Minnesota River.

1992

In 1992 the Minnesota River Citizen's Advisory Committee was created with nominated individuals representing most of the geographical and cultural diversity of the Minnesota River. Assisted by the Minnesota Pollution Control Agency, this group of 30 citizens set out to define reasonable water quality goals and outline methods to reach them. Shortly after establishment of this committee, Governor Arne Carlson issued a challenge to all Minnesotans; to make the Minnesota River swimmable and fishable within 10 years. His request did not fall upon deaf ears. The Minnesota River Citizen's Advisory Committee went to work and in 1994 released their report "Working Together: A Plan to Restore the Minnesota River".

1994

One of the 10 recommendations to restore the Minnesota River was to establish a "Minnesota River Commission". With talk in the air that a committee was soon to be appointed, and with a sincere interest in ensuring that the Citizen's Advisory Committee's report did not end up on a bookshelf never to be seen again, a group of county commissioners began discussing the best way to see out its implementation. These commissioners created the idea of a joint powers agreement between counties based on the key role county government plays in implementing water quality improvement projects. A Minnesota Statute was already in place to create such a board,

and this structure would help ensure that local water quality priorities would be met and understood by state and federal agencies. The Citizen's Advisory Committee Report was to be the Board's guide book.

1995

After successfully marketing their plan of action to the counties who had land that ultimately drained into the Minnesota River, the founding commissioners of the MRBJPB participated in an historic event. On July 12, 1995 counties in the Minnesota River Basin along with Governor Arne Carlson met at the bend of the river in Mankato and officially signed the MRBJPB agreement.

1998

Today the 37 counties of the Minnesota River Basin Joint Powers Board are working together to coordinate the clean up of the Minnesota River Basin. The Board is trusted by citizen and environmental groups, consulting firms, state and federal agencies, universities and schools, and many others as the central working group to improve the Minnesota River Basin. We have initiated a spirit of cooperation and a system of communication among landowners, government, and businesses to improve the Minnesota River Basin.

Major Accomplishments of the MRBJPB

- Coordinated and established a communication mechanism to reach citizens, local, state and federal agencies, schools, and the private sector throughout the MN River Basin.
- Assisted in securing and implementing \$200 million in federal and state money to convert flood-prone farmland into native grasses and trees to reduce flooding & restore wildlife habitat.
- Developed a Minnesota River Basin Data Center-Minnesota State University, Mankato.
- Received and is Implementing \$475,000 for Water Quality Improvement Projects in the Basin.
- Coordinated the completion of a Minnesota River Basin Comprehensive Recreational Guidance Document in cooperation with the MN DNR.
- Sponsored the completion of a Corridor Partnership Plan for the middle section of the Scenic ByWays program in the basin.
- Provided low-cost workshops on the latest research and data on sediment, phosphorus and an annual update on the state of the Minnesota River, with 100-350 attendees at each event.
- Assembled a Minnesota River Data Review Team made up of 17 different organizations.
- Assembled a "Blue Ribbon Task Force" made up of top policy makers of each agency involved in Minnesota River clean up efforts.
- Worked with 13 cities along the MN River to create a unified recreational event for the first time.

PROPOSED MRBJPB 1999 LEGISLATIVE INITIATIVES

I. ADMINISTRATIVE FUNDING FOR MRBJPB

- Currently the State of Minnesota through its Board of Water and Soil Resources (BWSR) contributes \$125,000 per Biennium to the administrative costs of the MRBJPB.
- The total annual expenses of the MRBJPB are estimated to be \$220,000 per year.
- The Metropolitan Council has a placeholder in their budget to fund one final year of administrative cost at \$100,000 in 1999.
- The 37 Counties have dedicated \$40,000 in dues for the same period.
- Earned revenue from conferences, forums and from corporate contributions totaled a little over \$18,000 in 1998.

REQUEST

The MRBJPB respectfully requests an additional \$125,000 per Biennium to begin in July, 1999 for administrative expenses under the existing conditions administered by BWSR.

RATIONALE

The purpose of the MRBJPB is to coordinate and add value to ongoing activities improving the water quality of the Minnesota River and to organize the groups within the basin to better use the scarce resources to implement projects that impact water quality.

The non-State contributions to the Board will come from the Counties in the form of annual dues and from the Metropolitan Council for 1999.

Without an additional contribution from the State of Minnesota the MRBJPB will not be able to continue its mission.

The MRBJPB adds value to several state-led directives to improve water quality including:

- The MPCA's Clean Water Partnership program, the Watershed Implementation at the Local Level approach and Citizens Monitoring;
- The MDA's "Principles of Agricultural Drainage", the Ag BMP Loan program and research on impacts of drainage on water quality;
- The DNR's forestry and wildlife sections improvements in habitat in the basin, the Division of Waters and drainage related issues and the development of recreation;
- The BWSR and their development of the Conservation Reserve Enhancement Program (CREP), RIM and other Cost Share related projects; and
- The EQB's objectives recently published in "Soundings: A Minnesota Water Plan" that includes:
 - ⇒ Priorities need to be set in a systematic manner;
 - ⇒ Coordination needs more emphasis;
 - ⇒ Information sharing and education is never finished;
 - ⇒ Funding assistance must relate to priorities; and
 - ⇒ Without evaluation, programs may miss the mark.

II. LCMR REQUEST A19: "MINNESOTA RIVER BASIN: LOCAL LEADERSHIP"

The MRBJPB and partners are sponsoring an LCMR request for developing local leadership within the Minnesota River Basin. This request builds on the good work done by the Citizen's Advisory Committee to the Minnesota River Assessment Project by developing local leaders in each of the 13 major watersheds in the basin, creating a basin wide plan, demonstrating land use management in a resource conserving manner, and extending outreach to the communities of the basin.

REQUEST

Please support the funding of A19 for \$700,000.

RATIONALE

The LCMR will accomplish the following:

- The development of a watershed-based framework to guide the implementation of land use practices and policies which will achieve maximum benefits for water quality, the economy, and the quality of life in the basin;
- Building on each County's Comprehensive Local Water Plan and supporting counties and local watershed groups in merging these plans and others into comprehensive watershed plans as required by regulation;
- Offering technical assistance to watershed-based groups to assist in the design and planning of projects, implementation of these projects and development of the organizational structure necessary to achieve a sustainable planning and project effort;
- Assisting in funding alternative land management practices that if implemented on a basin-wide scale, will significantly improve the water quality of the Minnesota River and its tributaries;
- Creating a long-range plan for the basin including goals and objectives of each local watershed effort into a basin-wide plan;
- Sharing and distributing data retrieved as a result of the watershed planning and project implementation efforts using the Minnesota River Basin Data Center and each Counties' databases as appropriate; and
- Assisting in linking as many schools in the basin as possible to internet-based information sources in an effort to achieve a sustainable and uniform method of information disbursement within the counties, the watersheds and the basin.

III. INCREASE COST-SHARE FUNDING FOR PROJECTS

Currently, several watershed-based groups are now ready to prioritize and implement water quality improvement projects on the land where only a few years ago, just a few groups accessed cost-share funds for projects.

In FY 1994, two (2) groups requested funding from BWSR for cost share projects totaling \$600,000; in FY 1998 eight (8) groups sought funding at the same level.

REQUEST

In 1997 the State Legislature awarded \$475,000 to the MRBJPB for implementing projects in the Minnesota River Basin. To date, six (6) projects are ongoing and the second round of funding for the remaining \$270,000 has almost \$1,000,000 of candidate projects competing for funds.

We suggest that the Legislature move the \$475,000 into the Base budget of BWSR for projects in the Minnesota River Basin at the ongoing cost-share rate.

RATIONALE

- The LCMR request for planning will produce an ongoing set of goals and objectives that need implementation for water quality to improve.
- Project funds are necessary because of the vast amount of smaller, more localized projects that must be completed in order for the basin to realize improvements in overall water quality.
- Each major watershed will have its own priorities for improvement. Having a fund available for projects will allow each watershed to establish those projects that have the greatest impact for improvement and allow the local people to access this fund to accelerate the clean up of the river.
- The Board of Water and Soil Resources is the appropriate administrator of the Cost-Share Funds and has received many more requests for projects than they can possibly fund now.

IV. INCREASE BASE AMOUNT FOR COMPREHENSIVE LOCAL WATER PLANNING

Each of the 37 Counties in the Minnesota River Basin Joint Powers Board have completed at least the first generation Comprehensive Local Water Plan. This planning serves as the foundation for determining which projects are higher in priority and where the county may have susceptibility to water contamination.

Each County-Based plan must, according to the regulations contained in Minnesota Statute 103B, move water planning into watershed planning.

This takes a significant amount of resources and also represents a paradigm shift for the counties in planning for the protection and restoration of their waters.

REQUEST

The MRBJPB requests that the State of Minnesota increase the Base amount to BWSR from \$37,500 a year per county to \$50,000 a year per county for all 87 Counties with an annual percentage increase based upon an established consumer price index.

RATIONALE

- Each county in the state has added at least a one-half time staff person to focus on water planning.
- Comprehensive Local Water Planning has dramatically increased the planning, monitoring and implementation of water resource management in Minnesota and prevented further degradation of our surface and ground water.
- Counties are requested by the State of Minnesota to provide more resources in the environmental area related to water planning, including an increased focus on watershed management.
- To meet the goals of the state, counties need resources at the local level to get the work done and these costs have increased since 1991 when Comprehensive Local Water Planning was first funded.
- And finally, there has not been an increase in base funding since 1991 when the program was started.

V. LONG TERM FUNDING FOR THE MINNESOTA RIVER BASIN DATA CENTER

In 1997, the Minnesota Legislature through the Legislative Commission for Minnesota Resources (LCMR) commission awarded \$250,000 (with \$100,000 hard match) to the MRBJPB and Mankato State University for the development of the Minnesota River Basin Data Center.

This request was initiated by the recommendations from the Minnesota River Citizen's Advisory Committee to:

- ⇒ "Monitor water quality throughout the Minnesota River basin";
- ⇒ "Improve technical assistance to local governments"; and
- ⇒ "Engage the general public".

REQUEST

Provide long term (5 year) funding in the amount of \$350,000 per year for the Minnesota River Basin Data Center at the Minnesota State University - Mankato.

RATIONALE

- Information is power. The citizens of the basin need to know how and where to access information on water quality that impacts their lives.
- Information is also dated. Whatever information exists today it must be refreshed on an on-going basis.
- Students can provide the labor to refresh the data while learning valuable skills that are transferable to the workplace. They will also learn about the unique features of the basin and better understand the uniqueness of this part of Minnesota hopefully locating their families to the area.
- All data will be "pedigreed" in that it will have information explaining its source and how it was collected. In this way we can use several sources of data presenting a valuable and useful picture of water quality in the basin.

VI. IMPLEMENTATION OF THE "MINNESOTA RIVER WATERSHED COMPREHENSIVE RECREATIONAL GUIDANCE DOCUMENT & TRAIL CORRIDOR PLAN"

In 1996 the Minnesota State Legislature directed the Minnesota Department of Natural Resources (DNR) to develop a plan for a trail and other recreational opportunities for the Minnesota River Watershed. The DNR requested the Minnesota River Basin Joint Powers Board co-sponsor this project and together with citizens, organizations, businesses and units of government from each of the major watersheds determine the wishes of the people.

- This plan is now complete and awaits implementation. Specific goals and objectives have been determined for each portion of the basin and prioritized by those citizens attending the 18 public meetings held throughout the basin.
- A major trail study needs to be completed to determine each locale's willingness and readiness to build a Minnesota River Trail. The sponsors suggest the Regional Development Commissions (RDCs) throughout the basin manage the implementation phase of this guidance.

REQUEST

Fund a start up grant for the Regional Development Commissions to use in beginning the implementation of the guidance document.

RATIONALE

This comprehensive recreational guidance document represents a significant body of work to inventory and establish by public process the will of the people of the Minnesota River Basin as it pertains to their interest in developing, preserving or enhancing recreational, tourism, scenic, cultural and historic resources.

- The Regional Development Commissions have the infrastructure to put plans into action and are the logical leaders in this type of effort.
- The local RDC's have identified the development and implementation of a Minnesota River Trail System as a high priority and are ready to begin the planning of this effort.
- Trails have been shown to improve the economy of the regions they run through and connect to and the hope of a renewed economy in Southern Minnesota drives the creation of a viable and acceptable trail corridor in the basin.

VII. PROVIDE \$75,000 PER YEAR TO BWSR FOR A MINNESOTA RIVER BASIN COORDINATOR

The "mentor" State Agency of the Minnesota River Basin Joint Powers Board is BWSR. This Board and its staff have shown exemplary support of the MRBJPB and have initiated several large programs and projects to enhance the improvement of water quality and land use in the basin.

REQUEST

The MRBJPB respectfully requests funding \$75,000 for a full time coordinator for BWSR dedicated to working in the Minnesota River Basin.

RATIONALE

The simple fact is that with the increase in watershed planning, Conservation Reserve Enhancement Program (CREP) roll out, Soil and Water Conservation District projects, basin-wide planning, delivery of federal programs and others, the staff of BWSR is swamped.

- A dedicated soil and water professional would provide much needed assistance on assisting counties, districts and watershed teams develop projects that will impact positively on water quality.
- And mostly, to provide accountability and measurability of the actual reductions of pollution from entering the waterways.

SUMMARY

The MRBJPB is working with the members of the "Blue Ribbon Task Force" to identify other legislative issues for the 1999 Session. It is our sincere hope that you will support these efforts to build on the good work that has already taken place.

Thank you for your part in making the Minnesota River Basin an improved resource for all of us.

Sincerely,



Orville Meints
Chippewa County & Chair of MRBJPB

WORKING TOGETHER: A PLAN TO RESTORE THE MINNESOTA RIVER

EXECUTIVE SUMMARY

In September 1992, Governor Arne Carlson issued a challenge: Make the Minnesota River swimmable and fishable within 10 years. This is an ambitious goal. It will require all Minnesotans to make a major financial investment and to make some fundamental changes in the ways we manage land and water.

The Minnesota River Citizens' Advisory Committee here presents a plan to meet Governor Carlson's challenge. The Committee, 30 members strong, represents the geographical and cultural diversity of the Minnesota River basin. There were members from Big Stone Lake to the mouth of the river and everywhere in between. There were farmers, county commissioners, conservationists, business people, and representatives from several state and local agencies. They met more than 30 times over a two-and-a-half year period, hearing presentations from experts in a wide variety of disciplines and discussing at length the river's problems and potential solutions. The recommendations outlined in this executive summary and detailed in the body of the report chart the path that the Committee believes must be taken to restore the Minnesota River.

Recommendations

Restore floodplains and riparian areas

It is time to restore the Minnesota River floodplain to its natural purpose. The Reinvest in Minnesota (RIM) program, in concert with local and federal initiatives, should acquire all of the Minnesota River floodplain between Jordan and Big Stone Lake — roughly 200,000 acres in all. Procurement should be made with willing landowners through permanent easements and selective fee-title acquisitions.

Riparian areas — the vegetative buffers along river banks — should be reestablished along all of the Minnesota River's major tributaries. Special attention should be given to connecting riparian areas to non-riparian natural areas so as to create corridors for wildlife.

Restore wetlands

In the Minnesota River basin, more than 90% of the original wetlands have been drained or filled. We must restore some of those wetlands. We should begin by purchasing perpetual easements on lands that will be inexpensive to restore, that offer the biggest "return" in the form of pollution reduction, water retention and habitat restoration, and that landowners want to restore. The RIM program and the U.S. Fish and Wildlife Service wetland restoration programs should be funded at sufficient levels to meet the demand from all landowners who want to participate.

Manage drainage ditches and storm sewers as tributaries

We must acknowledge that these drainage systems are in fact tributaries of the Minnesota River. We must recognize that the amount and quality of water they convey has a major impact on the physical, chemical, and biological characteristics of the Minnesota River and its tributaries. If we are to achieve a swimmable and fishable river, we must revise the state drainage code to weigh the environmental

costs against the economic benefits of ditch projects, and we must require treatment of all urban storm water before it is discharged into natural bodies of water.

Improve land management practices

The cleanup of the Minnesota River can only be accomplished when we recognize that the quality of the water is determined by what we do on the land. Widespread adoption of responsible land-use practices on the part of homeowners, farmers, developers, businesses, and government agencies will significantly reduce polluted runoff to the Minnesota River. We should provide more financial incentives for whole-farm resource planning, and, in cases where voluntary compliance is not working, we must establish certain mandatory land-use practices.

Monitor water quality throughout the Minnesota River basin

It is essential for us to precisely measure the impact that our efforts are having. We need to know how dirty the river is now, how much cleaner it becomes as we implement our restoration plans, and when we have achieved a swimmable, fishable river. In order to do that, we will need to establish a permanent water-quality monitoring network throughout the river basin. The Minnesota Pollution Control Agency should establish state-of-the-art monitoring stations at the mouths of the 12 major tributaries of the river, and local organizations and units of government should install a network of monitoring stations in their watersheds. All of the data gathered should be housed in an academic institution and made readily available to the public.

Establish a "Minnesota River Commission" to oversee the cleanup effort

A new institutional structure is needed to ensure government accountability and citizen participation in meeting Minnesota River cleanup goals. The Citizens' Advisory Committee proposes the creation of the Minnesota River Commission. Composed of private citizens as well as representatives of local organizations, state agencies, and the Dakota communities in the river basin, the functions of the commission will be to establish specific goals for the cleanup effort, provide broad oversight of major agency activities, evaluate the effectiveness of expenditures, and holding an annual conference on the state of the river.

Establish local joint powers agreements

The major goals for the river basin will be developed by the Minnesota River Commission, based on the work of the Citizens' Advisory Committee and the Minnesota River Assessment Project. The strategies used to accomplish these goals, however, should be developed and managed at the local level. The counties and other units of government within each of the 12 major watersheds in the Minnesota River basin should establish joint powers agreements which allow them to collaborate and share responsibilities for improving the water quality in their particular watershed.

The Minnesota Pollution Control Agency and the Metropolitan Council are now in the process of developing "pollution load allocations" for each of these watersheds. It is imperative that this work be completed as soon as possible. Pollution load allocations specify the amounts of various pollutants that

can safely be discharged from a particular watershed. The information will be used by each of the joint powers organizations to develop their cleanup strategies.

Improve technical assistance to local governments

Technical expertise is a major limitation for local organizations trying to address nonpoint source pollution in the Minnesota River basin. The lack of technical capabilities at the local level manifests itself in an inability to satisfactorily define local problems, set realistic goals, and carry out successful implementation programs. State government, through its agencies and university system, has an obligation to guide local governments in building the expertise that is needed to successfully implement water cleanup projects. Guidance is needed in a number of areas, such as designing surface water monitoring networks, establishing water quality goals, training in the use of Geographical Information Systems, creating design standards for pollution abatement measures, and interpreting research findings.

Engage the general public

Citizens throughout the basin need to come to understand the costs of a polluted river, the benefits of a clean river, and the actions they can take to help make the river clean. Within each of the 12 major watersheds, citizens should be involved in developing shared visions of social, economic, and environmental health. Unlike some educational programs, the emphasis should not be on materials development but on encouraging citizen participation. Existing information exchange and peer support networks will be utilized and supplemented as necessary. Examples include chapters of the Sustainable Farming Association of Minnesota, Clean Up our River Environment, Land Stewardship Project, Friends of the Minnesota Valley, Coalition for a Clean Minnesota River, Citizens for Big Stone Lake, ridge till clubs, and other groups where farmers and urban residents are encouraged to share information on sustainable practices.

Enforce existing laws

Minnesota has many laws designed to protect water quality. Unfortunately, the laws are not always enforced. A strengthened and coordinated system of enforcing existing environmental laws is needed at both the state and local levels. To start, the newly formed Minnesota River Commission should convene a conference on enforcement to develop a thorough assessment of enforcement problems. Additional resources will be needed to train enforcement staff. We will need to hire more DNR conservation officers and other staff. We should appoint a Minnesota River ombudsperson who will act to ensure that violators of the law are prosecuted when a state or county government has failed to do so. And the Office of the Legislative Auditor should conduct periodic audits of state and local governments charged with enforcement activities.

DATE: March 15, 1999

TO: Board Members

FROM: Al Kean, Chief Engineer *AmK*

SUBJECT: Flood Storage Easements Pilot, Draft Proposal from Wild Rice Watershed District

The subject draft proposal was hot off the press on 3-12-99. Details about policy and procedure proposals are being worked out.

Summary of Current Understandings about the Proposal

- 1) Wild Rice WD staff and managers believe the time is right for a flood storage easement "program" that would provide an alternative in small watersheds to drainage improvements for flood damage reduction, as well as a way to achieve water quality and other natural resource management benefits. A program for state and local financing of easement acquisition and construction administered by the watershed district is envisioned, similar to the farmstead ring dike program in the Red River basin. This program would be integrated with the Wild Rice WD "Systems Approach" to water management.
- 2) Flood storage easements would allow continued agricultural uses of the land such as haying or grazing.
- 3) The Wild Rice WD would be the easement holder and would assume responsibility for operation and maintenance of flood storage easement sites.
- 4) The local share of easement acquisition, construction and future operation and maintenance costs would be financed similar to other watershed district projects.
- 5) The watershed district would acquire permanent easements that could be modified or abandoned like other watershed district projects. (i.e. "The easement will remain in effect on the property for the life of the project.")
- 6) The total payment for the easement would not exceed 100% of the Assessor's Township Average Market Value, or the individual parcel assessed value.
- 7) The proposed program would pay the same total flood storage easement payment independent of the land being enrolled in other federal and state programs, such as CRP (and RIM limited duration easements?). The objective here is simplicity, including the rationale that flood storage would be permitted on land with an existing CRP contract and would be permanent.
- 8) Design and monitoring procedures would generally follow the "Minnesota Wetland Restoration Guide" authored by the BWSR. Embankment heights would generally be limited to 5 feet or less to avoid the need for a state dam safety permit.

Current Issues and Discussion

- 1) Funding for this pilot is part of a RIM and PWP appropriation. RIM statutes currently do not

allow taking a RIM easement on land that is and will remain enrolled in a CRP contract. An effort is being made to have this provision of RIM statute changed during this legislative session. A separate new program for flood storage easements could avoid this constraint. Many of the potential flood storage easement sites identified by the Wild Rice WD to date are currently enrolled in CRP.

2) The proposal does not address how state and local flood storage easement acquisition costs would be split between the state and the watershed district, or how construction costs would be funded. Wild Rice WD and BWSR staff envision a 75% state and 25% local cost share for easement acquisition. The payment system for construction and conservation practice implementation are being worked out, including caps on technical and administrative costs.

3) The proposed payment of up to 100% of the assessed value of the land for flood storage on land currently enrolled in a perpetual RIM easement seems problematic. RIM easements provide for modification of the conservation plan, including additional water storage, with the approval of the landowner, BWSR and SWCD. It might be appropriate to treat a limited duration RIM easement like a CRP contract in regard to flood storage easement payments.

4) Watershed district acquisition of easements and assumption of operation and maintenance responsibilities, like for other watershed district projects, seems to have a lot of merit. This would provide a local funding mechanism, have essentially all of the easement processing at the local level and would minimize, or substantially eliminate, any future costs to the state for enrolled flood storage easement sites.

cc: Ron Harnack, Executive Director
Jim Birkholz, Assistant Director
Brian Dwight, Board Conservationist
Tim Fredbo, Easement Programs Manager
Jerry Bennett, Administrator, Wild Rice Watershed District

FLOOD STORAGE EASEMENTS PILOT PROGRAM PROPOSAL

prepared for the
Wild Rice Watershed District
by
Houston Engineering, Inc.

DRAFT

INTRODUCTION

The Wild Rice Watershed District, encompasses an area of approximately 2080 square miles, including the drainage basin of the Wild Rice River, which is directly tributary to the Red River of the North in northwestern Minnesota. The District also includes the watershed of the Marsh River and other small contiguous area directly tributary to the Red River of the North. The District office is located in Ada, Minnesota. Other larger municipalities within the District include Hendrum, Halstad, Shelly, Twin Valley, Ulen, Hitterdahl, Mahnomen, Felton, Borup, Gary, Perley, Waubun, Bejou, Ogema, and Naytahwaush. Figure 1 of the attachments is a map of the District showing county boundaries, major municipalities, major transportation systems, lakes and major water courses. The Watershed District incorporates lands of six counties including Becker, Clay, Clearwater, Mahnomen, Norman, and Polk.

The Wild Rice Watershed District can be characterized by three physiographic regions extending from the west boundary to the east boundary: the glacial lake bed deposits, the beach ridge area, and the glacial moraine. Figure 2 of the attachments is a map of the District showing the extent of these areas

The beach ridge area is located along the boundary of old Glacial Lake Agassiz. The level of Lake Agassiz fluctuated through the centuries, with the fluctuations leaving their mark on the land in the form of beaches. The beach ridge physiographic region of the District follows a north-south corridor approximately eight miles wide through the center of the District and is located on the east boundary of the lake plain.

The glacial moraine area is located east of the beach ridge physiographic region. The landscape of this region was formed by the soil, rocks and debris deposited by the glaciers. The glacial moraine area can be characterized as rolling prairie, with scattered areas of sharply rolling hills interspersed with lakes, ponds, wetlands, and bogs.

The direct watershed of the Marsh River and the western portion of the watershed of the Wild Rice River, below Twin Valley, are located in the lake bed of Glacial Lake Agassiz. The old lake bed is a flat, gently sloping area with distinct divides between streams. The western portion of the lake bed region is subject to periodic flooding by the Red River of the North. Stream banks are characteristically low and overflow floodwaters from one stream to another occurs from time to time in the lake bed region.

The eastern part of the watershed of the Wild Rice River lies outside of the lake bed in the glacial moraine reach. The topography is more irregular, with hills and numerous

lakes. In the beach ridge area, the river and streams are more deeply entrenched than they are to the west or east.

Like the three physiographic regions (Figure 2), there are three distinctive soil groupings in the Wild Rice Watershed District. The soils in the west tend to be clays of low permeability, colored with poor internal drainage, though very fertile for agriculture. The soils near and within the beach ridge area of the District tend to be clay loams and sandy loams mixed with sands and gravels and include some moderately steep slopes. The soils of the moraine area are mostly clays and silts, and those areas of more irregular topography tend to have a loamy texture and be dark to moderately dark colored and poorly to well-drained. This glacial moraine upland area has nearly level to steep slopes and many wet areas and pocketed depressions. Figure 3 is a map of the District showing general soil associations and their distribution.

Approximately 67% of the District is under cultivation, 17.8% in forest, and 7% in pasture. Most of the cropland is in the flat valley plain located in the western half of the Watershed District. There is significant forest acreage in the eastern part of the basin and along the Wild Rice River. Wetlands and open water areas amount to about 6.9% of the total land use and are located primarily in the eastern half of the District.

PROJECT OBJECTIVE

Flooding within the Wild Rice Watershed District is virtually an annual occurrence caused by either spring snowmelt, alone or in conjunction with spring rains, or excessive summer rainfalls.

The objective of this project is to implement relatively minor structural improvements and flood storage easements that will reduce potential flood damage while enhancing the environment. This program will result in local flood damage reduction through the use of small dispersed detention sites. This small scaled approach to flood mitigation results in limited land purchase and thus reduced project costs. The flood storage easement will be recorded on the property, however allows the landowner to continue agricultural practices of other uses on the property.

The project will provide many benefits including: flood protection; water quality improvement; wildlife habitat enhancement; erosion control; as well as opportunities for recreation and aesthetic appreciation.

FLOOD PROTECTION

This program will provide relatively small detention sites within the upper reaches of sub watersheds. These detention sites are intended to significantly reduce peak flows downstream through the retention of runoff near its origin. Runoff retained will then be slowly released, reducing peak flows, decreasing soil erosion and reducing local property damage downstream.

WATER QUALITY IMPROVEMENT

Water quality improvements will result from the entrapment of nutrients and sediments that would otherwise enter adjacent lakes, streams, and ditches. The drainage area of these sites will be primarily agricultural lands, and thus through retention, excess agricultural chemicals and organic matter leaving the site will be reduced.

WILD LIFE HABITAT ENHANCEMENT

The flood storage area may provide essential habitat for many different types of wildlife. The resultant vegetation may result in increased nesting areas, protection, and food sources for many species of birds and other mammals.

EROSION CONTROL

The reduction in peak discharge and slowed release of runoff will reduce erosion potential both at the site, as well in the downstream rivers and channels.

RECREATION AND AESTHETICS APPRECIATION

Many of the lands included in this program will no longer be used for agricultural production. The land will instead become covered with vegetation and result in prime wildlife habitats. These areas may be used for a variety of activities including, hunting and trapping, bird watching, nature observation, aesthetics, education, and scientific research. A monetary value for this benefit is difficult to quantify.

EASEMENT OBJECTIVES AND SITE SELECTION RATIONAL

The project involves the use of small-scale dispersed detention sites to promote flood damage reduction and environmental enhancement. The flood storage easement provides a method to purchase limited property rights on relatively small parcels of land. This reduced land purchase results in increased project feasibility and simplified project initiation. The landowner is able to retain ownership of his/her property and the public receives flood storage, resulting a win-win for both parties.

The objective of the easement is to purchase rights on specific areas within a sub-watershed for the purpose of flood storage. These rights include:

- the right of ingress/egress for the purposes of construction and maintaining required structural components.
- the right to retain runoff on the land until which time that it can be slowly discharged from the site reducing potential erosion and reducing local flood damages downstream.

The site selection will be limited by location, topography, and overall cost-effectiveness of flood water storage. Sites should be located within the upper reaches of a sub-watershed where known flood damages occur downstream. This location criteria allows for maximum flood damage reduction benefit with the least amount of structural improvements. If possible, the sites should be located in areas where the existing topography and physical features will minimize required improvements and maximize runoff retention. Existing ridges, knobs, swales, depressions, and other existing physical features should be identified and utilized to minimize construction costs.

The overall cost-effectiveness of each site will be measured based on a combination of project costs versus volume of storage obtained. A guideline for determining project feasibility would be if the overall costs are less than \$1,000/AF of storage obtained. This measure would be based on the entire project and not limited to individual detention sites within the project.

PAYMENT SYSTEM

As a result of the wide diversity of locations and landowners involved in this project, it is difficult to provide precise guidelines that should be implemented to deal with a payment system applicable to all lands. Many of the involved lands may currently be included in existing governmental supplement programs with varying contract terms. The following list is intended to address a variety of potential situations and recommended action:

FLOOD STORAGE EASEMENT:

The flood storage easement will be the first method of flood storage acquisition. The flood storage easement would be purchased from the landowner for a value not to exceed 100% of the Assessor's Township Average Market Value, as published annually by the MN Department of Revenue, or the individual parcel assessed value as recorded in the county auditor's office. For this option the current landowner will retain ownership of the involved parcel but the Watershed District will receive an easement on the property for purposes of construction, inspection, maintenance, and runoff detention. The advantages to the landowner, are that the land may continue to be used for agricultural purposes, such as haying or grazing, or for recreational purposes such as trapping and hunting. The landowner will, however, continue to pay property taxes on the parcel. The flood storage easement will be transferred to the Watershed District for the life of the project.

FEE SIMPLE LAND PURCHASE:

Under some circumstances it may be necessary to purchase the parcel of land from the current owner instead of acquiring a flood storage easement. Under these circumstances the parcel would be purchased from the current owner for the same cost as the flood storage easement, not more than 100% of the Assessor's

Township Average Market Value, as published annually by the MN Department of Revenue, or for the individual assessed value as recorded in the county auditor's office. The land would then be permanently owned and maintained by the Watershed District.

FLOOD STORAGE EASEMENT ON LANDS CURRENTLY INVOLVED IN THE FEDERAL CRP (CONSERVATION RESERVE PROGRAM)

Some of the land desired for the Flood Storage Easement Program may currently be enrolled in existing governmental supplement programs. Each of the governmental programs has different usage requirements, and thus the land acquisition method will need to be tailored to meet these criteria. The following method will be used when dealing with lands enrolled in the existing federal Conservation Reserve Program (CRP). Landowners enrolled in federal CRP receive annual payments based on the duration of contract selected. To deal with these wide variations, the flood storage easement would simply be purchased from the landowner at the same rate as for lands not enrolled in CRP. The rate will not exceed 100% of the Assessor's Township Average Market Value, as published annually by the MN Department of Revenue, or the individual parcel assessed value as recorded in the county auditor's office. For this option, the current landowner will retain ownership of the involved parcel, but the Watershed District will have an easement on the property for purposes of construction, inspection, maintenance, and runoff detention. The easement will remain in effect on the property for the life of the project.

If the landowner desires to sell the parcel instead of granting an easement, the purchase price will be the same as the easement price, however the CRP contract will then revert to the Watershed District.

FLOOD STORAGE EASEMENTS ON EXISTING RIM (REINVEST IN MINNESOTA) PROGRAM LANDS:

Approval from the Board of Soil and Water Resources would be required prior to acquiring flood storage easements on lands enrolled in the existing RIM Program. The flood storage operation plan and additional hydraulic information would be required to ensure compliance with existing RIM program requirements. After approval, the easement would be purchased for a price not to exceed 100% of the Assessor's Township Average Market Value, as published annually by the MN Department of Revenue, or the individual parcel assessed value as recorded in the county auditor's office. The actual purchase price would be established under the discretion of the local Watershed District.

If the landowner desires to sell the parcel, the purchase price will be the same as the easement price, and the requirement placed on the land as part of the RIM program would still apply.

EASEMENT ACQUISITION PROCEDURES

The easement acquisition procedures for this project will involve a number of steps leading from problem identification to issuing easement/purchase payments.

The first step in the process of the Flood Storage Program is "problem identification". Many of these problems can only be identified by the landowners and thus public advertisement of the program is essential. People involved with the county water management programs, soil and water conservation services, highway departments, township boards and other water resource personnel are also often sources of existing drainage problems.

After the problem has been identified, the specific storage site(s) will need to be identified using USGS Quadrangle Maps, aerial photos, or other methods. This method will allow the watershed district to identify approximate flood pool sizes for the purpose of meeting with affected landowners. Prudent information such as drainage areas, storage volumes, and preliminary layouts should be determined prior to meeting with landowners.

Once the preliminary study is complete, representatives from the Watershed District will meet the landowner(s) to determine interest in the project. At this preliminary meeting only approximate calculations and conceptual design will be known, however this should be enough information for landowners to make a decision on whether or not they are interested in the program. The objective at this phase is to get an option for easement/purchase the required land prior to proceeding to the next step. Circumstances may vary and additional information may be required before landowners feel comfortable with a decision to proceed. The applicable purchase price options will be included as part of the signed option for easement/purchase.

This option for easement/purchase will allow the process to continue knowing that if a site is determined feasible that the landowner has agreed to sell it. This method will eliminate the possibility of expending funds on unavailable sites. After the option has been attained, a detailed survey of the site can be completed. A hydrologic and hydraulic analysis, preliminary design, and cost estimate will be developed to determine the overall cost effectiveness of the potential site(s). Note that this cost estimate will need to include all costs related to the project including, but not limited to, construction, engineering, surveying, construction administration, legal council, land acquisition, permitting, meetings, and general administration.

Based on the overall cost effectiveness of the site(s), a decision to proceed or abandon the project will be reached. A guideline to determine cost effectiveness will be project with total costs of less than \$1,000/acre-ft of storage. The project feasibility would be calculated based on the combination of all individual detention sites proposed within the study area. Note that this is only a guideline and actual feasibility determination will likely involve other factors.

If a decision to proceed with the project is reached, the option for easement/purchase will be exercised, and the landowner paid at the per acre price established in the option. Note that, if possible, the easement will be based on an elevation contour to minimize land costs, however special circumstances may require a survey to square off of the parcel for ease of future crop production. Once the option is exercised and the necessary legal obligations are met, final design and construction can follow.

DESIGN AND CONSTRUCTION PROCESSES

Design procedures will generally follow the "Minnesota Wetland Restoration Guide" as prepared by the Minnesota Board of Water and Soil Resources, dated December 1992. This guide breaks down the design of wetlands into two categories; wildlife production and flood control. The purpose of this project is primarily flood control and flood damage reduction. As a result, the hydrologic and hydraulic design may vary from the recommendations of wetlands manual.

Each site will consist of earthen embankments, spillway systems, or a combination of both. Design and construction of the earthen embankments will follow either the criteria presented in the wetland restoration guide, or the specifications of a licensed Professional Engineer, depending upon the drainage area and size of the project.

There will be two different types of spillways used in the project; principal and emergency. The principle spillway is used to control the inflow and outflow from the detention site. This spillway will be designed to attain maximum flood detention and provide local flood damage reduction. An emergency spillway will be added to safely discharge runoff that exceeds the maximum capacity of the site. This structure will protect the embankment from damage and adjacent property from potential flooding. The target detention criteria for this program are as follows:

Hydraulic Design of Primary Spillway

INFLOW = 50-Year/24-Hour → OUTFLOW = 1 to 2-Year/24-Hour

Hydraulic Design of Emergency Spillway: 100-Year/24-Hour at 1 ft. depth

Note that the above listed design criteria are only targets and the actual design will depend on the location, topography, available storage, and overall cost-effectiveness of each site. Smaller diameter trickle tubes will also be utilized for either sites with relatively small drainage areas, or in conjunction with principle spillways.

MONITORING PROCEDURES

The Wild Rice Watershed District will assume responsibility for the operation and maintenance of each site upon construction completion and project acceptance. The operation and maintenance of the sites will then remain with the District for the life of the project.

INSPECTIONS

As suggested by the "Minnesota Wetland Restoration Guide", it is essential that each site be checked periodically for the first three years following the initial construction. This inspection and any required maintenance should be completed a minimum of four times during each year. The timing of each inspection, as suggested in the Board of Water and Soil Resources guidelines, is listed below:

- 1) Late Winter - shortly before spring thaw.
- 2) Early Spring - following the initial spring runoff
- 3) Late Summer - early September
- 4) Late Fall - before winter freeze-up

The results of these and all inspections should be recorded and kept on file in the office of the Wild Rice Watershed District. The reports should describe the conditions found and list any corrective action needed with a recommended time frame to complete each action. Note that inspections of each site will also be required following any flooding events that occur during this initial phase.

Following the initial 3-yr. phase, the Watershed District will make inspection annually in May or June, after severe floods, and after the occurrence of any unusual conditions that may adversely effect the structural elements of the site.

MAINTENANCE

Each site will require periodic maintenance. Proper maintenance will provide for the protection of existing structural components. It is necessary that the required maintenance be performed in a timely manner. The costs associated with the maintenance will ultimately be the responsibility of the Watershed District. The lack of required maintenance could result in the degradation of the site, and may lead to a hydraulic failure.

ROUTINE MAINTENANCE

The routine maintenance will involve mowing or spraying to prevent the growth of trees and brush, filling to repair damage caused by burrowing animals or erosion, and re-grading to correct settlement of the embankment.

Spillways:

The inlets need to be clear of all trees and other debris that could result in the interruption of flows. Trash racks that are obstructed by debris will

greatly reduce the hydraulic capacity of the spillways and should be cleaned frequently. The emergency spillways will require periodic mowing and should be checked for erosion and cracking after each use. The primary inlet, depending upon type, should be checked during each inspection for cracks, spalling, joint separation, or similar.

Discharge Area:

High flow from discharge pipe(s) may result in erosion and reduce the overall stability of the site. Frequent inspections of this area, and stabilization of subsequent erosion problems may be required.

Seepage:

Failure of embankments can occur if seepage through the embankment has sufficient velocity to carry away soil particles, this process is called piping. Inspection of the embankments for wet spots, boils, sinkholes or flowing water is an effective way to identify potential seepage problems. It may be reduced through blocking inflow areas with clay soil, plastic, or other impermeable materials. Immediate action should be taken to address seepage or piping problems. Seepage locations, rates, and changes should be closely monitored.

Overall Embankment:

No trees or brush shall be allowed to grow on the embankment. The embankment should be mowed, sprayed, or burned to control weeds and woody vegetation. Any trees or brush should be removed from the embankment areas on a regular basis. The embankment should be checked for cracks, slumps, erosion, scour and vegetation condition, and repaired accordingly. The embankment should be checked, and repaired as necessary, for damage caused by burrowing animals or erosion. Grading may be necessary to offset settlement of the embankment.

Concrete Components:

If concrete components are implemented as part of the design, the components should be inspected and all necessary repairs to correct spalling, cracking, or other structural deficiencies should be completed within a timely fashion.

EMERGENCY MAINTENANCE

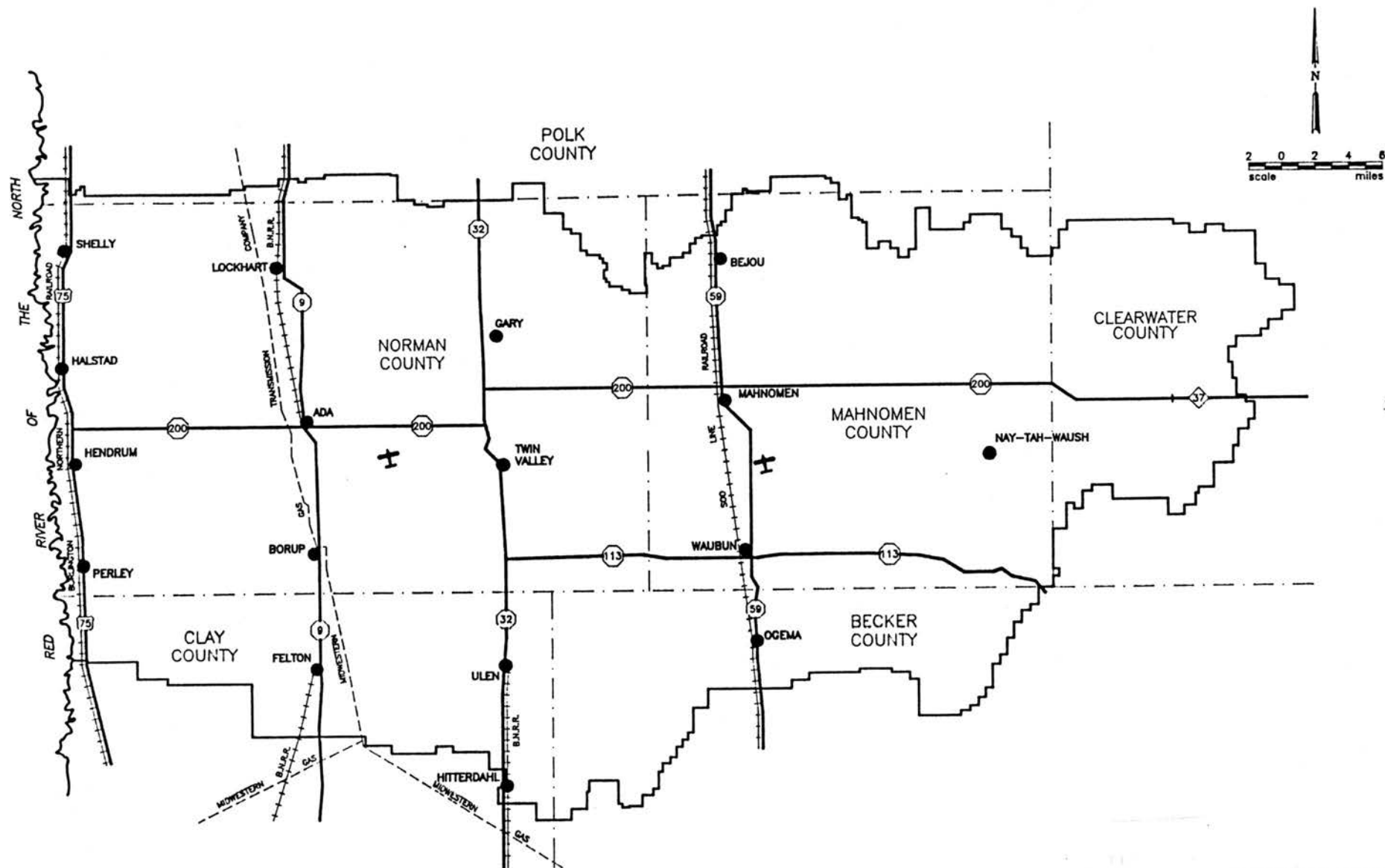
If representatives of the Wild Rice Watershed District determine that immediate repairs or protective measures are necessary to preserve the integrity of the site, they shall, without delay, obtain the materials, labor, and equipment required to perform the necessary work on a force account basis. Following the emergency, a

full inspection of the site should be completed, and all necessary repairs accomplished.

CONCLUSION

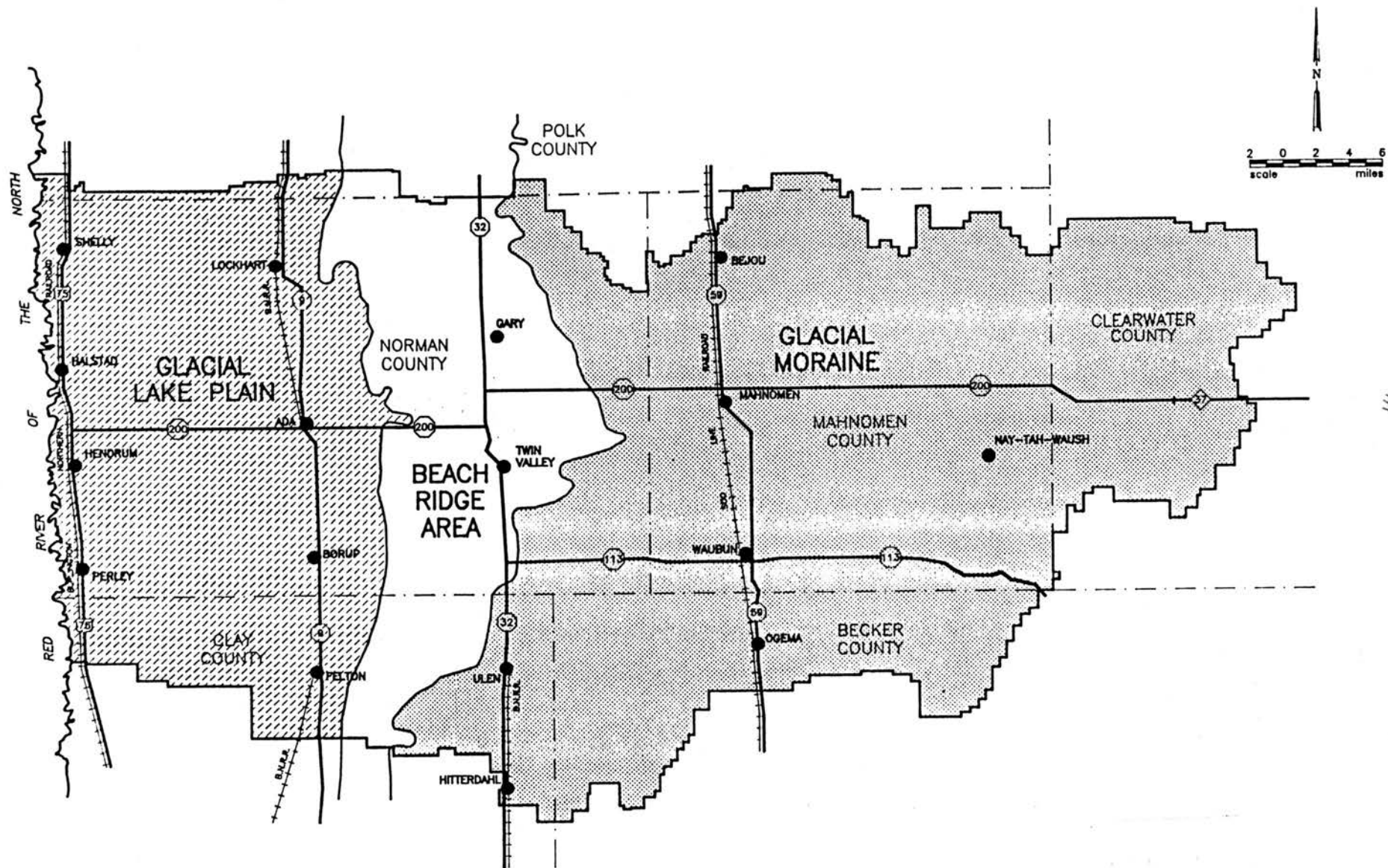
Flooding within the Wild Rice Watershed District is virtually an annual occurrence. The purpose of this program is to implement relatively minor structural improvements and flood storage easements that will reduce potential flood damage while enhancing the environment. This program will result in local flood damage reduction through the use of small dispersed detention sites. In addition to flood damage reduction, the project will provide many other benefits including: water quality improvement; wildlife habitat enhancement; erosion control; as well as opportunities for recreation and aesthetic appreciation. We feel that the Flood Storage Easement Pilot Program is a worthwhile project and may become a beneficial flood damage reduction tool throughout the Red River Basin, as well as throughout the state of Minnesota.

FIGURE 1



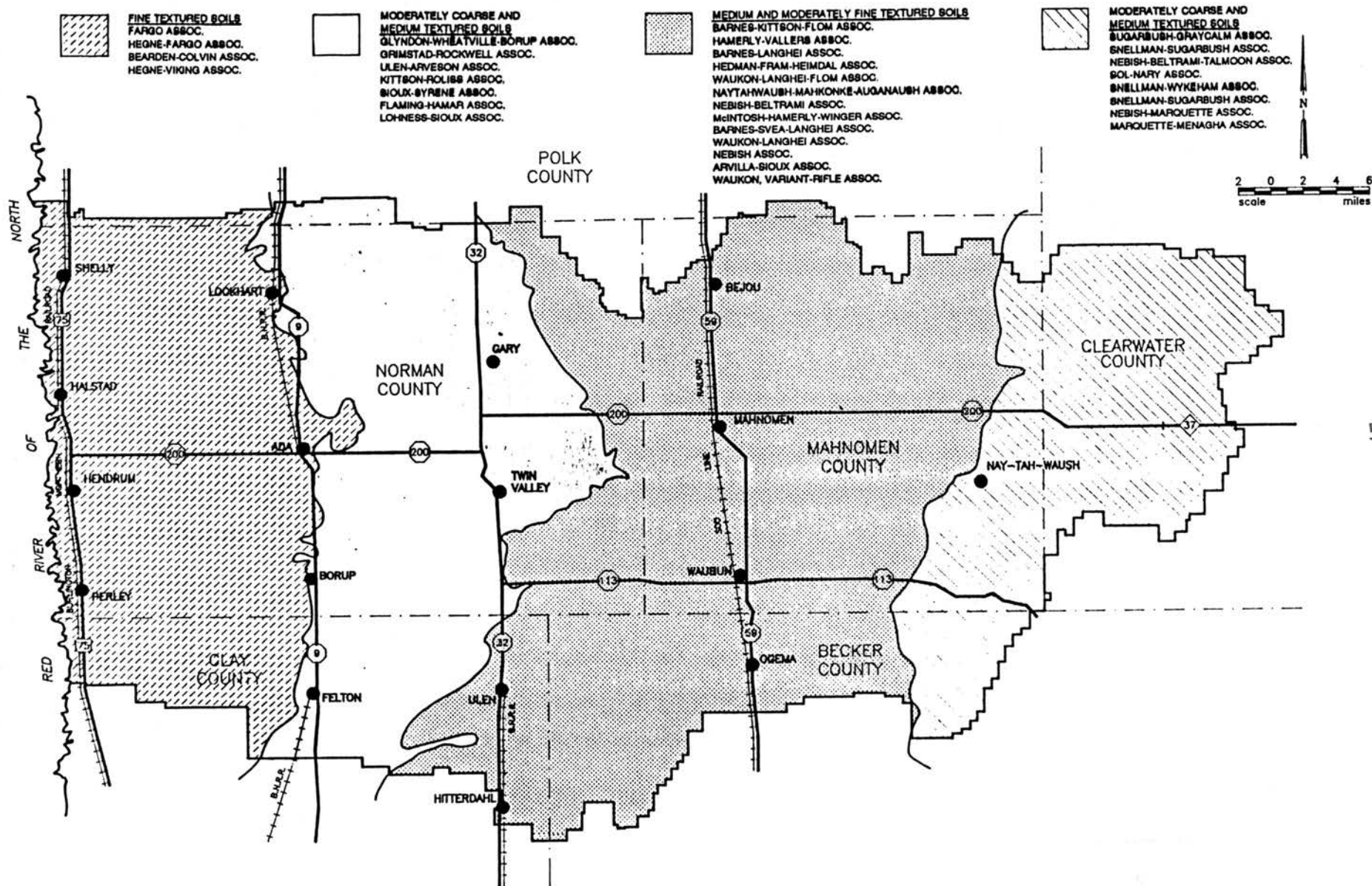
WILD RICE WATERSHED DISTRICT

FIGURE 2



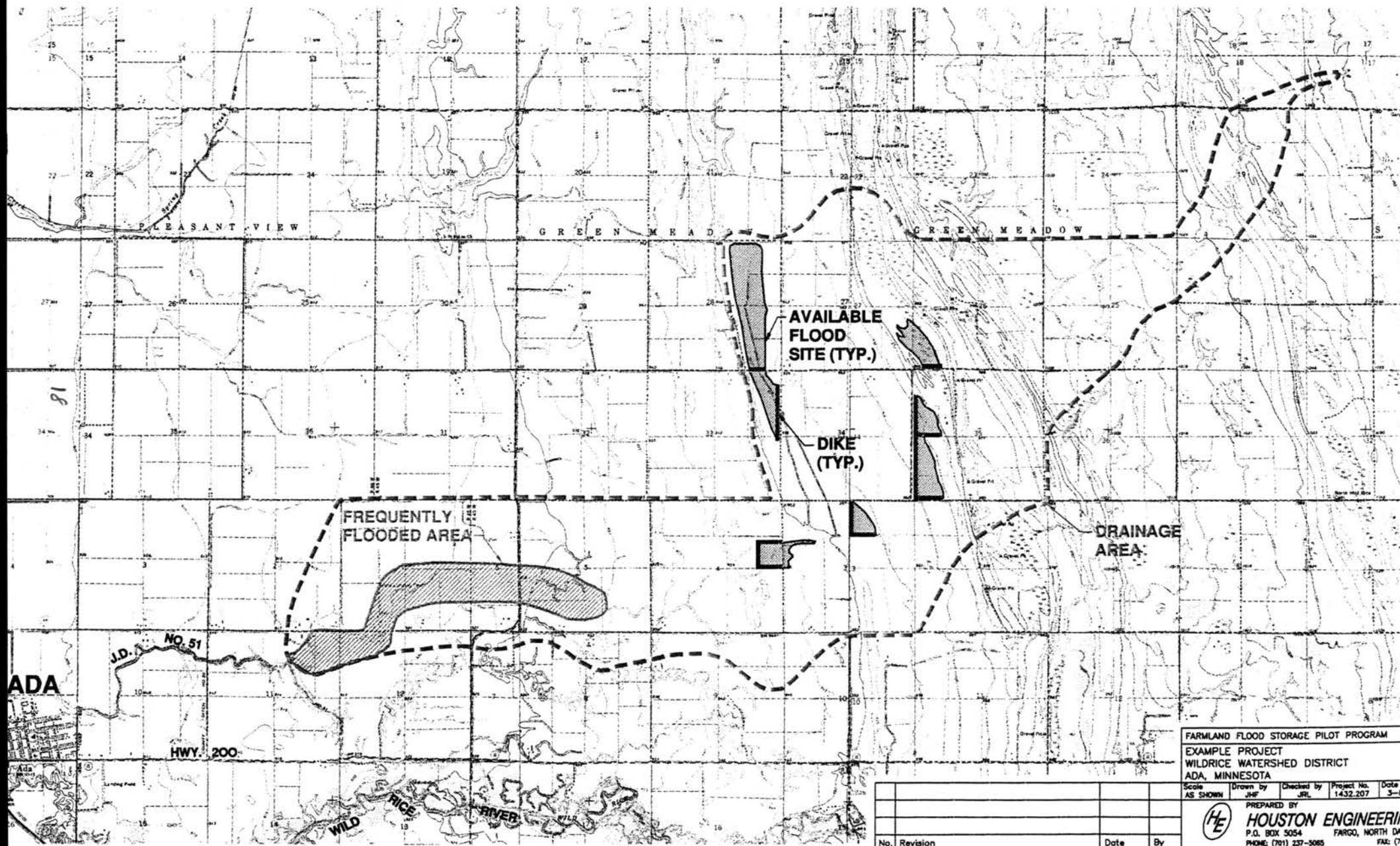
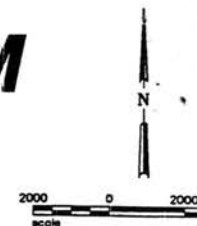
PHYSIOGRAPHIC REGIONS

FIGURE 3



MAJOR SOIL ASSOCIATIONS

FARMLAND FLOOD STORAGE PILOT PROGRAM EXAMPLE PROJECT



FARMLAND FLOOD STORAGE PILOT PROGRAM

EXAMPLE PROJECT
WILDRICE WATERSHED DISTRICT
ADA, MINNESOTA

Scale AS SHOWN Drawn by JHE Checked by JRL Project No. 1432.207 Date 3-8-



PREPARED BY
HOUSTON ENGINEERING
P.O. BOX 5054 FARGO, NORTH DAK.
PHONE: (701) 237-5085 FAX: (701)

No.	Revision	Date	By

March 10, 1999

TO: Board Members

FR: Tim Fredbo, Easement Program Manager 

RE: **INFORMATION** - RIM, CREP, RIM/WRP Status Report

This status report summarizes all the easement applications that we have approved for funding over the past year (1998). *Attachment 1* summarizes and shows the location of the approved applications across the state for all the different easement programs we now have; "regular" RIM Reserve and PWP, CREP, and the RIM/WRP wetland restoration partnership. *Attachment 2* shows activity associated with each county or SWCD.

Conservation Reserve Enhancement Program (CREP)

Seventy-five landowners have enrolled 2,447 acres into the CREP at cost to the state of \$1,666,076. Approximate federal cost to enroll these acres is \$2.4 million. If these 2,447 acres were enrolled into the RIM Reserve program without the federal CREP partnership, the state cost would be \$3,226,276. CREP has saved the state \$1,560,200 (\$3,226,276 - \$1,666,076) to place these acres under permanent conservation easements. Renville County has been the most active CREP county to date. They have commitments from 26 landowners covering 737 acres.

Our current easement program work plan for FY99-00 (1998 \$15.0 million appropriation) allocates \$6,875,000 for CREP easements. Subtracting CREP applications funded to date (\$1,666,076) leaves a balance of \$5,208,924 available for additional CREP easements.

RIM/WRP Wetland Restoration Partnership

In 1998 27 new restoration projects were brought into the partnership easement program with the NRCS. These approved projects encompass 1,791 acres of restorable wetland and adjacent upland. These easements will be secured at a total cost to the state of \$1,007,271. NRCS WRP cost for these easements is \$1,933,526. All the easements approved for this partnership in 1998 were funded with dollars freed up from 1996 and 1997 RIM applications that have been partnered on. As a result we still have the \$2.0 million available for additional partnership easements as outlined in our easement program work plan for FY99-00.

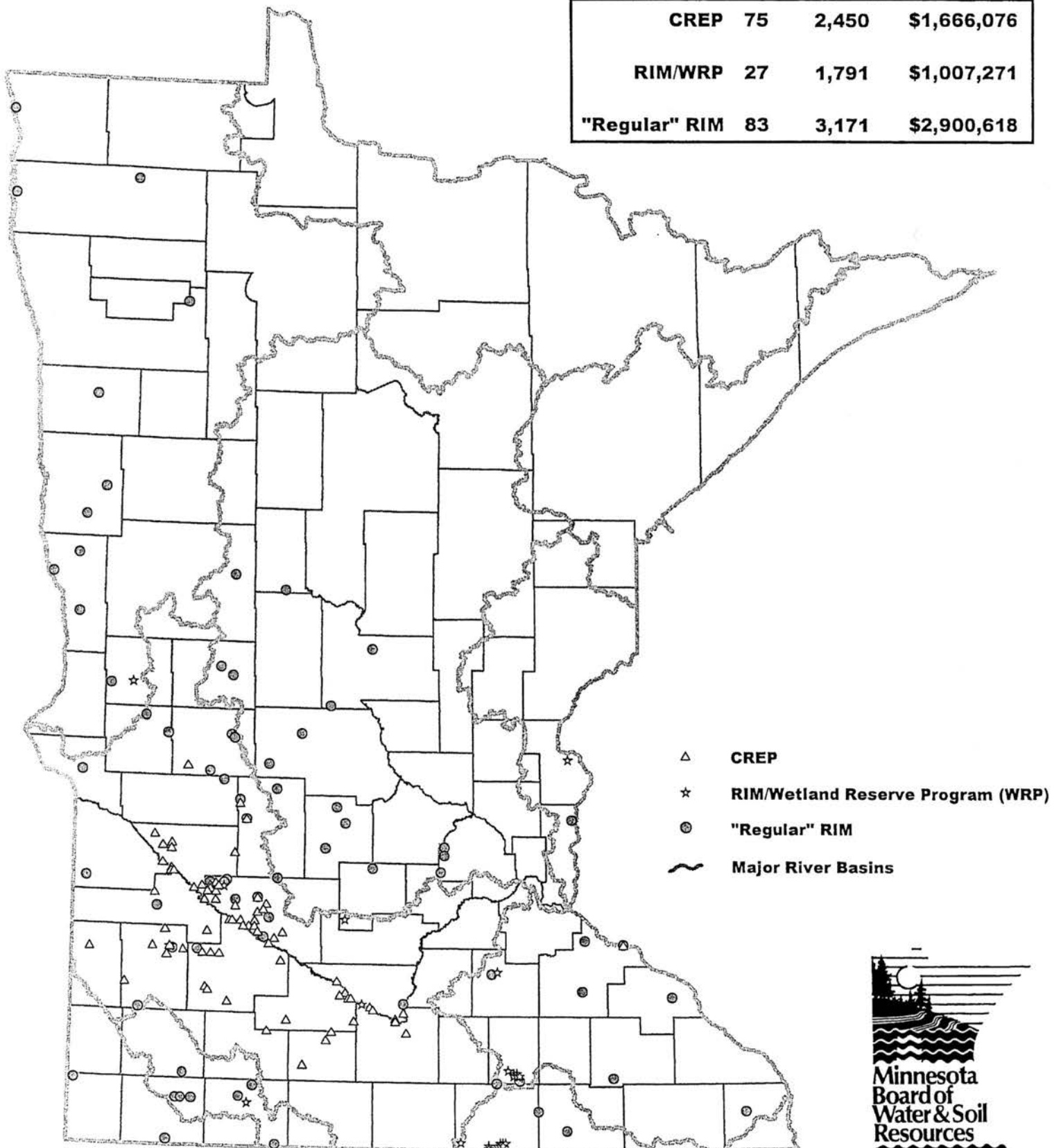
Since the inception of this partnership we have a total of 89 easements with landowners on 4,946 acres. To acquire these easements and install needed conservation practices will cost a total of \$6,756,250 (RIM cost = \$2,246,529, WRP cost = \$4,509,721). Without partnering it would have cost the state \$5,356,469 to acquire these easements. This partnership has saved the state \$3,109,940 (\$5,356,469 RIM alone cost - \$2,246,529 RIM partner cost).

"Regular" RIM Reserve (98-03 sign-up)

Results of the last RIM Reserve sign-up are depicted on *Attachment 3*. A total of 83 applications encompassing 3,171 acres have been approved at a cost of \$2,900,618. Total demand for this sign-up was \$4,760,816. Demand for RIM is down from the past as a result of the continuous non-competitive sign-ups available through CREP and RIM/WRP.

Conservation Easement Program Approved Applications in 1998

	Number of Easements	Acres	Dollars
CREP	75	2,450	\$1,666,076
RIM/WRP	27	1,791	\$1,007,271
"Regular" RIM	83	3,171	\$2,900,618



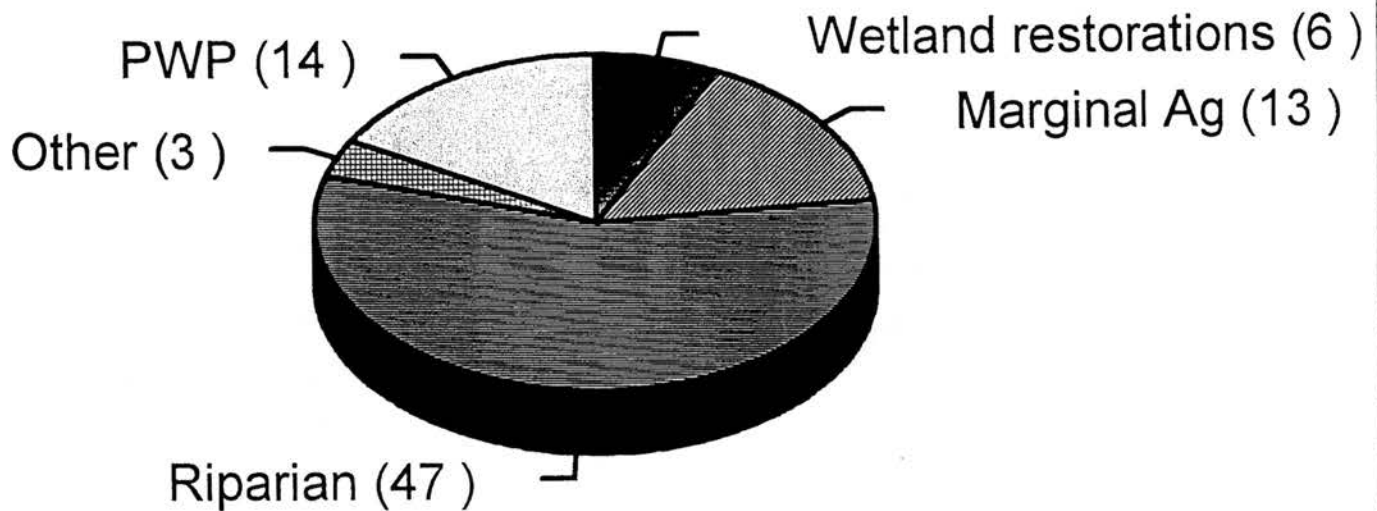
**1998 Conservation Easements
(approved applications)**

SWCD	CREP		RIM/WRP		RIM		TOTAL	
	Easement Acres	Total Payments	Easement Acres	Total Payments	Easement Acres	Total Payments	Easement Acres	Total Payments
Big Stone	0.0	0.00	0.0	0.00	132.2	83,191.62	132.2	83,191.62
Blue Earth	0.7	469.00	102.0	59,363.39	0.0	0.00	102.7	59,832.39
Brown	162.8	131,231.07	0.0	0.00	0.0	0.00	162.8	131,231.07
Chippewa	275.2	217,977.64	0.0	0.00	0.0	0.00	275.2	217,977.64
Clay	0.0	0.00	0.0	0.00	40.3	17,456.21	40.3	17,456.21
Cottonwood	47.6	38,556.28	0.0	0.00	0.0	0.00	47.6	38,556.28
Douglas	0.0	0.00	0.0	0.00	59.0	20,163.03	59.0	20,163.03
Freeborn	0.0	0.00	695.2	372,296.88	55.7	71,442.95	750.9	443,739.83
Goodhue	0.0	0.00	0.0	0.00	32.7	37,423.88	32.7	37,423.88
Grant	0.0	0.00	116.6	90,881.72	17.2	13,282.53	133.8	104,164.25
Hennepin	0.0	0.00	0.0	0.00	89.2	178,492.59	89.2	178,492.59
Root River	0.0	0.00	0.0	0.00	55.0	51,530.53	55.0	51,530.53
Jackson	0.0	0.00	52.6	28,911.07	258.2	327,848.32	310.8	356,759.39
Kandiyohi	5.5	3,776.63	0.0	0.00	32.2	19,281.15	37.7	23,057.78
Kittson	0.0	0.00	0.0	0.00	56.0	40,242.16	56.0	40,242.16
Lac Qui Parle	0.0	0.00	0.0	0.00	13.5	6,947.37	13.5	6,947.37
Lincoln	27.2	17,131.10	0.0	0.00	0.0	0.00	27.2	17,131.10
Lyon	284.5	206,379.96	73.0	33,901.24	135.4	128,396.07	492.9	368,677.27
McLeod	0.0	0.00	43.6	24,150.35	9.5	11,338.44	53.1	35,488.79
Marshall	0.0	0.00	0.0	0.00	102.6	30,360.09	102.6	30,360.09
Meeker	0.0	0.00	0.0	0.00	56.4	30,134.19	56.4	30,134.19
Morrison	0.0	0.00	0.0	0.00	122.0	52,743.32	122.0	52,743.32
Mower	0.0	0.00	0.0	0.00	30.8	36,949.69	30.8	36,949.69
Murray	0.0	0.00	0.0	0.00	5.8	5,503.53	5.8	5,503.53
Nicollet	564.7	433,892.87	0.0	0.00	88.0	131,916.32	652.7	565,809.19
Nobles	0.0	0.00	0.0	0.00	47.7	47,712.04	47.7	47,712.04
Norman	0.0	0.00	0.0	0.00	33.1	16,213.04	33.1	16,213.04
Olmsted	0.0	0.00	0.0	0.00	54.3	37,211.76	54.3	37,211.76
East Ottertail	0.0	0.00	0.0	0.00	11.2	4,819.70	11.2	4,819.70
East Polk	0.0	0.00	0.0	0.00	150.0	51,987.00	150.0	51,987.00
Pope	33.0	21,058.51	0.0	0.00	139.4	91,848.18	172.4	112,906.69
Redwood	208.8	132,132.00	0.0	0.00	60.9	69,920.59	269.7	202,052.59
Renville	737.2	506,311.45	148.6	71,946.11	256.1	295,383.28	1,141.9	873,640.84
Rice	0.0	0.00	47.1	12,840.00	26.5	35,297.01	73.6	48,137.01
Rock	0.0	0.00	0.0	0.00	81.5	49,707.16	81.5	49,707.16
Stearns	0.0	0.00	0.0	0.00	199.0	79,091.88	199.0	79,091.88
Steele	0.0	0.00	494.8	284,152.20	35.0	37,289.38	529.8	321,441.58
Stevens	0.0	0.00	0.0	0.00	37.3	25,925.66	37.3	25,925.66
Swift	0.0	0.00	0.0	0.00	17.1	4,234.99	17.1	4,234.99
Wabasha	0.0	0.00	0.0	0.00	49.7	46,052.77	49.7	46,052.77
Wadena	0.0	0.00	0.0	0.00	37.0	10,677.67	37.0	10,677.67
Washington	0.0	0.00	0.0	0.00	9.7	15,202.75	9.7	15,202.75
Watonwan	90.9	89,626.63	0.0	0.00	0.0	0.00	90.9	89,626.63
Wilkin	0.0	0.00	0.0	0.00	117.1	82,903.21	117.1	82,903.21
Yellow Medicine	7.8	4,221.74	0.0	0.00	17.0	4,234.99	24.8	8,456.73

ATTACHMENT 2

RIM 98-03 Sign-up

breakdown by easement type



	Number of easements	Dollars	Acres
Total funded apps	83	2,900,618.07	3,171.9
Total pending apps	13	304,979.61	255.3
Total nonfunded apps	<u>42</u>	<u>1,555,218.16</u>	<u>2,093.3</u>
	138	4,760,815.84	5,520.5

Total MNRiver funded apps \$1,060,374.61 = 36.6%

	Number of easements	Dollars	Acres
Wetland restorations	6	170,702.92	269.1
Marginal Ag	13	399,467.63	504.8
Riparian	47	1,961,573.46	2,052.6
Other	3	103,797.07	78.5
PWP	<u>14</u>	<u>265,076.99</u>	<u>266.9</u>
Total	83	\$2,900,618.07	3,171.9

*Total of 138 apps received, totaling 5,520.5 acres and \$4,760,815.84

April 1999

**BOARD OF WATER AND SOIL RESOURCES
CONFERENCE ROOM, ONE WEST WATER STREET
ST. PAUL, MINNESOTA 55107
APRIL 28, 1999**

AGENDA

9:00 a.m.

Call Meeting to Order

Adopt Agenda

Approval of Minutes of March 24, 1999

Reports

- Chair - Kathleen Roer
- Executive Director - Ron Harnack
- Dispute Resolution Committee - Glenn Annexstad
- Education and Public Relations - Paul Krabbenhoft
- Cost-Share/Soil Conservation Committee - Dwain Otte
- Wetlands Committee - Darrell Bruggman
- Financial Oversight Committee - Ginny Imholte
- Administrative Advisory Committee - Kathleen Roer

Agency Reports

- Jim Anderson, Minnesota Extension Service
- Pat Bloomgren, Department of Health
- Sharon Clark, Department of Agriculture
- Rod Massey, Pollution Control Agency
- Allen Garber, Department of Natural Resources

Committee Recommendations

1. St. Louis County Comprehensive Protection and Management Plan - Dan Eklund - DECISION
2. Lake County Comprehensive Protection and Management Plan - Dan Eklund - DECISION

New Business

1. Cass SWCD Lakeshore Easement Work Plan Approval - Ron Shelito - INFORMATION

Old Business

1. Grants to SWCDs for Implementation of the Conservation Reserve Enhancement Program (CREP) - Greg Larson - DECISION
2. Flood Storage Easements Pilot, Wild Rice Watershed District Proposal - Al Kean - DECISION
3. Wetland Preservation Area Program Status - Barbara Ohman - INFORMATION
4. Generic Environmental Impact Statement (GEIS) on Animal Agriculture - Susan Schmidt - INFORMATION

Advisory Comments

- Minnesota Association of Conservation District Employees (MACDE)
- Minnesota Association of Soil & Water Conservation Districts (MASWCD)
- Minnesota Association of Townships (MAT)
- Minnesota Association of Watershed Districts (MAWD)
- Natural Resources Conservation Service (NRCS)

Upcoming Meetings

- Next BWSR Meeting, May 26, 1999
- Local Water Planners Conference, June 22-23, 1999, in Rochester

Noon

Adjourn



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Fax (507) 280-2875

Box 267
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Metro Region:

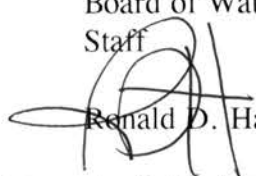
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DATE: April 20, 1998

TO: Board of Water and Soil Resources Members, Advisors, and Staff

FROM:  Ronald D. Harnack, Executive Director

SUBJECT: April 28, 1999 BWSR Meeting

The Board of Water and Soil Resources will meet on Wednesday, April 28, 1999, beginning at 9:00 a.m. The meeting will be held in the BWSR conference room at One West Water Street, St. Paul. The following is some background information regarding the agenda items:

Committee Recommendations

1. The St. Louis County Comprehensive Wetland Protection and Management Plan is the result of a two-year effort by the County's planning department and the Soil and Water Conservation Districts to provide a wetland regulatory framework that better fits the county's diverse land uses. Through the effort of local, state and federal agencies, the county has devised a plan exceeds the requirements under Minnesota Rule 8420.650 governing local wetland plans. This plan uses the Wetland Evaluation Technique (WET) to evaluate the functions of the county's wetland resources. Combined with a value matrix developed through citizen input, a wetland is categorized into one of four categories (priority, high, moderate, and low). Each of the categories contains standards that determine the flexibility or protection that a particular wetland will receive. Agency participation by the Minnesota DNR and the U.S. Army Corps of Engineers was critical in the analysis and categorization of wetland functions. Additionally, the agencies provide valuable information used by the citizens advisory group to categorize public values by their relative importance. The St. Louis County Board recently adopted this plan by ordinance to prepare for its implementation by staff. **DECISION**
2. Lake County Wetland Plan: Lake County also used a two-year process to develop their Comprehensive Wetland Protection and Management Plan. A multi disciplinary team comprised of state, federal, and local agencies staff coordinated the development of a plan modeled after Cass County's wetland ordinance. Like the Cass plan, this plan uses the MNRAM functional assessment process to determine wetland functions and associated values providing each wetland with a preliminary score. Upon a site visit by county staff,

the preliminary score will be reviewed and modified, if site conditions warrant such. The score determines the type and amount of flexibility or protection that a particular wetland will receive when an impact is proposed. Input from the Minnesota DNR and the U.S. Army Corps of Engineers staff were very valuable in the development of this plan. The plan meets or exceeds the standards in Minnesota Rule 8420.650, which governs local wetland plans. The County Board recently adopted this plan as part of their comprehensive plan and ordinance.

DECISION

New Business

1. Cass SWCD Lakeshore Easement Work Plan Approval: See attached. INFORMATION

Old Business

1. Grants to SWCDs for Implementation of the Conservation Reserve Enhancement Program (CREP): This is completion of an item from the February BWSR meeting. See attached. DECISION
2. Flood Storage Easements Pilot, Wild Rice Watershed District Proposal: A subcommittee of the Board (Ginny Imholte, Jerome Deal and Paul Krabbenhoft) met with BWSR and DNR staff, Jerry Bennet, Wild Rice Watershed District administrator; Curt Jacobsen, Wild Rice WD manager; and Cheryl Miller, National Audubon Society, on April 8 in Ada to refine the draft proposal presented in March. The issues raised at the March meeting by Cheryl Miller and Wayne Edgerton were discussed, as well as some new ideas and associated issues. Coordination is continuing prior to the BWSR meeting, with the intent of presenting a proposal for approval that will enable this pilot to move forward to get a project on the ground during calendar year 1999. DECISION
3. Wetland Preservation Area Program (WPAs) Status: WPAs were established with the original passage of the Wetland Conservation Act in 1991. This program provides an incentive to landowners to preserve existing wetland areas through a property tax exemption. Lands enrolled in WPAs must have a permanent restrictive covenant established. The county is reimbursed by the State Department of Revenue for lost tax revenue from the tax exemption.

Though this program was established in 1991, the program procedures and forms were developed in early 1998. The information was distributed to all counties and LGUs at that time. Since then, there has been interest expressed in the program, but no counties have begun accepting applications as yet. There were still a number of questions remaining before counties become comfortable with taking on the program. BWSR staff developed the WPA FAQ (Frequently Asked Question) sheet to help provide guidance to counties in accepting the program. INFORMATION

4. Generic Environmental Impact Statement (GEIS) on Animal Agriculture: Susan Schmidt, project manager, for the statewide Generic Environmental Impact Statement on Animal Agriculture, will provide an update on the status of GEIS, with emphasis on current literature review contracts and a phased statewide feedlot inventory process. INFORMATION

If you require additional information, please feel free to give me a call. Travel safely, I look forward to seeing you on the 28th!

**BOARD OF WATER AND SOIL RESOURCES
CONFERENCE ROOM, ONE WEST WATER STREET
ST. PAUL, MINNESOTA 55107
APRIL 28, 1999**

PRELIMINARY AGENDA

9:00 a.m. Call Meeting to Order

Adopt Agenda

Approval of Minutes of March 24, 1999

Reports

- Chair - Kathleen Roer
- Executive Director - Ron Harnack
- Dispute Resolution Committee - Glenn Annexstad
- Education and Public Relations - Paul Krabbenhoft
- Cost-Share/Soil Conservation Committee - Dwain Otte
- Wetlands Committee - Darrell Bruggman
- Financial Oversight Committee - Ginny Imholte
- Administrative Advisory Committee - Kathleen Roer

Agency Reports

- Jim Anderson, Minnesota Extension Service
- Pat Bloomgren, Department of Health
- Sharon Clark, Department of Agriculture
- Rod Massey, Pollution Control Agency
- Allen Garber, Department of Natural Resources

Committee Recommendations

1. St. Louis County Comprehensive Protection and Management Plan - Dan Eklund -
DECISION
2. Lake County Comprehensive Protection and Management Plan - Dan Eklund - DECISION

New Business

1. Cass SWCD Lakeshore Easement Work Plan Approval - Ron Shelito - INFORMATION

Old Business

1. Grants to SWCDs for Implementation of the Conservation Reserve Enhancement Program (CREP) - Greg Larson - DECISION
2. Flood Storage Easements Pilot, Wild Rice Watershed District Proposal - Al Kean -
DECISION
3. Wetland Preservation Area Program Status - Barbara Ohman - INFORMATION
4. Generic Environmental Impact Statement (GEIS) on Animal Agriculture - Susan Schmidt -
INFORMATION

Advisory Comments

- Minnesota Association of Conservation District Employees (MACDE)
- Minnesota Association of Soil & Water Conservation Districts (MASWCD)
- Minnesota Association of Townships (MAT)
- Minnesota Association of Watershed Districts (MAWD)
- Natural Resources Conservation Service (NRCS)

Upcoming Meetings

- Next BWSR Meeting, May 26, 1999

Noon

Adjourn

Resolution _____
MN Board of Water and Soil Resources (BWSR)

DRAFT

Date: April 28, 1999

Re: St. Louis County
Comprehensive Wetland Protection and Management Plan

WHEREAS, St. Louis County's Comprehensive Local Wetland Management Plan (hereafter, "the Plan") was submitted to the Board of Water and Soil Resources (BWSR) on April 1, 1999 and adopted by the County on March 9, 1999; and

WHEREAS, St. Louis County is a Greater than 80 percent area as defined in MN Rule 8420.0110, Subp. 20a, and has wetland covering over 30 percent of its 4,306,973 acres; and

WHEREAS, On February 25, 1997 the BWSR approved the wetland functional assessment methods used by the County per Minnesota Rules 8420.0650, Subp. 2, item a (2) and 8420.0540, Subp. 10, item G; and

WHEREAS, the Plan included active citizen and agency participation in developing the assessment methodology and management strategies. The Plan has been developed with the goal of providing clear guidance for future decisions concerning wetlands in the County. The Plan also integrates the wetland management categories with the other aspects of county water planning and protection; and

WHEREAS, staff from the Minnesota Department of Natural Resources, North and South St. Louis County Soil and Water Conservation Districts, the U.S. Army Corps of Engineers as well as the Minnesota Board of Water and Soil Resources provided significant contributions to the planning process. Staff from the Minnesota Pollution Control Agency also participated in planning meetings. St. Louis County incorporated agency comments into the Plan; and

WHEREAS, the Plan contains an excellent land use history and demographic information as it pertains to wetlands. The overall strength of the Plan is the development of specific management categories for wetlands that will result in protection of local wetland resources in proportion to their functions and related public values. Critical to the Board's review of this plan, the Plan does not "roll back" protection for any wetlands beyond that allowed under state law, but rather specifies detailed criteria for implementing any "flexibility" of standards. The Plan will provide the County with the guidance, standards and policies necessary to conserve wetland resources; and

WHEREAS, although the Plan does not always clearly differentiate between WCA and additional local controls and does not expressly state that parts of WCA outside the scope of the elements addressed in the Plan still apply within the County, these are elements of style and not substance which are best left to the local users of the Plan; and

WHEREAS, the Plan contains several areas where local staff opinion are presented in such a

manner to suggest the material as fact. This again is a matter of style not affecting substance;

NOW THEREFORE, in accordance with Minnesota Rules Chapter 8420.0650, Subp. 3, the BWSR finds that the Plan meets all the requirements of Wetland Conservation Act Rule and Law. The BWSR will continue to be an active partner in reviewing implementation of the plan on a regular basis. The BWSR would like to formally commend St. Louis County for a solid track record of WCA program administration and development of a Plan that integrates state and local standards in one process that aligns with other local, state and federal programs.

DRAFT

Kathleen Roer, Chair

Date

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**COMPREHENSIVE WETLAND PROTECTION
AND MANAGEMENT PLAN
OF
ST. LOUIS COUNTY, MINNESOTA**



Adopted: Tuesday, March 9, 1999

ST. LOUIS COUNTY'S COMPREHENSIVE WETLAND PROTECTION AND MANAGEMENT PLAN

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EXECUTIVE SUMMARY

There has been in St. Louis County wetland regulations for several decades but until 1992 those regulations were the sole responsibility of the Federal Government. This changed with the passage of the Wetland Conservation Act by the Minnesota Legislature in 1991 with counties and cities beginning local administration in 1992. It became apparent to the public and local governments that changes in the law were necessary in order satisfy concerns raised by citizens and wetland program administrators. This need for amendments eventually resulted in allowing local units of government to develop its own wetland plans that would more truly reflect local concerns and issues. The St. Louis County Board authorized such a planning effort in 1996 to be directed by the County Planning Department in cooperation with townships, cities, interested agencies and organizations, along with citizens. The County also contracted with RLK-Kuusisto to assist with plan development. The State of Minnesota through the Board of Water and Soil Resources provided grant assistance for this effort.

The planning effort centered in four areas and this Executive Summary provides an overview of each of them. Those areas are:

1. Background research on population trends and related demand on housing construction, mining activity, drainage ditches, forestry activity, peat lands, and inventory of County wetlands.
2. Examination of Wetland Functions within the County. Wetland Functions are those things that wetlands do for the environment and society. Wetland functions include such things as flood control, filtering out pollution, recharge of ground water, wild life habitat, economic such as peat harvesting, shoreland erosion control, education, fisheries habitat, and aesthetics.
3. Examination of Wetland Values within the County. Wetland Values are what we believe are important about wetlands. For example: a wetland may have significant value for flood control but if the area is primarily under public ownership and little development exist then the flood control issue becomes less important.
4. The development of policies, procedures, implementation strategies and regulations that address the issues ascertained during the planning effort.

Background Research:

State and Federal Statutes and regulations determine what constitutes a wetland. There are three factors that when present define the existence of a wetland. The first factor is vegetation in that there are certain plant species which primarily depend upon "wet soils" so that when they make up a majority of the plants in an area there is a strong possibility that a wetland exists. Vegetation that are hydric types includes sedges, rushes, cattail, alder, black spruce, black ash, or tamarack and many other types of species. Vegetation alone does not determine the existence of a wetland and there must also be the existence of Hydric Soils which are generally organic soils or mineral soils with high or perched water tables. The third factor is wetland hydrology during the growing season. If an area is typically inundated or saturated with water to the surface for more than 12.5% of the growing season it is a wetland. If such conditions exists between 5% and 12.5% of the growing season such land may be a wetland.

St. Louis County is conservatively estimated to have 31% of its total area in wetlands with another 6% of its total area in lakes and streams. The inventory figures are based on the National Wetland Inventory Maps (NWI) which according the County field experience underestimates the total wetland area. It is very likely that total area within the County that is actually wetlands probably exceeds 40% of total area. The completion of a County Soils survey along with ongoing County field work would assist in providing a more meaningful estimate of total wetland acreage.

The County Planning effort converted the wetland data found in the NWI maps to the more commonly understood eight wetland types. The most common wetland type in the County is Type 8 (Bog) with an estimated 822,817 acres followed by Type 6 (Shrub Swamp) with an estimated 274,204 acres. The least common wetlands were Type One (Seasonally Flooded) with 2,934 acres and Type Four (Deep Marsh) with 9,975 acres.

Map One shows communities within the County with 40% or more of total land area in wetlands according to the NWI maps. The map shows that the highest concentration of wetlands exist in south west St. Louis County and north of the Iron Range. Mining activity has likely had a significant impact upon wetlands within the County. The mining industry in recent years averages about 100 acres of wetlands impacted per year. This level of impact has likely been going on throughout the century and would likely explain the lower concentration of wetlands on the Iron Range. The Duluth area also has a lower concentration of wetlands according to the NWI maps. This in part may be the result of urbanization in this area but it also is the result of the NWI maps not identifying wetlands in the heavy clay soil area around Duluth. Duluth area wetlands also tend to be in smaller pockets of less than one acre and these small wetlands tend not to be shown on the NWI maps.

Wetland Function:

The determination of wetland function is a very important feature of any wetland program. There are numerous methodologies in existence that can be used to scientifically determine what a wetland does but it was the consensus of County staff that we needed a wetland assessment method that more specifically addressed the needs of this County. We were looking for a system that meets the following criteria:

1. The method should be scientifically defensible.
2. The method should be objective and repeatable. In general, the outcome should be the same for the rating of a particular function despite the particular evaluator.
3. The method should be practical to implement by evaluators with a general background in biology/natural resources and no specialized expertise. In general, the County has at its disposal persons qualified in environmental issues but given the large area of the County it is not realistic to bring in several experts to a site to perform an evaluation. The methodology selected must be able to be used by one person on site.

The St. Louis County Wetland Assessment Guide (SWAG) was developed with the above three objectives in mind. This guide was approved for use in St. Louis County by the Minnesota Board of Water and Soil Resources in February of 1998. This guide first requires the reviewer to define the wetland assessment area by answering a series of questions regarding the conditions found on site.

The Functional Assessment has been field tried at Reference Wetland Sites found throughout the County. These wetlands were identified by County Staff in cooperation with the consultant and are intended to provide a comparison with other similar wetlands. The County will continue to evaluate the SWAG for effectiveness and administrative purposes.

Once the wetland conditions are determined the reviewer then answers a series of questions with each question relates to various wetland functions. The reviewer must answer each question with a yes or no response. Those wetland functions are as follows: Flood Flow Alteration, Sediment Stabilization, Ground Water Recharge, Ground Water Discharge, Sediment/Toxicant Retention, Wildlife Habitat, and Aquatic Habitat.

The final step is to rate the wetland for each of the functions. The answers to the questions will determine whether or not the answer results in a high, moderate, or low function. The Wetland Assessment Guide defines what constitutes a high, moderate, or low criteria for each function. The results of this determination provides in part the basis for wetland replacement, restoration, filling and administration in the policy section of the plan.

Wetland Values:

Citizen opinion provides the basis for wetland values and the process used by the County was the use of a citizen advisory committee, attendance at individual town meetings, open houses, and public hearings. The County requested that each Town and City appoint a representative to serve on this committee. This committee also provided a liaison back to their community on the progress of the plan, review proposed policies, and comment upon the background information. The citizen committee also received information regarding wetland issues to assist them in understanding the wetland issues. The values were developed through the use of two surveys and discussion of the results. Surveys were also sent to town and cities who did not send a representative to the meetings so those communities could express their views on the issues.

The first survey identified the following wetlands as having a high value:

- Waterbird nesting area
- Waterbird migratory staging area.
- Wetlands located adjacent to trout streams.
- Wetlands adjacent to lakes and rivers.
- Wetlands near rare plants and animals.

The first survey identified the following wetlands as having low value:

- Common wetlands.
- Wetlands in prime commercial areas.
- Wetlands in prime industrial areas.
- Wetlands on agricultural lands.
- Wetlands on private lands.

The second survey provided more detail regarding wetland issues and values. It presented various wetland scenarios and asked questions regarding the level of protection the situation should afford the wetland. In general wetlands that had a clearly defined function such as protecting a trout stream or adjacent to a lake were rated very highly and the most protection were called for. Wetlands which had the least interest in protection were along major highways, areas with water and sewer, and in mining areas.

The citizens of St Louis County have mixed feelings regarding wetland issues. Most who have examined the issues do not advocate the wholesale draining and filling of wetlands. However, they clearly do not believe that every wetland has great value to the community and to the environment. They believe that a balance must take place between wetland preservation and the rights of the property owners. This balance can only be obtained when a wetland function is understood and the needs of the land owner are assessed in relationship with that function.

The Plan:

The Wetland Plan was developed with six objectives in mind. Those objectives relate to the need to get away from the one size fits all approach to wetland administration; developing a more efficient means of wetland program administration; improve wetland education efforts; developing an appreciation for a need to recognize other land use issues in relationship to wetland concerns, recognition of economic and housing issues within the watershed, and work with other wetland planning efforts.

The specific wetland policies address issues relating to: Program Administration, Government Relations, Economic Activity, and Wetland Impacts, Functions and Values. The policies identify those issues which relate to purely local issues, as well as, issues relating flexibility provisions of the existing wetland law, and those provisions specifically permitted by the Wetland Act.

The Wetland Plan will provide guidance to the County in several areas. First of all there will be a need to amend the County Zoning Regulations to bring into effect those standards that are regulatory in nature. Two examples of this is the enforcement provisions for wetlands filled without authorization and the makeup and role of the wetland technical committee. There will also have to be new administrative efforts including new replacement ratios of wetlands based on their location and value, certification of consultants, and possible joint powers arrangements with cities. There will also be increased educational efforts to better inform the public and officials regarding wetland issues. Finally, there will be a need for amendments to state statutes particularly relating to the definition of project which as presently defined presents significant administrative problems as well as fairness and environmental issues.

The wetland policies place the highest level of protection in shoreland areas. The plan as proposed does not permit any automatic exemptions for wetland filling within the principal structure setback area around lakes and rivers. This area typically ranges from 75 to 200 feet. The least area of protection are certain types of types one, two and six wetlands which the amount of filling permitted without replacement may approach two acres. It should, however, be remembered that there are federal regulatory issues relating to wetland filling under those circumstances.

ST. LOUIS COUNTY WETLAND PLAN

Introduction:

If the St. Louis County Wetland Plan is adopted and implemented as intended, the result will likely be an overall increase in wetland functions and values over that which is now being accomplished through the Wetland Conservation Act. This may not necessarily mean an increase in the quantity of wetland, but rather an increase in the quality of many wetlands through preservation, enhancement, restoration, and creation mitigation projects. This increase in quality will be primarily due to the County and the LGU's being able to focus preservation and mitigation requirements on higher functioning and higher value wetlands by using this plan. In addition, the plan encourages sensible use of wetland resources by implementing stricter sequencing and mitigation requirements for impacting wetlands that are high functioning and valuable to the County, while being more flexible in allowing minor impacts to low functioning and less valuable wetlands.

It is only through acceptance and understanding by the citizens that this plan can be successful. The citizens must believe that through this plan the County is doing its best to balance their rights and needs while at the same time protecting the wetlands that are essential for our environment. The plan's acceptance will depend upon continued public involvement in the planning process. A plan is a statement of a community's values and continued monitoring is needed to insure that these values are being followed. This is in contrast to the state regulations which while enjoying support among state wide groups has not been generally well received at the local level due to the top down style of decision making.

This wetland plan is divided into the following components:

1. Background information which provides the basis for decision making.
2. Citizen produced wetland values which is based on the work of the citizen advisory committee and the hearing process.
3. Wetland Plan objectives and policies that serves as a road map for wetland action in the County.
4. Reference Wetland and the St. Louis County Wetland Assessment Guide. This guide will combines the scientific wetland functions with citizen values in order to determine a "wetlands" value to an area.

The planning process does not end with the adoption of this plan. One future component would be the establishment of a wetland mitigation register . This would provide a means for linking those people with a need or potential need for wetland mitigation with landowners who would be willing to allow wetland mitigation on their property. There are likely a substantial number of citizens in the County who would like to have some type of wetland enhancement, creation, or restoration performed on their property, but they lack the resources (money, engineering design, and/or equipment) to complete it. The County could encourage landowners in this situation to sign up as potential wetland mitigation landowners. The County could utilize staff and other TAC members to arrange site visits with these landowners to evaluate wetland mitigation potential on their property. Once suitable sites are identified, potential applicants for wetland replacement plans can be linked to the landowners of these sites. By having the County and TAC members involved in mitigation site selection, the probability is higher that mitigation will be ecologically beneficial as compared to developers, landowners, and consultants selecting mitigation sites. This is because their search and selection of mitigation sites tends to be primarily focused on cost without consideration of wetland functions and values.

The County or local communities may also develop local wetland plans as a continuation of this planning process. The local plan could involve more detailed examination of wetland issues in a specific area with recommendations for what can and can not be done in specific wetland areas. The County's wetland plan is not able to provide that level of detail which would be of value to such areas but the plan does provide for guidance to such communities.

Finally as stated in the policy section this plan we undergo annual review by the County. This annual review and report to the County Board will point out areas that need improvement in assuring that we have achieved the desired balance between wetland protection and other public values of the County.

Acknowledgments:

Ken Larson served as project manager and coordinator of this project for RLK-Kuusisto, Ltd. Ken Powell of Westwood Professional Services, Inc. was a subconsultant for RLK-Kuusisto throughout most of this project. He was responsible for the County ditch system evaluation, development of the wetland functional assessment method, evaluation of reference wetlands, combining wetland values with functions, and providing the general comments at the end of this report. Jeff Smyser of RLK-Kuusisto provided the residential land demand, timberland and peat projections.

There are three staff members of County Planning who are responsible for assuring that this plan addresses the needs of the County. The staff members are: Mark Johnson, Scott Smith and Mary McKay.

St. Louis County has two Soil and Water Conservation Districts and both were involved in plan development. The staff people involved from those organizations were: Robin Payne of the South SWCD and Mark Lindhorst of the North SWCD. The County wetland technical committee worked extensively on this plan and in particular Tim Peterson of the Army Corp of Engineers was of particular value to the County in plan preparation.

Finally, this plan could not have been accomplished without the active involvement of the Citizen Advisory Committee. These citizens from towns and cities throughout the County worked hard attending meetings over a nearly two year period of plan development and brought back valuable information and comments from their own community during the planning process.

Chapter One: BACKGROUND STUDIES

The examination of background information that may impact wetland decision making is the first step in the planning process. The chapter addresses the following issues: Residential land demand, forestry production, mining, peat lands, county ditches, and inventory of wetlands. This information assisted those reviewing the plan in making recommendations regarding planning policies.

Part One: Residential Land Demand

Introduction

As part of wetland planning for St. Louis County, a residential land demand model was created to make projections for the County and smaller subareas of the County. The purpose of the model is to project the amount of land that will be needed for residential development. This projection will help understand how much development pressure there will be. The greater the demand, the greater the potential for wetland impacts from the new development. The projections are presented here first and an explanation of the model follows.

Projections

Subarea Projections: New Housing Units and Land Demand

Subarea	Estimated Units 1990	Projected Units 2010	New Units 1990-2010	Land Demand 1990-2010 (acres)
BABBITT area	1,047	1,061	14	57
COTTON area	288	292	4	16
ELY AREA	2,660	2,696	36	144
<i>Eveleth</i> <i>Gilbert</i> <i>Mt. Iron</i> <i>Virginia</i> COMBINED area	12,595	12,765	170	680
FLOODWOOD area	388	393	5	21
INDEPEND. area	1,887	1,912	25	102
GREENWOOD area	410	416	6	22
<i>Duluth</i> <i>Hermantown</i> <i>Proctor</i> COMBINED area	63,848	64,710	862	3,449
HIBBING area	12,099	12,263	163	654
ORR area	181	183	2	10
TOTAL	95,403	96,691	1,288	5,154

Methodology:

It is beyond the scope of this study to analyze the growth of the more than 100 individual cities and townships in the County. The study divided the County into 10 subareas. A representative community was selected for each subarea. In two subareas, data for several cities were combined since it is difficult to separate adjacent cities that form one urbanized area.

The representative communities are substitutes for their subareas in the model. The subareas combine to form the County. Thus, the total population of the communities substitutes for the population of the County.

Also, each community has a percentage of the combined total of all the representative communities. This percentage is used as the substitute for the subarea's percentage of the total County population.

These percentages are applied to County population projections to get a step-down projection for the subarea. The County average of persons per housing unit is applied to these subarea projections to arrive at a housing unit projection for each subarea.

The County projections used in the model are based on the 1990 census and the estimate for 1995 by Minnesota Planning. The 1990-95 growth rate was projected into the future to year 2010.

The complete model is attached as an Appendix.

Note: Ratio and percentage values shown in the tables are rounded. The computer spreadsheet model uses up to seven decimal places. Therefore, the results in the tables may not match the results of the calculations that use the rounded values.

source: U.S. Census, projections by RLK.

TABLE 1 Community Populations and County Projections

Community	1970	1980	1990	1995	2000	2010
ST. LOUIS COUNTY	220,693	222,229	198,213	198,879	199,547	200,890
BABBITT	3,076	2,435	1,562			
COTTON	301	396	429			
ELY	4,904	4,820	3,968			
<i>Eveleth</i>	4,721	5,042	4,079			
<i>Gilbert</i>	2,287	2,721	1,934			
<i>Mt. Iron</i>	1,698	4,134	3,362			
<i>Virginia</i>	12,450	11,056	9,410			
COMBINED	21,156	22,953	18,785			
FLOODWOOD			578			
INDEPENDENCE	1,993	2,640	2,814			
GREENWOOD			612			
<i>Duluth</i>	100,578	92,811	85,493			
<i>Hermantown</i>	6,737	6,759	6,761			
<i>Proctor</i>	3,123	3,180	2,974			
COMBINED	110,438	102,750	95,228			
HIBBING	16,104	21,193	18,046			
ORR	315	293	270			

1995 County est. MN Planning

TABLE 2 Percentages of Sample

Community	Population % of sample 1990 total	
BABBITT	1,562	1.1%
COTTON	429	0.3%
ELY	3,968	2.8%
<i>Eveleth</i>	4,079	2.9%
<i>Gilbert</i>	1,934	1.4%
<i>Mt. Iron</i>	3,362	2.4%
<i>Virginia</i>	9,410	6.6%
COMBINED	18,785	13.2%
FLOODWOOD	578	0.4%
INDEPENDENCE	2,814	2.0%
GREENWOOD	612	0.4%
<i>Duluth</i>	85,493	60.1%
<i>Hermantown</i>	6,761	4.8%
<i>Proctor</i>	2,974	2.1%
COMBINED	95,228	66.9%
HIBBING	18,046	12.7%
ORR	270	0.2%
Sample Total	142,292	100.0%

TABLE 3 Subarea Projections: Population and Total Housing Units

		Population			persons per unit 2.08	Total Housing Units		
		1990	2000	2010		1990	2000	2010
County population		198,213	199,547	200,890		95,403	96,045	96,691
Subarea	% of total	Subarea estimate				Subarea estimate		
BABBITT	1.1%	2,176	2,191	2,205		1,047	1,054	1,061
COTTON	0.3%	598	602	606		288	290	292
ELY	2.8%	5,527	5,565	5,602		2,660	2,678	2,696
<i>Eveleth Gilbert Mt. Iron Virginia</i>								
COMBINED	13.2%	26,168	26,344	26,521		12,595	12,680	12,765
FLOODWOOD	0.4%	805	811	816		388	390	393
INDEPEND. area	2.0%	3,920	3,946	3,973		1,887	1,899	1,912
GREENWOOD	0.4%	853	858	864		410	413	416
<i>Duluth Hermantown Proctor</i>								
COMBINED	66.9%	132,653	133,546	134,444		63,848	64,278	64,710
HIBBING	12.7%	25,138	25,307	25,478		12,099	12,181	12,263
ORR	0.2%	376	379	381		181	182	183
total	100.0%	198,213	199,547	200,890		95,403	96,045	96,691

TABLE 4 Subarea Projections: New Housing Units and Land Demand

Subarea	Estimated Units 1990	Projected Units 2010	New Units 1990-2010	acres/unit	Land Demand 1990-2010 (acres)
BABBITT area	1,047	1,061	14	4	57
COTTON area	288	292	4	4	16
ELY area	2,660	2,696	36	4	144
<i>Eveleth Gilbert Mt. Iron Virginia</i>				4 4 4 4	
COMBINED area	12,595	12,765	170	4	680
FLOODWOOD area	388	393	5	4	21
INDEPEND. area	1,887	1,912	25	4	102
GREENWOOD area	410	416	6	4	22
<i>Duluth Hermantown Proctor</i>				4 4 4	
COMBINED area	63,848	64,710	862	4	3,449
HIBBING area	12,099	12,263	163	4	654
ORR area	181	183	2	4	10
total	95,403	96,691	1,288		5,154

The above figures show that there is limited demand for residential development land in St. Louis County. The one exception is the development of shoreland property which is not reflective of population trends since this development is primarily seasonal residential when it first is developed. County land use records indicate that around 200 housing units are developed each year in the County and typically these are around lakes. It is this type of property that has the greatest potential impact upon wetlands. The reason for this is that much of the land now being developed is more marginal and wetlands along with other physical features are frequent obstacles for development. County wetland policy should recognize this concern and the value of shoreland wetlands.

Part Two: Forest Industry

Statewide Timberland Projections

The U.S. Forest Service prepared 30-year timber harvest projections for Minnesota. While the harvesting projections are not the focus here, the assumptions of the study are useful. The assumption of primary interest is that the total area of timberland in the state will decline by an average of 0.172% per year between 1990 and 2020. This would result in a statewide decline from 14.7 million acres to 14.0 by year 2020.

The assumption of timberland area decline by an average of 0.172% per year differs from the assumption used in the Generic Environmental Impact Statement (GEIS) Study on Timber Harvesting and Forest Management in Minnesota prepared in 1994 for the Minnesota Environmental Quality Board. The GEIS assumed that the area of timberland statewide would increase by 106,000 acres from 1990 to 2040. This increase was based on reversion of marginal agricultural lands to timberland in the southern part of the State, and assumes that this gain in the south would offset the loss of timberland in the northern part resulting from development for other uses.*

There are several reasons why the Forest Service made the different assumption of a decline in the area of timberland. First, historic data shows that timberland area has been decreasing as land develops for urbanization, roads, utility rights of way, and the like. Second, the reversion to timberland of agricultural land in the southern areas of Minnesota may not be sufficient to offset continued losses in the north.* In addition, this reversion can be reversed if increases in the price of agricultural commodities makes the marginal agricultural land profitable again.

*Though the St. Louis County residential land demand model described earlier in this report shows no significant residential growth, the remainder of the northern part of the state may well be experiencing development pressure that is reducing timberland. In addition, the forest studies focused on timberland rather than residential growth. Any comparisons of the timberland projections for the northern part or the entire state and residential growth projections for St. Louis County should be made cautiously.

St. Louis County Timberland Projections

A projection of the area of timberland in St. Louis County can be made using the Forest Service's assumption of a **0.172% per year decline** between 1990 and 2020. The 1990 inventory found 2,698,800 acres of timberland in St. Louis County. The results of applying the Forest Service's annual rate of decline in timberland acreage are shown in the following table (rounded to the nearest 100 acres).

	1990	1995	2000	2005	2010	2015
acres	2,698,800	2,675,700	2,652,700	2,630,000	2,607,500	2,585,100

The rate of decline in St. Louis County may be greater than the statewide rate. The projected average statewide rate of decline takes into account the gain in timberland in the southern part of the state. Losses of timberland are expected in the northern part.

Another point to keep in mind is that the Forest Service projects that the area of aspen forest type is likely to continue to decline somewhat further in the future. This is because of the expectation that mature and over mature aspen stands containing small amounts of useable trees will be passed over for harvest and will then naturally convert to other forest types. In 1990, aspen made up 1,092,200 acres of timberland in St. Louis County, or 40%.

St. Louis County Harvest Data

The MN Dept. of Natural Resources (DNR) expects little change in harvest in the future. There may be some shift from one species to another. For example, aspen harvest is expected to decline while birch and upland hardwoods harvest may increase. Overall, however, harvest acres are expected to stay stable or decline slightly from 1995 levels.

The following information from the DNR shows acres in St. Louis County harvested in 1995, categorized by species.

<u>Species</u>	<u>Acres Harvested</u>
Aspen	18,300
Balsam	1,900
Spruce	2,800
Jack Pine	1,500
Red Pine	200
White Pine	0
Birch	1,000
Maple and hardwoods	100
Cedar	0
TOTAL	25,800

This total of 25,800 harvested acres is about 1% of the total timberland in the County.

Timberland ownership in the County falls into a number of categories. The next table shows acreage in each ownership category.

Ownership	Acres
National Forest	506,500
Bureau of Land Mgmt.	1,400
Other Federal	8,900
Indian	24,000
State	356,300
County	744,800
Forest Industry	127,700
Non-industry Private	929,200
Total in St. Louis County	2,698,800

Pressures from interest groups to reduce timber harvesting on public lands such as national forests may reduce harvests on public lands, according to the Forest Service. The DNR expects some reduction in harvest in Superior National Forest, whether for this or other reasons. This could lead to increased harvesting on private lands to meet demand.

If harvesting on *public* lands is more carefully managed to avoid negative impacts on the environment, the increase in *private* land harvesting may have greater impacts on wetlands or other features of the natural environment.

sources: *Minnesota Forest Statistics, 1990, Revised*, and *An Analysis of Minnesota's Fifth Forest Resources Inventory, 1990*, North Central Forest Experiment Station, Forest Service, United States Dept. of Agriculture, St. Paul, MN, 1995.

Additional data from Minnesota Dept. of Natural Resources, Division of Forestry.

St. Louis County timberland projections by RLK.

**County Forest Road off of
County Hwy. #4**



Part Three: Mining Industry

The mining industry is a significant employer and taxpayer in St. Louis County. It is also in the nature of their operations that impact of wetlands can not be avoided and that has resulted in the mining industry as having the largest impact upon wetlands of any economic activity. In general the mining companies impact about 100 acres of wetlands per year. The mining companies have had significant problems finding suitable wetland mitigation sites in the County. This is due to the significant level of wetlands existing in the County and limited opportunity for wetland restoration. In meeting with the mining companies the following other issues were identified as problems relating to wetlands:

1. Differences between the State of Minnesota and the Corp of Engineers in evaluating wetland replacements.
2. Differences between the Corp and the State as to where mitigation can take place once it is outside of the County.
3. Need to streamline the administration of wetland protection programs. The present federal and state review takes to long according to the companies.
4. Consideration should be given to delayed replacement such as through tailing basins and abandoned mining areas.

The mining industry is presently regulated by both state and federal governments. The County does not have an interest in also regulating the industry wetland issues. The County does have an interest in maintaining a competitive mining industry while assuring that the Iron Range's environment is protected. It is also in the interest of the County that wetland replacement due to mining activity not compete with other wetland replacement needs in the County. The mining companies through their studies have indicated that there is only limited sites for wetland replacement in the County and the County's experience with wetlands would also indicate that this is the situation. It is therefor important that mining companies be given a great deal of flexibility in siting wetland replacements and very serious consideration should be given to the use of tailing basins and abandoned mining areas. It is those areas where the century of wetland impacts through mining has taken place and therefor wetland replacement in such areas should be seriously considered.

**Hull Rust
Mine-Hibbing**



Part Four: Peat

At one time, many thought peat had the potential to become a significant fuel resource in Minnesota. However, this potential never was realized. Due to its low fuel value relative to other fuels, mining peat for fuel is not economically viable. Rather, peat mines provide sphagnum moss for horticultural purposes. Even though as much as 25% of St. Louis County is peat land, according to the St. Louis County Land Department, the peat industry is small.

Only the top five feet of a peat bog is usable, and only the top 1/4 inch is harvested, via a vacuum process. The bog is drained to allow the sun to dry the top. The top 1/4 inch is collected several times a year after it dries properly.



Peat Lands-southwest St. Louis County

Data on Peat in St. Louis County

Peat mining, which is more accurately referred to as harvesting since fuel mining no longer occurs, happens on county land, state land, and private land. This is similar to other natural resources industries such as forestry and mineral mining. Peat "mines" of over 40 acres must acquire a permit from the Minnesota Dept. of Natural Resources (DNR). Smaller peat operations exist, but the DNR does not have data on them all. Peat operations occur on private land and on land leased from the county or state. DNR data on peat operations in St. Louis County are shown in the following table.

Location	Area Owned or Leased for Peat Harvesting	Expected Harvest Area
1) west of Cotton SE¼, Sec. 36, T.55N., R.18W.	160 acres	160 acres
2) east of Floodwood SW¼ Sec. 2, SE¼ Sec. 3 T.51N., R.19W.	271 acres	271 acres
3) near Toivola Secs. 30,31 Secs. 2,3,10,11 T.54N., R.19W.	230 acres	230 acres additional 700 acres future expansion
4) north of Cotton Secs. 2,3 T.55N., R.17W. Sec. 35 T.56N., R.17W.	357 acres	40 acres
5) Hermantown SW¼ of NW¼ Sec. 4 T.50N., R.15W.	30 acres	30 acres
6) near Angora Sec. 33, T.62N., R.19W.	<40 acres	40 acres
TOTAL	901 acres	1471 acres

sources: Minnesota Dept. of Natural Resources, Division of Minerals, and St. Louis County Land Management Department.

Part Six: County Ditch System Evaluation

Introduction and Methods

A preliminary study of the County's legal ditches was undertaken to determine the general condition and characteristics of each ditch system as well as their potential use for wetland restoration. Identification of potential wetland restoration areas may help in providing future wetland mitigation needs for the citizens of St. Louis County as well as local and County government agencies.

Originally, RLK-Kuusisto proposed to conduct interviews with Town and County officials to evaluate the ditch system. However, the recent availability of digital ortho quads (DOQ's) for St. Louis County and Geographic Information System (GIS) capabilities provided an opportunity to do a more detailed evaluation with minimal field work.

The evaluation focused on the 4 Judicial and 9 County ditch systems identified in the St. Louis County Water Plan (1991). According to the plan, these 13 ditch systems are the only ones in the County that have had their extent measured. The ditches in these systems cover approximately 546 miles in St. Louis County. A map of the ditch systems was obtained from the County Highway Department and used as the basis for the evaluation. This map coincides with Map A7-1 in the County Water Plan.

DOQ's at a scale of 1 inch equals 400 feet were plotted for the 13 ditch system areas within St. Louis County. Thirteen subareas among the ditch systems were selected to be field checked. These areas were selected based on location (attempted to spread locations among all ditch systems), accessibility from roads, and diversity of land cover types present. DOQ's for the thirteen subareas were plotted at a scale of 1 inch equals 200 feet and taken to the field for verification of cover types. Cover types observable from existing roads were identified and plotted on each 200 scale DOQ. Cover type designations included hayfield, deciduous woodland, scrub shrub swamp, forested wetland, coniferous woodland, etc. Verified cover types from the 13 subareas were used to assist in identifying general cover types for the remainder of the ditch systems on the 400 scale DOQ's.

All ditch systems were examined for potential wetland restoration areas using the 400 scale DOQ plots. Potential wetland restoration areas were identified as those areas adjacent to existing ditches that did not appear as wetland or appeared as partially drained wetland in comparison to adjacent wetland types. In addition, these areas had to be associated with a portion of ditch not immediately adjacent to a public road or building. It was assumed that portions of the ditch system adjacent to roads and buildings would likely not be viable wetland restoration opportunities due to potential flooding problems that could result from restoration attempts. The areas identified are very general and will require more intensive field investigation and assessment of land ownership. These areas were not observed in the field, but were selected based on interpretation of the DOQ plots. Critical factors such as topographic position and land ownership of these areas were not evaluated.

Results

The following paragraphs provide a general description of each ditch system evaluated along with information on potential wetland restoration areas in the system and potential limitations to restoration efforts. Ditch system locations and potential wetland restoration areas are shown on the attached ditch evaluation map.

County ditches 1 and 6 are fairly extensive systems adjacent to the Whiteface River. The ditches are closely spaced in many areas and less than half are adjacent to roadways. Three areas of these systems were field checked and 5 potential wetland restoration areas were identified from the DOQ's. The potential areas are what appears to be open field or agricultural land adjacent to areas of the ditch. The remainder of the system is primarily associated with roadways and/or surrounded by tamarack and alder swamp. A limitation to restoration in this system may be the reluctance by landowners to convert agricultural land (hayfield, pasture) to wetland.

County Ditch 2 is a small system primarily associated with roadways and located between the St. Louis and Whiteface Rivers. Areas of the system not associated with roadways are typically surrounded by scrub shrub wetland. No areas were field checked, and no potential restoration areas were identified on the DOQ's. A limitation to restoration in this system is the relatively high density of homes and roads that could experience flooding problems with increased water levels in certain areas.

County Ditch 4 is an extensive system located on the west side of the St. Louis River. About half of the system is associated with roadways and the remainder bisects coniferous forest and agricultural land. One areas was field checked, and eight potential restoration areas were identified on the DOQ's. One of the eight potential areas is what appears to be a large expanse of coniferous forest, however, the areas could be forested wetland. The remainder of the potential areas are associated with agricultural land adjacent to sections of the ditches. Field observations indicate that some sections of the ditches bisecting coniferous forest are very deep and may be difficult to plug for restoration. In addition, there is the problem of losing potentially valuable coniferous forest habitat and agricultural land to wetland restorations.

County Ditch 5 is a small system located just north of the Duluth airport. Much of the system has been eliminated to make room for runways and other airport facilities. The remainder of the system bisects woodland and scrub shrub wetland. One area was field checked and no potential restoration areas were identified from the DOQ's. A major limitation to restoration is the proximity of the system to homes and the airport which could experience flooding. In addition, there would be the concern of losing potentially valuable woodland habitat.

County Ditch 7 is a small system of closely spaced ditches located west of Wild Rice Lake. Almost the entire area adjacent to ditches in the system appears to be bog and no potential restoration areas were identified. There appear to be very few portions of the ditches associated with roadways or adjacent to homes, however, the ditches provide limited drainage and thus limited restoration opportunities.

County Ditch 10 is a small system located west of the Embarrass River. Ditches in the system are primarily associated with roadways. Most of the system was field checked and there were no potential restoration opportunities identified. Areas adjacent to ditches are primarily scrub shrub wetland, wooded swamp, and/or sedge meadow.

County Ditch 11 is a small system located west of Wild Rice Lake and just south of County Ditch 7. Most of the system is associated with roadways and areas adjacent to ditches appear to be cedar and spruce swamp. One area was field checked and one small potential restoration area was identified. The major limitation to restoration in this area is the abundance of existing wetland in the area and the potential flooding of roadways.

County Ditch 13 is an extensive system located east of the Whiteface River. Ditches in the system area associated with roadways for the most part, while the remainder are surrounded by scrub shrub and forested wetland. No areas were field checked and one potential restoration area was identified based on the DOQ's. Limitations to restoration opportunities within the system include potential loss of valuable upland habitat (woodland) and flooding problems associated with roadways.

Judicial Ditch 1 extends into Carlton County and is located just south of the St. Louis River. Most ditches in the system are associated with roadways or run parallel to meandering creek channels. The surrounding areas are primarily scrub shrub wetland, black ash swamp, or heavily forested upland. Two areas were field checked and one potential restoration area was identified although this area appears to be heavily wooded. The primary limitation associated with restoration in this system is the potential loss of heavily forested upland in addition to flooding hazards.

Only a small portion of **Judicial Ditch 2** extends into St. Louis County. The area was not large enough to justify evaluation.

Judicial Ditch 3 is an extensive, widely spaced system adjacent to the Savanna and Floodwood Rivers. A majority of ditches in the system appear to be associated with roadways, while the remainder are primarily surrounded by scrub shrub wetlands and bogs. One area was field checked and 5 potential restoration areas were identified on the DOQ's. The potential restoration areas are associated with open field or agricultural lands. A potential problem with restoration in this system is the flooding of agricultural land and homes that could result from restoration efforts.

Judicial Ditch 4 is a large system located south of the confluence of the St. Louis and Whiteface Rivers. Many of the ditches in the system are associated with roadways, while others bisect forested and agricultural areas. Two areas were field checked and 8 potential restoration areas were identified from the DOQ's. Half of the potential restoration areas are wooded and the other half are open field due to agriculture or clear cutting. Field observations indicate that portions of the ditches in forested areas may be deep and difficult to block for restoration of wetlands. Limitations to restoration in this system are related to loss of agricultural land and potentially valuable woodland habitat.

Summary and Recommendations

In general, wetland restoration opportunities associated with the St. Louis County ditch systems evaluated in this study are very limited due to the ineffectiveness of the ditches in draining existing wetlands, the lack of maintenance to the systems that has resulted in a partial to full return to former wetland conditions, and the proximity of a large portion of the ditches to roads and buildings that are subject to flooding from restoration attempts. Other potential limitations to restoration opportunities include the loss of valuable upland habitat (deciduous, coniferous, and mixed woodlands), the loss of agricultural areas (rare in the County), and the reluctance of private landowners to allow increased flooding on their land that would result from wetland restoration.

If the County wishes to pursue further investigations of the County ditch system, the next step would be to identify land ownership in the potential restoration areas to determine if any public land is involved. Investigative efforts could be concentrated on public lands since there would be a higher probability for use in wetland restoration. Subsequent steps would be to use a combination of aerial photography, topographic mapping, National Wetland Inventory Mapping, and field investigation to evaluate each potential restoration site. Coordination with landowners to gain access for field investigations would be a major component of further evaluations.



Stoney Brook

Part Seven: Wetland Inventory

St. Louis County has more than 80% of its original pre-settlement wetlands the County. The Board of Water and Soil Resources provided the following wetland acreage for the County:

Table One: County Wide Wetland Acreage

Type One- Seasonally Flooded:	2,934 acres
Type Two-Wet Meadow :	30,887 acres
Type Three-Shallow Marsh:	43,521 acres
Type Four-Deep Marsh:	9,975 acres
Type Five-Shallow Open Water:	31,687 acres
Type Six- Shrub Swamp:	274,204 acres
Type Seven- Wooded Swamps:	74,891 acres
Type Eight-Bogs:	822,817 acres
Riverine:	9,951 acres
Not Classified Wetlands:	24,825 acres

***County Wide Wetlands**

All types:	1,325,692 acres
Deep Water:	253,420 acres
Upland:	2,727,861 acres
Total County Acreage:	4,306,973 acres

Percent of County in Upland:	63%
Percent of County Wetland:	31%
Percent of County Deep Water:	6%

Source: Board of Water and Soil Resources

St. Louis County has been active in wetland identification since 1993 and it is apparent from our past reviews that the National Wetland Inventory Maps in several areas of the County underestimates the amount of wetlands. The County does not have a soils survey to assist in verification of wetland acreage and the size of the County makes it impossible to do a field inventory of all County wetlands. Therefore, it is likely that Table One does not fully explain the extent of wetland acreage in the County, particularly Type 7 (Forested Wetlands), is likely to be more prevalent than the figures provided from the Board of Water and Soil Resources.

In general the following comments can be made about the maps:

1. Types one and two are generally scattered throughout the County and it is the observation of County staff based on our five years of field experience that the numbers from the NWI maps are vastly underestimated which given the methodology used for the NWI maps and the County's lack of a soil survey is not surprising.
2. The open water wetlands of types three, four, and five are primarily found in the northern quarter of the County and these are very rare wetlands in the County's largest watershed which is the St. Louis. This data from the NWI maps appears to be accurate based on the DNR's protected waters map and staff observation.
3. Types six, seven, and eight are most common in the St. Louis River watershed and based on staff field experience type seven appears to be underestimated in the County. It is likely that the type eight data is accurate since it does represent our large peat areas.
4. St. Louis County has significant amount of public lands and many of those communities with such high concentration of wetlands also have significant amounts of public lands.

Communities with highest percentage of wetlands

The following maps show the concentration of wetlands within the County:

Map 1: Wetland Rich Communities shows communities with over 40% of land area in wetlands with the percentage shown in each community.

Map 2: Communities with highest acreage of Type One Wetlands-Seasonally Flooded.

Map 3: Communities with highest acreage of Type Two Wetlands-Wet Meadow.

Map 4: Communities with highest acreage of Type Three Wetlands-Shallow Marsh.

Map 5: Communities with highest acreage of Type Four Wetlands-Deep Marsh.

Map 6: Communities with highest acreage of Type Five Wetlands-Shallow Open Water.

Map 7: Communities with highest acreage of Type Six Wetlands-Shrub Swamp.

Map 8: Communities with highest acreage of Type Seven Wetlands-Wooded Swamps.

Map 9: Communities with highest acreage of Type Eight Wetlands-Bogs.

The wetland inventory indicates that there are significant areas within the County with a high concentration of wetlands. The Glacial Lake Upham Plain of southwest and south central St. Louis County have wetland concentrations where two thirds of the land is in wetlands and as noted above this information is based on the National Wetland Inventory Maps which tend to understate the amount of wetlands in an area. The Lake Superior Watershed and the lower St. Louis Watershed in the Duluth area has the lowest concentration of wetlands in the County. This is in part due to the urbanization in the Duluth area but additionally the heavy clay soils of the Lake Superior Watershed often have wetlands that are missed by the Wetland Inventory Maps. The mining area of the Iron Range also has a lower concentration of wetlands. There are opportunities in this area for wetland creation as part of mineland reclamation activity as well as potential use of active mining areas for long term wetland replacement efforts.

South Sturgeon Lake area wetlands



Chapter Two: WETLAND VALUES AND CITIZEN INVOLVEMENT

Citizen participation in the wetland planning process was an important feature of the County Wetland Planning effort. The County at the start of the planning process asked each town and city within the County to appoint a representative to serve on the Citizen Advisory Committee. The County received 18 names of representatives from cities and 52 representatives from townships. The committee had the following purposes: receive information regarding the present wetland regulations and what constitutes a wetland, provide input as to what they see as important and not important about wetland protection efforts, and to review and comment upon proposed wetland policies and wetland review methodologies, and to bring back to their communities information gained at the meetings. The citizen committee also received copies of the NWI wetland maps for their communities to review and comment on.

Meetings were held at the Biwabik City Hall and at the Rice Lake Town Hall and each of the regular meetings covered the same topic at both the north and south meeting. Town and city representatives were able to go to either meeting depending upon their schedule. The SWCD, County staff, BWSR and the Army Corp of Engineers were usually represented at the meetings. The dates of the meetings were as follows:

November 19, 20, 1996
January 29,30, 1997
March 31, April 3, 1997
April 28, 30, 1997
July 21,23 1997
October 20, 23, 1997
November 17, 20, 1997
December 1, 4, 1997



**County Court House
Duluth**

The minutes of the meetings are included in the appendix. In general, attendance at the meetings averaged 25 people per meeting site with attendance at the Biwabik site usually better than at the Rice Lake site. The Rice Lake site is located three miles north of the City of Duluth while the Biwabik City Hall is located about 15 miles east of Virginia.

The Citizen Committee determined that there needed to be an informal opportunity for the public to review and comment upon the plan prior to the official Planning Commission and County Board hearings. The Planning Department set up a series of meetings that were held on the following dates and the Department will be using the "Open House" format often utilized by the Department of Natural Resources. The Open House dates are as follows:

January 26, Canosia Town Hall, Duluth area
January 27 La Croix Ranger Station, Cook.
February 3 Cherry Town Hall east of Hibbing.
February 9 Fortune Bay Casino, Tower end of Lake Vermilion.
February 10 Cotton Town Hall.
February 19 North Star Town Hall.

Development of Wetland Values:

The Citizen Advisory Committee began their meetings with a discussion of what is a wetland and the various wetland types. The next phase of the meetings was an overview of the wetland regulations in effect in St. Louis County followed by discussions on wetland functions. This background information was necessary to provide the basis for the development of wetland values. It was the primary function of this committee to state to the County what they view and important and not important about wetlands in their area. Two surveys were completed by the citizen advisory committee with several of the communities having local meetings to prepare the survey in which residents came and the survey was filled out jointly. The results of the two surveys are summarized in the following conclusions:

Citizen Wetland Values-Conclusions

The citizen advisory committee demonstrated that they understood the importance of wetlands and when a function was clear they had no difficulty in supporting protection. Generally, the following wetland situations were rated highly in both surveys:

Wetlands with high value placed by citizens.

No significance in order of listing

1. Wetlands that protect wildlife habitat particularly water birds and trout.
2. Wetlands adjacent to lakes and rivers.
3. Wetlands with rare plants.
4. Wetlands near areas with shallow wells.
5. Wetlands in urban areas.
6. Wetlands important for flood control.

Conversely the public was able to conclude that wetlands located in other areas were not as important. Those wetlands situations are as follows:

Wetlands with the lowest value:

No significance in order of listing

1. Wetlands located in rural areas along major highways and not in shoreland.
2. Wetlands related to peat extraction.
3. Wetlands adjacent to areas with public water and sewer.
4. Wetlands in ongoing agricultural areas.
5. Wetlands in the iron mining area.
6. Wetlands displaced as a result of forest management activity.
7. Wetlands that are common in an area.

First Wetland Value Survey:

The St. Louis County Planning Department in conjunction with the wetland consultant prepared a wetland value survey for the citizen advisory committee. The survey was done after the committee had basic functions of a wetland explained to them. This survey was distributed to representatives prior to the March 31 and April 3 meetings. The survey was discussed at the meetings and then those in attendance filled out the survey and turned it in. The survey was also mailed out to towns and cities who were not in attendance and they were given an opportunity to complete them. The survey is shown below with the results of the survey listed after.



Wynne Creek-Giants Ridge

St. Louis County Wetland Values Survey

March, April 1997

St. Louis County Planning Department

Town, City, or Organization/Agency you represent _____

Wetland values are a measure that society places upon a wetland. They are based on collective judgement and are subject to change from area to area. Wetland functions, on the other hand, are measurable and include such purposes as: wildlife and fish habitat, shoreline protection, groundwater recharge/discharge, water quality protection, commercial uses such as rice farming or peat extraction, and flood water retention. The County wetland plan combines the functions of a wetland with the value measurement placed on the wetland by society. A major responsibility of the citizen committee will be to develop the wetland value portion of this plan. This survey is intended to be the first step in this process. The committee over the next few months will be weighing wetland values with scientifically measured wetland functions to complete the plan.

The following is a list of significant features found in St. Louis County that may influence the value you place on a particular wetland. Please rank each one of the features by the following scale based on your views in your area of the County. If you have an opinion about other areas of the County you may write your views at the bottom of the page or on the back of the survey. You may also add any other wetland comments you have about your area on the back of the survey.

Select "1" if wetland protection in your area is *significantly less* due to the feature.

Select "2" if wetland protection in your area is *somewhat less* due to the feature.

Select "3" if wetland protection in your area is *does not change* due to the feature.

Select "4" if wetland protection in your area is *somewhat higher* due to the feature.

Select "5" if wetland protection in your area is *significantly higher* due to special future.

An example of how to rank the following features is as follows: If you believe a particular wetland has a higher value and is important to protect due to one of the features, then you should select "5". If you believe that the value of a wetland is much lower and is not important to protect due to this feature then you should select a "1". Other numbers can be selected in between these extremes depending on the effect that the feature has on the value of a given wetland in your area. If you have no opinion about a particular item you should leave it blank. You may write additional comments about wetlands at the end of this survey. These comments may include thoughts about wetlands located in the County but outside your area or if there are any wetland issues in your area that we did not include in the survey.

Rating	Feature
--------	---------

- | | |
|-----|--|
| ___ | Wetlands located in flood plains. |
| ___ | Wetlands located in shoreland areas (1,000 feet from lake 300 feet from rivers). |
| ___ | Wetlands located immediately adjacent to lakes and rivers. |
| ___ | Wetlands located within areas serviced by water and sewer lines. |
| ___ | Wetlands located adjacent to trout streams and trout lakes. |
| ___ | Wetlands that are small ponds (types 3,4, and 5). |
| ___ | White Cedar Swamps. |
| ___ | Tamarack Swamps. |
| ___ | Black Spruce Bogs. |
| ___ | Horticultural Peat Bogs. |
| ___ | Relatively Common Wetlands such as scrub shrub. |
| ___ | Less Common Wetlands such as types 3, 4, and 5. |
| ___ | Wetlands on private lands. |
| ___ | Wetlands in or near wildlife refuges or fish and wildlife management areas. |
| ___ | Wetlands in or near the BWCA, State Parks, or Voyager National Park. |
| ___ | Wetlands located on County Lands. |
| ___ | Wetlands located in partially drained areas. |
| ___ | Wetlands located in prime commercial development areas. |
| ___ | Wetlands located in prime industrial development areas. |
| ___ | Wetlands located in mining areas. |
| ___ | Wetlands located in prime residential development areas. |
| ___ | Wetlands located adjacent to the major County Rivers such as St. Louis, Cloquet, Little Fork, Vermilion, Sturgeon and Pike rivers. |

- _____ Wetlands located in or near local parks or local recreation areas.
- _____ Wetlands that are in or near waterbird nesting areas.
- _____ Wetlands located in or near waterbird migratory staging areas.
- _____ Wetlands in or near areas of rare, threatened or of special concern plant or animal species that are dependent upon wetlands.
- _____ Wetlands located in agricultural and pasture areas.
- _____ Wetlands located in historical or archeological significant areas.
- _____ Wetlands that have been restored for conservation or replacement purposes.

Please *make any other comments regarding wetland value and functions issues in St. Louis County.*

Survey Results-First Value Survey

A total of 64 surveys were returned from members of the committee and from towns and cities that did not have a representative. The County was then divided into the following regions in order to determine whether or not there was differences within the County. Those areas are as follows:

Rural North County which is the area north of the Mesabi Range generally not in the St. Louis River Watershed.

North St. Louis River. This area is that part of the St. Louis river watershed that is north of the confluence of the St. Louis and Whiteface Rivers.

Rural South County. This area is that portion of the south St. Louis County that is not in the immediate Duluth area.

Duluth area. This area includes the cities of Duluth, Hermantown, Proctor and townships bordering those cities.

Other. These are surveys of people who did not identify a community, agency representatives, County agencies, and guests in attendance at the hearing.

The survey results are as follows with the most highly valued wetlands being listed first going down to the wetland types with the least value. The tabulation begins with the totals for all surveys followed by the regions and concluding with the "other" category which are those communities that were not identified in the survey and other persons such as technical experts who responded.

County Totals.

(Rated most important to Least)

<i>Category</i>	<i>Value</i>
1. Waterbird Nesting Area.	4.3
Waterbird Migratory Staging.	4.3
2. Wetlands located adjacent to trout streams.	4.2
3. Wetlands adjacent to lakes and rivers.	4.1
Wetlands in or near wildlife refuge.	4.1
Wetlands near major rivers.	4.1
Wetlands near rare plants and animals.	4.1
4. Wetlands in Shoreland areas.	4.0
5. Wetlands in Flood plain.	3.8
White Cedar swamps.	3.8
6. Wetlands that are small ponds.	3.7
Wetlands near BWCA and Parks.	3.7
7. Wetlands on County Lands.	3.6
8. Wetlands near local parks.	3.5
9. Tamarack Swamps.	3.4
Restored Wetlands.	3.4
10. Less Common Wetlands.	3.3
Black Spruce Swamps.	3.3
11. Horticultural Peat.	3.1
12. Partially Drained wetlands.	3.0
13. Wetlands in significant historic areas.	2.8
14. Wetlands in prime residential areas.	2.7
15. Wetlands in Water and Sewer areas.	2.6
Wetlands in Mining Areas.	2.6

16. Wetlands on Private Lands.	2.5
Wetlands on Agricultural Lands.	2.5
17. Wetlands in Prime Commercial areas.	2.4
Wetlands in Prime Industrial areas.	2.4
18. Common Wetlands.	2.3

Count: 64

Duluth Area Order of Wetland Values
(Rated most important to least)

<i>Category</i>	<i>Value</i>
1. Wetlands located adjacent to major rivers.	4.7
2. Wetlands near waterbird nesting sites	4.6
Wetlands near migratory staging areas	4.6
3. Wetlands near rare plant or animal species.	4.5
Wetlands near wildlife management areas.	4.5
4. Wetlands located in flood plains.	4.4
Wetlands in or near BWCA and Parks.	4.4
5. Wetland located near trout lakes and streams.	4.3
6. Wetlands near local parks.	4.1
7. Wetlands located near lakes and rivers.	4.0
8. Wetlands located in shoreland areas.	3.9
9. Wetlands located on County Lands.	3.8
10. Wetlands that are small ponds.	3.6
11. White Cedar swamps.	3.5
12. Tamarack swamps.	3.3
Black Spruce swamps	3.3

13. Partially drained wetlands.	3.2
Mining areas.	3.2
Less Common Wetlands.	3.2
14. Restored wetlands.	3.1
15. Prime Industrial areas.	3.0
16. Horticultural Peat Bogs.	2.9
17. Prime Commercial areas.	2.8
Prime Residential areas.	2.8
18. Wetlands on private lands.	2.6
19. Wetlands in historical areas.	2.5
20. Areas serviced by water and sewer lines.	2.4
21. Agricultural and pasture lands.	2.3
22. Relatively common wetlands.	1.6

Count: 15.



Lester River-Town of Rice Lake

North St. Louis River Wetland Values.

(Rated most important to least)

<i>Category</i>	<i>Value</i>
1. Wildbird migratory staging area.	4.0
Wetlands located in shoreland areas.	4.0
Wetlands located adjacent to trout streams	4.0
2. Wetlands located in floodplains.	3.9
Wetlands located adjacent to lakes or rivers.	3.9
Wetlands located adjacent to major rivers.	3.9
Wetlands located near waterbird nesting.	3.9
3. Wetlands that are small ponds.	3.8
White Cedar Swamps.	3.8
4. Wildlife management areas.	3.7
Wetlands located near rare species.	3.7
5. County Lands.	3.4
Tamarack Swamps.	3.4
Black Spruce Bogs.	3.4
6. Wetlands near BWCA and Parks.	3.1
Horticultural Peat Bogs.	3.1
Less Common Wetlands.	3.1
Local Parks.	3.1
7. Restored wetlands.	2.9
8. Partially drained areas.	2.6
Historically significant sites.	2.6
9. Areas with water and sewer lines.	2.5
10. Relatively Common Wetlands.	2.4
11. Wetlands on Private lands.	2.3
12. Wetlands in mining areas.	2.2
13. Wetlands in agricultural areas.	2.1
14. Wetlands in prime residential areas.	2.0

- | | |
|---|-----|
| 15. Wetlands in prime industrial lands. | 1.7 |
| 16. Wetlands in prime commercial areas. | 1.6 |

COUNT: 19

Rural North County

(Rated from most important to least)

<i>Category</i>	<i>Value</i>
1. Wetlands Adjacent to lakes and rivers	4.5
2. Wetlands with rare plants and species	4.4
Restored wetlands.	4.4
3. Wildlife management areas.	4.3
Waterbird nesting	4.3
Trout Streams.	4.3
4. Waterbird migratory staging areas.	4.1
5. Major rivers.	4.0
Mud Creek Road East of Lake Vermilion	
6. Shoreland areas.	3.9
7. Small Pond wetlands.	3.6
White Cedar wetlands.	3.6
8. Tamarack Swamps.	3.5
9. Black Spruce Swamps	3.2
10. Wetlands near BWCA and Parks.	3.2
11. Local parks.	3.1
12. Horticultural Peat	3.0
County Lands	3.0
13. Prime Residential area.	2.9



14. Partially drained areas.	2.8
Historically significant sites.	2.8
Flood Plain	2.8
15. Agricultural areas.	2.6
16. Less common wetlands.	2.5
Prime Commercial areas.	2.5
Mining areas.	2.5
17. Prime Industrial areas.	2.4
Water and Sewer areas.	2.4
18. Common Wetlands.	2.1
19. Wetlands on Private Lands.	1.8

Count: 13

Rural South County

(Rated most important to least)
Category

Value

1. Wetlands near BWCA and parks.	4.8
2. Wildlife Refuges.	4.7
Waterbird Nesting areas.	4.7
3. Shoreland areas.	4.4
Trout streams.	4.4
4. Rare plants and species.	4.3
County Lands.	4.3
Wildlife Management.	4.3
5. Adjacent to lakes and rivers.	4.2
Wetlands that are ponds.	4.2
6. Wetlands adjacent to major rivers.	4.0
7. White Cedar Swamps.	3.8
8. Rare plants or animals.	3.7

Cotton Area Wetlands



9. Wetlands in Floodplain.	3.5
Restored wetlands.	3.5
10. Water and Sewer line area.	3.3
Local Parks and recreation area.	3.3
Horticultural Peat area.	3.3
11. Tamarack Swamps.	3.2
Black Spruce Swamps.	3.2
Common wetlands.	3.2
Partially drained wetlands.	3.2
12. Wetlands on Private lands.	3.0
Historically significant sites.	3.0
13. Wetlands on Agricultural lands.	2.8
14. Mining lands	2.6
Prime residential areas.	2.6
15. Prime Commercial areas.	2.4
Prime Industrial areas.	2.4

Count: 6



Miller Creek-City of Duluth

Other

(includes citizens who are not representatives, agencies, organizations, and those who did not indicate community)

<i>Category</i>	<i>Value</i>
1. Wetlands in wildbird migratory areas.	4.4
Wetlands near trout streams.	4.4
2. Wetlands near rare plants.	4.3
Wetlands near waterbird nesting areas.	4.3
Wetlands adjacent to lakes and rivers.	4.3
3. Wetlands in flood plain.	4.2
White Cedar Swamps.	4.2
4. Wetlands in Shoreland areas.	4.0
Less Common Wetlands.	4.0
Wildlife management areas.	4.0
Wetlands near major rivers.	4.0
5. Wetlands located near local parks.	3.8
Wetlands that are small ponds.	3.8
6. Wetlands near BWCA and Parks.	3.7
Wetlands on County Lands.	3.7
7. Wetlands that have been restored.	3.5
Wetlands located in prime residential areas.	3.5
8. Tamarack Swamps.	3.4
Wetlands located in historic areas.	3.4
9. Black Spruce Bogs.	3.3
Horticultural Peat Bogs.	3.3
Partially drained areas.	3.3
10. Prime Commercial areas.	3.1
Wetlands on Private Lands.	3.1
11. Prime Industrial Lands.	3.0
Agricultural Lands.	3.0
12. Mining Lands.	2.9

Water and Sewer Line areas.	2.9
13. Common Wetlands.	2.7

Count: 13

Second Wetland Values Survey: The Scenario Survey

The Citizens who had been involved with the first survey expressed an interest in having a more comprehensive survey on wetland issues. A second survey was then prepared that provided more real world choices regarding wetland issues. The survey was more difficult to answer and the number of returned surveys dropped to 44. However, the survey results give a clearer picture as to the values County residents place on wetlands. The following is the survey and the results from the County-wide tabulation. The lower rate of return and the fact that the survey asked people to comment upon issues throughout the County means that the break down by region found in the first survey was not done for the second survey.

Wetland Values Survey-Scenarios

This exercise will help determine the choices the committee would make in making decisions on what is valued in wetlands and the level of wetland impacts that would be permissible. Each scenario describes a type of wetland followed by a description of its location and what a person is intending to do with that wetland. You will need to select a number from one through five as to what you think should be done for this specific issue. **Also at the bottom of this page please indicate the Township or City you represent.**

Write Number 1: Not Allowed: If you believe the person should not be permitted to do this action.

Write Number 2: Allowed if the impact is minimized to the extent possible and the wetland of similar function and value is replaced in the same area.

Write Number 3: Allowed, if the impact is minimized to the extent possible, but the wetland will be replaced outside of the area. The acreage of wetland replacement is the same as what was impacted.

Write Number 4: Allowed, although impact is not minimized, and wetlands are replaced outside of the immediate area.

Write Number 5. The wetland can be impacted and no replacement needed.

Survey Results

Using the Survey Form with average points after each choice

The lower the average point number the more importance placed on wetland protection

You are responsible for making decisions regarding the following wetland situations. The bold print describes the wetland condition and what a person or company wants to do. You should respond by indicating a number 1 through 5 based on what you believe is the correct action in the circumstance described. The previous page contains a description of the meaning of each of the numbers.

1. A 40 acre forested wetland which has little to no surface water, but can hold a significant amount of water during major storm events. The land owner's project would involve the filling of five acres of this wetland. There is a stream in the area that has a record of flooding in the Spring after winters' with above average snowfall or after rainfall of three inches in a 24-hour period during the summer.

A ☐ Located at the intersection of two major highways in a commercially developed area.

Average Points: 2.92

B ☐ Located adjacent to a creek (not a trout stream) that flows into a residential development within two miles of the fill area.

Average Points: 2.13

C ☐ Located adjacent to a trout stream.

Average Points: 1.91

D ☐ Located adjacent to an undeveloped lake with no public access.

Average Points: 2.70

E ☐ Located adjacent to a developed lake with numerous cabins and a public access.

Average Points: 2.36

2. A 20-acre shrub swamp (type 6) with scattered wet meadow (type 2) exist where a developer wishes to subdivide 100 acres into 15 lots with new roads being constructed. It is likely that 10 acres of the wetland will be filled for roads and building sites. The wetland has a high rate of water infiltration into the ground so it is valuable for both groundwater resupply and for flood control.

A ☐ Located in a rural township where residents have shallow wells for their water supply.

Average Points: 1.43

B ☐ Located in an area with municipal water supply.

Average Points: 2.57

C ☐ Located adjacent to a lake or river.

Average Points: 1.91

D ☐ Located in an urban area subject to flooding.

Average Points: 1.47

E ☐ Located in a rural area with deep wells and no significant flooding issues.

Average Points: 3.22

Note: The lower the average points the more significance placed on wetland protection

3. An 80 acre forested wetland (Type 7) with a bedrock substrate and with small springs

and seeps. It is an area with high potential for wildlife habitat and may contain rare plants. The landowner wishes to build a driveway through the wetland to reach some upland property. A total of 20,000 square feet of wetland which is slightly less than one half acre will be filled.

A _____ Located up slope of a trout stream and water from this area eventually will flow into the stream.

Average Points: 2.31

B _____ Located up slope of a small stream which flows through a developed urban area.

Average Points: 2.60

C _____ Located up slope from a shallow marsh area.

Average Points: 3.32

D _____ Located adjacent to a road ditch. Water from this wetland will flow into the ditch.

Average Points: 3.9

4. A 1,000 acre bog (type 8) located in Central St. Louis County. The proposed impact will be up to 40 acres.

A _____ The activity will be a peat extraction business.

Average Points: 3.70

B _____ The activity is a livestock operation and some land will be drained for pasture usage.

Average Points: 2.68

C _____ The activity is the construction of a permanent forest management road.

Average Points: 3.50

D _____ The activity is the placement of a single family home with a driveway and several outbuildings.

Average Points: 3.00

Note: The lower the average points the more significance is placed on wetland protection.

5. The parcel under consideration is 120 acres near the city of Duluth. There are about 25 acres of wetlands scattered on the parcel with no single wetland larger than three acres cell and they are primarily type 6 and 7. The applicant proposes a gravel pit which will impact 15 acres of wetlands.

A _____ The wetlands are in an area of shallow wells. A shallow well is less than 50 feet deep.

Average Points: 1.54

B _____ The wetlands are near a trout stream.

Average Points: 1.59

C _____ The wetlands eventually flow into the Reservoir Lakes.

Average Points: 2.11

D _____ The wetlands are valuable for flood control in the Miller Creek area.

Average Points: 1.56

6. A 2 acre shrub swamp (Type 6) has moderate value in flood water retention, groundwater recharge and wildlife habitat. The property owner has a five acre lot and proposes to construct a home with a car repair business, driveway, parking lot, and outbuildings. There is the possibility that the entire two acres will be eliminated.

A _____ Wetland is located in a rural area and in the same minor watershed the area is approximately 20% wetlands.

Average Points: 3.13

B _____ Wetland is located in an urban area and much of the original wetlands in the area no longer exist.

Average Points: 2.30

C _____ Wetland is located adjacent to a lake or river.

Average Points: 1.89

D _____ Wetland is located in a rural area along a major highway and not adjacent to a lake or river. Most of the area is in public ownership where no wetlands will be drained or filled.

Average Points: 3.95

Note: The lower the average points the more significance is placed on wetland protection.

7. A five acre shrub swamp (Type 6) wetland not associated with a stream or lake. A developer wishes to construct a mini mall on a 40 acre parcel and three acres of the wetlands will be impacted.

A _____ Located in a rural township and has a plant species listed as special concern by the DNR. These plants are uncommon in Minnesota but are not protected by law as are endangered or threatened species.

Average Points: 2.19

B _____ Located in an urban area and there are plants of special concern.

Average Points: 1.90

C _____ Located in a rural area and there are endangered plants.

Average Points: 1.77

D _____ Located in a urban area and there are endangered plants.

Average Points: 1.80

E _____ Located in a significant wildlife habitat area.

Average Points: 1.55

F _____ Located adjacent to a significant waterfowl area.

Average Points: 1.65

G _____ Located adjacent to significant fisheries area.

Average Points: 1.58

Note: The lower the average points the more significance is placed on wetland protection.

8. A 20 acre deep marsh (type 4) wetland area with pond lilies, cattails, and a wide fringe of types 2, 6, and 7. The total wetland area with the fringe is 40 acres. A developer wishes to subdivide this area into five acre lots. It is estimated that 10 acres of the fringe area will be drained or filled. The 20 acre deep marsh will not be filled but the filling of the fringe area will somewhat decrease water quality and the use of the area for waterfowl habitat.

A _____ Located on the edge of a large recreation lake with year round homes and considerable boating activity.

Average Points: 1.83

- B. _____ Located on a small shallow lake with limited boating and few cabins.

Average Points: 2.04

- C. _____ Located adjacent to a slow moving stream channel that connects into a large, recreational lake, The channel has high boating activity.

Average Points: 1.79

- D. _____ Located in a highly visible area adjacent to a major highway with no streams or lakes nearby.

Average Points: 2.56

- E. _____ Located in the interior of public lands and the development will be used for hunting cabin sites.

Average Points: 2.51

9. A 20 acre wetland complex consisting of meadow (type 2) and shrub swamp (type 6) it is not associated with a stream or lake. A developer wishes to build a manufacturing facility that will employ 50 people. This development will impact 5 acres of wetlands.

- A. _____ Located along a major highway with public water and sewer lines.

Average Points: 3.83

- B. _____ Located within two miles of the mining area of the Iron Range.

Average Points: 3.76

- C. _____ Located in a rural area along a gravel road with no public water or sewer.

Average Points: 3.00

- D. _____ Located in small city in the County along a paved highway.

Average Points: 3.63

Note: The lower the average points the more significance is placed on wetland protection.

10. A 120 acre parcel contains 20 acres of wetlands in an agricultural area of the County. The wetlands are scattered throughout the parcel with the smallest being one acre and the largest being five acres in area. The wetland types include 2,6, and 7. There is a small stream on the property which is not a trout stream and this stream within one mile of the 120 flows into a major County River.

- A. _____ A farmer wishes to reopen a drainage ditch that has existed on the property since 1915. A total of 10 acres will be drained on the farm.

Average Points: 3.65

- B. _____ A permanent forest management road will be constructed that would impact up to 4 acres of wetlands.

Average Points: 3.35

- C. _____ The parcel will be clear cut and a temporary forest road will be constructed. The waste wood will be left on the property including scattered in the wetlands.

Average Points: 2.73

- D. _____ A County Highway will be constructed through the parcel and it will impact a minimum of 4 acres of wetlands.

Average Points: 3.30

Citizen Advisory Committee Conclusions

The County Wetland Citizen Advisory committee spent a considerable amount of time reviewing wetland issues in the County. They were able to reach conclusions that clearly pointed to the need to adjust the wetland policies in the County. However, the survey results also indicated that County residents did not want to advocate the wholesale draining and filling of wetlands and that they recognized that wetlands had clear functions and in many situations those functions needed to be preserved. In general, the public accepted wetlands where the functions were clearly evident such as those adjacent to trout streams as having a high value but they also recognized that not all wetlands can or should be of equal value.

The Citizen Advisory Committee next two tasks were to develop means to implement the values they have stated as important. The first of the two tasks was the development of the Wetland Functional Analysis which was developed by the County's consultant and the Technical Committee using the values expressed in the first citizen survey. The Committee and County staff wanted an assessment that used objective criteria, recognized that not all wetlands serve the same function, and could be used throughout the County and obtain similar results regardless of who was filling out the Assessment. The Citizen Advisory did receive copies of the Assessment after it had been reviewed by the County Technical Committee.

The next and final task of the Citizen Advisory Committee was the development of the Wetland Planning Objectives and Policies. It was through the final five sets citizen meetings that the planning effort was tied together. The Committee members were encouraged to bring back the proposed policies for discussion in their communities. Draft copies of the plan were also distributed to the communities who did not attend the citizen meetings.

The remaining two chapters of this plan are the Wetland Planning Policies and Objectives followed by the Wetland Functional Assessment. The efforts of the Citizen Advisory Committee were crucial in the development of the final two chapters. The Technical Experts offered valuable assistance to insure technical accuracy but the residents of St. Louis County provided the rationale and basis for the remaining planning efforts.



Caribou Lake - Town of Grand Lake

Chapter Three: WETLAND POLICIES AND OBJECTIVES

Wetlands have been a controversial issue throughout the State during the 1990's. The Minnesota Legislature in 1996 authorized local governments to prepare wetland plans that better reflect the needs and interest of the area. The St. Louis County Wetland Plan is intended to provide that local guidance on wetland issues. The Planning effort began in 1996 and was completed in early 1998. It was done through a process of a citizen advisory committee appointed by towns and cities which was responsible for developing the wetland value sections of the plan and providing a tie into the local communities from the County level on issues relating to the plan's progress. The County Planning effort had the following objectives relating to the development of the plan.

1. Recognizing that the "one size fits all" approach to wetland planning efforts is not effective. A plan is needed to prioritize the importance of wetland protection for a given area. This is accomplished by determining a wetland's function and having citizens within the plan area assign value to those functions.
2. Wetland program administration needs to be more efficient in resolving issues, clearer in purpose and less confusing to the property owner.
3. Wetland education is an important feature of any planning effort. The public has had little opportunity in the past to understand what is important about wetlands and what defines a wetland. The planning effort and future implementation efforts should have a component relating to education as to wetland functions and values.
4. St. Louis County has significant areas of wetlands and while protection is important, there needs to be recognition that a community's need for housing, agriculture, mining, industrial, commercial, recreational, forestry, and other uses must also be examined along with wetland protection efforts. The County will base wetland policy upon wetland functions within a watershed and strive for no net loss of public value. Please refer to Section 4.09, "Combining wetland functions with values", for more information.
5. Wetland decisions cannot be isolated from other broad land use decisions relating to the future of the County and the protection of the environment.
6. Recognize and implement the concept outlined in the State Wetland Plan for local wetland management on a watershed basis using water plans and local land use planning.

Implementation of the Plan.

The County Wetland Plan is implemented through a series of actions that are stated in policies. This section states those policies which will guide those involved in wetland issues throughout the time this plan is in effect. The policies are divided into four sections. The first section deals with program administration followed by Government Relations, Economic Activity, and then Wetland Impacts, Functions and Values. Program Administration describes how the program will be

implemented and should be considered the nuts and bolts of the plan. The Government Relations section recognizes that wetland issues cut across government jurisdictional lines and that a series of policies are needed that will address how such issues will be dealt with. Economic Activity is the third set of policies and, while the entire plan relates in part to issues of development and the relationship with the environment, this section addresses particular issues relating to economic concerns. The fourth set of policies specifically relate to how the County addresses wetland impacts. It serves as the heart of the plan where the relationship between development and the environment is spelled out. These policies need to be taken together in order to view how the County sees as the future of wetland program administration in this region. It is recognized that many of the policies are not under the direct control of the County but all of the issues stated in this plan are of concern and interest to the citizens of the County. This plan, while authorized under the Wetland Conservation Act, is also part of the County Comprehensive Plan which is defined in Minnesota Statute 394.22 as "the policies, statements, goals, and interrelated plans for private and public land and water use, transportation, and community facilities including recommendations for plan execution, documented in texts, ordinances and maps which constitute the guide for the future development of the County." This particular plan is an amendment to the County Water Plan (County Ordinance #27, Article II, Section 20). There will be several sections of this plan that will be implemented through the County Zoning Ordinance.

The following key defines the code letters found after each Plan item:

- "W" These items are currently contained in the "Wetland Conservation Act Rules, Chapter 8420".
- "F" These items are expressions of flexibility allowed per State Rule 8420.0650.
- "L" These policies are local initiatives not addressed by the Wetland Conservation Act.

Section 1: Program Administration.

1.01 Certification of consultants: The County supports the development of a wetland delineator certification. The County will maintain a list of qualified delineators. Consultants who operate in St. Louis County may be added to the County's list by submitting their qualifications to the Wetland Technical Advisory Committee (WTAC) for review. "L"

1.02 Penalty for fill in violation of wetland regulations: Wetland impacts that take place without approval and are not exempt shall be mitigated at twice the required replacement ratio. Where restoration is ordered, the amount of wetland restored shall be subtracted from the total replacement required. Full restoration to a pre-altered condition shall be required unless the WTAC concludes that restoration is impossible, or a replacement plan is approved by the Planning Director for some or all of the wetland area impacted. In that case, full sequencing shall be required and no de minimis exemption allowed in addition to the required replacement. No land use, performance standard, conditional use or other permits will be issued for any property or to any individual, company or organization with an unresolved wetland violation. "W / L"

1.03 Wetland Technical Advisory Committee (WTAC): St. Louis County will establish a technical advisory committee as a subcommittee of the Planning Commission. This committee shall hold open public meetings by procedures approved by the committee and the Planning Commission. The public, particularly those affected by the committee's actions, will be invited to participate in the meeting process in accordance with the established procedures. Recognizing that wetland decisions must be made by a broad range of disciplines, the following shall be represented on the committee: Army Corp of Engineers (ex-officio), DNR Waters, Wildlife, and Conservation Officer, local government representative, North and South St. Louis County SWCD, County Wetlands Coordinator, County Water Plan Coordinator, County Planner who does wetland program administration and is from an office other than that of the wetland coordinator, County Public Works, County Land Department, Board of Water and Soil Resources, and Planning Commission. The committee shall have the following responsibilities:

- A. Review wetland delineations; accept or reject delineation reports.
- B. Review wetland replacement plans, including use of wetland banking.
- C. Review the ongoing administration of the wetland program.
- D. Develop wetland education and information programs.
- E. Recommend appropriate enforcement action.
- F. Monitor the quality of wetland consultants work.
- G. Review existing and potential education and commercial functions of a wetland.
- H. Monitor cumulative impact of wetland draining and filling.
- I. Develop threshold recommendations for wetland impacts in minor watersheds.
- J. Review Banking proposals.

The WTAC shall make recommendations to the Planning Director. "W / L"

1.04 Appeals: Decisions of the Planning Director shall be sent by mail to the affected unit or units of government, the proposer, and each person who has requested notice of the decision. Any interested party may appeal the Director's decision to the County Planning Commission by submitting a written request to the Planning Department within 30 days of the date on which notification was mailed. Appeal hearings will be conducted in conformance with the standards for Conditional Use hearings set forth in Ordinance 46, Article VIII, Section 3. The hearing fee shall be waived if the appeal is requested by a unit of government. "W / L"

1.05 Planning Commission waivers: The County Planning Commission shall be the sole authority in granting waivers from all local elements of this plan. The Commission shall consider the following during its review: opinion of the WTAC, the applicant's use of sequencing, economic feasibility of alternatives, impact upon the minor watershed, impact of adjacent properties, and land use impacts. All waivers shall be handled as a conditional use permit. "L"

1.06 Wetland banking: The County supports the continued development of the wetland banking system. It is particularly important that banking opportunities exist for private development within the County. These banks may include mining areas, borrow pits, and reclaimed drained areas. The use of banking credits shall be available for any wetland impact throughout the County. However, wetland impacts in the Duluth area shall be replaced by wetlands in the Duluth area. The Duluth area is defined as the following watershed: Lake Superior South, Cloquet River south

of Island Lake, and St. Louis River Watershed downstream from the White Pine River. Carlton County portions of the watershed shall also be considered eligible for replacement. The Planning Commission may approve a waiver if replacement of a wetland impacted in the Duluth area can not be feasibly replaced in the Duluth area. The mined land reclamation program should consider the potential for wetland development in the abandoned mining areas and in new mine land reclamation plans. "L"

1.07 Wetland replacement from impacts outside County: Wetland replacement in St. Louis County from an impact outside the County shall require review by the WTAC and approval of the Planning Commission. "L"

1.08 Conditional Use review of replacement wetlands: The Planning Commission shall review all wetland replacements and banks larger than 2 acres as conditional uses, except:

- restored wetlands
- wetland creation within the same minor watershed as the wetland impact
- wetland banks within the "permit to mine" area
- wetland creation as part of a government approved borrow pit reclamation plan "L"

1.09 Reduced need for delineations: Wetland replacement using the replacement ratio found in this plan shall be rounded upwards in increments of 500 square feet with a minimum replacement of 1,000 square feet, unless a detailed wetland delineation has been approved by the WTAC. The objective of this policy is to decrease the need for full wetland delineations while assuring there is no loss in wetland function and value. "L"

1.10 Annual Plan review: The St. Louis County Wetland Plan shall be reviewed on an annual basis with a report submitted to the County Board of Commissioners. The report shall include information on the use of the cumulative impact of wetland filling, functional analysis, administrative effectiveness, WTAC meetings, function and value of wetland impacts, cumulative replacement ratio effect, and other issues deemed appropriate by the Planning Department in order to provide the County Board with information regarding the effectiveness of plan implementation. The WTAC shall develop and the Planning Commission shall approve of a methodology to monitor and evaluate wetland decisions in the County. "L"

1.11 Definitions: The following definitions shall be used throughout the plan:

Bottomland hardwood type 1 wetlands: Floodplain, forested wetlands dominated by deciduous hardwood trees on alluvial soils associated with riverine systems. "L"

Major Watersheds: The watersheds mapped by the State of Minnesota of which 81 are found in the State and the following are in St. Louis County: Lake Superior South, Cloquet, St. Louis, Mississippi-Grand Rapids, Little Fork, Vermilion River, Rainy River (Headwaters), and Rainy River (Rainy Lake). "W"

Minor Watershed- The sub-watersheds identified by the Department of Natural Resources and shown in the County GIS data base. "L"

Planning Director: The person designated by the County Board of Commissioners to administer the Zoning Ordinance and other land use Official Controls, or authorized representative. "L"

Sequencing: Wetland sequencing is the process of applying the following replacement principles in descending order of priority:

- (A) avoids direct or indirect impact of the activity that may destroy or diminish the wetland;
- (B) minimize the impact by limiting the degree or magnitude of the wetland activity and its implementation;
- (C) rectifies the impact by repairing, rehabilitating, or restoring the affected wetland environment;
- (D) reduces or eliminates the impact over time by preservation and maintenance operations during the life of the activity;
- (E) replaces unavoidable impacts to the wetland by restoring or, if wetland restoration opportunities are not reasonably available, creating substitute wetland areas having equal or greater public value. "W"

Sequencing Flexibility- The use of sequencing to a point where absolute adherence to the standards would not result in protection of a wetland's function or value compared with the replacement of a wetland elsewhere. "L"

Upland enhancement: The manipulation or protection of upland areas adjacent to wetlands with the express intent of enhancing the individual replacement wetland's function and subsequent public value. Examples may include maintaining an undisturbed buffer, tree planting for wildlife, providing nesting cover, et cetera. "F"

Wetland- means lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. A wetland must meet the following three criteria:

1. Have a predominance of hydric soil.
2. Be inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions.
3. Under normal circumstances, support a prevalence of hydrophytic vegetation. "W"

Wetland buffer - an upland area adjacent to an existing or created wetland. "F / L"

Wetland creation - construction of wetlands in an area that was not wetlands in the past. "W"

Wetland enhancement - making changes to an existing wetland that results in improving one or more of its functions. "F"

Wetland restoration - reestablishment of an area that was historically wetlands but currently provides no or minimal wetland functions due to manmade alterations such as filling or drainage. "W"

Section 2: Government Relations

2.01 Joint powers agreements with cities: St. Louis County recognizes that smaller County communities may have difficulty administering the wetland regulations. The County and/or the SWCD will assist these communities under the following guidelines.

- A. The policies of this wetland plan are implemented by the community.
- B. A joint powers agreement that spells out payment for services, review procedures, and other administrative requirements is approved by the County Attorney and County Board.
"L"

2.02 Project notifications: The Project Notification form shall be sent to Town Clerks and to Indian Reservations when a project is proposed within the reservation boundaries so that these communities know of wetland impacts and have an opportunity to comment on them. "L"

2.03 Town zoning administration: Towns which administer their own zoning shall have an Administrator who is competent to perform wetland determinations, or shall refer all wetland questions to the County or SWCD. The County will offer training on a periodic basis regarding the identification of wetlands. If a town does not have such a person the town shall send copies of all permit applications to the County for wetland checkoff purposes. The County shall develop administrative guidelines for such review. "L"

2.04 New culverts: The County Planning Department shall coordinate with the appropriate road authorities to provide information regarding wetland protection to individuals receiving permission to place culverts for new access to property. Individuals shall be specifically informed that the issuance of this access does not imply any County approval for wetland impacts. "L"

2.05 DNR permitting: St. Louis County requests that the Minnesota Department of Natural Resources in all its permitting information shall specifically inform applicants about the existence of the Wetland Conservation Act and that approval of the DNR does not imply any approval from other agencies including local government. "L"

2.06 Local wetland plans: Cities and Towns are encouraged to develop more specific wetland plans that are consistent with the policies of this plan. This could include mapping wetlands and utilizing the Functional Assessment to predetermine wetland replacement policies for the particular area. These plans should be incorporated into the County Wetland Plan. "L"

2.07 Single agency review: The County shall work toward becoming the sole approval authority for wetland impacts within its jurisdiction in cooperation with the U.S. Army Corps of Engineers. Administration oversight should follow the model of the State Shoreland Management Program. "L"

2.08 Local government and federal negotiations: St. Louis County and/or local governments should be able to negotiate directly with the federal government regarding any delegation of federal wetland responsibility to the County or Local Government. The County welcomes assistance and guidance from the State on this issue. "L"

2.09 Inaccuracy of National Wetland Inventory Maps: The National Wetland Inventory Maps are recognized to be an inaccurate measure of the size, location and number of wetlands in the County. The level of inaccuracy often underestimates the wetland acreage in the County. The County will on a separate layer of information track the wetland determination, delineations, soil maps, air photos and specific plans in order to refine wetland data available to the public. The County requests that the State of Minnesota when considering policies relating to wetland amount in the County should take into account that the NWI maps underestimate County wetlands. "L"

2.10 County and Town drainage ditches: St. Louis County recognizes the need to maintain adequate drainage in order to sustain established land uses. To that end, the County shall promote an inventory of existing ditch networks for both physical characteristics and regulatory status. The County will support a property owner's right to continue drainage as necessary to maintain an existing land use. This plan further supports the efforts of County residents to examine potential changes in the drainage laws as they affect areas such as the Toivola area of the County. Where practical, the County shall also promote the return of marginal lands to pre-drained conditions for wetland restoration credit. "L"

2.11 Land use controls: The County and local communities should examine the land use controls as implemented in their communities. This examination will be to ensure wetland issues are taken into account when development is proposed. Furthermore, the zoning maps should be studied by the community to ensure minimum lot size standards and use districts reflect the existence and value of wetlands in the area. "L"

2.12 Urban/rural consistent wetland standards: Wetland regulation enforcement should be the same in rural and urban areas. The County recognizes its responsibility in rural areas and is willing through joint powers agreements to assist in urban areas. However, it is the responsibility of the Board of Water and Soil Resources to insure that the cities are properly implementing the Wetland regulations. "L"

2.13 Wetland impacts on public lands: Wetland Impacts on Federal and State Lands that require mitigation may not be mitigated on lands under County Wetland jurisdiction without approval of the WTAC. The County must be satisfied that the sequencing criteria has been met and that wetland replacement complies with the intent of this plan. "L"

Section 3: Economic Activity

3.01 Iron mining: The mining industry has unique wetland replacement issues which call for alternative forms of review. Therefore the County Wetland Plan supports the following:

- A. Wetland replacement issues should continue to be part of the overall mined land reclamation plan.
- B. There should be only one permitting agency for the mining companies; DNR minerals or the Army Corp of Engineers. St. Louis County will not involve itself in wetland impacts within the permit to mine area.
- C. The County recognizes the authority of the permitting agency in "B" above to develop and to implement wetland replacement requirements, including the appropriate financial assurance provisions for the mining industry defined in state rules. The County has no objections to non-concurrent wetland replacement anywhere in the state including areas with 80% or more pre-settlement wetlands remaining. The County will work in cooperation with the mining industry regarding any changes in legislation that would be necessary to accomplish this policy.
- D. The County encourages continued research on the use of tailing basins and other similar areas as wetland replacement areas. In addition, mined land reclamation activity is encouraged to identify and establish wetlands in abandoned mining areas. "L"

3.02 Construction activity: The County encourages all landowners who are constructing driveways to contact either the SWCD or the County prior to construction so that information can be obtained regarding wetland identification. Realtors and contractors shall be provided with educational materials relating to wetlands. "L"

3.03 Wetlands and sewage treatment: The County recognizes that wetlands can play an important role as part of a sewage treatment system. The use of wetlands for the tertiary polishing of effluent shall be allowed, provided there is no surface discharge and no significant loss of wetland function. The placement of pipes, tanks, and related equipment in wetlands shall be allowed, provided all other provisions of the WCA, the Plan, and State water quality standards are met. "L"

3.04 Construction/demolition debris: Construction and/or demolition debris shall not be used as fill material in a wetland unless specific authorization is granted by the WTAC. "L"

3.05 Erosion control adjacent to wetlands: Erosion from development adjacent to wetlands must be controlled so that sediment does not run into the wetland. Erosion control plans may be required by the local unit of government in order to stabilize runoff into the wetland. "L"

Section 4: Wetland Impacts, Functions and Values.

4.01 Functional analysis: St. Louis County adopts by reference, the Wetland Functional Analysis, found in chapter four of this Plan. This analysis shall serve as the basis for evaluating wetland impacts throughout St. Louis County. This analysis reflects the inventory of wetlands prepared from the National Wetland Inventory Maps and the County GIS system, surveys of citizens regarding wetland values, and the involvement of technical experts. No community shall utilize an analysis that is inconsistent with the County's analysis. In reviewing a wetland impact using the functional analysis the educational and commercial potential and existing use should also be considered. Wetlands that are used for established commercial and educational uses must have the impact of any wetland draining or filling upon that function considered prior to permitting the impact. This examination shall be done in conjunction with the operator of the commercial or educational use. The potential for new commercial or educational wetland uses will be examined on a case by case basis by the WTAC. "F / L"

4.02 Priority areas for wetland restoration: The restoration of drained wetlands can be valuable for the environment and provide wetland banking and replacement opportunities. All shoreland districts shall be considered priority areas for wetland restoration. The WTAC and Planning Commission may identify additional priority areas. "L"

4.03 Project definition: St. Louis County contends that the current WCA project definition is overly restrictive and unfairly favors "projects" on small parcels. Furthermore, the County believes that, in as much as the de minimis exemption has been adopted by the State without regard to wetland functions and values, a less restrictive policy could promote economic development while maintaining the facade of "no net loss". Therefore, the County supports legislative changes that would allow for the following "Project" definition and related standards.

"Project" means a specific plan, contiguous activity, proposal, or design necessary to accomplish a goal as defined by the local government unit. A project may not be split into components or phases for the sole purpose of gaining additional exemptions, except under the following circumstances:

1. One exemption or de minimis shall be allowed for each 35 acres of contiguous ownership, provided the WTAC is satisfied that sequencing as been followed.
2. Wetland fill can not exceed more than 10% of the wetlands on the total property being developed.
3. For subdivisions and similar developments where each lot exceeds 4.5 acres, each property owner shall be entitled to a de minimis exemption. However, the county shall ensure through the subdivision review that all such lots or parcels have a buildable area without draining or filling, or that WCA requirements have been satisfied by the developer prior to plat approval. "L"

4.04 Exemption standards: St. Louis County incorporates the existing exemptions of the State Wetland Conservation Act into this Plan. In addition, the County adopts the following

exemption standard:

(Exemption 9 under WCA) Wetland impacts on types 1,2 and 6 not within 300 feet of a river or 1,000 feet from a lake, except for bottomland hardwood type 1 wetlands, shall have an exemption of two acres if all of the following conditions are met:

- A. The Wetland is assigned a low or moderate protection level and the wetland's public value as determined by the St. Louis Wetland Assessment Guide (SWAG) will be retained.
- B. The area is in a commercial or industrial zoned area or in an area with a minimum lot standard of 4.5 acres or more.
- C. No more than 10% of a wetland shall be filled.
- D. The type 2 or type 6 wetland is less than 2 acres in size. However, this exemption may be expanded to additional acreage, including types 1, 2, and 6 wetlands that are part of a larger wetland system, when the additional acreage is part of a conservation plan approved by the local soil and water conservation district, the additional draining or filling is necessary for efficient implementation of the project, the hydrology of the larger wetland system is not adversely affected, and wetlands other than types 1, 2, and 6 are not drained or filled. "F"

4.05 Accidental wetlands: Upon approval of the WTAC, wetlands larger than two acres, created accidentally or incidently, may be considered for project specific wetland mitigation purposes pursuant to State rule if there is a demonstrable risk of loss of the wetland. "L"

4.06 Upland improvement credit: Replacement credit for upland improvement and preservation will be authorized by the WTAC. The amount of upland to be allowed as a credit will be determined by the WTAC in cooperation with DNR Wildlife. The upland credit shall be related to the upland's relationship to the wetlands and may not be the majority of the mitigative efforts for a land owner. The County will continue toward developing specific guidelines for the use of upland credit. "F"

4.07 Wetlands on public lands: St. Louis County has considerable public lands and these public lands serve as a significant wetland reserve. These lands can serve as an example for Best Management Practices in wetlands, as well as, an opportunity for wetland restoration. The amount of public lands within a minor watershed should be a consideration when reviewing the potential loss of a wetland value and function on private lands. "L"

4.08 Wetland protection levels: The establishment of different wetland protection levels is important to allow flexibility in the application of the Wetland Conservation Act regulations to project proposers on a case-by-case basis. With the establishment of different wetland protection levels, the County places emphasis on protecting higher functioning wetlands that have a higher value to County residents. Conversely, the County places less emphasis on protecting lower functioning wetlands that have a lower value to County residents. Four levels of wetland protection will be implemented under this policy - **Priority, High, Moderate, Low**. There are 4 characteristics that vary within each level - **Mitigation ratio, Sequencing, Location of mitigation, Mitigation alternatives allowed**. The following table summarizes categories of each characteristic based on the protection level. "F"

Protection level	Mitigation ratio	Sequencing	Mitigation location	Mitigation alternatives
Priority	2:1	WCA sequencing standards, sequencing flexibility not allowed	Prioritization standards enforced*	Creation or restoration, upland enhancement not to exceed 25% of the total replacement area
High	1.5:1	WCA sequencing standards, sequencing flexibility allowed	Prioritization standards enforced	Creation or restoration, upland enhancement not to exceed 50% of the total replacement area
Moderate	1:1	WCA sequencing standards, sequencing flexibility allowed	Prioritization standards enforced	Creation or restoration, upland enhancement not to exceed 50% of the total replacement area
Low	0.5:1	WCA sequencing standards, sequencing flexibility allowed	Prioritization standards not enforced	Creation or restoration, upland enhancement not to exceed 50% of the total replacement area

*Prioritization is the process of locating wetland mitigation as close as possible to the wetland being impacted. The sequence in order of descending priority is to require mitigation on site if possible, then in the same - minor watershed - major watershed - wetland ecological unit - state.

Policies

1. Projects shall be evaluated using the procedure outlined in Addendum #1.
2. On a case-by-case basis, the WTAC shall determine if proposed action(s) meet the definition of wetland restoration, wetland enhancement, and upland enhancement and protection.
3. On a case-by-case basis, the WTAC shall determine the percent mitigation credit allowed for proposed wetland enhancement and/or upland enhancement and protection (up to the maximum designated for each protection category). The WTAC will evaluate this based on the relative contribution a proposed action will have on improving and/or maintaining wetland functions that are valued by the citizens of the County.
4. On a case-by-case basis, the WTAC shall determine the width of proposed upland enhancement and protection that will be considered for mitigation credit.
5. The County recommends that sequencing be applied to all wetland impacts, however, it will only be required for impacts that are above the de minimis amount and are not subject to other exemptions.
6. The requirements listed for wetlands under the 4 protection categories shall apply only if none of the standards listed in the Implementation Policies are applicable.

4.09 Combining wetland functions with values: "F"

Wetland functional rankings are only useful when viewed in context of their value to something or someone (i.e., society, the ecosystem, etc.). The wetland functions chosen for assessment by the County's evaluation method (*Floodflow Alteration, Sediment Stabilization, Groundwater Recharge, Groundwater Discharge, Sediment/Toxicant Retention, Wildlife Habitat, and Aquatic Habitat*) were not assessed in terms of value. Note that the wetland functions of *Education/Recreation* and *Commercial* uses were not addressed in the functional assessment due to their close connection with value judgments. However, these 2 functions/values are addressed in this section of the plan.

Wetland values were assessed in terms of their importance to the citizens of St. Louis County. The following guidelines will be used for placing wetlands into different protection levels. The basis for these guidelines is the data collected on St. Louis County citizen values (surveys and meetings), and current laws and regulations affecting some aspect of wetland regulations (i.e., Endangered Species Act, MPCA Rules Ch. 7050, etc.).

The following system of assigned wetland protection levels to wetlands based on functions and values is set up for the user to start with determining if the wetland fits within the guidelines for the Priority protection level followed by the High and then Low protection levels. If the wetland does not fit within the guidelines for any of these 3 levels, then it is assigned to the Moderate protection level. The guidelines for these levels are not absolute. There should be flexibility to allow for unique circumstances with specific projects when it is warranted. The St. Louis County WTAC will make final decisions on which protection category is most appropriate for a particular wetland based on these guidelines and any extenuating circumstances.

It should be noted that it is not the intent of this system to place an overall ranking on a particular wetland. It is intended to aid in making management decisions based on the functions a particular wetland performs and the value that has been placed on these functions in different instances.

Priority Protection Level

- Wetlands with a known population or populations of State and/or Federally listed threatened or endangered plants or animals.
- Wetlands that affect wild rice beds.
- Wetland within a designated wildlife refuge, wildlife management area, park, or designated historical site.
- Wetlands with a high Wildlife Habitat functional ranking that serve as a waterbird nesting area or migratory staging area.
- Wetlands adjacent to designated trout streams that have a high Aquatic Habitat, Sediment Stabilization, or Sediment/Toxicant Retention functional ranking.
- Wetlands in designated shoreland areas which have a high Stabilization or Sediment/Toxicant Retention functional ranking.
- Wetlands adjacent to perennial rivers or streams with a high Floodflow Alteration, Sediment Stabilization, or Sediment/Toxicant Retention functional ranking.
- Wetlands in areas of shallow wells with a high Groundwater Recharge functional ranking and a high functional ranking for at least one other function.
- Wetlands in minor watersheds with fewer than 80% of pre-settlement wetlands remaining.
- Wetlands that are within 300 feet of a trout stream or a trout stream tributary, as defined in the DNR protected waters inventory.

High Protection Level

- Wetlands with a high ranking for at least 4 of the 7 functions evaluated.
- Wetlands with a known population or populations of DNR "special concern" plant or animal species and a high Wildlife Habitat or Aquatic Habitat functional ranking.
- Wetlands adjacent to designated trout streams with a high functional ranking for at least 2 of the 7 functions evaluated.
- Wetlands officially being used for educational purposes (i.e., outdoor classrooms for nature centers or schools).
- Wetlands used by and accessible to the general public for recreational purposes (fishing, boating, etc.).
- Wetlands with a high potential for commercial uses such as horticultural peat, wild rice production, etc.
- Wetlands in designated shoreland areas with a high functional ranking for at least 2 of the 7 functions evaluated.
- Upstream wetlands located adjacent to streams or rivers that flow through towns or cities and have a high Floodflow Alteration functional ranking.
- Wetlands in areas of shallow wells with a high Groundwater Recharge functional ranking.

- Wetlands that have a high Groundwater Discharge functional ranking where water eventually outlets to a stream or river.
- Wetlands with a high Floodflow Alteration functional ranking that are located in the designated 100-year floodplain of a stream or river.
- Wetlands with a high Aquatic Habitat and Wildlife Habitat functional ranking.
- Wetlands adjacent to Coldwater Lake Habitats as determined by the WTAC.
- Wetlands with plant communities that rank high in floral diversity/integrity.
- All wetlands within shoreland protection zones (300 feet of rivers and 1000 feet of lakes).

Moderate Protection Level

- Wetlands not falling within the guidelines listed for Priority, High, or Low protection levels.
- Wetlands with plant communities that rank moderate in floral diversity/integrity.

Low Protection Level

- Type 6 wetlands that have a low or moderate functional ranking for 5 or more of the 7 functions evaluated.
- Partially drained wetlands that have a low or moderate functional ranking for 5 or more of the 7 functions evaluated.
- Wetlands located in zoned commercial or industrial areas that have a low or moderate functional ranking for 5 or more of the 7 functions evaluated.
- Wetlands currently being used for horticultural peat that have a low or moderate functional ranking for 5 or more of the 7 functions evaluated.
- Wetlands located in zoned residential areas that have a low or moderate functional ranking for 6 or more of the 7 functions evaluated.
- Wetlands located in crop fields that do not have a high Aquatic Habitat or Wildlife Habitat functional ranking.
- Wetlands in designated mining areas that have a low or moderate functional ranking for 5 or more of the 7 functions evaluated.
- Wetlands with a low functional ranking for 5 or more of the functions evaluated.

"F"

Project Evaluation Procedure
for
Wetland Impacts

Step 1 Determine the extent of wetland area the project will impact.

Step 2 Determine the de minimis exemption from the following:

Shoreland, between the OHWL and the principal structure setback:	No exemption
Types 3, 4, 5, 8, wetlands with a predominance of cedar or tamarack, and shoreland wetlands, non-isolated, or with a surficial connection to a public water:	400 sq. ft.
Shoreland, other:	1000 sq. ft.
Non-shoreland, other:	10,000 sq. ft.

If a project's wetland impact exceeds the de minimis exemption, proceed to step 3.

Step 3 Determine the wetland protection level using first the list in section 4.09 of the Plan, then the St. Louis Wetland Assessment Guide (SWAG).

The highest protection level applies.

If low or moderate, the 1-2-6 exemption may apply. (See 4.04)

Step 4 Determine mitigation options using the mitigation matrix in the Plan.

Step 5 Submit a replacement plan to the WTAC for all non-exempt impacts.

Chapter Four: Reference Wetlands and Functional Assessment

REFERENCE WETLANDS

Sixteen reference wetlands were selected and evaluated with assistance from members of the St. Louis County TAC. The purpose of selecting and evaluating reference wetlands was to provide a basis of comparison for evaluating the functions of other wetlands and to test the SWAG. Some criteria used for selecting reference wetlands were as follows:

1. **The reference wetland should be really accessible.** People involved in the evaluation of wetlands in the County should be able to easily visit a specific reference wetland type to observe characteristics associated with its functional rating. They will then be able to take this mental image back with them to the particular wetland they are evaluating of the same type. Mental images are not scientifically defensible, but they are a powerful means of comparison and may be as reliable as individual indicators in certain instances.
2. **The reference wetland should be located in an area that will not be undergoing significant changes that may directly or indirectly affect the wetland in the foreseeable future.** This is important so that these wetlands can serve as a relatively stable standard of comparison and be evaluated in further detail over the years as potentially part of a long term study. Such a study would permit quantifiable data to be collected on wetland functions to determine if the indicators used in the evaluation accurately measure actual wetland functional processes. Public lands are generally the best location for reference wetlands.

Originally, RLK-Kuusisto proposed to select and evaluate 10 reference wetlands of different types in 3 ecological regions of the County. Upon consultation with members of the TAC, it was decided to focus on wetlands that were typically dealt with in the County's administration of the Wetland Conservation Act. It was also decided to select wetlands that were "typical" or "normal" for each specific wetland type in the County and not necessarily pristine or undisturbed. It was assumed that evaluating these types of wetlands would be more useful in determining if SWAG worked. In addition, the full range of functional rankings would be represented in the outcome (i.e., high, moderate, and low rankings for each of the 7 functions would occur at least once among the reference wetlands).

Sixteen reference wetlands in 3 general regions of the County were evaluated. Reference wetlands were located in the southeast portion of the County (Lake Superior watershed), the south central portion of the County (St. Louis River watershed), and in the north central portion of the County (Vermillion River watershed). The attached reference wetland location maps were created by the St. Louis County Planning Department and they depict the specific location of the reference wetlands.

The following table summarizes the results of the reference wetland evaluations utilizing the current version of the SWAG.

Reference Wetland	Function						
	FF	SS	GR	GD	STR	WH	AH
Shoreland South	Low	High	Moderate	High	Moderate	Low	High
Type 8 South	Low	Low	Moderate	High	Moderate	Low	Moderate
Type 7 South	Moderate	Moderate	Moderate	High	Moderate	Low	Moderate
Type 6 South	Low	Moderate	Moderate	High	Moderate	Low	Moderate
Type 5 South	Low	High	Low	High	High	Moderate	High
Type 4 South	Low	High	Moderate	High	Moderate	High	High
Type 3 South	High	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Type 2 South	Moderate	Low	Moderate	High	Moderate	Low	Moderate
Shoreland North	High	High	High	Low	Moderate	Moderate	High
Type 7 North	Low	Moderate	Moderate	Moderate	Moderate	Low	Moderate
Type 7	Low	Moderate	Moderate	High	Moderate	Low	Moderate
Vermillion	High	High	High	Moderate	High	High	High
Type 4 North	Low	Moderate	Moderate	High	Moderate	Low	Moderate
Type 3 North	Low	Moderate	Moderate	High	Moderate	High	High
Type 3	Moderate	Low	Moderate	Moderate	Moderate	Low	Moderate
Vermillion	High	Low	Moderate	Low	High	Low	Low
Type 2 North							
Type 1 North							

FF = Floodflow Alteration
 SS = Sediment Stabilization
 GR = Groundwater Recharge
 GD = Groundwater Discharge
 STR = Sediment/Toxicant Retention
 WH = Wildlife Habitat
 AH = Aquatic Habitat

WETLAND FUNCTIONAL ASSESSMENT METHOD

Development of a wetland functional assessment method is necessary because an assessment of wetland functions is a required component of Local Comprehensive Wetland Protection and Management Plans prepared under rules of the WCA.

Wetland functions were separated from wetland values as this method was developed. Brimson (1993) was used extensively for guidance and clarification on the distinction between wetland functions and wetland values. Wetland functions are the biological, chemical, and physical attributes or processes related to the ecological functioning of a wetland. Functions exist in the absence of society. Wetland values are essentially the goods and services that emanate from wetland functions and attributes. An example that illustrates the difference is the term "water quality." Improvement of water quality is often listed as a function of wetlands, however, it actually implies value. The actual function may be the interception of nitrates and phosphates from surface runoff waters, and the value of this function may be that it improves water quality.

Development of the assessment method was based on addressing 3 major considerations. These considerations are as follows:

1. **The method should be scientifically defensible.**
2. **The method should be objective and repeatable.** In general, the outcome should be the same for the rating of a particular function despite the particular evaluator.
3. **The method should be practical to implement by evaluators with a general background in biology/natural resources and no specialized expertise.** In other words, a team of experts in various fields should not be required to conduct the evaluation. A person with a general biology/natural resources background and some limited training should be able to accurately conduct the evaluation.

Several of the well-known function and values assessment methodologies were reviewed prior to development of the St. Louis County Assessment Method, including HGM (Brimson 1993), WET (Adamus et. al), MinRAM (MN Interagency Working Group 1996), and WRAM (Wisconsin DNR).

HGM is the newest and most innovative approach to wetland functional assessment. The scientific basis of the approach is sound and only functions are evaluated. A problem with using this approach for the St. Louis County plan is that HGM is only a method of classifying wetlands from which a functional method can be developed. The classification does not correspond to that used by the current regulatory system, and guidance for developing a functional assessment method based on this classification scheme indicates that the process would be too time consuming and expensive given the scope and purposes of this plan.

WRAM is a relatively quick and easy evaluation method that was created for use in Wisconsin. It, however, does not clearly make a distinction between wetland functions and values. It is a

qualitative method based largely on the professional judgment of the evaluator. The evaluator must answer a series of questions about the wetland that are intended to guide him/her to a particular rating. It does not provide any guidance as to how to translate answers to the questions into a final rating.

MinRAM 1.0 is similar to WRAM, and it is an accepted assessment tool for use in Minnesota according to the Minnesota Board of Water & Soil Resources. It is more detailed than WRAM and provides guidance for interpreting what is high, medium, and low quality for a particular function in terms of the information provided by answering the questions. The rationale for the overall functional ratings is somewhat based on the value of these functions to society rather than the strict interpretation of their degree of functioning. It provides some minimal guidance for incorporating reference wetlands. However, it still relies heavily on professional judgment and it recommends that a diverse team of professionals conduct the evaluation together.

WET is the most detailed and well-researched of the methods. It measures functions in terms of their effectiveness (capability of performing a function) and opportunity (opportunity of a wetland to perform a function to its level of capacity). Values are somewhat separated from functions by the fact that functions are also assessed by their social significance. A clear advantage of WET is that it asks a series of questions related to a specific function and then provides a "flow chart-like" key that clearly leads the evaluator to a specific ranking (high, moderate, low) based on the answers to the questions. The advantage of this is that the results are relatively repeatable for different evaluators as long as the initial questions are answered correctly. A disadvantage of WET is that it is rather long and cumbersome to use.

The method chosen for use in St. Louis County in consultation with the Technical Advisory Committee (TAC) and the Citizens Advisory Committees is a modification of WET which incorporates elements of MnRAM and HGM. The wetland functions chosen for evaluation are a subset of the wetland functions addressed by WET. The number of functions evaluated was limited to 7 including Floodflow Alteration, Sediment Stabilization, Groundwater Recharge, Groundwater Discharge, Sediment/Toxicant Retention, Wildlife Habitat, and Aquatic Habitat. Wetlands perform infinitely more functions, however, it was concluded that evaluation of more than 7 would begin to make the assessment procedure too long and cumbersome to use routinely. Note that wetland functions typically referred to in other assessment methods such as "Water Quality," "Shoreline Protection," and "Aesthetics" are not used in this method because they imply some element of value.

The following document constitutes the St. Louis County Wetland Assessment Guide referred to by the acronym SWAG. It is suggested that this method be used for at least the first year of implementation of the County Wetlands Plan, and then be re-evaluated by the County TAC to determine if modifications are necessary.

Project Evaluation Procedure for Wetland Impacts

Step 1 Determine the extent of wetland area the project will impact.

Step 2 Determine the de minimis exemption from the following:

Shoreland, between the OHWL and the principal structure setback:	No exemption
Types 3, 4, 5, 8, wetlands with a predominance of cedar or tamarack, and shoreland wetlands, non-isolated, or with a surficial connection to a public water:	400 sq. ft.
Shoreland, other:	1000 sq. ft.
Non-shoreland, other:	10,000 sq. ft.

If a project's wetland impact exceeds the de minimis exemption, proceed to step 3.

Step 3 Determine the wetland protection level using first the list in section 4.09 of the Plan, then the St. Louis Wetland Assessment Guide (SWAG).

The highest protection level applies.

If low or moderate, the 1-2-6 exemption may apply. (See 4.04)

Step 4 Determine mitigation options using the mitigation matrix in the Plan.

Step 5 Submit a replacement plan to the WTAC for all non-exempt impacts.

Chapter Four: Reference Wetlands and Functional Assessment

REFERENCE WETLANDS

Sixteen reference wetlands were selected and evaluated with assistance from members of the St. Louis County TAC. The purpose of selecting and evaluating reference wetlands was to provide a basis of comparison for evaluating the functions of other wetlands and to test the SWAG. Some criteria used for selecting reference wetlands were as follows:

1. **The reference wetland should be really accessible.** People involved in the evaluation of wetlands in the County should be able to easily visit a specific reference wetland type to observe characteristics associated with its functional rating. They will then be able to take this mental image back with them to the particular wetland they are evaluating of the same type. Mental images are not scientifically defensible, but they are a powerful means of comparison and may be as reliable as individual indicators in certain instances.
2. **The reference wetland should be located in an area that will not be undergoing significant changes that may directly or indirectly affect the wetland in the foreseeable future.** This is important so that these wetlands can serve as a relatively stable standard of comparison and be evaluated in further detail over the years as potentially part of a long term study. Such a study would permit quantifiable data to be collected on wetland functions to determine if the indicators used in the evaluation accurately measure actual wetland functional processes. Public lands are generally the best location for reference wetlands.

Originally, RLK-Kuusisto proposed to select and evaluate 10 reference wetlands of different types in 3 ecological regions of the County. Upon consultation with members of the TAC, it was decided to focus on wetlands that were typically dealt with in the County's administration of the Wetland Conservation Act. It was also decided to select wetlands that were "typical" or "normal" for each specific wetland type in the County and not necessarily pristine or undisturbed. It was assumed that evaluating these types of wetlands would be more useful in determining if SWAG worked. In addition, the full range of functional rankings would be represented in the outcome (i.e., high, moderate, and low rankings for each of the 7 functions would occur at least once among the reference wetlands).

Sixteen reference wetlands in 3 general regions of the County were evaluated. Reference wetlands were located in the southeast portion of the County (Lake Superior watershed), the south central portion of the County (St. Louis River watershed), and in the north central portion of the County (Vermillion River watershed). The attached reference wetland location maps were created by the St. Louis County Planning Department and they depict the specific location of the reference wetlands.

The following table summarizes the results of the reference wetland evaluations utilizing the current version of the SWAG.

Reference Wetland	Function						
	FF	SS	GR	GD	STR	WH	AH
Shoreland South	Low	High	Moderate	High	Moderate	Low	High
Type 8 South	Low	Low	Moderate	High	Moderate	Low	Moderate
Type 7 South	Moderate	Moderate	Moderate	High	Moderate	Low	Moderate
Type 6 South	Low	Moderate	Moderate	High	Moderate	Low	Moderate
Type 5 South	Low	High	Low	High	High	Moderate	High
Type 4 South	Low	High	Moderate	High	Moderate	High	High
Type 3 South	High	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Type 2 South	Moderate	Low	Moderate	High	Moderate	Low	Moderate
Shoreland North	High	High	High	Low	Moderate	Moderate	High
Type 7 North	Low	Moderate	Moderate	Moderate	Moderate	Low	Moderate
Type 7 Vermillion	Low	Moderate	Moderate	High	Moderate	Low	Moderate
Type 4 North	High	High	High	Moderate	High	High	High
Type 3 North	Low	Moderate	Moderate	High	Moderate	Low	Moderate
Type 3 Vermillion	Low	Moderate	Moderate	High	Moderate	High	High
Type 2 North	Moderate	Low	Moderate	Moderate	Moderate	Low	Moderate
Type 1 North	High	Low	Moderate	Low	High	Low	Low

FF = Floodflow Alteration
 SS = Sediment Stabilization
 GR = Groundwater Recharge
 GD = Groundwater Discharge
 STR = Sediment/Toxicant Retention
 WH = Wildlife Habitat
 AH = Aquatic Habitat

WETLAND FUNCTIONAL ASSESSMENT METHOD

Development of a wetland functional assessment method is necessary because an assessment of wetland functions is a required component of Local Comprehensive Wetland Protection and Management Plans prepared under rules of the WCA.

Wetland functions were separated from wetland values as this method was developed. Brimson (1993) was used extensively for guidance and clarification on the distinction between wetland functions and wetland values. Wetland functions are the biological, chemical, and physical attributes or processes related to the ecological functioning of a wetland. Functions exist in the absence of society. Wetland values are essentially the goods and services that emanate from wetland functions and attributes. An example that illustrates the difference is the term "water quality." Improvement of water quality is often listed as a function of wetlands, however, it actually implies value. The actual function may be the interception of nitrates and phosphates from surface runoff waters, and the value of this function may be that it improves water quality.

Development of the assessment method was based on addressing 3 major considerations. These considerations are as follows:

1. **The method should be scientifically defensible.**
2. **The method should be objective and repeatable.** In general, the outcome should be the same for the rating of a particular function despite the particular evaluator.
3. **The method should be practical to implement by evaluators with a general background in biology/natural resources and no specialized expertise.** In other words, a team of experts in various fields should not be required to conduct the evaluation. A person with a general biology/natural resources background and some limited training should be able to accurately conduct the evaluation.

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ST. LOUIS COUNTY WETLAND ASSESSMENT GUIDE (SWAG)

Purpose:

This guide was developed for use in St. Louis County, Minnesota, in conjunction with the County's Comprehensive Wetlands Management Plan. The guide is a modification of the *Wetland Evaluation Technique (WET)* developed by the U.S. Army Corps of Engineers (Waterways Experiment Station), and it uses elements of Version 1.0 of the *Minnesota Routine Assessment Method for Evaluating Wetland Functions* as developed by the Minnesota Inter-agency Wetlands Group. Users of this guide should have at least a basic knowledge of wetland science to the extent that they have the ability to complete routine wetland delineations.

The purpose of the guide is to provide a tool for use in evaluating the functions of wetlands in St. Louis County. The guide has been designed to reduce subjectivity by inferring a rank of low, moderate, or high for each wetland function based on a series of yes-no answers to specific questions. However, as with all methods, a certain degree of professional judgment is required. The guide focuses strictly on wetland functions and attempts to avoid value judgments.

How to Use this Guide:

1. Use the "selection of assessment area" sheet for guidance in defining the approximate boundaries of the wetland area to examine.
2. Examine the wetland in the field and answer the guide questions for each of the seven functions. In general, an affirmative answer to a question relates to a higher functional ranking and a negative answer relates to a lower ranking. The field examination should typically not take more than 2 hours (depending on the size of the assessment area) or it can be accomplished in conjunction with data collection for delineation of the wetland.
3. Use the answers to the questions to run through the "Ranking Keys" for each of the 7 functions.
4. Identify the set of questions under the "high" or "low" categories within each function which is true for the wetland being examined (one set per function). If none of the sets of questions within a functional category are met, then assign a "moderate" ranking for that function. If low and high categories are true for a given function then a "moderate" ranking should be assigned (this may happen with the groundwater recharge and discharge functions). Record your results in the ranking summary at the end of the document.

Results from the evaluation can be interpreted using the interpretation narratives for each function. Modification of functional rankings for a particular wetland can and should be made if more specific data or observations on wetland functions are available that support a higher or lower rank. In addition, the user may wish to consider future conditions of a wetland and base answers to the questions on projected variables. For instance, wetlands in or near developing or urbanizing areas may be evaluated in terms of anticipated future conditions such as an increased impervious watershed area, increased sedimentation sources, increased erosion, etc.

FUNCTIONAL GUIDE

Project/Landowner Name _____

Wetland #/Name _____ Date _____

Location: Township or City _____ Section _____

Evaluator(s) _____

FLOODFLOW ALTERATION

Floodflow Alteration is defined as the function whereby surface water is stored or its velocity is attenuated to a greater degree than typically occurs in terrestrial landscapes. This function is measured in terms of effectiveness and opportunity. The ranking does not reflect quantities of water stored or degree of flow attenuation, but rather the probability that water storage or flow attenuation will occur.

Instructions: Answer questions and then use flowchart to determine if HIGH or LOW ranking applies. Assign a MODERATE ranking if HIGH or LOW rankings do not apply according to the flowchart.

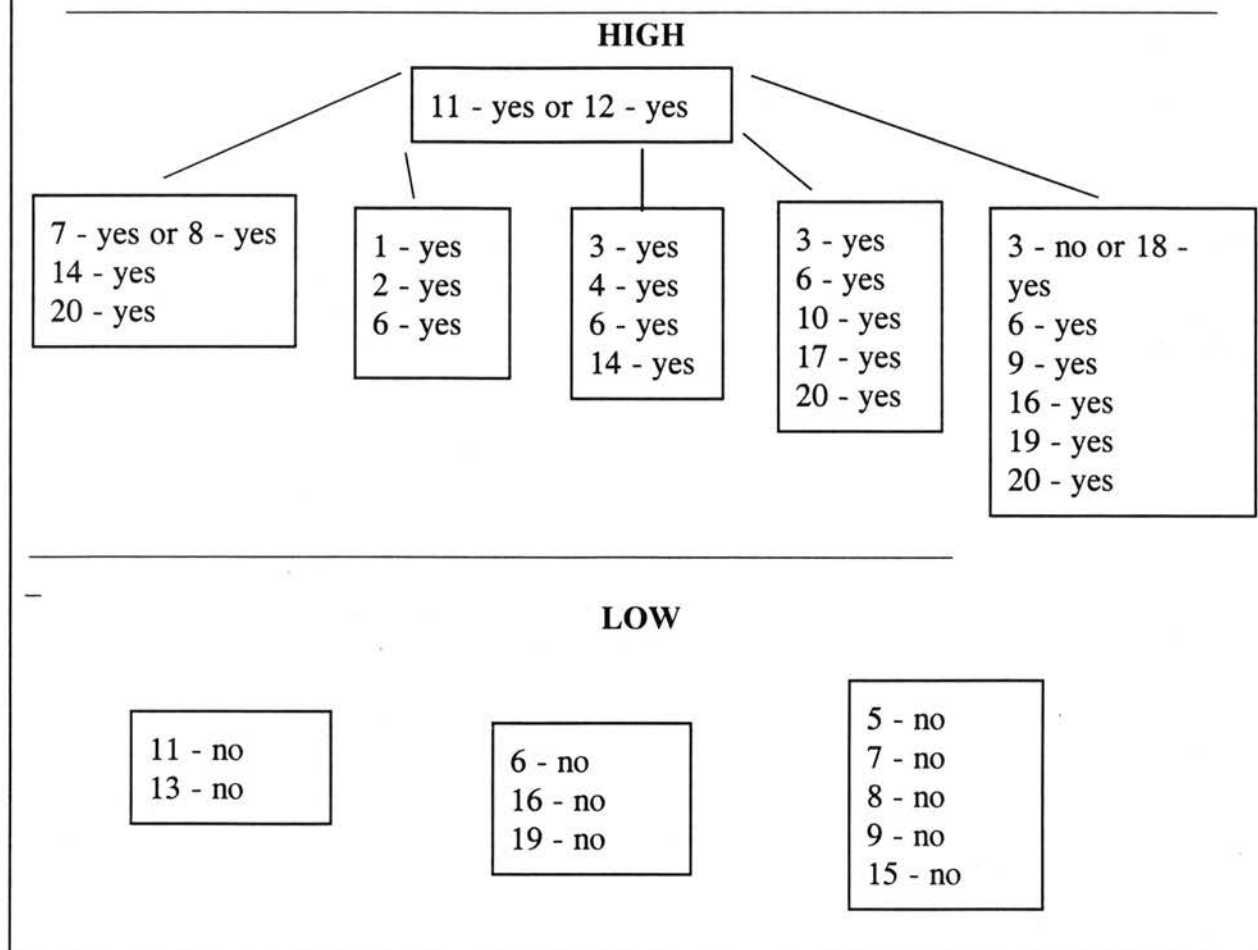
YES NO

- | | | | |
|--------------------------|--------------------------|----|---|
| ☐ | ☐ | 1. | Does the wetland have a constricted outlet? |
| ☐ | ☐ | 2. | Does the wetland have an unconstricted inlet? |
| ☐ | ☐ | 3. | Does the wetland <i>lack</i> an outlet? |
| ☐ | ☐ | 4. | Does the wetland <i>lack</i> an inlet? |
| ☐ | ☐ | 5. | Does the wetland <i>lack</i> an unconstricted outlet? |
| ☐ | ☐ | 6. | Does the wetland <i>lack</i> any functioning ditches, channels, levees, or similar features (excluding natural streams) that facilitate the flow of water through and out of the wetland? |
| ☐ | ☐ | 7. | Is any part of the wetland used for stormwater or floodwater detention? |

YES NO

- | | | | |
|--------------------------|--------------------------|-----|--|
| ☐ | ☐ | 8. | Is there extensive, regular flooding associated with the wetland from a nearby waterbody or stream? |
| ☐ | ☐ | 9. | Is the surface area of the wetland assessment area >200 acres? |
| ☐ | ☐ | 10. | Is the surface area of the wetland assessment area >5 acres? |
| ☐ | ☐ | 11. | Is the wetland <20% the size of its immediate watershed? |
| ☐ | ☐ | 12. | Is the immediate watershed of the wetland >50% impervious and/or unvegetated? |
| ☐ | ☐ | 13. | Is >50% of the wetland's immediate watershed something other than forested or scrub shrub? |
| ☐ | ☐ | 14. | Does the wetland have seasonally flooded or seasonally saturated hydrology only? |
| ☐ | ☐ | 15. | Is the dominant hydrologic regime <i>not</i> permanently flooded? |
| ☐ | ☐ | 16. | Is >50% of the wetland Type 6 or 7? |
| ☐ | ☐ | 17. | Does the wetland have a wide wetland-upland fringe forming a broad boundary? |
| ☐ | ☐ | 18. | Is there a fringe of herbaceous vegetation, trees, or shrubs >20 ft. wide along >50% of the wetland - upland edge? |
| ☐ | ☐ | 19. | Does the wetland have high vegetation/open water interspersions? (Answer no if there is not open water) |
| ☐ | ☐ | 20. | Do the soils have moderate to high permeability and there is not a shallow (<3 ft.) depth to bedrock? |

FLOODFLOW ALTERATION



- The following interpretation narrative describes the characteristics of wetlands necessary to satisfy the criteria for “high” and “low” rankings for the **FLOODFLOW ALTERATION** function.

HIGH

All wetlands receiving a high floodflow alteration ranking must have an impervious or bare ground watershed or the wetland must be <20% the size of its immediate watershed. In addition, any one of the following sets of characteristics must be true:

- Seasonal hydrology only, low soil permeability, and wetland is part of a floodwater/stormwater detention system or flooding from an associated waterbody or stream.

or

Constricted outlet and an unconstricted inlet and there are no ditches/channels/levees.

or

Seasonal hydrology only, no outlet, no inlet, and no ditches/channels/levees.

or

No outlet present, no ditches/channels/levees, wide and gradual wetland to upland boundary, soils have a moderate to high permeability, and wetland is >5 acres.

or

Type 6 or 7 wetland, outlet present or wetland fringe of veg.>20 ft. wide, no ditches/channels/levees present, high vegetation/open water interspersed, soils have moderate to high permeability, and wetland is >200 acres.

LOW

A wetland having any of the following sets of characteristics would be ranked as low:

The wetland's immediate watershed is forested or scrub shrub and the wetland is >20% the size of its watershed.

or

Wetland is not Type 6 or 7, ditches/channels/levees present, vegetation/open water interspersed low.

or

Permanently flooded, an unobstructed outlet present, not part of a floodwater/stormwater detention system or no flooding associated with a nearby waterbody or stream, and wetland not >200 acres.

SEDIMENT STABILIZATION

Sediment Stabilization is defined as the ability to effectively bind soil and dissipate erosive forces. This function is measured in terms of effectiveness only.

Instructions: Answer questions and then use flowchart to determine if HIGH or LOW ranking applies. Assign a MODERATE ranking if HIGH or LOW rankings do not apply according to the flowchart.

YES NO

- | | | | |
|--------------------------|--------------------------|-----|--|
| ☐ | ☐ | 1. | Does the wetland <i>lack</i> an inundated portion under normal conditions? |
| ☐ | ☐ | 2. | Does herbaceous vegetation, trees, or shrubs occupy >10% of the <i>inundated</i> portion of the wetland? (Answer no if there is not an inundated portion) |
| ☐ | ☐ | 3. | Is the open water area of the wetland > the remainder of the wetland? (Answer no if there is not open water) |
| ☐ | ☐ | 4. | Is there an area of open water in the wetland >100 feet wide surrounded by emergent vegetation? |
| ☐ | ☐ | 5. | Is any portion of the wetland in a position to protect a nearby shoreline of an open water area? |
| ☐ | ☐ | 6. | Does the wetland have high vegetation/open water interspersions? (Answer no if there is no open water) |
| ☐ | ☐ | 7. | Is there an area of submergent or floating aquatic vegetation present in the wetland? |
| ☐ | ☐ | 8. | Does the wetland have vegetation classes with obscure boundaries and high interspersions (answer no if there is only one vegetation class)? |
| ☐ | ☐ | 9. | Does the wetland have any functioning ditches, channels, levees, or similar features (excluding natural streams) that facilitate the flow of water through and out of the wetland? |
| ☐ | ☐ | 10. | Are there drastic fluctuations in water levels due to artificial manipulation or stormwater runoff? |

YES NO

- ☐ ☐ 11. Are there channelized tributaries upstream of the wetland?
- ☐ ☐ 12. Do field observations or other sources of information indicate erosion around or in the wetland?
- ☐ ☐ 13. Are there any unstable and/or steep banks adjacent to the wetland?
- ☐ ☐ 14. Is there a fringe herbaceous vegetation, trees, or shrubs >20 ft. wide along >50% of the wetland - upland edge?
- ☐ ☐ 15. Is >50% of the wetland Type 6 or 7?
- ☐ ☐ 16. Does the wetland have an immediate underlying substrate of bedrock, cobble, or gravel?

SEDIMENT STABILIZATION

HIGH

Any combination of the 2 columns:

3 - yes
4 - yes
9 - yes
10 - yes
11 - yes
12 - yes
13 - yes

5 - yes
6 yes and 8 - yes
8 - yes
14 - yes
16 - yes

LOW

2 - no if 1 - no
4 - no
5 - no
7 - no
9 - no
12 - no
13 - no
15 - no
16 - no

The following interpretation narrative describes the characteristics of wetlands necessary to satisfy the criteria for "high" and "low" rankings for the **SEDIMENT STABILIZATION** function.

HIGH

Wetlands ranked high for sediment stabilization are those with any combination of one characteristic from the first set with one characteristic from the second set.

Open water > vegetated area of the wetland, has >100 ft. wide area of open water, ditches/channels/levees present, channelized tributaries upstream, erosion in or around the wetland, drastic water level fluctuations, unstable or steep banks adjacent to wetland.

Vegetated fringe >20 ft. wide, high interspersed of vegetation classes and high vegetation/open water interspersed, in a position to protect a nearby shoreline, substrate of bedrock, cobble, or gravel.

LOW

Wetlands with a low sediment stabilization ranking are those with <10% of the inundated portion vegetated, no open water area >100 ft. wide, no area of submergent or floating aquatic vegetation present, not Type 6 or 7, no ditches/channels/levees, not in a position to protect a nearby shoreline, no erosion in or around the wetland, no bedrock/rubble/gravel substrate, no unstable/steep banks adjacent to wetland.

GROUNDWATER RECHARGE

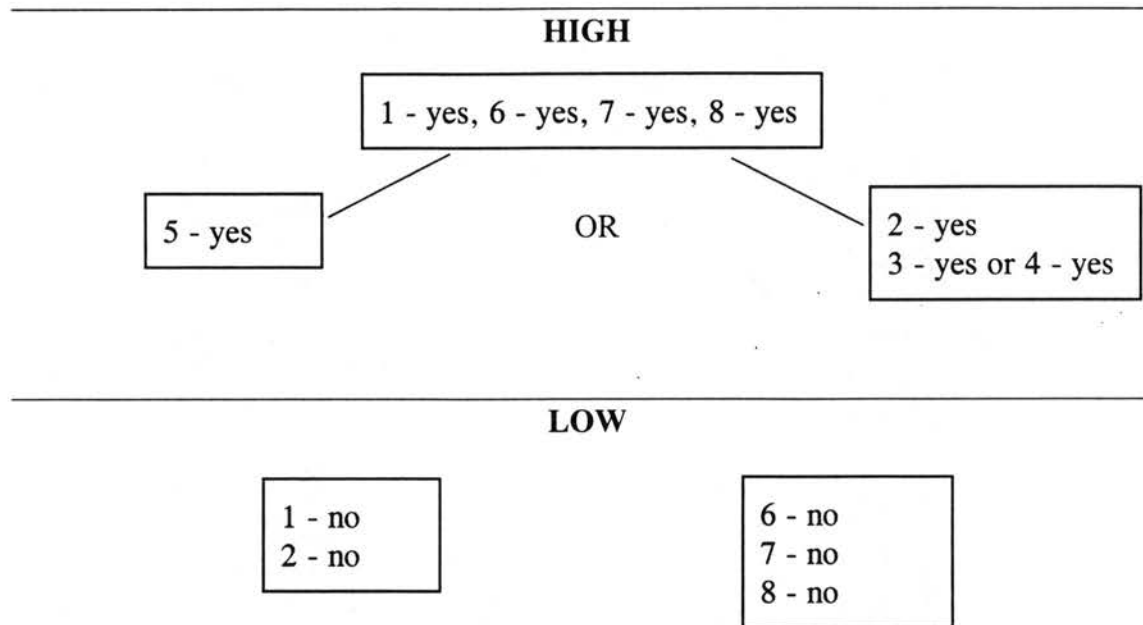
Groundwater Recharge is defined as where recharge to groundwater exceeds groundwater discharge and/or the rate of recharge exceeds the rate of recharge from terrestrial landscapes. This function is measured in terms of effectiveness. The sensitivity of this ranking is somewhat low due to the lack of any direct measurements and the lack of direct correlation between the observed characteristics and actual recharge.

Instructions: Answer questions and then use flowchart to determine if HIGH or LOW ranking applies. Assign a MODERATE ranking if HIGH or LOW rankings do not apply according to the flowchart.

YES NO

- | | | | |
|--------------------------|--------------------------|----|---|
| ☐ | ☐ | 1. | Does the wetland <i>lack</i> an outlet? |
| ☐ | ☐ | 2. | Does the wetland have an inlet? |
| ☐ | ☐ | 3. | Is the dominant hydrologic regime permanently flooded? |
| ☐ | ☐ | 4. | Is any part of the wetland part of a stormwater or floodwater detention system? |
| ☐ | ☐ | 5. | Is the drop in elevation downslope of the wetland greater than the rise in elevation upslope of the wetland? |
| ☐ | ☐ | 6. | Does the wetland <i>lack</i> any functioning ditches, channels, levees, or similar features (excluding natural streams) that facilitate the flow of water through and out of the wetland? |
| ☐ | ☐ | 7. | Does the wetland <i>lack</i> springs or seep areas? |
| ☐ | ☐ | 8. | Do the soil have moderate to high permeability and there is <i>not</i> a shallow (<3 ft.) depth to bedrock? |

GROUNDWATER RECHARGE



The following interpretation narrative describes the characteristics of wetlands necessary to satisfy the criteria for "high" and "low" rankings for the **GROUNDWATER RECHARGE** function.

HIGH

Wetlands receiving a high groundwater recharge ranking must not have an outlet, no ditches/channels/levees, no springs in the area, and not have soils with low permeability. In addition, one of the following must be true:

The drop in the downslope elevation must be $>$ the rise in the upslope elevation from the wetland.

or

Inlet present, permanently flooded or part of a stormwater/floodwater detention system.

LOW

Wetlands ranked with a low groundwater recharge function must have an outlet with no inlet or have ditches/channels/levees, no spring or seep areas, and have low permeability soils.

GROUNDWATER DISCHARGE

Groundwater discharge is defined as where the rate of discharge from groundwater into the wetland exceeds the rate of recharge. This function is measured in terms of effectiveness only. The sensitivity of this ranking is somewhat low due to the lack of any direct measurements and the lack of direct correlation between the observed characteristics and actual discharge. The key will tend to rank a majority of wetlands as high for this function.

Instructions: Answer questions and then use flowchart to determine if HIGH or LOW ranking applies. Assign a MODERATE ranking if HIGH or LOW rankings do not apply according to the flowchart.

YES NO

- | | | | |
|--------------------------|--------------------------|----|---|
| ☐ | ☐ | 1. | Are there springs or seep areas in the wetland? |
| ☐ | ☐ | 2. | Is the dominate hydrologic regime saturated? |
| ☐ | ☐ | 3. | Is the dominant hydrologic regime permanently flooded? |
| ☐ | ☐ | 4. | Is there an area of submergent or floating aquatic vegetation present in the wetland? |
| ☐ | ☐ | 5. | Does the wetland <i>lack</i> any functioning ditches, channels, levees, or similar features (excluding natural streams) that facilitate the flow of water through and out of the wetland? |
| ☐ | ☐ | 6. | Is the immediate watershed of the wetland 0-50% impervious and/or unvegetated? |
| ☐ | ☐ | 7. | Does the wetland have a narrow wetland-upland fringe with a sharp boundary? |
| ☐ | ☐ | 8. | Is the rise in elevation upslope of the wetland greater than the drop in elevation downslope of the wetland? |
| ☐ | ☐ | 9. | Is groundwater recharge function rated as low or moderate? |

GROUNDWATER DISCHARGE

HIGH

1 - yes

OR

2 - yes or 3 - yes
4 - yes or 8 - yes
5 - yes
6 - yes

2 - yes or 3 - yes
4 - yes or 8 - yes
7 - yes

LOW

9 - no

2 - no
3 - no

The following interpretation narrative describes the characteristics of wetlands necessary to satisfy the criteria for "high" and "low" rankings for the **GROUNDWATER DISCHARGE** function.

HIGH

Wetlands ranked high for groundwater discharge must have one of the following sets of characteristics:

Springs or seeps in the wetland.

or

Dominant hydrologic regime permanently flooded or saturated, an area of submergent or floating aquatic vegetation present or drop in downslope elevation less than rise in upslope elevation from the wetland, no ditches/channels/levees, and watershed not impervious or unvegetated.

or

Dominant hydrologic regime permanently flooded or saturated, an area of submergent or floating aquatic vegetation present or drop in downslope elevation less than rise in upslope elevation from the wetland, and wetland -upland boundary sharp.

LOW

Wetland ranked as having a low groundwater discharge function are those with a high groundwater recharge function or those without a permanently flooded or saturated dominant hydrologic regime.

SEDIMENT/TOXICANT RETENTION

Sediment/Toxicant Retention function is defined as where inorganic sediments and/or chemical substances generally toxic to aquatic life are physically trapped and retained. This function is measured in terms of effectiveness and opportunity. The key will tend to rank a majority of wetlands as high for this function.

Instructions: Answer questions and then use flowchart to determine if HIGH or LOW ranking applies. Assign a MODERATE ranking if HIGH or LOW rankings do not apply according to the flowchart.

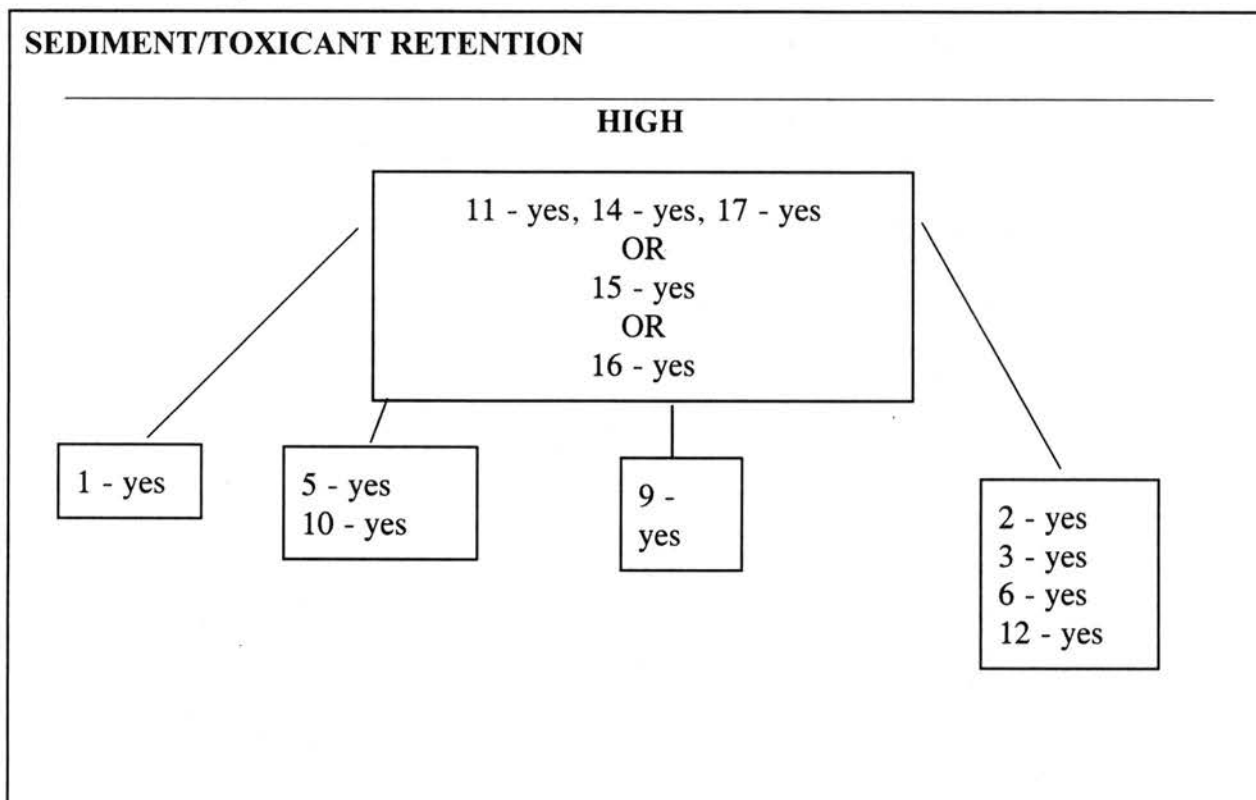
YES NO

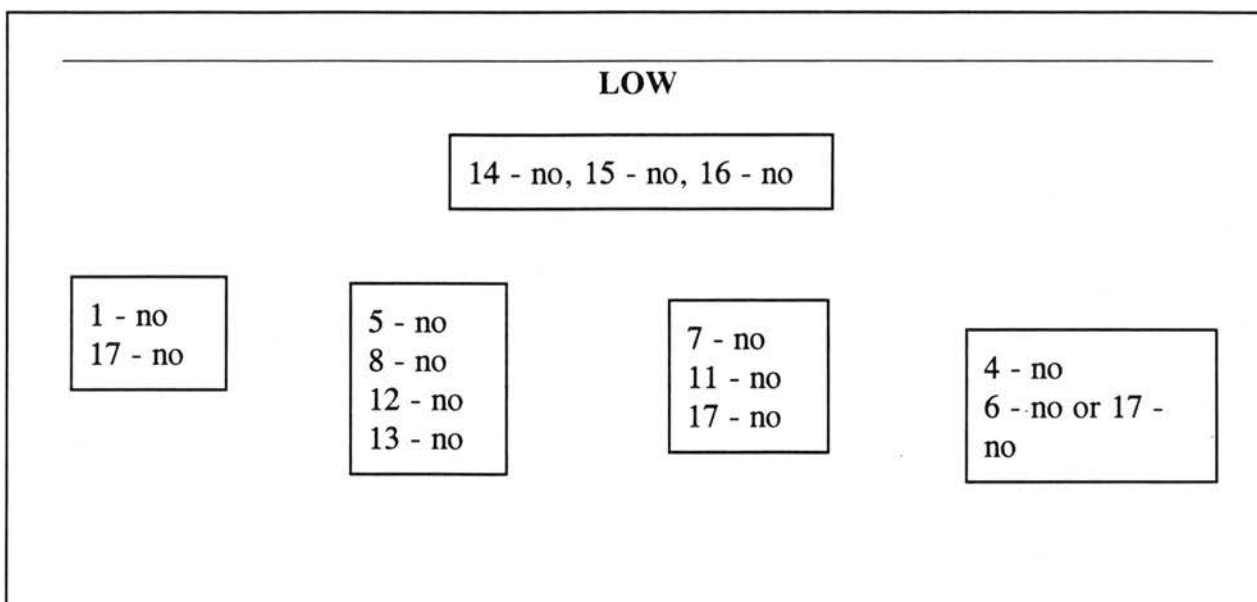
- | | | | |
|--------------------------|--------------------------|-----|---|
| ☐ | ☐ | 1. | Does the wetland <i>lack</i> an outlet? |
| ☐ | ☐ | 2. | Does the wetland have a constricted outlet? |
| ☐ | ☐ | 3. | Does the wetland have an unconstricted inlet? |
| ☐ | ☐ | 4. | Does the wetland <i>lack</i> an unconstricted outlet? |
| ☐ | ☐ | 5. | Does the wetland <i>lack</i> an inundated portion under normal conditions? |
| ☐ | ☐ | 6. | Is there an area of open water in the wetland >100 feet wide surrounded by emergent vegetation? |
| ☐ | ☐ | 7. | Does the wetland have high vegetation/open water interspersions? (Answer no if there is not open water) |
| ☐ | ☐ | 8. | Does herbaceous vegetation, trees or shrubs occupy >10% of the <i>inundated</i> portion of the wetland? (Answer no if there is not an inundated portion) |
| ☐ | ☐ | 9. | Is there a fringe of herbaceous vegetation, trees, or shrubs >20 ft. wide along >50% of the wetland - upland edge? |
| ☐ | ☐ | 10. | Does herbaceous vegetation, trees, or shrubs occupy >50% of the <i>inundated</i> portion of the wetland? (Answer no if there is not an inundated portion) |
| ☐ | ☐ | 11. | Does the wetland <i>lack</i> any functioning ditches, channels, levees, or similar features (excluding natural streams) that facilitate the flow of water through and out of the wetland? |

YES NO

- ☐ ☐ 12. Is the wetland adjacent to or part of a lake, river, or stream?
- ☐ ☐ 13. Does the wetland lack an immediate underlying substrate of bedrock, cobble, or gravel?
- ☐ ☐ 14. Do field observations or other sources of information indicate erosion around or in the wetland?
- ☐ ☐ 15. Is there a moderate to high potential for waterborne contaminants to enter the wetland from sources such as landfills, mines, pesticide/herbicide treated agricultural upland, highway runoff, etc.?
- ☐ ☐ 16. Are there sediment sources in the surface watershed of the wetland such as bare soil, surface mines, gullies, eroding banks, stormwater outfalls, etc.?
- ☐ ☐ 17. Has 0-20% of the wetland been impacted by such activities as excavating, filing, farming, tilling, etc.?

SEDIMENT/TOXICANT RETENTION





The following interpretation narrative describes the characteristics of wetlands necessary to satisfy the criteria for "high" and "low" rankings for the **SEDIMENT/TOXICANT RETENTION** function.

HIGH

Wetlands with a high sediment/toxicant retention must first have one of the following three sets of characteristics:

No ditches/channels/levees and no human impact and no erosion in or around the wetland.

or

Sources of waterborne contaminants in the watershed.

or

Sediment sources in the surface watershed of the wetland.

In addition to one of the above sets of characteristics, one of the following sets of characteristics must be true:

No outlet.

or

Vegetation in >50% of the inundated portion of the wetland.

or

Wetland fringe of >20 ft. wide of vegetation along the wetland edges.

or

An open water area >100 ft. wide surrounded by veg., a constricted outlet and unconstricted inlet present.

LOW

Wetlands ranked as having a low sediment/toxicant retention function must have no erosion in or around the wetland, no potential for waterborne contaminants in the watershed, no sediment sources in the surface watershed. In addition, one of the following sets of characteristics must be true:

An outlet present and a major portion of the wetland impacted by human activities (filling, farming, etc.)

or

Veg. occupies <10% of the inundated portion of the wetland, wetland is not adjacent to or part of a lake, river, or stream, has a cobble/gravel/bedrock substrate.

or

Ditches/channels/levees present, vegetation/open water interspersed not high, major portion of the wetland impacted by human activities.

or

There is no area of open water >100 feet wide surrounded by vegetation or a major portion of the wetland impacted by human activities, and an unobstructed outlet present.

WILDLIFE HABITAT (DIVERSITY & ABUNDANCE)

Wildlife Habitat function refers to the number of different species (diversity) and number of individuals within each species (abundance).

Instructions: Answer questions and then use flowchart to determine if HIGH or LOW ranking applies. Assign a MODERATE ranking if HIGH or LOW rankings do not apply according to the flowchart.

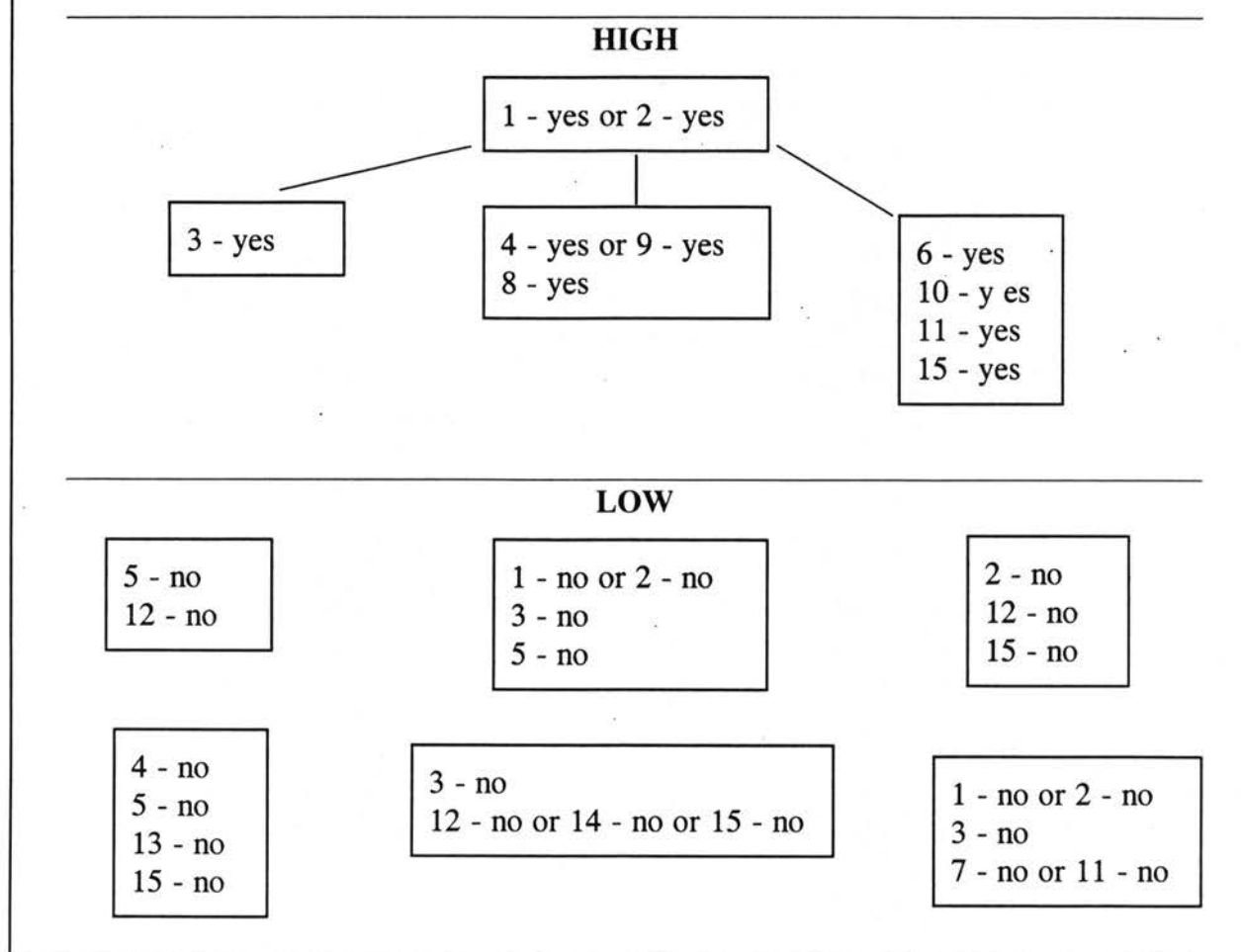
YES NO

- | | | | |
|--------------------------|--------------------------|----|---|
| ☐ | ☐ | 1. | Does the wetland have vegetation classes with obscure boundaries and high interspersed (answer no if there is only one vegetation class)? |
| ☐ | ☐ | 2. | Does the wetland have high vegetation/open water interspersed? |
| ☐ | ☐ | 3. | Does the wetland have at least 3 different vegetation classes (i.e., submergent, scrub shrub, herbaceous, forested deciduous, forested coniferous) or 2 different classes and open water? |
| ☐ | ☐ | 4. | Is >50% of the wetland Type 6 or 7? |

YES NO

- | | | | |
|--------------------------|--------------------------|-----|--|
| ☐ | ☐ | 5. | Is the wetland >50% coniferous forest? |
| ☐ | ☐ | 6. | Does herbaceous vegetation, trees, or shrubs occupy 10-50% of the <i>inundated</i> portion of the wetland? (Answer no if there is not an inundated portion) |
| ☐ | ☐ | 7. | Does herbaceous vegetation, trees, or shrubs occupy <50% of the <i>inundated</i> portion of the wetland? (Answer no if there is not an inundated portion) |
| ☐ | ☐ | 8. | Does the wetland have snag trees that are or can be used by wildlife? |
| ☐ | ☐ | 9. | Is there a mudflat present? |
| ☐ | ☐ | 10. | Does the wetland <i>lack</i> any functioning ditches, channels, levees, or similar features (excluding natural streams) that facilitate the flow of water through and out of the wetland? |
| ☐ | ☐ | 11. | Has 0-20% of the wetland been impacted by such activities as excavating, filling, farming, tilling, etc.? |
| ☐ | ☐ | 12. | Is the immediate watershed of the wetland 0-50% impervious and/or unvegetated? |
| ☐ | ☐ | 13. | Is >50% of the wetland's immediate watershed forested or scrub shrub? |
| ☐ | ☐ | 14. | Is there a <i>low</i> potential for waterborne contaminants to enter the wetland from sources such as landfills, mines, pesticide/herbicide treated agricultural upland, highway runoff, etc.? |
| ☐ | ☐ | 15. | Is the wetland >1,000 ft. from the usual places of human activity (i.e. school, store, marina, etc.)? |

WILDLIFE HABITAT (DIVERSITY & ABUNDANCE)



The following interpretation narrative describes the characteristics of wetlands necessary to satisfy the criteria for "high" and "low" rankings for the **WILDLIFE HABITAT** function.

HIGH

Wetlands rated high for wildlife habitat must first have either a high veg./open water interspersions or a high interspersions of vegetation classes. In addition, one of the following sets of characteristics must be true:

At least 3 veg. classes or 2 vegetation classes with open water are present.

or

Mudflat is present or wetland is Type 6 or 7, and snag trees are present.

or

Vegetation occupies 10-50% of inundated portion of the wetland, no ditches/channels/levees, <20% of the wetland impacted by human activities, and >1000 feet from places of usual human activity.

LOW

Wetlands with a low wildlife habitat rating meet one of the following sets of conditions:

Not Type 7 coniferous forest, watershed primarily impervious or unvegetated.

or

<3 veg. classes present with low interspersions or there is a low veg./open water interspersions and wetland is not Type 7 coniferous.

or

A low veg./open water interspersions, <1,000 feet from usual place of human activity, and watershed primarily impervious or bare ground.

or

Wetland is not Type 6 or 7, <1,000 feet from an area of usual human activity, and >50% of the watershed not forested or scrub shrub.

or

<1,000 feet from usual place of human activity or potential for waterborne contaminants in watershed or watershed primarily impervious or bare ground and less than 3 different vegetation classes present.

or

Veg. occupies >50% of the inundated portion of the wetland or the wetland has been impacted by human activities, veg. classes have low interspersions or there is not a high veg./open water interspersions, and there are <3 vegetation classes.

AQUATIC HABITAT (DIVERSITY & ABUNDANCE)

Aquatic Habitat function refers to the number of different species (diversity) and number of individuals within each species (abundance). This particular key focuses on the diversity and abundance of fish or invertebrates confined to the water and saturated soils.

Instructions: Answer questions and then use flowchart to determine if HIGH or LOW ranking applies. Assign a MODERATE ranking if HIGH or LOW rankings do not apply according to the flowchart.

YES NO

- | | | | |
|--------------------------|--------------------------|----|--|
| ☐ | ☐ | 1. | Does the wetland have an inundated portion under normal conditions? |
| ☐ | ☐ | 2. | Is the wetland's dominant hydrologic regime <i>not</i> seasonally flooded or seasonally saturated? |
| ☐ | ☐ | 3. | Is the dominant hydrologic regime permanently flooded? |

YES NO

- ☐ ☐ 4. Does herbaceous vegetation, trees, or shrubs occupy 10-50% of the *inundated* portion of the wetland? (Answer no if there is not an inundated area)
- ☐ ☐ 5. Is there an area of submergent or floating aquatic vegetation present in the wetland?
- ☐ ☐ 6. Does the wetland have at least 3 different vegetation classes (i.e. submergent, scrub shrub, herbaceous, forested deciduous, forested coniferous) or 2 different classes and open water?
- ☐ ☐ 7. Is there an area of open water in the wetland that is shaded by vegetation or topographic relief?
- ☐ ☐ 8. Is there a mudflat present?
- ☐ ☐ 9. Is the wetland adjacent to or part of a lake, river, or stream?
- ☐ ☐ 10. Is the wetland adjacent to or includes a lake or pond with fish cover present (dense aquatic veg., submerged logs, undercut banks, etc.)?
- ☐ ☐ 11. Is there extensive, regular flooding associated with the wetland from a nearby waterbody or stream?
- ☐ ☐ 12. Does the wetland *lack* any functioning ditches, channels, levees, or similar features (excluding natural streams) that facilitate the flow of water through and out of the wetland?
- ☐ ☐ 13. Does the wetland have an outlet?
- ☐ ☐ 14. Is the substrate in the wetland predominantly *not* sand?
- ☐ ☐ 15. Is there a *lack* of sediment sources in the surface watershed of the wetland such as bare soil, surface mines, gullies, eroding banks, stormwater outfalls, etc.?
- ☐ ☐ 16. Has 0-20% of the wetland been impacted by such activities as excavating, filling, farming, tilling, etc.?
- ☐ ☐ 17. Is there a *low* potential for waterborne contaminants to enter the wetland from sources such as landfills, mines, pesticide/herbicide treated agricultural upland, highway runoff, etc.?
- ☐ ☐ 18. Is the surface area of the wetland assessment area >40 acres?

AQUATIC HABITAT (DIVERSITY & ABUNDANCE)

HIGH

1 - yes
3 - yes or 8 - yes
4 - yes
5 - yes
10 - yes

7 - yes
9 - yes
11 - yes
12 - yes

1 - yes
4 - yes
12 - yes
10 - yes or 14 - yes

1 - yes
4 - yes
10 - yes
16 - yes

3 - yes or 8 - yes
6 - yes
9 - yes
10 - yes or 14 - yes

LOW

2 - no
16 - no

13 - no
16 - no
17 - no
18 - no

The following interpretation narrative describes the characteristics of wetlands necessary to satisfy the criteria for "high" and "low" rankings for the **AQUATIC HABITAT** function.

HIGH

For a wetland to be ranked as high for aquatic habitat, one of the following sets of characteristics must be true:

Permanently flooded hydrologic regime or mudflat present, veg. occupies 10-50% of the inundated portion of the wetland, an area of submergent or floating aquatic vegetation is present, an outlet is present, substrate is not primarily sand, not adjacent to or part of a lake, river, or stream, fish cover present, and no sediment sources in surface watershed.

or

Wetland has at least 1 acre of open water sheltered by veg. or topographic relief, no ditches/channels/levees, adjacent to or part of a lake, river, or stream and extensive, wetland receives regular flooding associated with a nearby stream or lake.

or

Veg. occupies 10-50% of the inundated portion of the wetland, no ditches/channels/levees,

substrate not primarily sand or fish cover present.

or

Veg. occupies 10-50% of the inundated portion of the wetland, <20% of the wetland not impacted by human activities, and fish cover present.

or

Dominant hydrologic regime permanently flooded or mudflat present, at least 3 veg. classes present, wetland adjacent to or part of a lake, river, or stream, and substrate not predominantly sand or fish cover present.

LOW

For a wetland to be ranked as low for aquatic habitat, one of the following sets of characteristics must be true:

>20% of the wetland impacted by human activities, and dominant hydrologic regime is seasonally flooded or seasonally saturated.

or

No outlet present, >20% of the wetland has been impacted by human activities, there is a potential for waterborne contaminants in the watershed, and wetland is <40 acres.

Functional Ranking Summary

	HIGH	MODERATE	LOW
<i>FLOODFLOW ALTERATION</i>	_____	_____	_____
<i>SEDIMENT STABILIZATION</i>	_____	_____	_____
<i>GROUNDWATER RECHARGE</i>	_____	_____	_____
<i>GROUNDWATER DISCHARGE</i>	_____	_____	_____
<i>SEDIMENT/TOXICANT RETENTION</i>	_____	_____	_____
<i>WILDLIFE HABITAT</i>	_____	_____	_____
<i>AQUATIC HABITAT</i>	_____	_____	_____

USER GUIDANCE

Constricted - narrowed to a degree which may obstruct or influence hydrologic interaction

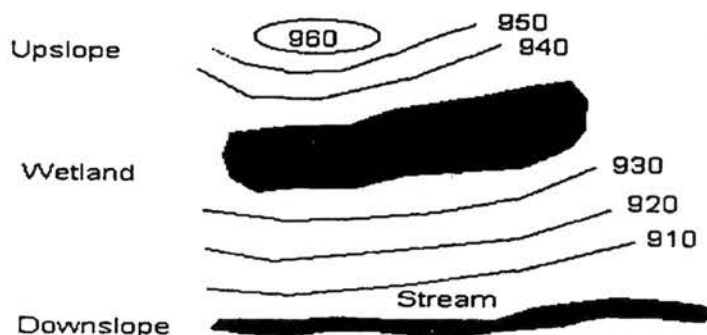
Inlet - point at which surface water enters a wetland via a channel

Outlet - point at which surface water exits a wetland via a channel

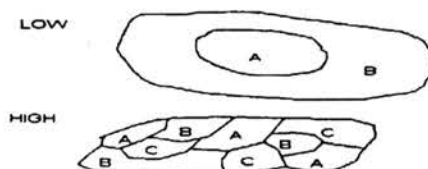
Regular Human Activity refers to more than one year around residence, clusters of small seasonal cabins, major state and county highways, commercial businesses, parks, heavily used recreational lakes and rivers, and other areas that frequented by humans on a regular, daily basis.

When estimating the drop in elevation downslope of the wetland to the lowest point and upslope of the wetland to the highest point use USGS maps or other topographic information available.

Note: Use of USGS 10 ft. contour maps is adequate.

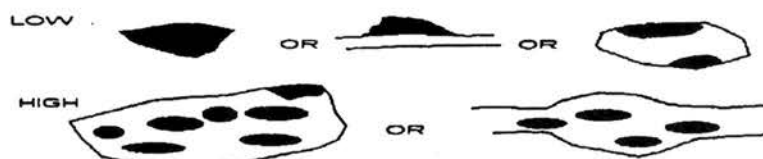


When noting interspersed vegetation classes within the wetland, use the following figures as guidance:

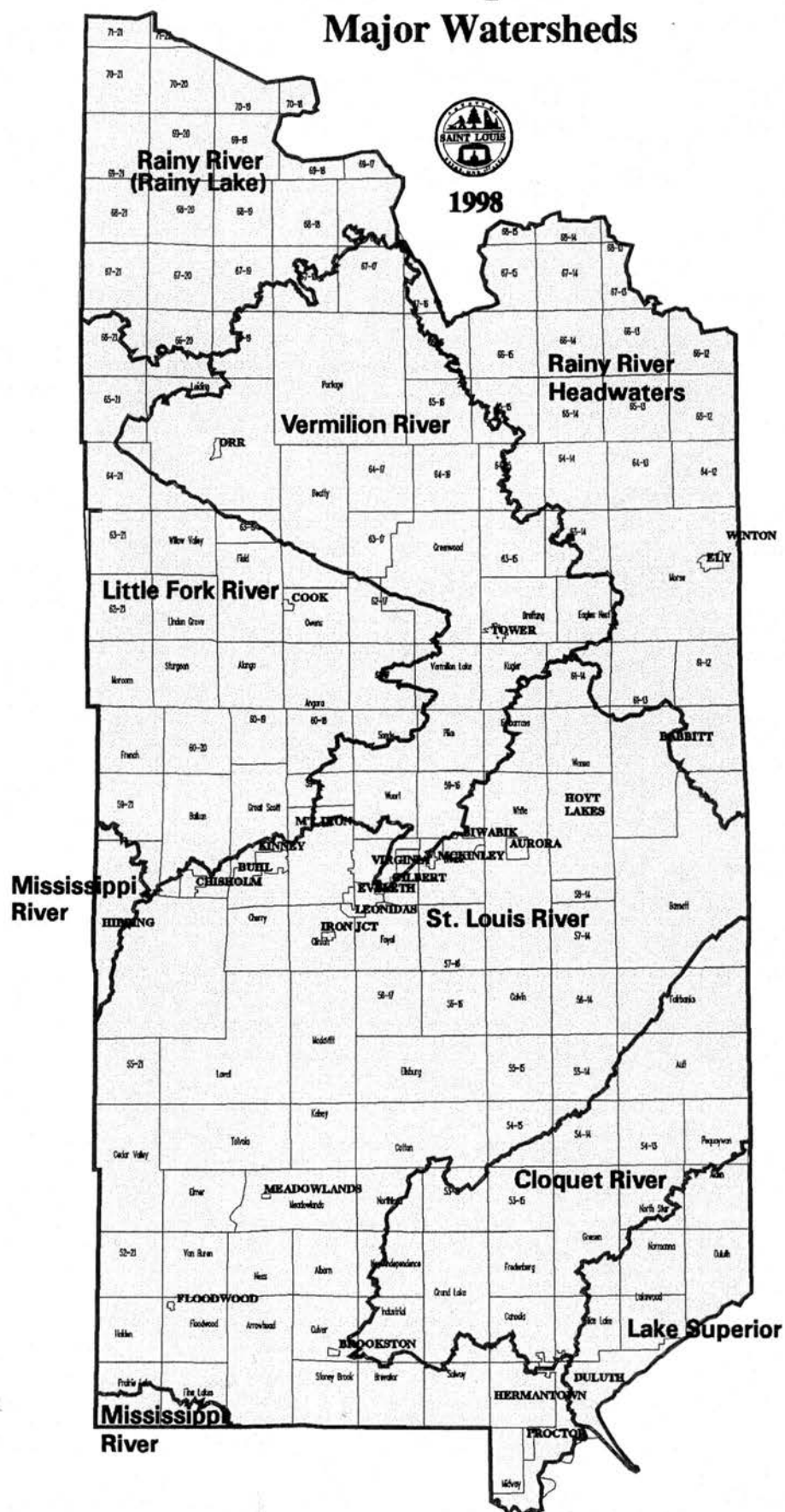


When noting interspersed water, use the following figures as guidance:

of vegetation and open



1998

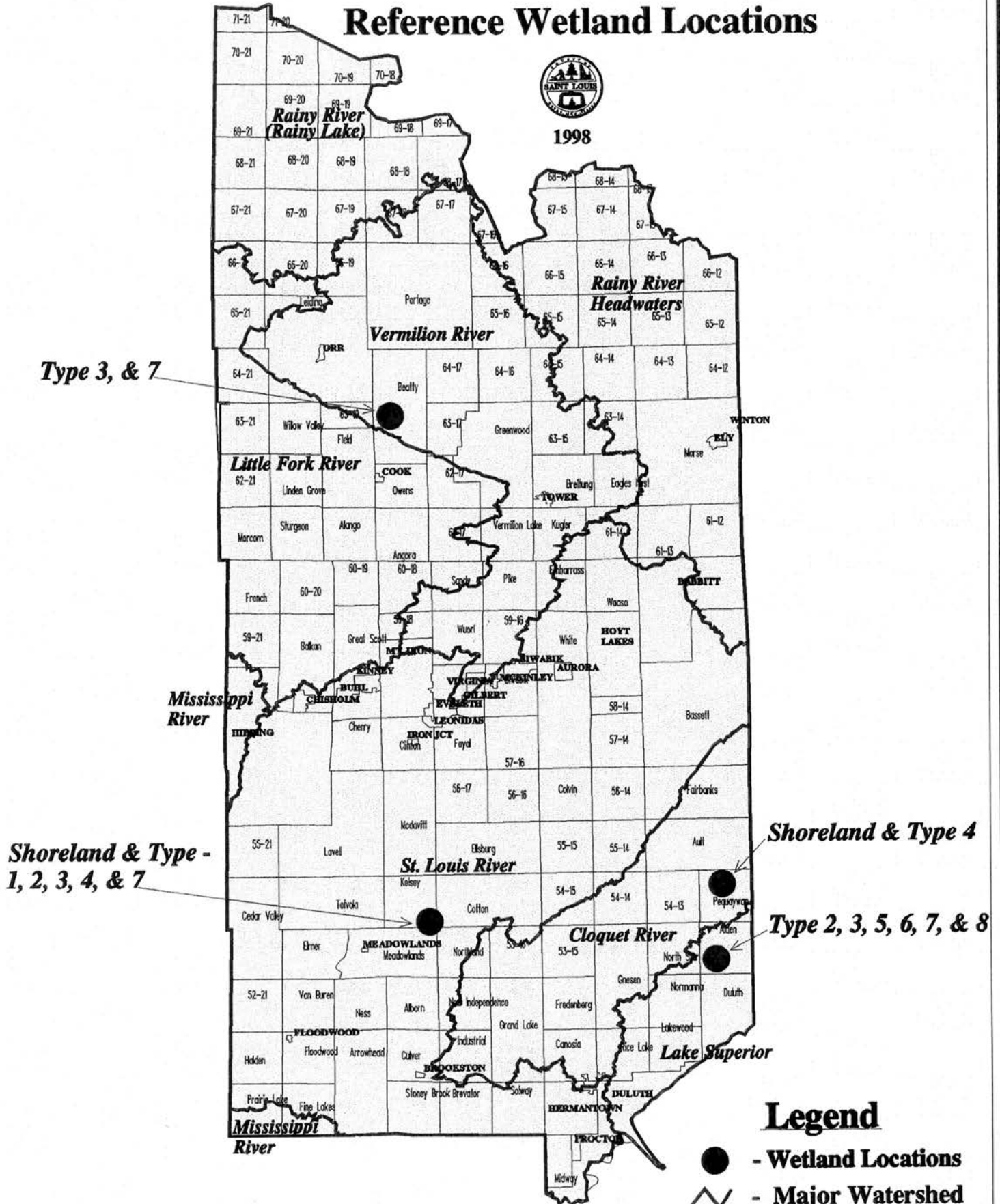


Map 2

Reference Wetland Locations



1998



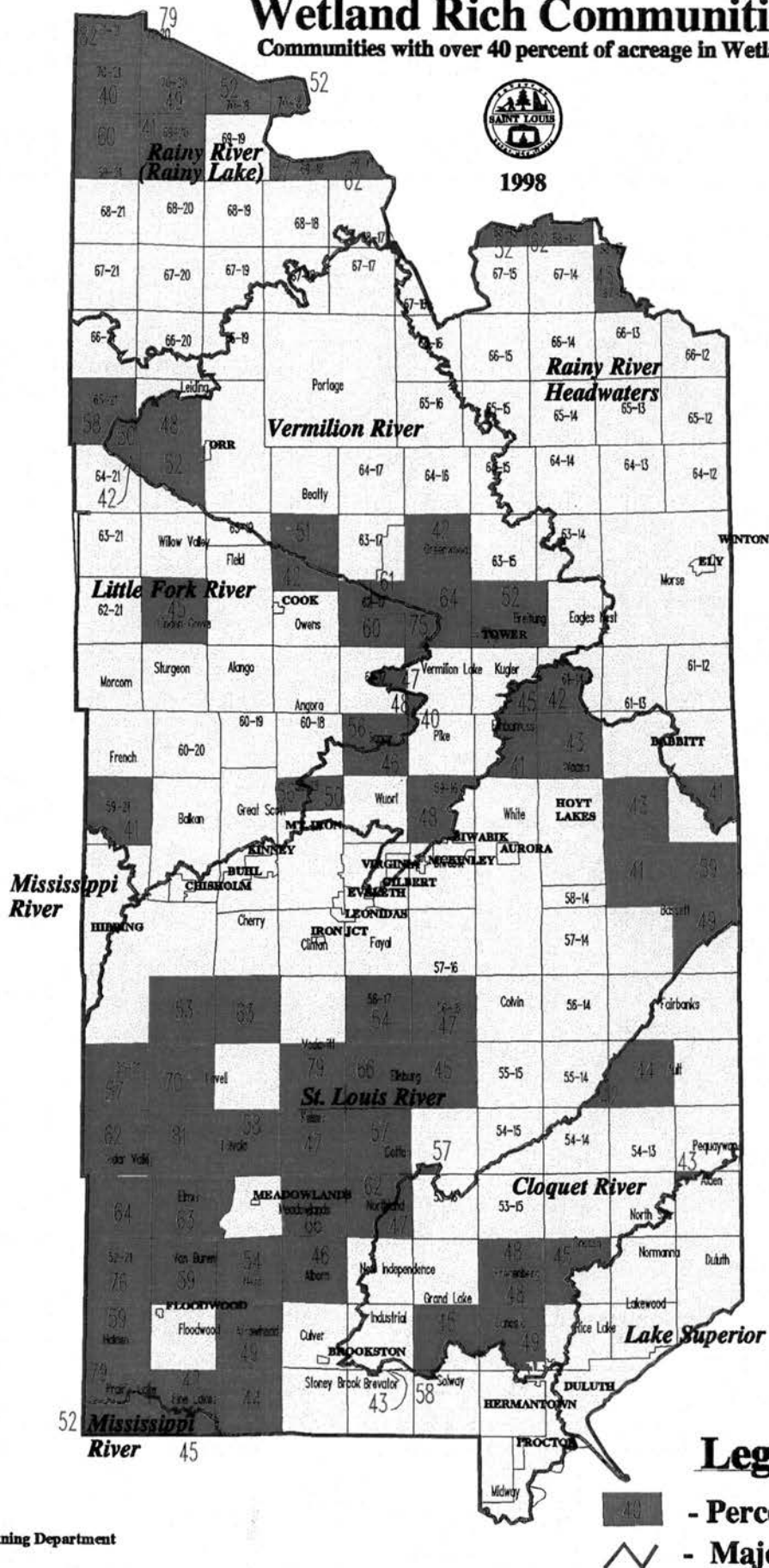
Map 3

Wetland Rich Communities

Communities with over 40 percent of acreage in Wetlands



1998

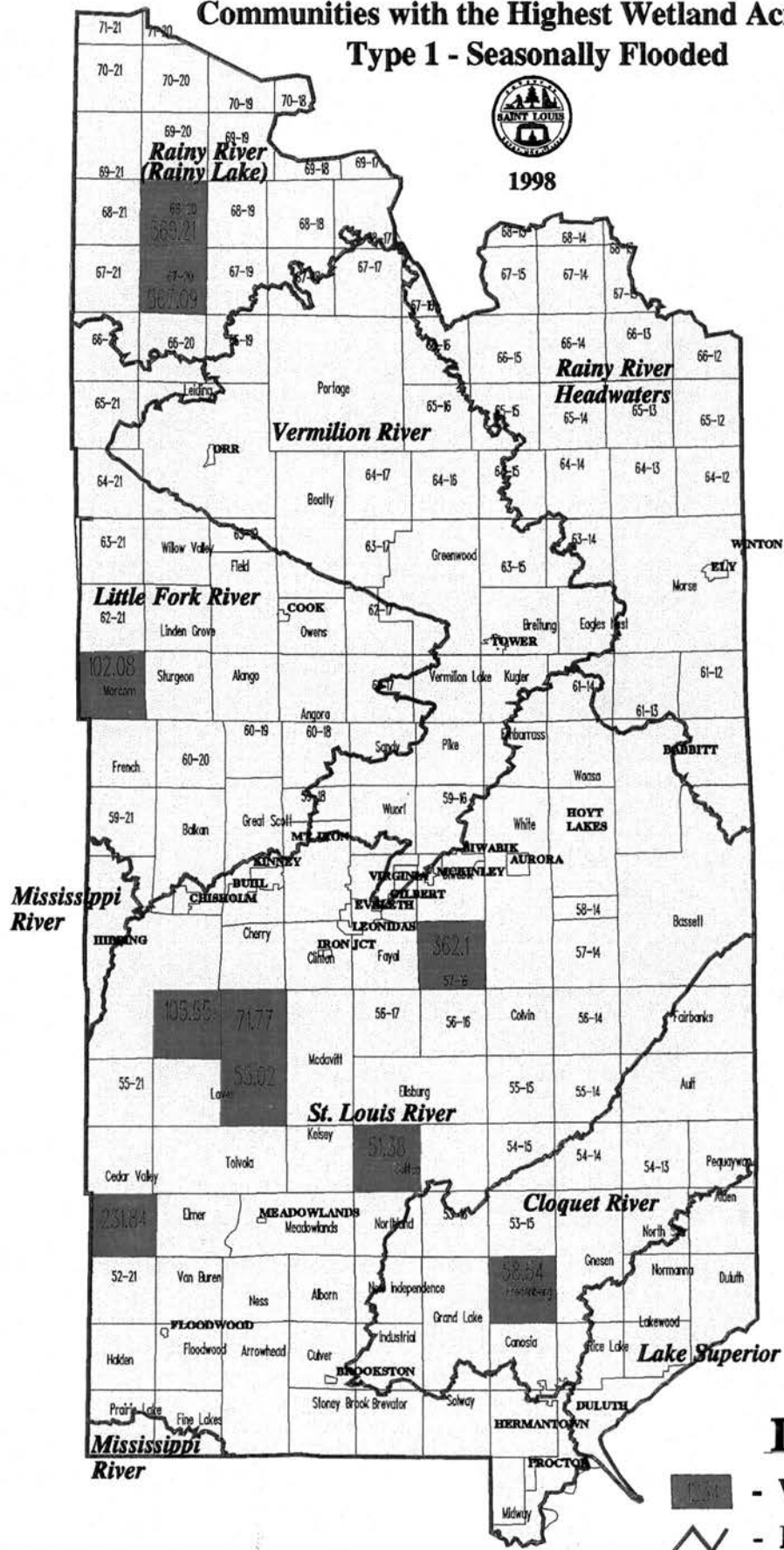


Map 5

Communities with the Highest Wetland Acres of - Type 1 - Seasonally Flooded



1998



Legend

- Wetland Acres
- Major Watershed

1998



1998



Legend

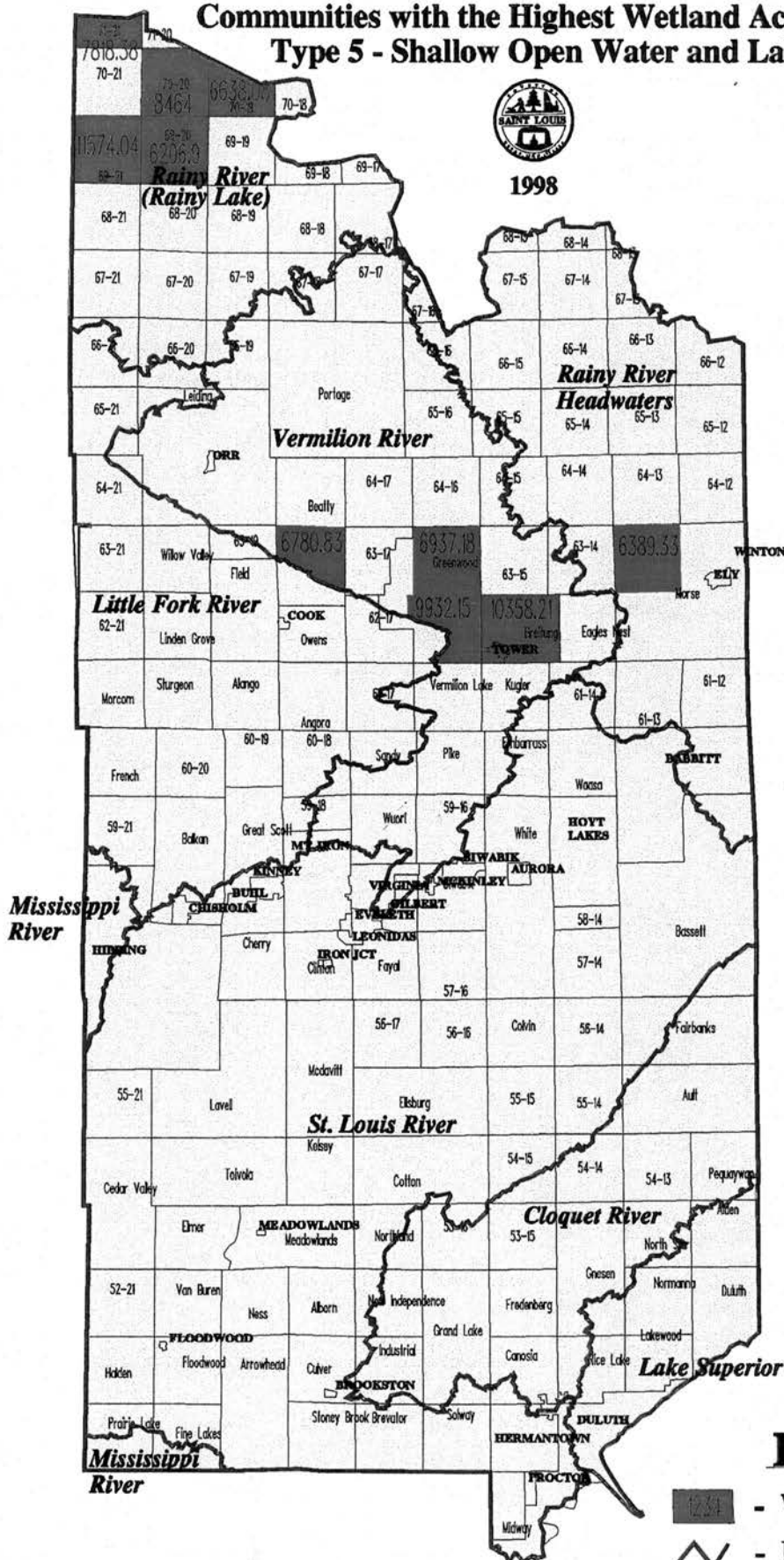
-  - **Wetland Acres**
 - **Major Watershed**

Communities with the Highest Wetland Acres of - Type 4 - Deep Marsh



-  - Wetland Acres
 - Major Watershed

1998

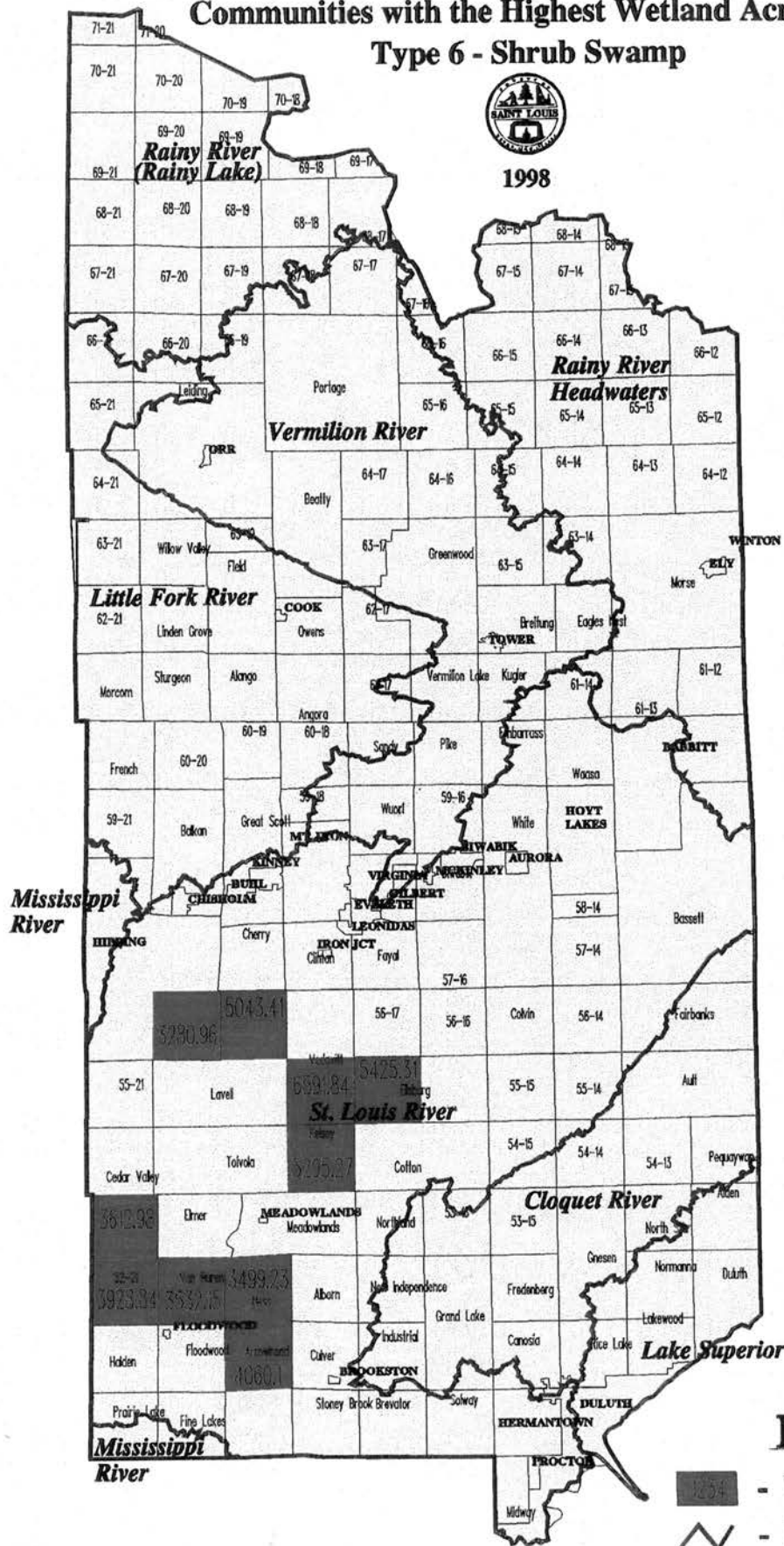
**Saint Louis County Planning Department**

Map 10

Communities with the Highest Wetland Acres of - Type 6 - Shrub Swamp



1998



68-15 61

66-15	<i>Rainy River</i>
	<i>Headwaters</i>



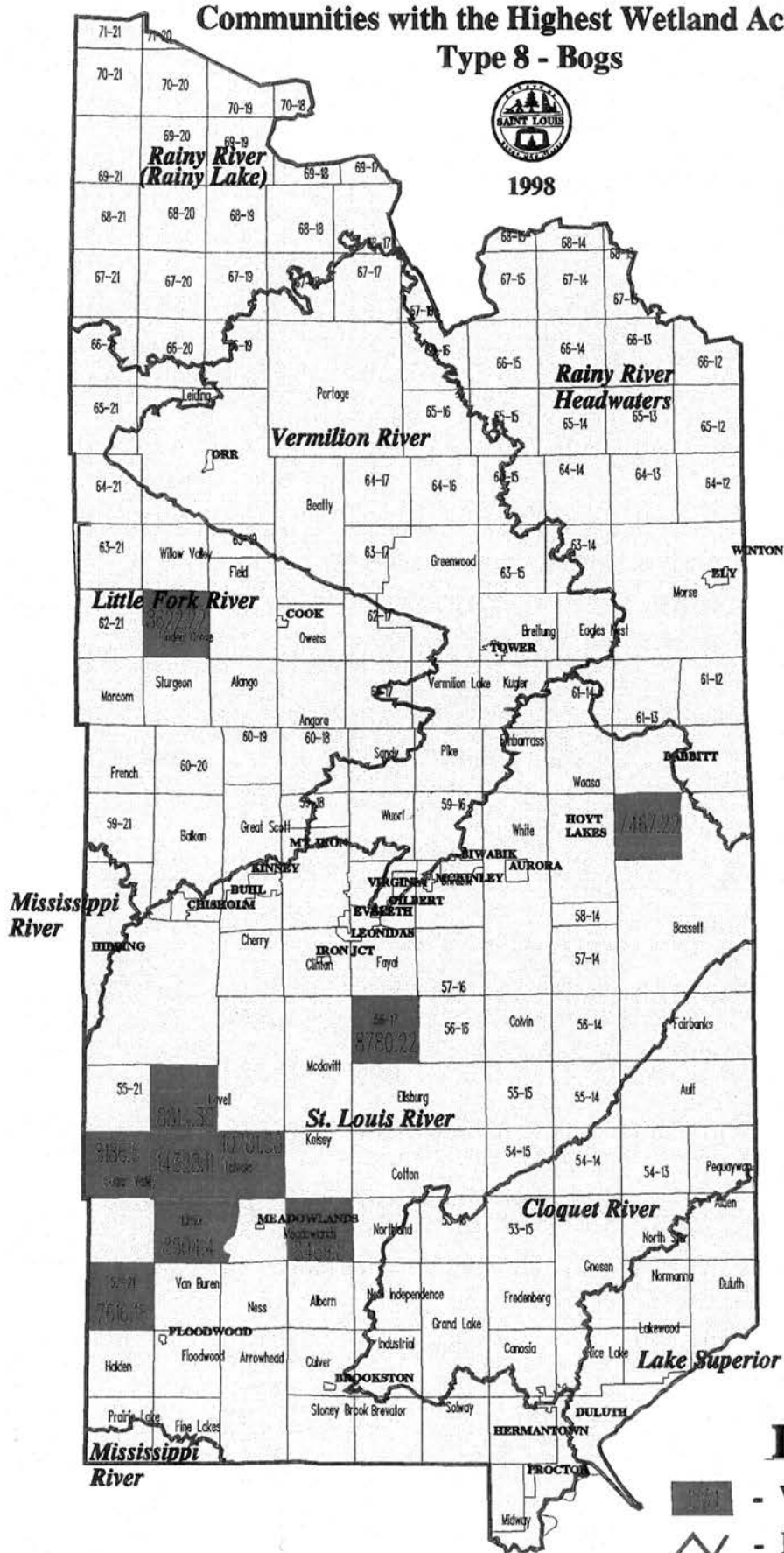
-  - **Wetland Acres**
 - **Major Watershed**

Map 12

Communities with the Highest Wetland Acres of - Type 8 - Bogs



1998

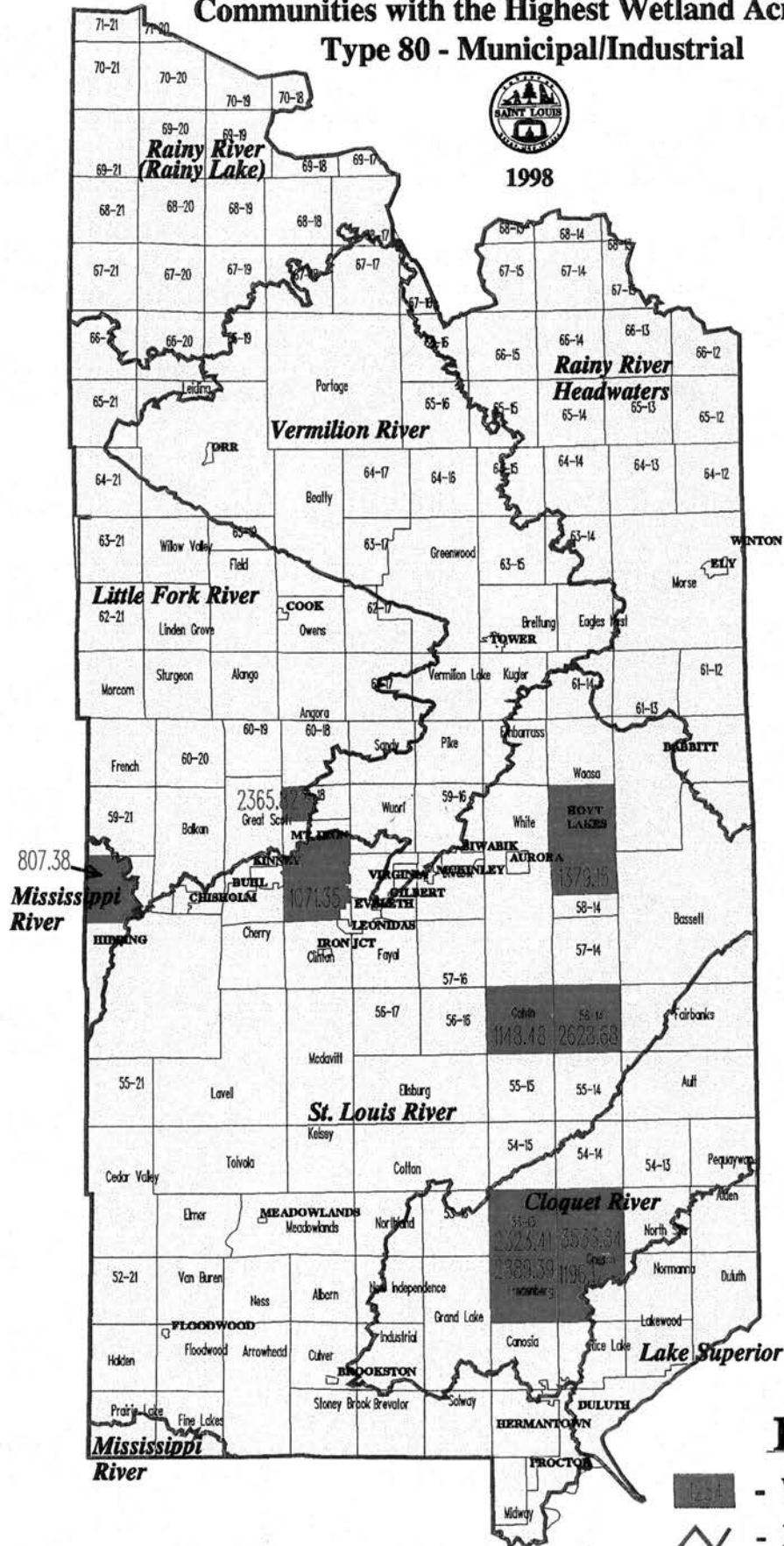


Map 13

Communities with the Highest Wetland Acres of - Type 80 - Municipal/Industrial



1998

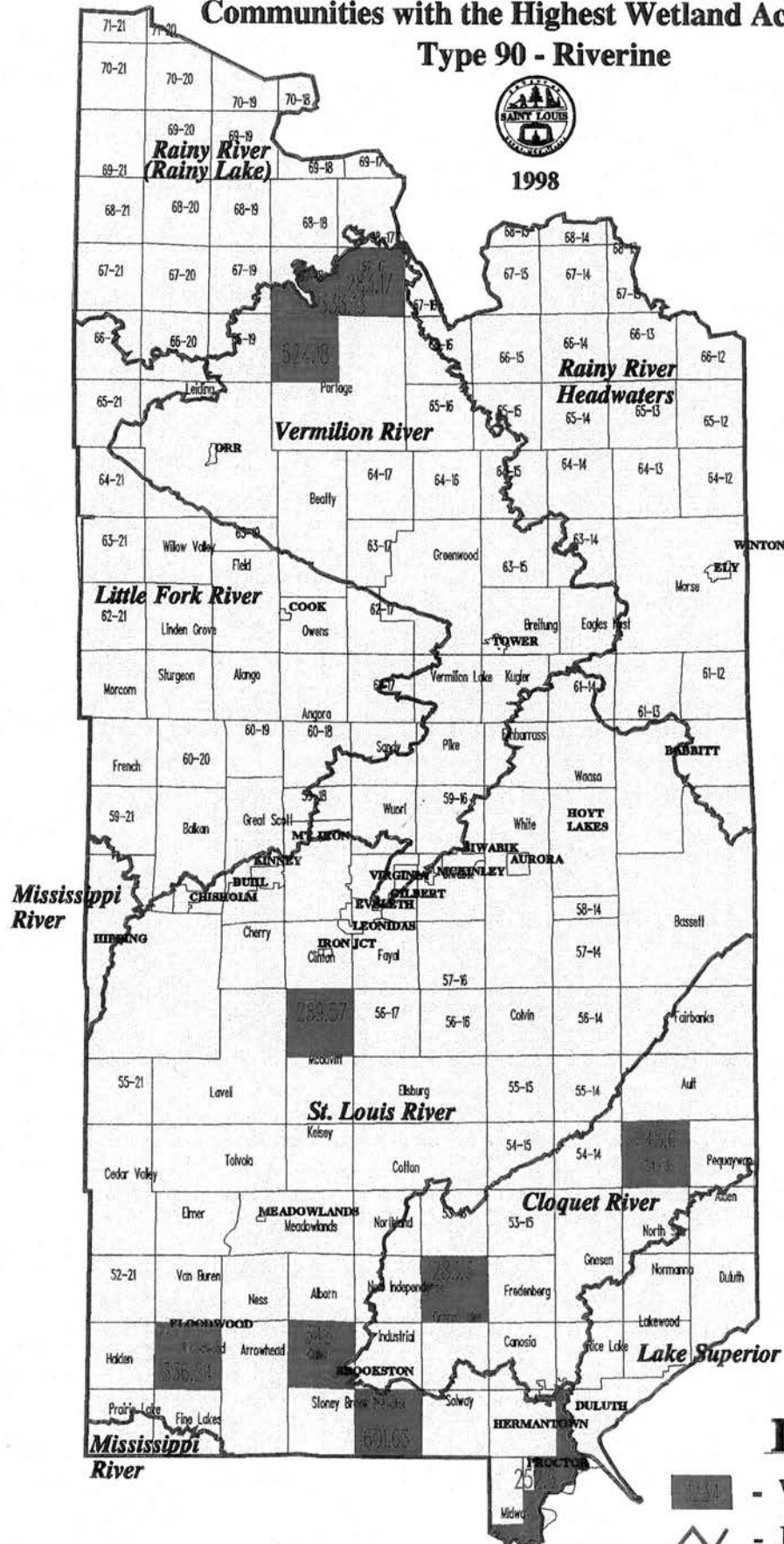


Map 14

Communities with the Highest Wetland Acres of -
Type 90 - Riverine



1998

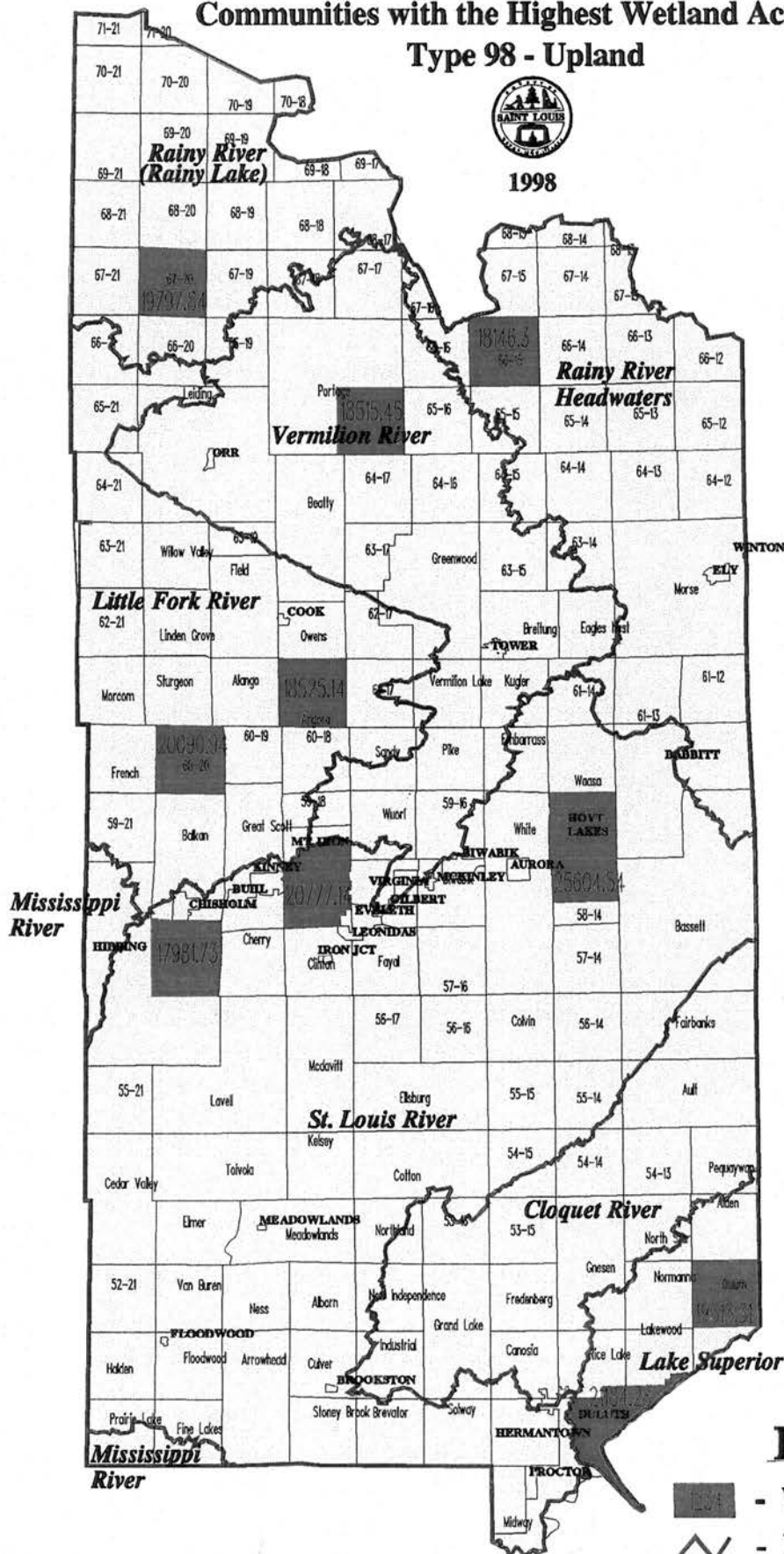


Map 15

Communities with the Highest Wetland Acres of - Type 98 - Upland



1998





*Resolution
of the
Board of County Commissioners
St. Louis County, Minnesota*

Adopted on: March 9, 1999

Resolution No. 169

Offered by Commissioner: Prebich

WHEREAS, public hearings were held on Tuesday, February 23, 1999, in the St. Louis County Courthouse, Hibbing, and on Tuesday, March 9, 1999, in the St. Louis County Courthouse, Duluth, to consider the Wetland Plan Amendment to the St. Louis County Comprehensive Plan (Ordinance No. 27, Section 20);

NOW, THEREFORE, BE IT RESOLVED, that the St. Louis County Board of Commissioners hereby adopts the County Wetland Plan Amendment to the St. Louis County Comprehensive Plan (Ordinance No. 27, Section 20).

Commissioner Prebich moved the adoption of the Resolution and it was declared adopted upon the following vote:
Yeas - Commissioners Fink, Fay, Kron, Forsman, Prebich, Raukar, and Chair Sweeney - 7
Nays - None

STATE OF MINNESOTA
Office of County Auditor, ss.
County of St. Louis

I, GORDON D. MCFAUL, Auditor of the County of St. Louis, do hereby certify that I have compared the foregoing with the original resolution filed in my office on the 9th day of March, A.D. 1999, and that the same is a true and correct copy of the whole thereof.

WITNESS MY HAND AND SEAL OF OFFICE at Duluth, Minnesota, this 9th day of March, A.D., 1999

GORDON D. MCFAUL, COUNTY AUDITOR

Paul J. Fink
Clerk of County Board / Deputy Auditor

EFFECTUATION

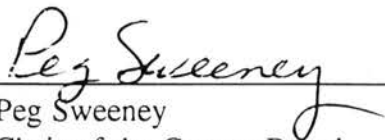
This amendment to Ordinance No. 27, Article II, Section 20 - St. Louis County Wetland Plan, shall take effect and be in full force on the 16th day of March, 1999, upon its adoption by the St. Louis County Board of Commissioners, and shall be published in the official newspaper(s) of St. Louis County as provided by Minnesota Statutes.

Public hearings were held by the St. Louis County Planning Commission on March 19, March 26, April 16, May 14, September 10, October 8, and November 12, 1998, and by the St. Louis County Board of Commissioners on March 2, and March 16, 1999.

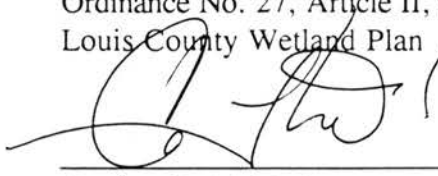
Recommended by the Planning Commission to the County Board for adoption on the 12th day of November, 1998.

Commissioner Prebich moved the adoption of this Ordinance, and Commissioner Raukar, duly seconded the motion, and it was adopted on the following vote:

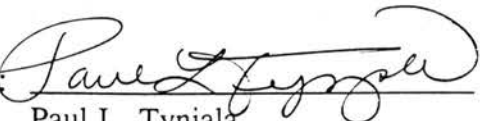
Yeas:	Commissioners Fink, Fay, Kron, Forsman, Prebich, Raukar, and Chair Sweeney - 7
Nays:	None
Absent:	None


Peg Sweeney
Chair of the County Board

Certified as a complete and accurate copy of
Ordinance No. 27, Article II, Section 20 - St.
Louis County Wetland Plan


Gordon D. McFaul
County Auditor

Attest:


Paul L. Tynjala
Clerk of the County Board

Resolution _____
MN Board of Water and Soil Resources (BWSR)

DRAFT

Date: April 28, 1999

Re: Lake County
Comprehensive Wetland Protection and Management Plan

WHEREAS, Lake County's Comprehensive Local Wetland Management Plan (hereafter, "the Plan") was submitted to the Board of Water and Soil Resources (BWSR) on April 9, 1999 and adopted by the County on April 7, 1999; and

WHEREAS, Lake County is a Greater than 80 percent area as defined in MN Rule 8420.0110, Subp. 20a; and

WHEREAS, the Plan included active citizen and agency participation in developing the assessment methodology and management strategies. The Plan has been developed with the goal of providing clear guidance for future decisions concerning wetlands in the County. The Plan is integrated into the Lake County Land Use Ordinance making wetland management a component of with all the other aspects of county planning and zoning; and

WHEREAS, staff from the Minnesota Department of Natural Resources, Lake County Soil and Water Conservation District, the U.S. Army Corps of Engineers as well as the Minnesota Board of Water and Soil Resources provided significant contributions to the planning process. Lake County incorporated all agency comments into the Plan; and

WHEREAS, the overall strength of the Plan is the development of specific management categories for wetlands that will result in protection of local wetland resources in proportion to their functions and related public values. Critical to the Board's review of this plan, the Plan does not "roll back" protection for any wetlands beyond that allowed under state law, but rather specifies detailed criteria for implementing any "flexibility" of state standards. The Plan will provide the County with the guidance, standards and policies necessary to conserve wetland resource; and

WHEREAS, the Plan utilizes an already approved model as the framework, but takes it a step further by fully integrating the wetland protection elements into the County Land Use ordinance. This is a first for a county ordinance and a very positive step toward treating wetlands as simply another factor to address in all land use decisions; and

WHEREAS, the Plan includes provisions for assurance of a "No Net Loss" policy via regular review by the Wetland Technical Committee and via incorporation of Wetland Conservation Act standards.

NOW THEREFORE, in accordance with Minnesota Rules Chapter 8420.0650, Subp. 3, the BWSR finds that the Plan meets all the requirements of Wetland Conservation Act Rule and Law. The BWSR will continue to be an active partner in reviewing implementation of the

plan on a regular basis. The BWSR would like to formally commend Lake County for development a Plan that integrates state and local standards in one ordinance that allows landowners and local officials to conform to a single set of standards.

Kathleen Roer, Chair

Date

M:\COWPROMP\LAKE.RES

CASS SWCD LAKESHORE EASEMENT WORK PLAN APPROVAL INFORMATION ITEM

Background: The 1998 state legislature allocated \$250,000 to the BWSR for acquiring conservation easements for sensitive shore land and riparian areas on lakes. During the summer and fall of 1998, BWSR north region staff developed criteria for this new program and solicited applications for the easement funds from local governments. In December 1998 the BWSR approved the Cass SWCD application package for funding easements on two lakes in Cass county (Ten Mile Lake and Unnamed Lake adjacent to Wabedo Lake). Subsequently the landowner of the largest parcel (Ten Mile lake) backed out. Cass SWCD has submitted revised workplan for funding. The revised workplan proposes to allocate the \$250,000 in Lakeshore Easement funds to acquire two LAKESHORE easements. The first and largest is on Little Boy Lake and consists of 4,000 feet of shoreline and 195 total acres. Easement costs will be \$235,000 for the Little Boy sight. The second easement has not changed since December 1998. Cass SWCD will use \$7,029 to acquire 2,270 feet of shoreline, 11.5 acres of land on Unnamed Lake adjacent to Wabedo Lake in Cass County. The remaining \$7,971 will be available to Cass SWCD to use for technical services funds and title insurance.

This easement package represents a very good buy for the state of Minnesota. The assessed value of the Little Boy easement sight is about \$500,000 dollars. Locals tell use that the market value is closer to one million dollars. Both sights will protect significant fisheries habitat and diverse shoreland vegetation systems. Both lakes are intensively developed and are under increasing pressure to develop the shoreline further. Shoreline easements were mentioned in the Cass County Water Plan as a strategy for protecting water resources in the county. And lastly, this easement package represents significant interagency cooperation as well as cooperation between local groups and state and local governments. Local DNR fisheries and wildlife staff have been actively involved in selection and review of the sights. The Leech Lake Watershed Foundation and the Tri-County leech lake Watershed Project have worked closely with the Cass SWCD in selection and review of the sights. Regional MPCA staff have indicated that the sights could provide significant water quality benefits if put into easements.

March 31, 1999

Agenda item: **Grants to SWCDs for Implementation of the Conservation Reserve Enhancement Program** (completion of an item from the February meeting)

Background: At the February BWSR meeting, \$358,605 was authorized for grants to SWCD's to implement CREP (Part A). However, despite a good effort by BWSR field staff to conclude discussions, negotiations with several SWCDs were not completed at that time. Negotiations have now been completed and staff recommend the following grants be approved (Part B).

(A) Approvals made in February:

<u>SWCD</u>	<u>Grant (\$)</u>	<u>No. Of Staff</u>
Chippewa	30,615	1
Yellow Medicine	29,067	1
Lac Qui Parle	28,545	1
Lincoln	28,545	1
Swift ¹	28,722	1
Redwood	32,000	1
Lyon	32,000	1
Cottonwood ²	23,000	1
Kandiyohi	8,449	0.4
Renville	25,150	1.4
Waseca, Lesueur, Blue Earth ³	42,698	1.5
Martin	21,349	0.75
Watowwan	<u>28,465</u>	<u>1</u>
Subtotal	358,605	13.05

(B) Staff recommendation for the April BWSR meeting:

Cottonwood	5,000	---
Waseca, Lesueur, Blue Earth	14,232	0.50
Martin	7,116	0.25
West Ottertail	10,000	0.50
Douglas, Grant, Traverse and Stevens ⁴	<u>30,000</u>	<u>See footnote 5</u>
Subtotal	66,348	1.25
Total	\$424,953	14.30 positions

¹Position will work 80% of the time in Swift and 20% of the time in Big Stone County.

²Position will also work in Jackson and Murray Counties.

³The fiscal agent (grant recipient) is LeSueur SWCD.

⁴The fiscal agent is Stevens SWCD.

⁵ The grant is for contract easement promotion and processing.

Frequently Ask Questions about Wetland Preservation Areas (WPAs)

Information for Counties interested in, or considering acceptance of, WPAs

1. What is a Wetland Preservation Area (WPA) (M.S. 103F.612 to 103F.616)?

Except for DNR Protected Waters Wetlands (PWW), wetlands that are located in both high priority regions and high priority areas as defined in a local watershed or wetland management plan are eligible for enrollment as WPAs. As an incentive for protection, a wetland area so enrolled is exempt from property tax in accordance with M.S. 272.02, Subp. 1, paragraph (10), clause (iii). The required minimum size of an enrolled area is the wetland area owned and a 16.5 foot strip of upland buffer. The maximum size eligible for enrollment is the wetland area owned with a total adjacent upland area of up to four acres for each acre of wetland.

2. What is the landowner required to do in order to have the land enrolled?

Once a parcel of land is enrolled as a WPA, a restrictive covenant is placed on the land, which is considered permanent. However, there is an opportunity for the landowner to request termination of enrollment. If the owner elects to terminate the WPA, the expiration date must be at least eight years from the date of the notice of request for termination. A WPA may be terminated earlier than this only in the event of a public emergency upon petition from the owner or county to the governor.

3. Are counties required to participate in the WPA program?

County participation in the WPA program is optional. A county may accept WPA enrollments, limit the acreage of the additional upland, or deny applications for enrollment of parcels of land into WPAs if the site is ineligible. If the county chooses to accept applications, the county will be reimbursed by the State of Minnesota Department of Revenue for the actual lost tax revenue. There is a standing appropriation from the general fund to the Department of Revenue in an amount necessary to make payments to cover the WPAs enrolled by counties under this property tax exemption program.

4. If the county chooses to accept WPA applications, what is the process?

The WPA program and its application process is spelled out in full in the Wetland Conservation Act (WCA) Administrative Manual, in the section entitled "Miscellaneous WCA Items". All application and enrollment forms, developed by BWSR in accordance with statute, can be found in the Appendix to this part. The Local Government Unit (LGU) for WCA and SWCD staff have a copy of the WCA Administrative Manual.

5. How will the county be reimbursed by the state, and how much will the reimbursement be?

Land enrolled in a WPA will be included as such on the tax rolls starting the tax year following enrollment, payable the next tax year (e.g. land enrolled and accepted by December 1, 1999 will be listed

as a WPA in 2000, payable 2001). The county auditor calculates and certifies to the DOR the total amount of revenue lost as a part of the abstract of tax list filed with the DOR each year prior to March 31. Procedures for computing the total amount of lost revenue are provided in M.S. §275.295. The reimbursement is calculated such that the **minimum** reimbursement rate would equate to the net tax capacity multiplied by \$.50/acre. Otherwise, it is the actual amount of revenue lost.

According to M.S. §275.295, "the commissioner [of revenue] shall pay to each taxing district, other than school districts, its total payment for the year at the time distributions are made." The DOR determines the amount of tax reimbursement for each taxing district in the geographic area based upon the abstract of tax list provided by the county auditor. DOR pays out to each of those taxing districts directly, except for the school districts. The DOR certifies to the MN Dept. Of Children, Families and Learning (DCFL) the amount that goes to each school district, and the DCFL reimburses that portion directly to the school districts. This is standard procedure followed by DOR and DCFL.

6. How would the county cover administrative costs for the WPA program enrollment?

The county may require an application fee to defray the administrative costs of the program. (M.S. §103F.612, subd.6)

7. How does the county know if the land is in a "high priority region or area"?

The county water planner and/or the local soil and water conservation district (SWCD) can assist the county in making this determination.

According to M. R. 8420.0350, Subp. 1, "high priority regions" for preservation, enhancement, restoration, and establishment of wetlands include all of the counties that have lost 50 percent or more of their presettlement wetland base (listed in 8420.0540, subp. 5a, item B). In all other areas of the state, high priority regions are high priority areas approved as such by the BWSR.

In 8420.0350, subp.2, the Rules outline the establishment of high priority areas. In a nutshell, high priority areas must be identified in local watershed management or wetland management plans. County water plans must include identification of high priority areas in order for a county to accept enrollment of WPAs. Likewise, in the seven-county metropolitan area, watershed management organizations must have identified high priority areas in their watershed management plans for the county the accept WPA enrollment in those areas so designated.

8. Who should process or take the applications for WPAs?

The county is responsible for approval or denial of WPA applications. County staff, such as the county recorder, could be assigned to assist landowners in completing applications. Alternatively, the county may consider requesting that the SWCD accept and process the applications on behalf of the county, make a recommendation, and forward the completed applications to the county for final action. The SWCD is required to complete a WPA Advisory Statement during the application review process, and therefore is already involved. Further, it may be appropriate for SWCDs to accept and process the applications and maintain files on behalf of the county, because the WPA enrollment requirements are

somewhat similar to those for RIM enrollment, with which SWCDs are familiar. In such a case, the SWCD should use the WCA Block Grant funds received annually from the BWSR to offset the costs of this program, and the county may authorize the WPA application fee to be collected by the SWCD.

9. How detailed does the required legal description need to be?

A legal description similar to that required for the Reinvest in Minnesota (RIM) Conservation Easement program, describing the area to be included in the WPA, is all that is needed. A full metes and bounds survey is not required.

10. How does the county determine the size of the wetland and its eligible upland buffer?

A wetland delineation, in accordance with the "United States Army Corps of Engineers Wetlands Delineation Manual" (January 1987), must be completed to determine the boundary of the wetland and where the mandatory minimum 16.5 foot upland buffer starts. The landowner can hire a wetland delineator to provide this service. Many SWCDs also provide this service to local landowners.

11. On what basis can the county limit or deny applications?

Once the county elects to accept applications for WPAs, the county may accept applications if the wetland is in a high priority region and high priority area, if it includes the 16.5 foot upland buffer strip, and is accompanied by the proper covenant. The county may reject a WPA application if it does not qualify, or send it back for modification and resubmittal if that is appropriate. The county may limit or reject additional upland proposed to be included according to standards the county establishes. If the application qualifies, the county may approve it and continue with processing the application. Unless the county establishes standards by which it may deny an application outright, there are no provisions in the law or rules for such denial.

12. What guidance can the county use to establish standards for limiting or rejecting additional upland buffer?

The intent of the WPA program was to provide an incentive for landowners to preserve existing wetlands, provided there is at least a 16.5 foot upland buffer strip around the perimeter of the wetland. The applicant may include up to four acres of upland for each acre of wetland enrolled. The following should be considered as language the county may adopt in an appropriate local standard by which it may limit or reject additional upland enrollment:

- a. The WPA program was not meant as a land retirement program for upland areas. The county will only allow enrollment of additional upland acreage which is beneficial for the preservation of the wetland. Therefore, enrollment of additional upland acreage more than that needed to protect the wetland may be allowed by the county where it is deemed reasonable, based upon guidance provided by the Technical Evaluation Panel (TEP). This may be handled on a case-by-case basis, through TEP review of each application requesting enrollment of additional upland acreage.

- b. Commercial or industrial property may only be enrolled, if eligible, in the WPA program at the minimum acreage size; i.e. the wetland area owned plus a 16.5 foot wide upland strip around the perimeter of the wetland.

13. County tax rolls are generally computerized. How can WPAs be added to property ID information?

This question was addressed during a meeting in fall, 1998, between BWSR and DOR staff and one of the computer cooperatives which works with Minnesota counties. It appears that it is simply a matter of creating a new class by which the parcel is described or identified in the tax roll system.

14. What if a parcel of land is already enrolled in a conservation program such as RIM, PWP, WRP, CREP, etc.? Is it still eligible for the WPA program?

If the area of land on which the wetland lies is in a high priority area according to the local water plan or comprehensive wetland management plan, it is considered eligible for enrollment as a WPA. The Department of Revenue will reimburse the county, as described earlier, the actual amount of lost revenue, with a minimum reimbursement rate of the net tax capacity multiplied by \$.50/acre, even if the land is already covered by a conservation easement.

15. What if a parcel crosses county boundaries?

M.S. §103F.612, Subd. 2 states that "if a wetland is located in more than one county, the application must be submitted to the county where the majority of the wetland is located" if the county is accepting applications for WPAs. However, this is not actually possible. Since two taxing authorities are involved, the only way to enroll a parcel of land is with the taxing authority/county in which a parcel lies. Therefore, this would require enrollment of each eligible parcel on which a wetland lies in its respective county. There is no way for counties to manage multiple taxing authorities for one property under WPAs.

16. What if a landowner only owns a portion of a wetland? Similarly, what if a landowner owns the entire wetland, which crosses county boundaries (as in #15 above), and only one of the counties is accepting WPA applications?

The entire wetland should be enrolled in the WPA, along with a required adjacent upland buffer that is a minimum 16.5 feet but no more than four times the area of the wetland acreage. Enrollment of a partial wetland, with the buffer required around the enrolled portion, should only be considered if the following conditions exist:

- ① the wetland is a depressional wetland,
- ② the area offered for enrollment includes a majority (e.g. 75% or greater of the total acreage) of the depressional wetland basin,
- ③ the area offered for enrollment includes all basin outlet(s),
- ④ there is a low probability that an outlet in any portion of the non-enrolled basin will be installed, and

- ⑤ the non-enrolled portion of the basin is adequately protected by the WCA or other government regulations.

**Overview of the Cook County Water Plan Update
BWSR Meeting
April 28, 1999**

The Cook County Board of Commissioners passed a resolution authorizing the updating of the Cook County Water Plan (Plan) in December 1997. An extension was granted by BWSR until June 1999 for the Cook Water Plan Update (Update). As with Cook's original water plan, a 17 person task force was appointed by the Cook County Commissioners to rank water issues and add the concerns of wetlands, stormwater runoff, and source water/wellhead protection. Additional input for the Update was provided by lake association surveys and guest speakers from various agencies (e.g. BWSR, SWCD, NRCS, and EPA).

Cook County is located at the tip of the arrowhead in Minnesota. The two main watersheds are Lake Superior and Rainy Lake (flows to Hudson Bay). Cook County also has 80 miles of Lake Superior shoreline.

Land area is around 997,133 acres with only 9.1 percent privately owned. Ninety one percent of the county is forested and nine percent of the county is (open) water. The DNR Protected Waters Inventory identified 863 lakes and 326 natural watercourses.

Cook County is underlain by bedrock aquifers. In fact, extensive portions of the County are more or less continuous bedrock exposure. Only scattered portions of the County have a mantle of glacial deposits.

Popular areas in the County include: Grand Marais, Tofte, Lutsen Mountain and Grand Portage. For recreation, Cook Co. has part of the BWCA and five state parks.

Important issues identified in the update include: failed on site septic systems, water quality of private water supplies, septage disposal, and protection of aquifer recharge areas. Development issues include: second tier development around lakes (and Lake Superior), redevelopment of older lots, undersized lots, and poor driveway design. Wetland protection and education about the functions and values of wetlands are covered in the Update.

Implementation of the Update will be the responsibility of the Cook County Planning and Zoning Office. Additional assistance is provided by the Cook Co. SWCD, Mn Extension Service, Cook Co. Health Dept.

Final comments are now being collected for the Update. The Ad Hoc Committee will meet in June. Staff will present the Findings of Fact at the June 23 BWSR meeting.

May 1999

**BOARD OF WATER AND SOIL RESOURCES
CONFERENCE ROOM, ONE WEST WATER STREET
ST. PAUL, MINNESOTA 55107
MAY 26, 1999**

AGENDA

9:00 a.m. Call Meeting to Order

Adopt Agenda

Approval of Minutes of April 28, 1999

Reports

- Chair - Kathleen Roer
- Executive Director - Ron Harnack
- Dispute Resolution Committee - Glenn Annexstad
- Education and Public Relations - Paul Krabbenhoft
- Cost-Share/Soil Conservation Committee - Dwain Otte
- Wetlands Committee - Darrell Bruggman
- Financial Oversight Committee - Ginny Imholte
- Administrative Advisory Committee - Kathleen Roer

Agency Reports

- Jim Anderson, Minnesota Extension Service
- Pat Bloomgren, Department of Health
- Sharon Clark, Department of Agriculture
- Rod Massey, Pollution Control Agency
- Allen Garber, Department of Natural Resources

New Business

1. Legislative Action on the FY00-01 BWSR Budget - Linda Prail -
 INFORMATION
2. FY01-02 Capital Bonding Requests - Jim Birkholz - DECISION
3. FY00 Local Water Planning Challenge Grants - Wayne Zellmer -
 DECISION
4. Lakeshed Erosion Control Cost-Share Program - Dan Steward -
 DECISION
5. Area II FY99 Work Plan Amendment - Tabor Hoek - DECISION

6. Area II FY00 Work Plan - Tabor Hoek - DECISION
7. BWSR's 1999 Environmental Initiative Award - Ron Struss - INFORMATION
8. Recognition of Metro Media WaterShed Partners Campaign - Ron Struss - INFORMATION

Advisory Comments

- Minnesota Association of Conservation District Employees (MACDE)
- Minnesota Association of Soil & Water Conservation Districts (MASWCD)
- Minnesota Association of Townships (MAT)
- Minnesota Association of Watershed Districts (MAWD)
- Natural Resources Conservation Service (NRCS)

Upcoming Meetings

- Next BWSR Meeting, June 23, 1999, Radisson Hotel, Rochester
(In conjunction with the Local Water Planners Conference)

Noon

Adjourn



One West Water Street
Suite 200
St. Paul, MN 55107
(651) 296-3767
Fax (651) 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.
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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
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Suite A
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(507) 285-7458
Fax (507) 280-2875

Box 267
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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: May 17, 1999

TO: Board of Water and Soil Resources Members, Advisors, Staff

FROM: Ronald D. Harnack, Executive Director

SUBJECT: May 26, 1999 BWSR Meeting

The Board of Water and Soil Resources will meet on Wednesday, May 26, 1999, beginning at 9:00 a.m. The meeting will be held in the BWSR conference room at One West Water Street, St. Paul. The following is some background information regarding the agenda items:

New Business

1. Legislative Action on the FY00-01 BWSR Budget: Hopefully by the Board meeting Franklin the dog will have done his work and we will have our FY2000-01 budget bill passed by the legislature and signed by the Governor. Staff will overview the budget numbers and their potential agency impact. INFORMATION
2. FY01-02 Capital Bonding Requests: Even though the dust has not settled on the 1999 legislative session, it's time to prepare for the 2000 session. It is anticipated that the 2000 legislature will pass a bonding bill authorizing the sale of state bonds to finance capital investments. The executive branch capital budget process has an initial deadline of June 15 for agencies to submit full narratives and numbers. In your packet is a table showing a summary of BWSR capital investment projects as prepared by staff. Board action is requested so staff may prepare information for submittal by the June 15 deadline. DECISION
3. FY00 Local Water Planning Challenge Grants: At their January 27, 1999 meeting, the Board authorized staff to launch the FY00 Local Water Planning (LWP) Challenge Grant Program. An LCMR appropriation of \$735,000 supplements this Program to \$1.5 million. A retooled application and evaluation process supported by local water planners highlights this year's Program. The Board will be requested to approve funding for projects as recommended by the LWP Interagency Review Group. DECISION
4. Lakeshed Erosion Control Cost-Share Program: See attached. DECISION

5. Area II FY99 Work Plan Amendment: Area II seeks approval for an amendment to the FY99 Work Plan budget to transfer \$2,782.07 (plus 25% local match) from project accounts to the office budget. The funding will be utilized to assist in the purchase of photocopier and conference room equipment as Minnesota Extension Service is leaving the building and taking these items with them. As a co-tenant with BWSR and DNR, the Area II office is expected to share the cost of office "pool" equipment. DECISION
6. Area II FY00 Work Plan: Annually the state grants Area II \$189,000 to be matched with 25% local money. The grant is split between office budget and project budget. This work plan is for an office budget of \$136,143.75 with the remainder of \$52,856.25 to be used for flood control projects. Other funding for projects covered in this work plan are 1999 \$250K bonding for road retentions, 1998 \$500K bonding for floodwater retention projects, and possibly \$1.5M to construct Lazarus Creek Flood Control Project. These projects have all been initiated, their status can be found in the work plan. Approval is requested. DECISION
7. BWSR's 1999 Environmental Initiative Award: WaterShed Partners, which BWSR is a member of, was presented the 1999 Environmental Initiative Award by the Minnesota Environmental Initiative. INFORMATION
8. Recognition of Metro Media WaterShed Partners Campaign. INFORMATION

If you require additional information, please feel free to contact Jim Birkholz, at 651-296-0879, as I will be on vacation May 17-31.

**BOARD OF WATER AND SOIL RESOURCES
CONFERENCE ROOM, ONE WEST WATER STREET
ST. PAUL, MINNESOTA 55107
MAY 26, 1999**

PRELIMINARY AGENDA

9:00 a.m. Call Meeting to Order

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(In conjunction with the Local Water Planners Conference)

Noon

Adjourn

DRAFT

**Board of Water and Soil Resources
AGENCY CAPITAL BUDGET REQUEST**

2000 Session

Dollars in Thousands

-----*Projects are listed in priority order*-----

DRAFT

New Business #2

Project Title	Category	2000	2002	2004	Notes
1. CREP--Conservation Reserve Enhancement Program - Minnesota River Basin	<u>Completion of an existing project.</u> Funding would continue a federal/state partnership--which leverages significant federal dollars which have already been appropriated and await state match.	34,974	34,974	0	Extension of CREP beyond September 30, 2003 is contingent on the next US Farm Bill. Currently, only permanent easements are being funded with state dollars. Cost to the state could be potentially decreased if limited duration easements were funded. An assessment of limited duration easements is underway that weighs savings versus the environmental risk of lands potentially coming back into agricultural production. (See attachment).
RIM Reserve/Wetland Reserve Program	<u>Completion of an existing project.</u> Funding would continue a federal/state partnership--which leverages significant federal dollars.	2,381	2,381	0	Extension of the WRP/RIM partnership beyond September 30, 2003 is contingent on the next US Farm Bill.
RIM Reserve /Wetland Preserves Program	<u>Sound investment of state funding.</u> Funding would continue the enrollment of marginal agricultural land, the restoration of wetlands and protection of at-risk wetlands. And given increased conflict over the maintenance of public drainage systems, a portion of these funds would be used to acquire easements for wetlands that have formed on a ditch system.	8,143	8,143	40,000	The figure for 2004 is derived from the \$20M annual need for conservation easements as stated in the report titled "The Continuing Journey to Preserve Minnesota's Outdoor Heritage." The report was prepared by the Citizen's Advisory Committee to Promote Minnesota's Hunting, Fishing, and Trapping Heritage (April, 1998).
SUBTOTAL RIM/CREP		45,498	45,498	40,000	

Project Title	Category	2000	2002	2004	Notes
2. Local Government Wetland Road Replacement	<u>Continuing a state commitment.</u> Section 103G.222, subd. 1(m) states: "Except for state public transportation projects, for which the department of transportation is responsible, the BWSR must replace the wetlands drained or filled by public transportation projects on existing roads in critical rural and urban watersheds."	5,974	6,812	7,221	The states financial responsibility could be reduced or eliminated if the aforementioned statute were amended to require local government road authorities to mitigate wetland impacts. The BWSR does not support this idea as experience has shown that if that were to happen, the quality of wetland replacement would be diminished.
3. Lakeshore Easements	<u>Sound investment of state funding.</u> Funding would continue a successful and cost-effective riparian protection practice piloted in 1998.	1,000	1,000	1,000	
4. Flood Storage Easements	<u>Honoring a state commitment.</u> Funding would continue a successful and cost-effective flood control practice piloted in 1998. Moreover, the Red River Basin Flood Damage Reduction Work (Mediation) Agreement, signed by several state and federal agencies, included flood storage easements as one of the flood control measures to be partially funded by the state.	2,000	2,000	4,000	The states financial responsibility could be potentially reduced if this activity were incorporated into the DNR flood damage reduction program.
5. Area II MN River Grant-In-Aid Program	<u>Projects that invariably get funded.</u> Funding would allow the completion of flood control projects that have been planned and approved.	1,500		200	The states financial responsibility could be potentially reduced if this activity were incorporated into the DNR flood damage reduction program.
Total Capital Budget Request		55,972	55,310	52,421	

EXHIBIT 1

CAPITAL BUDGET REQUESTS AND APPROPRIATIONS DISTRIBUTION BY BUDGET BOOK THEME

1994-1998

(in \$000)

	1994			1996			1998	
	1994 ADOPTED	% of 1994 ADOPTED		1996 ADOPTED	% of 1996 ADOPTED		1998 ADOPTED	% of 1998 ADOPTED
STATE GOVERNMENT	\$63,052	10%		\$71,813	12%		\$69,164	7%
CHILDREN, FAMILIES & LEARNING	40,304	6%		28,352	5%		73,025	7%
GRANTS TO POLITICAL SUBDIVISIONS *	n/a *	0%		44,460	7%		203,180	20%
ENVIRONMENT & NATURAL RESOURCES	123,618	19%		102,201	17%		198,701	20%
HEALTH & HUMAN SERVICES	58,180	9%		9,462	2%		32,030	3%
CRIMINAL JUSTICE	72,953	11%		93,454	15%		14,185	1%
TRANSPORTATION	58,016	9%		49,639	8%		94,500	9%
ECONOMIC DEVELOPMENT	34,435	5%		34,750	6%		38,340	4%
HIGHER EDUCATION	208,800	32%		180,235	29%		287,880	28%
TOTAL	\$659,358	100%		\$614,366	100%		\$1,011,035	100%

* Prior to 1996, the capital budget book "Grants to Political Subdivisions" did not exist. Requests were not received through DOF, and adopted projects were appropriated as pass-through grants to various state agencies.

RECOMMENDATIONS FOR CAPITAL BUDGET FUNDING TARGETS (\$400 M)

HIGHER
EDUCATION
\$100 M

K-12, DHS &
CORRECTIONS
\$100 M

STATE GOVT
& TRANSP
\$100 M

ENVIRONMENT
& ECON DEV
\$100 M

- * UofM 50
- * MnSCU 50

Issues:

- * Option B provides less funding for higher education, more for state government and others
- * Option B has direct competition between K-12 and DHS/Corrections (rather than with higher education)
- * May provide funding for only 1 major new state government building (BCA, Health, CFL, or DHS)
- * Transportation projects and funding sources are not entirely clear
- * Provides minimal funding for local economic development projects (with the possible exception of local environmental projects -- PFA, etc)
- * Overall funding target provides minimal funding availability for asset preservation

2000-01 Comprehensive Local Water Planning (CLWP) Challenge Grants

History: BWSR Grants Team met in December to develop a proposal for distributing LCMR and BWSR appropriations for Local Water Planning Challenge Grants. The team also proposed retooling the grant application process. A sub-team put together a new application, scoring criteria and work plan. Comments on the proposed process were solicited from the Local Water Planners Focus Group and the agencies Technical Representatives Group in January of this year. At their January 27, 1999 meeting the BWSR Board authorized staff to move forward with the retooled process.

Application Period: On February 3 interested parties were made aware, via a direct mailing and published notification in the State Register, that BWSR was accepting applications for the FY 2000-01 Challenge Grants. The deadline for submitting grants was April 1, 1999. The application was streamlined to four pages outlining the project purpose, relationship to the CLWP, desired outcomes, actions, evaluation and dissemination and budget. Project managers will develop detailed work plans and budgets for funded projects. A list of projects and the project purpose (as stated on the application) submitted for funding is included with this overview. The projects are listed according to the Review Team's funding recommendation ranking.

Review Team:

Invited

MN Assn. of Watershed Districts
 MN Assn. of Soil and Water Conservation Districts
 MN Assn of Conservation District Employees
 MN Assn. of Counties
 League of MN Cities
 Assn. of Metro Municipalities
 MN Geological Survey
 MN Assn. of Townships
 Metro Intercounty Assn.
 MN Assn. of Planning and Zoning Administrators
 MN Dept. of Ag
 MN Dept of Health
 Metropolitan Council
 Dept. of Natural Resources
 Natural Resources Conservation Service-USDA
 MN Planning
 Pollution Control Agency
 University of MN Extension
 BWSR

Participated

Sue Scribner

 Steve Olkins

 Barb Phalen

 John Burgers
 Mark Zabel
 Art Persons
 Jack Frost

 Glenn Skuta

 Doug Snyder (metro), Bill Best (north)
 Tom Fischer (south), Marybeth Block (at large)

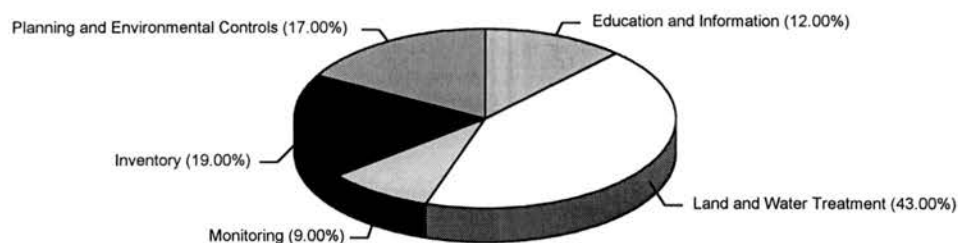
Review Team Recommendations: See the attached sheet spreadsheets for project rankings. The review team recommends that all projects above the heavy lines on the spreadsheets be funded (\$1,425,000 is available for large projects and \$75,000 for small projects). As BWSR board conservationists help the successful applicants develop work plans, circumstances may arise that prevents the project from moving forward. If, during the work plan development process in June and July, a project is removed from the funding list the committee recommends the next project on the list be funded.

LCMR Approval: Applications approved by the board will include approximately \$735,000 of LCMR funded projects. The Board's action regarding which projects to fund will be presented to LCMR in June as part of BWSR's LCMR Work plan. Upon LCMR approval of the BWSR Work plan, and Board Conservationist approval of the individual project work plan (around July 1 of 1999), the BWSR will execute a grant agreement with the local unit of government.

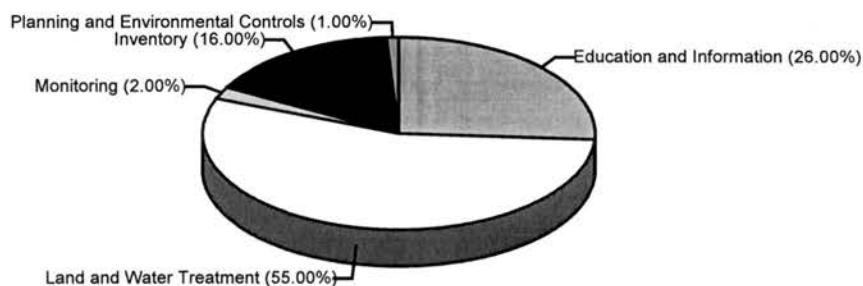
Summary of 2000-01 CLWP Challenge Grant Applications

	Total	Large Grants	Small Grants
Dollars Available	\$1,500,000	\$1,425,000	\$75,000
Dollars Requested	\$3,486,964	\$3,330,946	\$156,018
Match offered	\$4,934,729	\$4,692,760	\$241,969

Challenge Grant Applications by CLWP Predominant Category



Recommended for Funding by predominant CLWP Category



LWP CHALLENGE GRANT FY2000-01

Small Grant Category

Max allocation of \$7,500 per project. Total allocation \$75,000.

Interagency review recommended funding order.

E&I: Education and Information

INV: Inventory

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RANK	APPLICANT	PURPOSE	REPORTING CATEGORY	MATCH	FUNDS REQUESTED	TOTAL FUNDS REQUESTED	COMMENTS
1	Vadnais Lake Area WMO	The project purpose is to: (1) digitize and link the wetland inventory and database, (2) develop a comprehensive Wetland Protection and Management Plan (CWVMP), (3) develop wetland ordinance language, and (4) increase priority wetlands protection.	P&EC	\$9,320.00	\$7,500	\$7,500	
2	Cottonwood	The project will continue monitoring water quality trends to document results of land improvements and adoption of best management practices. The results will be showcased fro regional presentations and a reinforcement to watershed residents.	MON	\$7,500.00	\$7,500	\$15,000	
3	Washington County & MAGWA	The Water Festival's purpose is to teach students about the water cycle, ground water, surface water, and related natural resources. Activities are designed to inspire and motivate children to conserve and protect our water resources.	E&I	\$31,440.00	\$7,000	\$22,000	
4	Blue Earth	To eliminate discharge of untreated sewage to the Blue Earth and LeSueur Rivers from 65 dwellings in the Village of Rapidan by developing a Feasibility Study/Facilities Plan for waste water.	P&EC	\$5,500.00	\$3,000	\$25,000	
5	Nicollet	The project will repeat a popular 1988-89 rural well screening program called Township Testing. It will provide rural families with information on the safety of their drinking water and gauge the results of twelve years of implementation activities.	E&I	\$11,500.00	\$7,500	\$32,500	
6	Blue Earth	To eliminate discharge of untreated sewage to McGibney's Lake and the Minnesota River and prevent ground water contamination from 45 dwellings in the Village of Judson by developing a Feasibility Study/Facilities Plan for waste water treatment and drinking water supplies.	P&EC	\$5,500.00	\$3,000	\$35,500	
7	Sibley	To implement a rock tile inlet in Sibley County to improve future water quality in Bevens Creek Watershed. This project allows Sibley County, a rural county, and Carver County, a metro county, to work together in terms of a watershed wide program.	L&W	\$5,000.00	\$5,000	\$40,500	
8	Benton	Reduce cropland phosphorus and nitrogen to safeguard groundwater and Little Rock Lake by demonstrating Agriculture Best Management Practices (BMPs) through insuring against financial losses producers that effectively implement BMPs.	E&I	\$9,200.00	\$7,500	\$48,000	

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9	Ramsey Washington Metro Watershed District	To strengthen the implementation of the District's education goals by utilizing the training, peer coaching and educational materials of the national program, Adopt-a-Watershed, and to certify a local team for metro-wide Adopt-a-Watershed program development.	E&I	\$16,300.00	\$2,500	\$50,500	
10	Stearns	The applicant proposes to remove four solid waste dumps along the shores of the Sauk River, stabilize the sites to prevent erosion by planting and establish the Adopt-a-River Program for the Sauk River's reach.	L&W	\$5,470.00	\$4,628	\$55,128	
11	Polk	To seal priority unused, abandoned wells around Union / Sarah Lake. Second priority wells will be wells identified and ranked by using the sealing Well Priority Checklist. Educational activities will be part of the grant.	L&W	\$7,500.00	\$7,500	\$62,628	
12	Carver	Establish and maintain an automated water quality monitoring station in the Sibley County portion of the Bevens Creek Watershed. Coordinate sampling with Similar stations located in the Carver County portion of the watershed.	MON	\$7,500.00	\$7,500	\$70,128	
13	Becker	The purpose of the proposed project is to locate, inventory and monitor any wells within our Wellhead Protection Area and seal any abandoned wells.	INV	\$7,000.00	\$7,000	\$77,128	End of small grant allocation. Recommended to fund in entirety and reduce large grant allocation by \$2,128.00.
14	Chisago	To establish baseline data for water quality and flow of six streams in Chisago County, and to conduct ongoing tests to evaluate potential concerns with stream water quality to direct potential future restoration projects.	MON	\$7,035.00	\$4,490	\$81,618	
15	Fillmore	Develop a process to create Geographic Information System (GIS) mapping layers that will assist Fillmore County with making natural resource decisions in the implementation of programs to benefit the water quality of the South Branch of the Root River.	INV	\$7,000.00	\$7,000	\$88,618	
16	Sherburne	Assistance will be provided to irrigators to improve irrigation water management which will reduce leaching of nitrates to groundwater. The county will also sample wells for nitrates and expand its groundwater data base.	MON	\$7,250.00	\$7,250	\$95,868	
17	Carnelian-Marine Watershed District	The purpose of this project is to document and analyze the Silver Creek area for point and non-point sources of pollution and ordinance non-conformity in order to prepare the district for future shore land management projects.	INV	\$3,750.00	\$3,750	\$99,618	

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18	Stevens	To complete a hydraulic study required by the DNR to determine if restoration of a drained basin feasible to reduce flooding in the city of Chokio and restore wildlife habitat in the basin.	INV	\$7,500.00	\$7,500	\$107,118	
19	Hubbard	Share four hand-held dissolved oxygen/temperature meters among trained lake water -quality monitoring volunteers and add these parameters to existing county baseline water-quality database. Maintain volunteer motivation, increase knowledge, and answer additional questions regarding their lake's dynamics.	MON	\$3,664.00	\$3,500	\$110,618	
20	Murray	This project aims to alleviate severe erosion conditions present along portions of Currant Lake. Historically high lake water levels this decade have resulted in very steep banks, thus allowing continued shoreline and water quality degradation.	L&W	\$30,660.00	\$3,900	\$114,518	
21	Koochiching	LCMR funding would be used locally by the SWCD to accomplish two main objectives: hire temporary staff person to inventory abandoned wells as outlined in the Koochiching CLWP and in accordance with the BWSR 1991 Abandoned Well Inventory Guidebook. 2. Hire Temporary staff person to assist in the creation and distribution of E & I materials as outlined in the Koochiching CLWP.	E&I	\$7,500.00	\$7,500	\$122,018	
22	Traverse	Inventory all the erosion sites along the shores of lake Traverse, enter it into a GIS program and prioritize the sites, according to their severity, so that these sites can be fixed at a later date.	INV	\$3,000.00	\$3,000	\$125,018	
23	Pennington	The purpose of this proposal is to install a dry retention basin in the existing ditch that collects stormwater run-off from several paved parking lots and roofs. This ditch empties directly into the Red Lake River above the city water treatment plant intake.	L&W	\$9,680.00	\$7,500	\$132,518	
24	Crow Wing	To monitor water quality parameters in Upper Cullen Lake, its inlet and outlet, and its feeder wetlands to quantify the hydraulic and nutrient loading of the wetlands into the lake.	MON	\$7,500.00	\$7,500	\$140,018	

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25	Chippewa	The objective in purchasing a set of learning models is to show students and adults in a visual and participatory learning experience the effect of human activity and its impact on the land, water, and air. The written material emphasizes the individual's responsibility for wise land-use decision making that are demonstrated through the models.	E&I	\$5,500.00	\$5,500	\$145,518	
26	Traverse	Wildlife tree planting on a new DNR wildlife Management area along the Bois de Sioux River.	L&W	\$3,200.00	\$3,000	\$148,518	
27	Houston	The purpose of the project is: 1. Involve area students water issues through hands on participation. 2. Educate the public on water issues through school newspaper.	E&I	\$5,000.00	\$2,500	\$151,018	
28	Pennington	Divert storm water from Golf Course parking lot to a water and sediment basin. The runoff is concentrating and eroding away the streambank which was fixed in 1994 with Special Projects.	L&W	\$5,000.00	\$5,000	\$156,018	

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1	Benton & Morrison Conservation Districts	Reduce phosphorus loading and sedimentation by installing filter strips, waterways and preparing nutrient management plans all to improve trout habitat in Little Rock Creek and reduce algae blooms in Little Rock Lake.	L&W	\$52,100	\$52,100	\$52,100	
2	Lincoln	To identify sources of nitrate contamination levels in the ground and surface water of the Verdi Well Field and to protect the water resource itself, our drinking water supply for 80% of Lincoln County residents.	MON	\$34,240	\$34,240	\$86,340	
3	Olmsted Co. & Chosen Valley ISD	A major spring discharging at Chosen Valley High School will be developed into a karst educational exhibit and groundwater monitoring station creating a premier groundwater quality and flow monitoring site for southeastern	L&W	\$22,944	\$19,500	\$105,840	
4	Polk	Protection of the Red Lake River and the Water Supply of the City of East Grand Forks from arsenic, pathogens and sediments are primary purposes. Stabilization of steambank will protect a cemetery and agricultural land.	L&W	\$221,000	\$40,000	\$145,840	
5	Pelican River Watershed District	The purpose of the proposed project is to develop and test a parcel-based land use system to be used to establish and assign fees for a stormwater utility to collect revenues to fund stormwater treatment projects.	P&EC	\$28,000	\$28,000	\$173,840	
6	Brown's Creek Watershed District	The purpose of this project is to reduce flood-related property damage on Kismet basin by Stabilizing water levels while at the same time, protecting the cold water trout fisheries of Brown's Creek. The project will also improve water quality by lowering lake levels below existing septic systems and reducing shoreline erosion. Groundwater resources will be benefited through increased recharge.	L&W	\$163,500	\$40,000	\$213,840	
7	Beltrami	This project's purpose is to assist with the development of a wellhead protection plan for the City of Bemidji and surrounding townships. The City of Bemidji currently ranks seventh (7th) in the State in priority for completing a wellhead protection plan due to the very sensitive unconfined, surficial outwash aquifer that serves as the source of drinking water for the City of Bemidji, and for the residents in the surrounding townships.	P&EC	\$22,000	\$22,000	\$235,840	
8	Valley Branch Watershed District	To help maintain and improve the high-quality, trout-bearing waters at Valley Creek by (a) identifying nutrient sources, dynamics, and relations to aquatic vegetation, and (b) maintaining the existing automated hydrologic monitoring stations.	MON	\$32,000	\$32,000	\$267,840	
9	Ramsey-Washington Metro Watershed District	To implement and evaluate the effectiveness of the Polymer/Kenaf (P/K) stormwater treatment system in a confined space urban watershed. The goal is to improve water quality and protect Tamarack Swamp (a unique, ecologically-diverse, urban wetland).	L&W	\$123,572	\$100,000	\$367,840	

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10	Carnelian-Marine Watershed District	The primary purpose of this project is to aid district efforts to maintain and improve lake water quality by reducing shore land contributions of point and non-point source pollution through cost-aided and voluntary land use management.	L&W	\$33,050	\$33,050	\$400,890	
11	Red River Water Management Board	Establish the River Watch program throughout the Red River Basin as a sustainable partnership between schools and resource managers to provide useful water quality data for natural resource management based on scientific, standardized methods.	MON	\$114,500	\$100,000	\$500,890	
12	Capitol Region Watershed District	The purpose is to apply impervious surface information to reduce nutrient, solids, and other pollutant loading to the Mississippi River, and assist in reaching regional goals of improved water quality, biological diversity, and recreational use.	INV	\$44,800	\$40,000	\$540,890	
13	Kandiyohi	To obtain a coordinator who will assist the Crow River Watershed Steering Committee organize and facilitate the watershed planning process, including information/education activities, implementation of citizens monitoring network and increased local citizen involvement.	E&I	\$52,000	\$50,000	\$590,890	
14	Elk River Watershed Association Joint Powers Board	Reduce phosphorus and sediment reaching surface water primarily from livestock operations, inventory each minor watershed using macroinvertebrates to prioritize future work areas and to increase Secchi disc and Chlorophyll-a readings by 5%.	L&W	\$47,500	\$47,500	\$638,390	
15	Itasca	To develop for Itasca County, a detailed vulnerability classification to improve our ability to predict sensitivity of different lake types to changes in water quality due to changes in the watershed.	INV	\$31,000	\$29,500	\$667,890	
16	Douglas	A temporary, full-time technician will be hired to monitor excavation on new subdivisions, providing accountability and liaison with the MPCA enforcement of NPDES permits. A revised subdivision ordinance will be adopted to address environmental concerns.	E&I	\$24,188	\$24,188	\$692,078	
17	Clay	Project will evaluate wetland restorations achieving a goal of the Red River Basin Mediation. Products include drained/existing wetland basin inventories, evaluation of Functions/Values, several restored wetlands, and the first Wetland Management Plan in the Basin.	P&EC	\$40,000	\$40,000	\$732,078	
18	Carver	To expand current watershed restoration work being done in Bevens creek into Carver and Chaska creeks and to meet land owner demand for installing harvestable grass buffer strips in combination with manure and nutrient management plans.	L&W	\$47,700	\$40,000	\$772,078	

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19	Cottonwood, Murray & Redwood	Identification of priority feedlots in 6 sub-watershed's within Cottonwood River Watershed. Phase 1 of a CWP has identified feedlots within these sub-watersheds as having a major impact on water quality. Upgrading existing level one inventories to a level 3 inventory will set the framework to begin corrective measures.	INV	\$30,500	\$27,000	\$799,078	
20	Morrison	Establish vegetative buffers along fragile shoreline areas that will reduce erosion and nutrient loading. Targeted sites are on heavily developed lakes and the Mississippi River. Easements with landowners will be obtained to maintain established practice.	L&W	\$40,000	\$30,000	\$829,078	
21	Rock	An environmental education day consisting of approximately sixteen hands-on learning stations covering various environmental topics including: trees, water quality, wetlands, wind and water erosion, and soils. Students will attend approximately eight different sessions during the day.	E&I	\$47,350	\$10,000	\$839,078	
22	Washington	To test a process to identify and delineate high water elevation, runout level and runout point for landlocked basins within the Carnelian-Marine watershed; to establish and test sound guidelines to enhance FEMA floodplain maps.	P&EC	\$27,040	\$27,040	\$866,118	
23	Wilkin	Explore watershed management options for the Otter Tail River Watershed and address conservation and natural resource concerns outlined in the Red River mediation agreement and install BMPs to reduce flooding and enhance natural resources.	L&W	\$137,650	\$100,000	\$966,118	
24	Hubbard & Beltrami	Complete demonstration shoreline restoration/lake landscaping sites as cooperative workshop, involving citizens, and lake associations, to protect lakeshore on several Hubbard & Beltrami County lakes. Increased public insight regarding structural and biological techniques to stabilize lakeshore.	L&W	\$31,000	\$31,000	\$997,118	
25	Houston	This program has three purposes: 1. Provide incentive to feedlot owners to install roof gutters which will provide working demonstrations of their effectiveness; 2. Reduce pollution of surface waters by diverting clear water from 30 existing feedlots; 3. Encourage feedlot operators to begin implementation of a complete pollution abatement program.	L&W	\$25,500	\$25,000	\$1,022,118	
26	So. Washington Watershed District	To gather quantitative and qualitative data on stormwater infiltration through the development of a local demonstration site and a series of fact sheets to be used in future planning and management activities throughout the South Washington Watershed District (SWWD).	E&I	\$30,000	\$40,000	\$1,062,118	

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27	Cass County	This project will collect and treat the stormwater from the eastern third of the City of Walker and significantly reduce the sediment and associated pollution that enters Leech Lake.	L&W	\$50,000	\$40,000	\$1,102,118	
28	Renville	The proposed project will reduce sediment and nutrient input into Renville County surface waters which will ultimately improve water quality and reduce ditch maintenance costs to landowners and the County.	L&W	\$46,660	\$40,000	\$1,142,118	
29	Hubbard	To complete the development and implementation of a Wellhead Protection Area (WHPA) and Drinking Water Supply Management Area (DWSMA) for Park Rapids that will protect and preserve the city's water supply.	L&W	\$19,000	\$19,000	\$1,161,118	
30	Carlton	Expedite development of five LGU's wellhead protection plans. Coinciding development of these plans with current on-going county-wide Community Based Land Use Planning project will enable the integration of these plans into the new land use plans.	INV	\$38,500	\$38,500	\$1,199,618	
31	Anoka, Carver, Dakota, Hennepin, Ramsey, Scott & Washington	The project will improve estimates of ground-water recharge and enhance the development and management of local programs that address wellhead protection, remediation of contaminated ground water and delineation of areas sensitive to ground-water contamination.	P&EC	\$100,000	\$100,000	\$1,299,618	
32	SE MN Water Resources Board	The most vulnerable municipal public water supply in each of the nine member counties will receive both educational and technical assistance in laying groundwork for development of their Wellhead Protection Plans.	E&I	\$81,500	\$81,580	\$1,381,198	
33	Norman	To improve ground water quality, project funds will facilitate a conformance inspection of on-site septic systems and initiate the acquisition process for funds to install a municipal wastewater system.	P&EC	\$13,825	\$12,825	\$1,394,023	
34	Watsonwan	The project will enhance the planning efforts for sewer upgrades in five small communities and one lake district with a end goal of meeting state water quality standards.	P&EC	\$29,000	\$29,000	\$1,423,023	End of funding allocation. Offer \$28,848 to Watsonwan
35	Capitol Region Watershed District	This project is intended to identify and prioritize Como Lake management issues through active citizen and agency involvement; to select strategies to address these issues; and to implement projects and programs that benefit Como Lake and have the support of the community.	P&EC	\$54,800	\$40,000	\$1,463,023	
36	Traverse	To improve and protect the water quality and improve fish habitat in Lake Traverse and prevent further degradation of the shores of Lake Traverse.	L&W	\$32,500	\$32,500	\$1,495,523	

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37	Beltrami	To provide private landowners in a targeted subwatershed with high quality forest management plans identifying specific management alternatives. Forest Stewardship plans would address landowner objectives and promote the health and long-term viability of forests emphasizing water quality aspects of forest management.	P&EC	\$15,000	\$15,000	\$1,510,523	
38	Martin	The project purpose is to: (1) develop a Comprehensive Wetland Protection and Management Plan (CWMP), (2) adopt a wetland ordinance, and (3) increase protection, management, and restoration of priority wetlands.	L&W	\$48,773	\$40,000	\$1,550,523	
39	Olmsted County	A Water Resources Management and Capital Improvement Plan will be developed for the South Zumbro Watershed to promote integration of multi-agency surface water management objectives with the planning, design, and construction of highway and bridge improvements.	P&EC	\$40,000	\$40,000	\$1,590,523	
40	Pine	The project purpose is to permanently reduce sediment loading of Upper Pine Lake caused by the continual eroding by wave action and fluctuating water levels to a section of Upper Pine Lake Road where the lakeshore and road slope are the same.	L&W	\$14,902	\$13,301	\$1,603,824	
41	Brown's Creek Watershed District	The Ground Water Hydraulics and Hydrology project will gather and analyze ground water data necessary to manage and maintain good water quality and trout fishery in Brown's Creek.	INV	\$40,000	\$40,000	\$1,643,824	
42	Stearns	To restore and manage impacted shoreline areas with native vegetation for protecting water quality and providing educational and innovative benefits to landowners and agency staff.	L&W	\$29,600	\$29,600	\$1,673,424	
43	Martin	The purpose of this project is to install a permanent groundwater monitoring system at 10 to 20 different animal feedlots throughout the county. The groundwater monitoring systems would focus on the manure storage facilities at each location.	MON	\$41,442	\$40,000	\$1,713,424	
44	Wadena	Cooperative project in Hubbard and Wadena will explore feasibility to restore 3.6 miles of channel of Fish Hook River, reduce sediment loading to Upper twin Lake and implement BMP's in Shell River Watershed, tributaries of the Crow Wing River.	L&W	\$100,000	\$100,000	\$1,813,424	
45	Polk	Union and Sarah Lake are 5 feet over ordinary high water. High water is causing water quality problems by flooded lawns, septic systems, wells, beaches and buildings. Goals: Kepp lake at ordinary high water elevation.	L&W	\$40,000	\$40,000	\$1,853,424	

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46	Goodhue	Develop a feedlot inventory that incorporates the data into GIS to give planning officials and managers a tool to spatially analyze this data in conjunction with other GIS layers such as parcels, soils, and geologic information.	INV	\$39,225	\$39,225	\$1,892,649	
47	St. Louis County Planning	The project has the following purposes: 1. Expand upon the County's/SWCD base line lake water quality efforts. 2. Stabilize or improve upon water quality in targeted lake watersheds. 3. Prevent water quality problems through improved site review of new development. 4. Provide for improved collaboration between the County, SWCD's, and lake associations. 5. Provide a local response to the Minnesota DNR shore land Ecosystem Program and the Minnesota Pollution Control Agency Clean Water Action Plan.	L&W	\$30,075	\$25,264	\$1,917,913	
48	Martin	The purpose of this project is to restore/create a 30-acre wetland approximately one-half mile west of Hall Lake. This wetland will filter nutrients and sediment from Dutch Creek, which drains 17 square miles of agricultural land before entering Hall Lake.	L&W	\$392,379	\$40,000	\$1,957,913	
49	Marshall	The purpose of this grant request is to refine the local wetland inventory for the Thief River Watershed and to develop a local Wetland Management Plan for the watershed that will incorporate inventory findings (cooperative planning with Beltrami County is currently in process).	P&EC	\$15,000	\$15,000	\$1,972,913	
50	Jackson & Cottonwood	The purpose of this project is to move the feedlot program in both Jackson and Cottonwood County to a new level. With the addition of this position it is expected that surface water will be protected with additional inspections during the construction of all new feedlot structures by qualified and trained staff person. This will help both counties to meet the expectations of the proposed new feedlot rules. In addition, all feedlots would be inventoried to the standards of a level two inventory.	MON	\$43,000	\$43,000	\$2,015,913	
51	Martin	The purpose of this project is to develop two semi-permanent water monitoring stations west and south of the Fairmont chain of lakes ecosystem and to better manage two watersheds that drain approximately 23,876 acres of agricultural land into this lake ecosystem.	MON	\$41,055	\$32,528	\$2,048,441	
52	Snake River Watershed Management Board	This project will have two components: 1. Educate shore land owners on the value of revegetating their property and provide cost-share to implement shore land Best Management Practices (BMP's); 2. Provide cost-share to landowners for water quality improvements on their feedlots.	L&W	\$154,000	\$100,000	\$2,148,441	

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53	Stearns	The project will enhance surface and groundwater quality by providing cost share assistance for investigations of unpermitted manure storage basins. Basins that do not meet guidelines will be prioritized and additional financial assistance will be secured to repair or abandon.	L&W	\$187,200	\$40,000	\$2,188,441	
54	Traverse	To improve and protect the water quality and improve fish habitat on the Mustinka River and to prevent further degradation of the banks of the Mustinka River.	L&W	\$22,000	\$14,000	\$2,202,441	
55	Bois de Sioux Watershed District	The Bois de Sioux Watershed District Board of Managers has committed to provide up to \$32,000 total for the accelerated promotion of the CRP Riparian (Buffer Strip) program. We were told that the reason that more people aren't signing up is because of the lack of knowledge that the program exists. Getting the word out to the landowners in a one-on-one setting was determined to be the best way to educate landowners about the Program resulting in an additional 6,400 acres enrolled.	P&EC	\$18,200	\$16,000	\$2,218,441	
56	Aitkin	Project will address surface water concerns in a sub-watershed with complex characteristics. This grant will assist in strengthening the Big Sandy Watershed Project and refocusing efforts on common goals instead of differences.	INV	\$45,000	\$38,000	\$2,256,441	
57	Clay	To enhance the protection and management of surface and groundwater resources of 17 counties in the Red River Basin of Minnesota by hiring an executive secretary to coordinate comprehensive local water plan activities.	P&EC	\$67,914	\$67,000	\$2,323,441	
58	Aitkin	Aitkin County has 400 lakes and miles of streams and rivers. County population is growing at a 2.3% annual rate. Protection of undeveloped riparian lands is crucial for environmental, economic and social reasons.	L&W	\$51,500	\$40,000	\$2,363,441	
59	Two Rivers Watershed District	This project would integrate information regarding the 8 legal drainage systems administered by the Two Rivers Watershed District pertaining to ditch locations, benefit areas, land parcels affected, and ditch design information into one ditch file that would be entered into an Arc view geographic information system	INV	\$15,000	\$15,000	\$2,378,441	
60	Rice	To develop a county-wide comprehensive lake management plan modeled on the ten-year French Lake Clean Water Project in order to organize government agencies, lake associations, watershed organizations, and watershed	E&I	\$40,000	\$40,000	\$2,418,441	
61	Hubbard	Identify sensitive areas of county that could benefit from alternative septic treatment systems (ASTS). Partner meetings conducted for residents in these areas to identify options. Support feasibility assessments to identify appropriate septic treatment alternative options.	INV	\$42,200	\$38,130	\$2,456,571	

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62	Sand Hill River Watershed District	Generate maps of benefiting areas for the ditches within the district, enable the district to print maps as requested by the public, and begin establishing a comprehensive GIS database for the district public use.	INV	\$100,000	\$100,000	\$2,556,571	
63	North Fork Crow River Watershed District	Erosion control and sediment reduction on water conveyance systems located in NFCRWD. (multi-county)	L&W	\$65,500	\$65,500	\$2,622,071	
64	Norman & Mahnomon	To develop the first County Wide Standardized GIS Core Database working with the Federal, State and Local organizations to gather information. This will allow us to target Comprehensive Local Water Plan (CLWP) goals and record completed goals.	P&EC	\$122,000	\$90,000	\$2,712,071	
65	Traverse	Reduce erosion, pesticide, and nutrient loading into Traverse county watercourses and water bodies with-in the Mustinka River Watershed.	L&W	\$40,000	\$40,000	\$2,752,071	
66	Clearwater River Watershed District	Develop Master Sanitary Sewer Plan to provide alternative solution for failing ISTS.	P&EC	\$60,000	\$30,000	\$2,782,071	
67	Kanabec	The Kanabec SWCD will develop an outdoor Learning Facility in a riparian area for the Mora School and take that knowledge learned to provide technical assistance and cost-share to landowners in water quality improvements.	L&W	\$40,000	\$40,000	\$2,822,071	
68	Martin	The purpose of this project is to develop management techniques for a calcareous fen wetland (CFW) and to inventory a wetland complex to determine if other CFWs exist within the complex.	E&I	\$58,583	\$40,000	\$2,862,071	
69	Itasca	To predict two 15-20 minute videos for shore land owners and non-industrial private forest landowners illustrating Best Management Practices for rivers and riparian forestry management.	E&I	\$31,500	\$22,500	\$2,884,571	
70	Wabasha	The purpose of this grant is to accelerate the implementation of conservation practices in the lower Zumbro River Watershed in Wabasha County.	L&W	\$40,000	\$40,000	\$2,924,571	
71	Jackson	The purpose of this project is to develop a parcel layer for the unincorporated portion of Jackson County. Jackson County has been using an Arc View based GIS system for several years, and feels that it is now time to incorporate the land ownership records with this system. This would allow a simple and efficient method of incorporating land treatment activities with ownership	INV	\$90,000	\$40,000	\$2,964,571	
72	Pennington	Purchase a global System to inventory wetland restorations completed through the Conservation Reserve Program and incorporate into a Geographic Information System. Use data to determine sites for monitoring their effect on water quantity and quality.	INV	\$15,000	\$15,000	\$2,979,571	

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73	Pennington	County Ditch #1 enters the pool area of the dam on Red Lake River in Thief River Falls. This project will stabilize 900' of the side slopes of the ditch at the outlet, which is private.	L&W	\$25,000	\$25,000	\$3,004,571	
74	Martin	The purpose of this project is to streamline the accessibility of GIS information in Martin County. This is a four-phase project that involves developing and maintaining new GIS databases/layers, implementing a GIS department, and developing 2 to 5 public GIS access systems.	E&I	\$88,983	\$40,000	\$3,044,571	
75	Bois de Sioux Watershed District	The BdSWD intends to inventory culverts as a partner with Big Stone County. The primary interest for Big Stone County is to be able to properly manage their culvert maintenance program and size culverts for appropriate flow management in the future.	INV	\$14,000	\$14,000	\$3,058,571	
76	Capitol Region Watershed District	The purpose of this project is to assist the Citizen Advisory committee (CAC) in outreach activities to diverse geographic and cultural communities within the Capitol Region Watershed District throughout the watershed plan development process.	E&I	\$35,500	\$16,500	\$3,075,071	
77	Martin	To hire a land-use technical to conduct 200 land-use inventories within Martin County minor watersheds over a two-year time frame. Data will be used to prioritize watersheds. Martin County minor SWCD conservation cooperators (CC) will be interviewed. All data will be placed in GIS database/layers.	INV	\$68,192	\$40,000	\$3,115,071	
78	Bois de Sioux Watershed District	To initiate the process of developing a new generation watershed management plan to assess the surface water quality/quantity issues and related natural resource issues within the BdSWD, acceptable to BWSR and other agencies/organizations as well as the general public. It is our intention to have a plan that will provide for the necessary balance needed in natural resource management as much as possible.	INV	\$30,000	\$30,000	\$3,145,071	
79	Todd	Employ GIS technical to assist with development of a planning level digital parcel layer and other mapping. This information will be used by local units of government to administrate and educate the public on the goals and objectives of the Todd County Community Based Comprehensive Plan and County Comprehensive Water Plan.	P&EC	\$80,250	\$40,000	\$3,185,071	

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80	Bois de Sioux Watershed District	This project would be done to gather information about the culverts located in the North Ottawa Project Watershed area. We are currently putting together a plan of action for the development of a systems based approach to maximizing the resource management including but not limited to flow control, wildlife habitat enhancement, water quality improvement, erosion control, and water supply. We intend to create an inventory of existing culvert sizes and related information.	INV	\$16,000	\$16,000	\$3,201,071	
81	Murray	Conduct a Level III Feedlot Inventory of Murray County, to identify sites that may be polluting our surface and groundwater, so that we can accelerate the implementation of best management practices to improve our water quality.	INV	\$32,875	\$32,875	\$3,233,946	
82	Bois de Sioux Watershed District	The purpose of this project will be to collect all the data pertaining to all legal ditch systems under the BdSWD control and convert it to digital form for efficient access. This project will make general overall management of the ditch system more efficient. The BdSWD has a total of 60 systems to manage totaling approx. 400 lineal miles.	INV	\$50,000	\$50,000	\$3,283,946	
83	Crow Wing	The purpose of this program is to create a Water Plan Technician Position to assist with implementation of the Crow Wing County Water Plan. The Water Plan Advisory Board has focused on implementation of water resource protection strategies based on SLED-M. This position would primarily be responsible for coordination of a systematic septic system upgrade program by lake, development of ordinance and/or programs of voluntary compliance programs, County liaison to municipalities to assist in implementation	P&EC	\$37,000	\$37,000	\$3,320,946	
84	Clearwater River Watershed District	Conduct dialog among Stearns County SWCD, Environmental Services, townships and CRWD.	P&EC	\$10,000	\$10,000	\$3,330,946	

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1	Benton & Morrison Conservation Districts	Reduce phosphorus loading and sedimentation by installing filter strips, waterways and preparing nutrient management plans all to improve trout habitat in Little Rock Creek and reduce algae blooms in Little Rock Lake.	L&W	\$52,100	\$52,100	\$52,100	
2	Lincoln	To identify sources of nitrate contamination levels in the ground and surface water of the Verdi Well Field and to protect the water resource itself, our drinking water supply for 80% of Lincoln County residents.	MON	\$34,240	\$34,240	\$86,340	
3	Olmsted Co. & Chosen Valley ISD	A major spring discharging at Chosen Valley High School will be developed into a karst educational exhibit and groundwater monitoring station creating a premier groundwater quality and flow monitoring site for southeastern	L&W	\$22,944	\$19,500	\$105,840	
4	Polk	Protection of the Red Lake River and the Water Supply of the City of East Grand Forks from arsenic, pathogens and sediments are primary purposes. Stabilization of steambank will protect a cemetery and agricultural land.	L&W	\$221,000	\$40,000	\$145,840	
5	Pelican River Watershed District	The purpose of the proposed project is to develop and test a parcel-based land use system to be used to establish and assign fees for a stormwater utility to collect revenues to fund stormwater treatment projects.	P&EC	\$28,000	\$28,000	\$173,840	
6	Brown's Creek Watershed District	The purpose of this project is to reduce flood-related property damage on Kismet basin by Stabilizing water levels while at the same time, protecting the cold water trout fisheries of Brown's Creek. The project will also improve water quality by lowering lake levels below existing septic systems and reducing shoreline erosion. Groundwater resources will be benefited through increased recharge.	L&W	\$163,500	\$40,000	\$213,840	
7	Beltrami	This project's purpose is to assist with the development of a wellhead protection plan for the City of Bemidji and surrounding townships. The City of Bemidji currently ranks seventh (7th) in the State in priority for completing a wellhead protection plan due to the very sensitive unconfined, surficial outwash aquifer that serves as the source of drinking water for the City of Bemidji, and for the residents in the surrounding townships.	P&EC	\$22,000	\$22,000	\$235,840	
8	Valley Branch Watershed District	To help maintain and improve the high-quality, trout-bearing waters at Valley Creek by (a) identifying nutrient sources, dynamics, and relations to aquatic vegetation, and (b) maintaining the existing automated hydrologic monitoring stations.	MON	\$32,000	\$32,000	\$267,840	
9	Ramsey-Washington Metro Watershed District	To implement and evaluate the effectiveness of the Polymer/Kenaf (P/K) stormwater treatment system in a confined space urban watershed. The goal is to improve water quality and protect Tamarack Swamp (a unique, ecologically-diverse, urban wetland).	L&W	\$123,572	\$100,000	\$367,840	

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10	Carnelian-Marine Watershed District	The primary purpose of this project is to aid district efforts to maintain and improve lake water quality by reducing shore land contributions of point and non-point source pollution through cost-aided and voluntary land use management.	L&W	\$33,050	\$33,050	\$400,890	
11	Red River Water Management Board	Establish the River Watch program throughout the Red River Basin as a sustainable partnership between schools and resource managers to provide useful water quality data for natural resource management based on scientific, standardized methods.	MON	\$114,500	\$100,000	\$500,890	
12	Capitol Region Watershed District	The purpose is to apply impervious surface information to reduce nutrient, solids, and other pollutant loading to the Mississippi River, and assist in reaching regional goals of improved water quality, biological diversity, and recreational use.	INV	\$44,800	\$40,000	\$540,890	
13	Kandiyohi	To obtain a coordinator who will assist the Crow River Watershed Steering Committee organize and facilitate the watershed planning process, including information/education activities, implementation of citizens monitoring network and increased local citizen involvement.	E&I	\$52,000	\$50,000	\$590,890	
14	Elk River Watershed Association Joint Powers Board	Reduce phosphorus and sediment reaching surface water primarily from livestock operations, inventory each minor watershed using macroinvertebrates to prioritize future work areas and to increase Secchi disc and Chlorophyll-a readings by 5%.	L&W	\$47,500	\$47,500	\$638,390	
15	Itasca	To develop for Itasca County, a detailed vulnerability classification to improve our ability to predict sensitivity of different lake types to changes in water quality due to changes in the watershed.	INV	\$31,000	\$29,500	\$667,890	
16	Douglas	A temporary, full-time technician will be hired to monitor excavation on new subdivisions, providing accountability and liaison with the MPCA enforcement of NPDES permits. A revised subdivision ordinance will be adopted to address environmental concerns.	E&I	\$24,188	\$24,188	\$692,078	
17	Clay	Project will evaluate wetland restorations achieving a goal of the Red River Basin Mediation. Products include drained/existing wetland basin inventories, evaluation of Functions/Values, several restored wetlands, and the first Wetland Management Plan in the Basin.	P&EC	\$40,000	\$40,000	\$732,078	
18	Carver	To expand current watershed restoration work being done in Bevens creek into Carver and Chaska creeks and to meet land owner demand for installing harvestable grass buffer strips in combination with manure and nutrient management plans.	L&W	\$47,700	\$40,000	\$772,078	

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19	Cottonwood, Murray & Redwood	Identification of priority feedlots in 6 sub-watershed's within Cottonwood River Watershed. Phase 1 of a CWP has identified feedlots within these sub-watersheds as having a major impact on water quality. Upgrading existing level one inventories to a level 3 inventory will set the framework to begin corrective measures.	INV	\$30,500	\$27,000	\$799,078	
20	Morrison	Establish vegetative buffers along fragile shoreline areas that will reduce erosion and nutrient loading. Targeted sites are on heavily developed lakes and the Mississippi River. Easements with landowners will be obtained to maintain established practice.	L&W	\$40,000	\$30,000	\$829,078	
21	Rock	An environmental education day consisting of approximately sixteen hands-on learning stations covering various environmental topics including: trees, water quality, wetlands, wind and water erosion, and soils. Students will attend approximately eight different sessions during the day.	E&I	\$47,350	\$10,000	\$839,078	
22	Washington	To test a process to identify and delineate high water elevation, runoff level and runoff point for landlocked basins within the Carnelian-Marine watershed; to establish and test sound guidelines to enhance FEMA floodplain maps.	P&EC	\$27,040	\$27,040	\$866,118	
23	Wilkin	Explore watershed management options for the Otter Tail River Watershed and address conservation and natural resource concerns outlined in the Red River mediation agreement and install BMPs to reduce flooding and enhance natural resources.	L&W	\$137,650	\$100,000	\$966,118	
24	Hubbard & Beltrami	Complete demonstration shoreline restoration/lake landscaping sites as cooperative workshop, involving citizens, and lake associations, to protect lakeshore on several Hubbard & Beltrami County lakes. Increased public insight regarding structural and biological techniques to stabilize lakeshore.	L&W	\$31,000	\$31,000	\$997,118	
25	Houston	This program has three purposes: 1. Provide incentive to feedlot owners to install roof gutters which will provide working demonstrations of their effectiveness; 2. Reduce pollution of surface waters by diverting clear water from 30 existing feedlots; 3. Encourage feedlot operators to begin implementation of a complete pollution abatement program.	L&W	\$25,500	\$25,000	\$1,022,118	
26	So. Washington Watershed District	To gather quantitative and qualitative data on stormwater infiltration through the development of a local demonstration site and a series of fact sheets to be used in future planning and management activities throughout the South Washington Watershed District (SWWD).	E&I	\$30,000	\$40,000	\$1,062,118	

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27	Cass County	This project will collect and treat the stormwater from the eastern third of the City of Walker and significantly reduce the sediment and associated pollution that enters Leech Lake.	L&W	\$50,000	\$40,000	\$1,102,118	
28	Renville	The proposed project will reduce sediment and nutrient input into Renville County surface waters which will ultimately improve water quality and reduce ditch maintenance costs to landowners and the County.	L&W	\$46,660	\$40,000	\$1,142,118	
29	Hubbard	To complete the development and implementation of a Wellhead Protection Area (WHPA) and Drinking Water Supply Management Area (DWSMA) for Park Rapids that will protect and preserve the city's water supply.	L&W	\$19,000	\$19,000	\$1,161,118	
30	Carlton	Expedite development of five LGU's wellhead protection plans. Coinciding development of these plans with current on-going county-wide Community Based Land Use Planning project will enable the integration of these plans into the new land use plans.	INV	\$38,500	\$38,500	\$1,199,618	
31	Anoka, Carver, Dakota, Hennepin, Ramsey, Scott & Washington	The project will improve estimates of ground-water recharge and enhance the development and management of local programs that address wellhead protection, remediation of contaminated ground water and delineation of areas sensitive to ground-water contamination.	P&EC	\$100,000	\$100,000	\$1,299,618	
32	SE MN Water Resources Board	The most vulnerable municipal public water supply in each of the nine member counties will receive both educational and technical assistance in laying groundwork for development of their Wellhead Protection Plans.	E&I	\$81,500	\$81,580	\$1,381,198	
33	Norman	To improve ground water quality, project funds will facilitate a conformance inspection of on-site septic systems and initiate the acquisition process for funds to install a municipal wastewater system.	P&EC	\$13,825	\$12,825	\$1,394,023	
34	Watsonwan	The project will enhance the planning efforts for sewer upgrades in five small communities and one lake district with a end goal of meeting state water quality standards.	P&EC	\$29,000	\$29,000	\$1,423,023	End of funding allocation. Offer \$28,848 to Watsonwan
35	Capitol Region Watershed District	This project is intended to identify and prioritize Como Lake management issues through active citizen and agency involvement; to select strategies to address these issues; and to implement projects and programs that benefit Como Lake and have the support of the community.	P&EC	\$54,800	\$40,000	\$1,463,023	
36	Traverse	To improve and protect the water quality and improve fish habitat in Lake Traverse and prevent further degradation of the shores of Lake Traverse.	L&W	\$32,500	\$32,500	\$1,495,523	

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37	Beltrami	To provide private landowners in a targeted subwatershed with high quality forest management plans identifying specific management alternatives. Forest Stewardship plans would address landowner objectives and promote the health and long-term viability of forests emphasizing water quality aspects of forest management.	P&EC	\$15,000	\$15,000	\$1,510,523	
38	Martin	The project purpose is to: (1) develop a Comprehensive Wetland Protection and Management Plan (CWPMP), (2) adopt a wetland ordinance, and (3) increase protection, management, and restoration of priority wetlands.	L&W	\$48,773	\$40,000	\$1,550,523	
39	Olmsted County	A Water Resources Management and Capital Improvement Plan will be developed for the South Zumbro Watershed to promote integration of multi-agency surface water management objectives with the planning, design, and construction of highway and bridge improvements.	P&EC	\$40,000	\$40,000	\$1,590,523	
40	Pine	The project purpose is to permanently reduce sediment loading of Upper Pine Lake caused by the continual eroding by wave action and fluctuating water levels to a section of Upper Pine Lake Road where the lakeshore and road slope are the same.	L&W	\$14,902	\$13,301	\$1,603,824	
41	Brown's Creek Watershed District	The Ground Water Hydraulics and Hydrology project will gather and analyze ground water data necessary to manage and maintain good water quality and trout fishery in Brown's Creek.	INV	\$40,000	\$40,000	\$1,643,824	
42	Stearns	To restore and manage impacted shoreline areas with native vegetation for protecting water quality and providing educational and innovative benefits to landowners and agency staff.	L&W	\$29,600	\$29,600	\$1,673,424	
43	Martin	The purpose of this project is to install a permanent groundwater monitoring system at 10 to 20 different animal feedlots throughout the county. The groundwater monitoring systems would focus on the manure storage facilities at each location.	MON	\$41,442	\$40,000	\$1,713,424	
44	Wadena	Cooperative project in Hubbard and Wadena will explore feasibility to restore 3.6 miles of channel of Fish Hook River, reduce sediment loading to Upper twin Lake and implement BMP's in Shell River Watershed, tributaries of the Crow Wing River.	L&W	\$100,000	\$100,000	\$1,813,424	
45	Polk	Union and Sarah Lake are 5 feet over ordinary high water. High water is causing water quality problems by flooded lawns, septic systems, wells, beaches and buildings. Goals: Kepp lake at ordinary high water elevation.	L&W	\$40,000	\$40,000	\$1,853,424	

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46	Goodhue	Develop a feedlot inventory that incorporates the data into GIS to give planning officials and managers a tool to spatially analyze this data in conjunction with other GIS layers such as parcels, soils, and geologic information.	INV	\$39,225	\$39,225	\$1,892,649	
47	St. Louis County Planning	The project has the following purposes: 1. Expand upon the County's/SWCD base line lake water quality efforts. 2. Stabilize or improve upon water quality in targeted lake watersheds. 3. Prevent water quality problems through improved site review of new development. 4. Provide for improved collaboration between the County, SWCD's, and lake associations. 5. Provide a local response to the Minnesota DNR shore land Ecosystem Program and the Minnesota Pollution Control Agency Clean Water Action Plan.	L&W	\$30,075	\$25,264	\$1,917,913	
48	Martin	The purpose of this project is to restore/create a 30-acre wetland approximately one-half mile west of Hall Lake. This wetland will filter nutrients and sediment from Dutch Creek, which drains 17 square miles of agricultural land before entering Hall Lake.	L&W	\$392,379	\$40,000	\$1,957,913	
49	Marshall	The purpose of this grant request is to refine the local wetland inventory for the Thief River Watershed and to develop a local Wetland Management Plan for the watershed that will incorporate inventory findings (cooperative planning with Beltrami County is currently in process).	P&EC	\$15,000	\$15,000	\$1,972,913	
50	Jackson & Cottonwood	The purpose of this project is to move the feedlot program in both Jackson and Cottonwood County to a new level. With the addition of this position it is expected that surface water will be protected with additional inspections during the construction of all new feedlot structures by qualified and trained staff person. This will help both counties to meet the expectations of the proposed new feedlot rules. In addition, all feedlots would be inventoried to the standards of a level two inventory.	MON	\$43,000	\$43,000	\$2,015,913	
51	Martin	The purpose of this project is to develop two semi-permanent water monitoring stations west and south of the Fairmont chain of lakes ecosystem and to better manage two watersheds that drain approximately 23,876 acres of agricultural land into this lake ecosystem.	MON	\$41,055	\$32,528	\$2,048,441	
52	Snake River Watershed Management Board	This project will have two components: 1. Educate shore land owners on the value of revegetating their property and provide cost-share to implement shore land Best Management Practices (BMP's); 2. Provide cost-share to landowners for water quality improvements on their feedlots.	L&W	\$154,000	\$100,000	\$2,148,441	

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RANK	APPLICANT	PURPOSE	REPORTING CATEGORY	MATCH	FUNDS REQUESTED	TOTAL FUNDS REQUESTED	COMMENTS
53	Stearns	The project will enhance surface and groundwater quality by providing cost share assistance for investigations of unpermitted manure storage basins. Basins that do not meet guidelines will be prioritized and additional financial assistance will be secured to repair or abandon.	L&W	\$187,200	\$40,000	\$2,188,441	
54	Traverse	To improve and protect the water quality and improve fish habitat on the Mustinka River and to prevent further degradation of the banks of the Mustinka River.	L&W	\$22,000	\$14,000	\$2,202,441	
55	Bois de Sioux Watershed District	The Bois de Sioux Watershed District Board of Managers has committed to provide up to \$32,000 total for the accelerated promotion of the CRP Riparian (Buffer Strip) program. We were told that the reason that more people aren't signing up is because of the lack of knowledge that the program exists. Getting the word out to the landowners in a one-on-one setting was determined to be the best way to educate landowners about the Program resulting in an additional 6,400 acres enrolled.	P&EC	\$18,200	\$16,000	\$2,218,441	
56	Aitkin	Project will address surface water concerns in a sub-watershed with complex characteristics. This grant will assist in strengthening the Big Sandy Watershed Project and refocusing efforts on common goals instead of differences.	INV	\$45,000	\$38,000	\$2,256,441	
57	Clay	To enhance the protection and management of surface and groundwater resources of 17 counties in the Red River Basin of Minnesota by hiring an executive secretary to coordinate comprehensive local water plan activities.	P&EC	\$67,914	\$67,000	\$2,323,441	
58	Aitkin	Aitkin County has 400 lakes and miles of streams and rivers. County population is growing at a 2.3% annual rate. Protection of undeveloped riparian lands is crucial for environmental, economic and social reasons.	L&W	\$51,500	\$40,000	\$2,363,441	
59	Two Rivers Watershed District	This project would integrate information regarding the 8 legal drainage systems administered by the Two Rivers Watershed District pertaining to ditch locations, benefit areas, land parcels affected, and ditch design information into one ditch file that would be entered into an Arc view geographic information system	INV	\$15,000	\$15,000	\$2,378,441	
60	Rice	To develop a county-wide comprehensive lake management plan modeled on the ten-year French Lake Clean Water Project in order to organize government agencies, lake associations, watershed organizations, and watershed	E&I	\$40,000	\$40,000	\$2,418,441	
61	Hubbard	Identify sensitive areas of county that could benefit from alternative septic treatment systems (ASTS). Partner meetings conducted for residents in these areas to identify options. Support feasibility assessments to identify appropriate septage treatment alternative options.	INV	\$42,200	\$38,130	\$2,456,571	

LWP CHALLENGE GRANT FY2000-01

Large Grant Category

Max allocation of \$40,000 per project for individual county or \$100,000 for multi-county project.

Total allocation \$1,425,000

Interagency review recommended funding order.

E&I: Education and Information

INV: Inventory

L&W: Land & Water Treatment

MON: Monitoring

P&EC: Planning & Environmental Controls

RANK	APPLICANT	PURPOSE	REPORTING CATEGORY	MATCH	FUNDS REQUESTED	TOTAL FUNDS REQUESTED	COMMENTS
62	Sand Hill River Watershed District	Generate maps of benefiting areas for the ditches within the district, enable the district to print maps as requested by the public, and begin establishing a comprehensive GIS database for the district public use.	INV	\$100,000	\$100,000	\$2,556,571	
63	North Fork Crow River Watershed District	Erosion control and sediment reduction on water conveyance systems located in NFCRWD. (multi-county)	L&W	\$65,500	\$65,500	\$2,622,071	
64	Norman & Mahnomen	To develop the first County Wide Standardized GIS Core Database working with the Federal, State and Local organizations to gather information. This will allow us to target Comprehensive Local Water Plan (CLWP) goals and record completed goals.	P&EC	\$122,000	\$90,000	\$2,712,071	
65	Traverse	Reduce erosion, pesticide, and nutrient loading into Traverse county watercourses and water bodies with-in the Mustinka River Watershed.	L&W	\$40,000	\$40,000	\$2,752,071	
66	Clearwater River Watershed District	Develop Master Sanitary Sewer Plan to provide alternative solution for failing ISTS.	P&EC	\$60,000	\$30,000	\$2,782,071	
67	Kanabec	The Kanabec SWCD will develop an outdoor Learning Facility in a riparian area for the Mora School and take that knowledge learned to provide technical assistance and cost-share to landowners in water quality improvements.	L&W	\$40,000	\$40,000	\$2,822,071	
68	Martin	The purpose of this project is to develop management techniques for a calcareous fen wetland (CFW) and to inventory a wetland complex to determine if other CFWs exist within the complex.	E&I	\$58,583	\$40,000	\$2,862,071	
69	Itasca	To predict two 15-20 minute videos for shore land owners and non-industrial private forest landowners illustrating Best Management Practices for rivers and riparian forestry management.	E&I	\$31,500	\$22,500	\$2,884,571	
70	Wabasha	The purpose of this grant is to accelerate the implementation of conservation practices in the lower Zumbro River Watershed in Wabasha County.	L&W	\$40,000	\$40,000	\$2,924,571	
71	Jackson	The purpose of this project is to develop a parcel layer for the unincorporated portion of Jackson County. Jackson County has been using an Arc View based GIS system for several years, and feels that it is now time to incorporate the land ownership records with this system. This would allow a simple and efficient method of incorporating land treatment activities with ownership	INV	\$90,000	\$40,000	\$2,964,571	
72	Pennington	Purchase a global System to inventory wetland restorations completed through the Conservation Reserve Program and incorporate into a Geographic Information System. Use data to determine sites for monitoring their effect on water quantity and quality.	INV	\$15,000	\$15,000	\$2,979,571	

LWP CHALLENGE GRANT FY2000-01

Large Grant Category

Max allocation of \$40,000 per project for individual county or \$100,000 for multi-county project.

Total allocation \$1,425,000

Interagency review recommended funding order.

E&I: Education and Information

INV: Inventory

L&W: Land & Water Treatment

MON: Monitoring

P&EC: Planning & Environmental Controls

RANK	APPLICANT	PURPOSE	REPORTING CATEGORY	MATCH	FUNDS REQUESTED	TOTAL FUNDS REQUESTED	COMMENTS
73	Pennington	County Ditch #1 enters the pool area of the dam on Red Lake River in Thief River Falls. This project will stabilize 900' of the side slopes of the ditch at the outlet, which is private.	L&W	\$25,000	\$25,000	\$3,004,571	
74	Martin	The purpose of this project is to streamline the accessibility of GIS information in Martin County. This is a four-phase project that involves developing and maintaining new GIS databases/layers, implementing a GIS department, and developing 2 to 5 public GIS access systems.	E&I	\$88,983	\$40,000	\$3,044,571	
75	Bois de Sioux Watershed District	The BdSWD intends to inventory culverts as a partner with Big Stone County. The primary interest for Big Stone County is to be able to properly manage their culvert maintenance program and size culverts for appropriate flow management in the future.	INV	\$14,000	\$14,000	\$3,058,571	
76	Capitol Region Watershed District	The purpose of this project is to assist the Citizen Advisory committee (CAC) in outreach activities to diverse geographic and cultural communities within the Capitol Region Watershed District throughout the watershed plan development process.	E&I	\$35,500	\$16,500	\$3,075,071	
77	Martin	To hire a land-use technical to conduct 200 land-use inventories within Martin County minor watersheds over a two-year time frame. Data will be used to prioritize watersheds. Martin County minor SWCD conservation cooperators (CC) will be interviewed. All data will be placed in GIS database/layers.	INV	\$68,192	\$40,000	\$3,115,071	
78	Bois de Sioux Watershed District	To initiate the process of developing a new generation watershed management plan to assess the surface water quality/quantity issues and related natural resource issues within the BdSWD, acceptable to BWSR and other agencies/organizations as well as the general public. It is our intention to have a plan that will provide for the necessary balance needed in natural resource management as much as possible.	INV	\$30,000	\$30,000	\$3,145,071	
79	Todd	Employ GIS technical to assist with development of a planning level digital parcel layer and other mapping. This information will be used by local units of government to administrate and educate the public on the goals and objectives of the Todd County Community Based Comprehensive Plan and County Comprehensive Water Plan.	P&EC	\$80,250	\$40,000	\$3,185,071	

LWP CHALLENGE GRANT FY2000-01

Large Grant Category

Max allocation of \$40,000 per project for individual county or \$100,000 for multi-county project.

Total allocation \$1,425,000

Interagency review recommended funding order.

E&I: Education and Information

INV: Inventory

L&W: Land & Water Treatment

MON: Monitoring

P&EC: Planning & Environmental Controls

RANK	APPLICANT	PURPOSE	REPORTING CATEGORY	MATCH	FUNDS REQUESTED	TOTAL FUNDS REQUESTED	COMMENTS
80	Bois de Sioux Watershed District	This project would be done to gather information about the culverts located in the North Ottawa Project Watershed area. We are currently putting together a plan of action for the development of a systems based approach to maximizing the resource management including but not limited to flow control, wildlife habitat enhancement, water quality improvement, erosion control, and water supply. We intend to create an inventory of existing culvert sizes and related information.	INV	\$16,000	\$16,000	\$3,201,071	
81	Murray	Conduct a Level III Feedlot Inventory of Murray County, to identify sites that may be polluting our surface and groundwater, so that we can accelerate the implementation of best management practices to improve our water quality.	INV	\$32,875	\$32,875	\$3,233,946	
82	Bois de Sioux Watershed District	The purpose of this project will be to collect all the data pertaining to all legal ditch systems under the BdSWD control and convert it to digital form for efficient access. This project will make general overall management of the ditch system more efficient. The BdSWD has a total of 60 systems to manage totaling approx. 400 lineal miles.	INV	\$50,000	\$50,000	\$3,283,946	
83	Crow Wing	The purpose of this program is to create a Water Plan Technician Position to assist with implementation of the Crow Wing County Water Plan. The Water Plan Advisory Board has focused on implementation of water resource protection strategies based on SLED-M. This position would primarily be responsible for coordination of a systematic septic system upgrade program by lake, development of ordinance and/or programs of voluntary compliance programs, County liaison to municipalities to assist in implementation	P&EC	\$37,000	\$37,000	\$3,320,946	
84	Clearwater River Watershed District	Conduct dialog among Stearns County SWCD, Environmental Services, townships and CRWD.	P&EC	\$10,000	\$10,000	\$3,330,946	

New Business #4

LAKESHED EROSION CONTROL COST-SHARE PROGRAM

On June 3, 1998, BWSR was informed by the Minnesota Pollution Control Agency that our Lakeshore Erosion Control Cost-Share Project was recommended for funding by the US Environmental Protection Agency 319 Nonpoint Source Implementation Program. BWSR had applied for \$50,000 in 319 funds to demonstrate and apply lower cost options for land treatment practices to control sediment and nutrient loadings in lake watersheds.

BWSR received three applications from local governments (LGU) to use these grant funds: Morrison SWCD, Todd SWCD, and Aitkin SWCD. North Region staff, Dan Steward and Ron Shelito, reviewed the LGU applications and recommended the Aitkin and Todd SWCD applications for approval. The Morrison application proposed some good work but it did not meet the criteria of being lake watershed based.

Briefly, the Todd SWCD application proposes to apply BMPs in the headwater area of a cluster of lakes in the Swan River watershed. The Aitkin proposal will apply BMPs in the Hill Lake watershed. Both proposals will focus significant grant dollars to livestock fencing, alternative water to keep livestock away from the lakes, and critical area seedings.

This grant requires a 50 percent match. The match will come from the landowner's share of applying practices; SWCD in-kind for providing technical assistance; and BWSR in-kind for managing the grant, assisting the LGUs, and tracking results through LARS.

Staff recommends approval of the Aitkin SWCD's and the Todd SWCD's workplans.

LAKESHED LOW-COST SEDIMENT & NUTRIENT REDUCTION APPLICATION

Applicant: Todd Soil & Water Conservation District 320-732-2644
720 Commerce Road, Long Prairie MN 56347

Lake Name: Big Swan Lake, Long Lake, Moose Lake, & Lady Lake

Lake Watershed: Swan River Watershed, located in Todd County

Lake Water Quality Data / Recommendations: Each of the lakes listed have been monitored for water quality by the Minnesota Pollution Control Agency (MPCA) Lake Assessment process. The assessments show a range of water quality conditions from 28 parts per billion (ppb) to 84 ppb mean total Phosphorus. The percentile rankings of TSI value, based on all lakes in the North Central Hardwood Forest Ecoregion, include; Lady Lake at 64, Big Swan at 47, Long Lake at 70 and Moose Lake at 25. All of these lakes are at a point where they will benefit greatly from even small changes in the sediment and nutrient loads entering the lake. (Please see attachment A for complete assessment results)

Lake Watershed Land Use: The primary land use is agriculture. There are numerous large poultry operations; and family farms with a variety of livestock and crop rotations. The immediate areas surrounding the lakes are becoming more and more densely residential. Lake Lots with steep slopes and wetlands are being developed at an increasing rate as the availability of "good" lots decrease.

Best Management Practice's: Schwanke Creek is one of the major streams flowing into Big Swan Lake. Three feedlots located adjacent to Schwanke Creek would benefit from vegetative buffer strips and livestock exclusion fencing, thus reducing the sediment and nutrient loading in Big Swan Lake. Moose Lake has one feedlot located in the lakeshore area. An alternate feedlot location, vegetative buffer strips and fencing will significantly reduce the runoff into the lake. Lady Lake has a growing erosion problem, involving a steep slope along the township road. Sediment is washing through the culvert and building a delta on the lakeshore. Reshaping this area and establishing good vegetative cover will solve this problem before it can further impact the lake. Three landowners with agricultural fields adjacent to Big Swan Lake and one next to Moose Lake are in dire need of nutrient management plans. Bass Lake has one landowner across the road from the lake, but the natural drainage of the area causes the feedlot runoff to go through the culvert and into the lake. This site will require reshaping the feedlot, diversion of the runoff, fencing, and vegetative cover. Long Lake has several sites where wave action is causing extensive shoreland erosion. Individual landowners have been using "band-aid" practices to try to solve the problem. This lake would benefit tremendously from a joint erosion control effort, including buffers, rip rap, and bio-engineering practices.

Partners: The Todd Soil & Water Conservation District has excellent working relations with the local, state and federal agencies located in this area. The Natural Resource Conservation Service will be providing technical assistance. Planning and permitting will be done by Todd Planning & Zoning and the Department of Natural Resources, Division of Waters. Lake Associations will be included wherever possible in each of these projects.

Local Prioritization: The Swan River Watershed is the third highest priority watershed in Todd County, The first and second are already receiving the benefits of other programs. Surface waters of Todd County are a very high priority in the comprehensive local water plan. Goal 1, Objective C, Action Items 2 and 3 promote conservation measures and BMP's to reduce sediment and nutrients entering water bodies, and encourage the use of low cost options to accomplish this goal.

Requested Amount: \$25,000.

Match:

BWSR	\$5,000
Landowners	\$5,000
Todd SWCD & Partners	\$15,000

RECEIVED

MAY 12 1999

BD OF WATER & SOIL
RESOURCES - BRAINERD



ANNUAL PLAN – FISCAL 2000

JULY 1, 1999 – JUNE 30, 2000



AREA II MINNESOTA RIVER
BASIN PROJECTS, INC.



1999 BOARD OF DIRECTORS

BROWN COUNTY

Charles Guggisberg, Commissioner (1st Vice Chair)
Andrew Lochner, Commissioner

COTTONWOOD COUNTY

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AREA II MINNESOTA RIVER
BASIN PROJECTS, INC.

AREA II ANNUAL PLAN FISCAL 2000

> FUNDING

		<u>Local Match</u>
Annual Allocation from the State of Minnesota (75/25)	\$ 189,000.00	
Technical Services Agreement (details on Attachment I)	(136,143.75)	\$ 45,031.25
Available Project Funds	(52,856.25)	17,968.75
1996 \$250,000 Bonding Allocation for Road Retentions - Balance Remaining (75/25)	62,750.00	20,916.67 *
1998 \$500,000 Bonding Allocation for Floodwater Retention - Balance (60/40)	<u>453,500.00</u>	<u>333,000.00 **</u>
FUNDING AVAILABLE FOR FISCAL 2000	\$ 705,250.00	\$ 416,916.67
	Total = \$1,122,166.67	

*Local match of \$142,995.75 has been provided to date, surpassing required amount by \$59,662.75.

**Local match of 109,474.00 has been provided to date.

> 1999 WORK PLAN

Office staff:

Kerry Netzke, Coordinator

Billy Thomas, Professional Engineer

Joe DeSchepper, Engineering Technician

Focus: Administratively, the staff and Board members have been diligently pursuing the installation of retention structures with the abundance of funding that currently exists. Staff have stockpiled numerous projects in the office files, but the actual implementation has slowed due to a lack in personal contacts. Along with the funding allocations, a steady effort to semi-annually inform and update the Legislative Commission on Minnesota Resources (LCMR), who grants advisory approval to the bonding appropriations, is made to ensure that future, continued funding is possible.

Technically, Area II will continue to provide a service to the membering counties that most counties cannot provide for themselves - hydrologic and hydraulic analyses for bridge and culvert replacements. A March 24th meeting with all the county engineers was held to recap the basics of road retention design and how Area II can assist with the design, finance, and engineering inspection of these structures into scheduled road improvement and bridge replacement plans. Area II has begun working with the U.S. Fish & Wildlife Service, partnering on projects which create, restore, or enhance wetlands while also allowing some bounce to provide flood damage reduction.

The allocation of funding to projects within Area II has continued to receive attention in the past year. The Area II Board of Directors authorizes grants to projects paying particular attention to maintaining the near 50/50 cost-share standard similar to DNR programs, yet having the flexibility of 75/25 cost-share. (Refer to Attachment II for the updated listing of past cost-share funding scenarios.) More specifically, the determination of eligible, reimbursable expenses is more strictly controlled by considering only those costs that are above and beyond the costs related to installing the culvert/bridge structure without the retention capability. This is most critical when other State funding is involved, such as Township Bridge funds through MNDOT or Minnesota River Basin Joint Powers Board special allocations. Area II has adopted a policy whereby individual projects are rated on their flood control benefits. Those projects designed for maximum flood benefit are eligible for up to 75% funding; those designed for less benefit will be eligible for a lesser percentage as determined by a prorated formula based on flood flow reductions.

AREA II ANNUAL REPORT FISCAL 2000

PROJECTS FUNDED

	<u>STATE</u>	<u>AREA II</u>	<u>OTHER</u>	
Banks Small Dam Repair - Lyon County	\$ 1,500.00	\$ 0.00	\$ 5,025.00	Landowner
Island Lake 22 Road Retention - Lyon County	\$ 56,875.00	\$ 0.00	\$ 49,100.00	County
Black Rush Lake Wetland Restoration - Lyon County	\$ 45,000.00	\$ 0.00	\$104,449.00	Ducks Unlimited, County Pheasants Forever
North Hero 10 Road Retention - Redwood County	\$ 54,750.00	\$ 18,250.00	\$ 11,318.00	Redwood Water Plan
Lazarus Creek Floodwater Control Project - Yellow Medicine	\$ 60,043.55	\$ 20,514.52	\$ 0.00	

PROJECTS COMPLETED

➤ **Banks Small Dam Repair - Lyon County**

This former ACP dam was reconstructed with funding stemming from the Federal Government - ACP funds (\$15,075), the State of Minnesota (\$1,500), and the landowner (\$3,525). Besides serving as a sediment basin capturing 90% of the sediment from the 647-acre watershed, the dam will impound floodwaters lessening the overtopping of Lyon County Road 4 during spring flood events. The project will also provide wildlife habitat for the local area.

➤ **Island Lake 22 Road Retention - Lyon County**

Designed by Lyon County Highway Department, this site involved the replacement of the existing bridge with a 33" RCP low-flow inlet and 6'x10' RCB riser pipe. The roadway was raised 20' to provide the dam embankment. 100-year flows are reduced from 1406 cfs to 979 (70%) while 50-year flood flows are reduced 67% (381 cfs). Total project costs totaled \$231,790.15 which the State of Minnesota and Lyon County cost-shared at \$182,690.15 and \$49,100.00 respectively.

➤ **Black Rush Lake Wetland Restoration - Lyon County**

Several partners combined efforts to make this restoration successful including: U.S. Fish & Wildlife Service, MN DNR, Lyon County, Lyon SWCD, Ducks Unlimited, local sportsmens groups, and Area II. Total project cost is \$1,147,376. The project included the construction of a controlled outlet to create a shallow marsh of 2-3' depth, allow for 357 acre-feet (minimum) of floodwater storage, and to restore upland and wetland habitat to be managed as part of the National Wildlife Refuge System. The location is approximately 10 miles upstream from Marshall, MN; approximately ½ mile from the Redwood River.

➤ **North Hero 10 Road Retention - Redwood County**

This project, designed by Area II, involved raising and straightening a dangerously narrow township roadway located 1.25 miles from the Cottonwood River, and replacing the existing 42" CMP with a 30" RCP. Benefits include retention of 87 acre-feet of floodwaters upon 9.6 acres of land. Flow reductions of the 100-year storm are from 561 cfs to 108 cfs, a 453 cfs (80%) reduction. The Redwood County Water Plan assisted in the finance of the project while the Redwood County Highway Department assisted in the construction staking and inspection of this project.

➤ **Lazarus Creek Floodwater Retention Project [LQP-25] - Yellow Medicine County**

Project funding resulted in the completion of the Plans and Specifications by Houston Engineering, Inc.

Scheduled: The primary efforts of the office staff will be on the feasibility, design, and installation of road retention structures within the nine county area. Project prioritization includes: feasibility, cost, local support, emergency situations (such as bridge failures) and timing with scheduled construction plans. The following list depicts the projects which are currently scheduled for technical assistance.

PRIORITIZED LIST OF RETENTION PROJECTS

>HIGH PRIORITY

- ✓ Gales Township Section 23 - Redwood County
- ★ ✓ Stately Township Section 6 - Brown County
- ★ ✓ Lynd Township Section 20 - Lyon County
- ★ ✓ Amiret Township Section 33 - Lyon County
- ★ ✓ Coon Creek Township Section 28 - Lyon County
- ★ ✓ Amiret Township Section 25 - Lyon County
- ☆ ✓ Lake Marshall Township Section 19 - Lyon County
- ★ ✓ Norman Township Section 16 - YM County
- ★ ✓ Fortier Township Section 8 - Yellow Medicine County
- ★ ✓ North Hero Township Section 34N - Redwood County
- Fish Lake Outlet Repair - South Dakota

>MEDIUM PRIORITY

- Norman Township Section 35N - Yellow Medicine County
- Fier Project - Lincoln County
- ☆ Amiret Township Section 34 - Lyon County
- Florida Township Sections 19,20,29,30 - Yellow Medicine
- Springdale Township Section 21 - Redwood County
- Springdale Township Section 31 - Redwood County
- Limestone Township Section 4 - Lincoln County
- Norman Township Section 35S - Yellow Medicine County
- Hammer Township Section 32 - Yellow Medicine County
- ☆ Yellow Bank Township Section 11 - LQP County
- ★ ☆ Hendricks Township Section 8 - Lincoln County
- Ann Township Section 2 - Cottonwood County
- Lamberton Township Section 35 - Redwood County
- Hantho Township Section 25 - Lac qui Parle County
- North Hero Township Section 34S - Redwood County
- North Hero Township Section 35 - Redwood County

Project Status

Awaiting Finalization of Easements
 Awaiting Cost Estimate for funding
 Preliminary Design complete
 Preliminary Design complete for 2 retentions
 Small Dam - Preliminary Design stage
 Small Dam - Preliminary Design stage
 Designed completed by Lyon County
 Small Dam - Awaiting Finalization of Easements
 Small Dam Repair - Design complete, survey
 Preliminary Design Complete
 Awaiting Cooperation with State of SD

Funding Status

Funded FY 1995 - Expires 6/00
 Anticipated 1999
 Anticipated 1999
 Anticipated 1999
 Anticipated 1999
 Anticipated 1999
 Anticipated 1999
 Anticipated 1999
 Anticipated 1999

Project Status

Preliminary Design Complete
 3 Sites in Preliminary Design, Awaiting Easements
 Being Designed by Lyon County
 Preliminary Design Complete
 Preliminary Design Complete
 Preliminary Design Complete
 Preliminary Design Complete
 System of 4 Retentions Designed
 Preliminary Design Complete
 Preliminary Design Complete
 Preliminary Design Complete, Negotiating Easements
 Preliminary Design Complete
 Preliminary Design Complete
 Preliminary Design Complete
 Preliminary Design Complete
 Preliminary Design Complete

✓ Signifies project is to be completed in 1999.

☆ Signifies project is most likely to receive Road Retention Bonding funds

★ Signifies project is most likely to receive Floodwater Retention funds

LARGE PROJECTS

> **LQP-25 {LAZARUS CREEK} FLOODWATER CONTROL PROJECT**

Project CoSponsors - *Lac qui Parle-Yellow Bank Watershed District and Yellow Medicine County.*

Project Status - Plans and specifications finalized by Houston Engineering, Inc. in December 1999.
Engineering fees in excess of \$146,799.90 have been funded through the Area II's project funds.
The DNR granted the Protected Waters/Dam Safety Permit in January 1999.

Funding Status - \$ 1.5 Million Requested from the 1999 Legislature. \$500,000 local match requirement (75/25).

<i>March 30, 1999</i>	Senate Agriculture & Environment Committee Hearing House Environment & Natural Resources Committee Hearing
<i>April 14, 1999</i>	Bill included as part of the Senate's Bonding Bill House version stayed in committee for funding as part of the FY2000-2002 Bonding Bill
<i>April 14, 1999</i>	Green Scissors '99 Report distributed recommending 50/50 cost-share for Area II.
<i>May 6, 1999</i>	Bonding Bill Conference Committee Convenes
<i>May 1999</i>	Awaiting outcome of Bonding Bill Conference Committee

ROAD RETENTION BONDING FUNDS STATUS

- **APPROPRIATED AMOUNT:** \$ 250,000.00 (**\$ 62,750.00 Balance**)
- **STATUS OF 25% LOCAL MATCH:** Local match spent to date has surpassed the \$83,333.33 (required 25% local match) by \$92,903.56.
- **APPROPRIATION LANGUAGE:** For grant-in-aid on roadside storm water retention projects initiated by local governments in Area II in the Minnesota River Basin.
- **PROJECT STATUS:** The shaded rows indicate the projects reaching completion. Due to the snow and flood disasters of 1997, contractors and county governments found themselves overwhelmed with work, which delayed the completion progress for several projects. LCMR has allowed alternate sites to be added to this list due to the disaster consequences. Next LCMR Update: July 1999.

PROJECT	STATE SHARE	LOCAL SHARE	TOTAL	COMPLETION DATE
Hendricks 8 Road Retention - Lincoln County	\$ 30,000.00	\$10,000.00	\$ 40,000.00	<i>Questionable</i>
Lyons 3 Road Retention - Lyon County	\$ 53,125.00	\$ 96,186.78	\$149,311.78	November 1996
Monroe 24 Road Retention - Lyon County	\$ 30,000.00 -0-	\$10,000.00 -0-	\$ 40,000.00 -0-	Fall 1998 (funded 100% by MNDOT)
Amboy 8 Road Retention - Cottonwood	\$ 16,250.00	\$ 5,416.67	\$ 21,666.67	<i>No easement obtained</i>
Ann 6 Retention Modification - Cottonwood	\$ 22,500.00	\$ 12,700.00	\$ 35,200.00	November 1997
North Hero 10 Road Retention - Redwood	\$ 54,750.00	\$18,250.00	\$ 73,000.00	Fall 1998
Island Lake 22 Road Retention - Lyon	\$ 56,875.00	\$ 49,100.14	\$ 105,975.14	Fall 1998
Gales 31 Road Retention - Redwood County	\$16,500.00	\$ 5,500.00	\$ 22,000.00	<i>No easement obtained</i>
Alt #1 Gales 35 Road Retention - Redwood County				<i>No easement obtained</i>
Alt #2 Hansonville 23 Road Retention - Lincoln				<i>Pending</i>
Alt #3 Amiret 34 Road Retention - Lyon County				<i>Pending</i>
Alt #4 Lake Marshall 19 Road Retention - Lyon				<i>Anticipated Summer 1999</i>
TOTALS	Initial Updated	\$ 250,000.00 \$187,250.00	\$ 83,333.3 \$176,236.89	\$ 333,333.33 \$ 363,486.92
REMAINING BALANCE		\$ 62,750.00	\$ 83,333.33	\$ 146,083.33

FLOODWATER RETENTION FUNDS STATUS

- **APPROPRIATED AMOUNT:** \$ 500,000.00 (\$ 453,500.00 Balance)
- **STATUS OF 40% LOCAL MATCH:** \$104,449.00 local match has been provided to date.
- **APPROPRIATION LANGUAGE:** For grants to assist local governments in acquiring and constructing floodwater retention systems in Area II of the Minnesota River Basin.
- **PROJECT STATUS:** With this new appropriation from the 1998 legislature, the following list of tentative projects has been submitted to LCMR for advisory approval. In similar fashion to the first bonding appropriation, the intent will be to distribute the funding to as many projects and counties as possible utilizing the sponsors contribution for local match.

<i>PROJECT</i>	<i>FUNDING</i>	<i>PROJECT</i>	<i>FUNDING</i>
Banks Small Dam Repair - Lyon County	1,500.00	Amiret 33 Road Retention - Lyon County	
Black Rush Lake Wetland Restoration - Lyon County	45,000.00	Sodus 14 Road Retention - Lyon County	
LQP-25 (Lazarus Creek) Dry Dam - Yellow Medicine County		Amiret 19 Road Retention - Lyon County	
Norman 35N/35S Road Retentions - Yellow Medicine County		Shelburne 10 Road Retention - Lyon County	
Hammer 32 Road Retention - Yellow Medicine County		Coon Creek 33 Road Retention - Lyon County	
Florida 19/20/29/30 Retention - Yellow Medicine County		Nordland 23 Road Retention - Lyon County	
Fortier 8 Small Dam Repair - Yellow Medicine County		Nordland 35 Road Retention - Lyon County	
Ann 3 Road Retention - Cottonwood County		Lake Marshall 19 Road Retention - Lyon County	
Amboy 24 Dry Dam - Cottonwood County		Lynd 15 Road Retention - Lyon County	
Delton 19 Road Retention - Cottonwood County		Lynd 21 Road Retention - Lyon County	
North Hero 26 Road Retention - Redwood County		Monroe 36 Road Retention/Wetland Enhancement - Lyon County	
Lamberton 25 Road Retention - Redwood County		Fier Project - Lincoln County (3 road retentions)	
Springdale 31 Road Retention - Redwood County		Limestone 4 Road Retention - Lincoln County	
Springdale 21 Road Retention - Redwood County		Fish Lake Outlet Repair - Deuel County, SD	
North Hero 35 Road Retention - Redwood County		Yellow Bank 11 Road Retention - Lac qui Parle County	
Sodus 5 Road Retention - Lyon County		Hantho 25 Road Retention - Lac qui Parle County	
TOTALS	\$ 46,500.00	TOTALS	



ATTACHMENTS

ANNUAL PLAN – FISCAL 2000

ATTACHMENT I –
FISCAL 2000 TECHNICAL OFFICE BUDGET

ATTACHMENT II –
PAST FUNDING SCENARIOS FOR COST SHARED ROAD RETENTION PROJECTS

AREA II MINNESOTA RIVER
BASIN PROJECTS, INC.

ATTACHMENT I

FISCAL 2000 TECHNICAL OFFICE BUDGET

OFFICE OPERATIONS

Personal Services:

Directors' Compensation.....	\$ 11,000.00
Directors' FICA.....	1,000.00
Employees' Salaries.....	116,500.00
Employees' FICA.....	8,900.00
Employees' Medical Insurance.....	2,625.00
Employees' Retirement.....	6,000.00
Employee' FlexPlan.....	1,425.00

Total Personal Services..... \$ 147,450.00

Supplies:

Office.....	\$ 2,500.00
Field.....	1,000.00
Capital Outlay.....	1,000.00

Total Supplies..... \$ 4,500.00

Other Services and Costs:

Directors' Expenses.....	\$ 5,500.00
Employees' Expenses.....	2,000.00
Continuing Education.....	1,000.00
Professional Services.....	2,000.00
Maintenance & Repairs.....	2,400.00
Telephone.....	1,000.00
Postage.....	1,500.00
Vehicle Expense.....	2,500.00
Director's Insurance.....	2,000.00
Other Insurance.....	8,500.00
Rent.....	6,675.00
Miscellaneous & Other Expenses.....	4,000.00
Miscellaneous Expenses - Directors.....	100.00
Subsurface Investigations.....	0.00
Other Technical Services and Testing.....	10,000.00
Total Other Services and Costs.....	\$ 49,175.00

TOTAL OFFICE OPERATIONS..... \$ 201,125.00

Total Ineligible for Cost-Share by the State..... 19,600.00*

Total Eligible for Cost-Share by the State..... \$ 181,525.00

STATE SHARE OF ELIGIBLE COSTS..... \$ 136,143.75 (75%)

Local Share of Eligible Costs..... 45,381.25 (25%)

Costs Ineligible for Cost-Share..... 19,600.00*

NET BUDGETED LOCAL COSTS..... \$ 64,981.25

** These items not cost-shared by the State*

SUMMARY:

<i>Technical Office Grant</i>	\$ 136,143.75
<i>Projects Grant</i>	<u>52,856.25</u>
<i>Annual Allocation from State of Minnesota</i>	\$ 189,000.00

ATTACHMENT II
PAST FUNDING SCENARIOS FOR COST SHARED ROAD RETENTION PROJECTS

PROJECT	COMPLETION DATE & LOCATION	TOTAL ELIGIBLE COSTS	BWSR AMOUNT (% of Total)	OTHER STATE FUNDING	AREA II AMOUNT (% of Total)	LOCAL AMOUNT (% of Total)
North Hero 10 Road Retention	Summer 1998 Redwood County	~\$84,318.00	\$54,750.00 (65.9%)	~\$11,318.00 ¹ (13.4%)	\$18,250.00 (21.6%)	In-kind construction inspection
Island Lake 22 Road Retention	Fall 1998 Lyon County	\$231,790.15	\$56,875.00 (24.5%)	\$125,815.00 ² (54.3%)	\$0.00	\$49,100.15 (21.2%)
Fortier 15 Road Retention	Summer 1997 Yellow Med. Co.	\$41,138.10	0.00	0.00	\$30,000.00 (73.0%)	\$11,138.10 (27.0%)
Ann 6 Modification	Fall 1997 Cottonwood Co.	\$30,235.00	0.00	\$22,500.00 ⁵ (74.4%)	\$5,000.00 (16.6%)	\$2,375.00 (9.0%)
Lyons 3 Road Retention	Fall 1996 Lyon County	\$202,408.30	\$11,232.52 \$41,864.00 ⁴ (26.2%)	\$53,125.00 ⁵ (26.2%)	\$10,444.17 (5.2%)	\$85,742.61 (42.4%)
North Hero 31 Road Retention	Fall 1996 Redwood County	\$103,820.59	\$21,242.48 (20.4%)	\$53,445.00 ² \$17,651.11 ¹ (68.5%)	\$7,080.83 (6.9%)	\$4,401.17 (4.2%)
Nordland 30/29 Road Retention	Summer 1996 Lyon County	\$30,172.15	\$21,000.00 \$4,500.00 ⁴ (84.5%)	0.00	0.00	\$4,672.15 (15.5%)
Nordland 7 Road Retention	Summer 1996 Lyon County	\$82,487.65	\$30,000.00 (36.4%)	26,000.00 ⁴ (31.5%)	0.00	\$26,487.65 (32.1%)
Lake Stay 9 Road Retention	Summer 1996 Lincoln County	\$142,030.00	\$18,750.00 (13.2%)	\$95,330.00 ² \$6,500.00 ¹ (71.7%)	\$6,250.00 (4.4%)	\$15,200.00 (10.7%)
Gorecki-Jeremiason Road Retention	Fall 1995 Lincoln County	\$113,970.25	\$20,625.00 ⁴ (18.1%)	\$3,000.00 ¹ (2.6%)	\$6,875.00 (6.0%)	\$83,470.25 (73.3%)
Hendricks 35 Road Retention	Fall 1995 Lincoln County	\$94,594.43	\$11,945.00 \$9,283.93 ⁴ (22.4%)	59,608.57 ² (63.0%)	\$4,473.00 (4.7%)	\$9,283.93 (9.8%)
Storden 2 Road Retention	Summer 1995 Cottonwood Co.	\$16,570.00	\$5,800.00 (35.0%)	0.00	\$1,926.00 (9.7%)	\$8,844.00 (53.3%)
Germantown 6 Road Retention	Fall 1994 Cottonwood Co.	\$43,797.95	12,736.50 (29.1%)	\$21,240.00 ² (48.5%)	\$4,245.50 (9.7%)	\$5,575.95 (12.7%)
CSAH 16 Road Retention	Fall 1994 Yel. Med. Co.	\$15,846.91	\$10,522.00 (66.4%)	0.00	0.00	\$5,324.91 (33.6%)

continued on backside

ATTACHMENT II PAST FUNDING SCENARIOS FOR COST SHARED ROAD RETENTION PROJECTS						
County Road 57 Road Retention	Fall 1994 Lyon County	\$268,375.00	\$75,245.00 (28.0%)	\$10,000.00 ¹ \$34,042.82 ³ (16.4%)	\$19,087.18 (7.1%)	\$130,000.00 (48.5%)
CSAH 19 Road Retention	Fall 1994 Lincoln County	\$140,000.00	\$22,500.00 (16.1%)	\$34,042.82 ³ \$10,000.00 ² (31.4%)	\$18,457.18 (13.2%)	\$55,000.00 (39.3%)
TOTALS		\$1,641,554.48	\$1,012,489.75 (61.68)		\$629,064.73 (38.32)	

NOTE: ¹ Water Plan Base Grant funds; ² MNDOT funds; ³ DNR FDR Grants funds; ⁴ BWSR Challenge Grant Funds; ⁵ Road Retention Bonding Funds

As of April 1999

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

Cormorant Lakes Watershed District
Revised Watershed Management Plan

(For Board Action - in July)

The Minnesota Water Resources Board approved the formation of the Cormorant Lakes Watershed District (CLWD) Plan August 22, 1966. The original Water Management Plan considered drainage, pollution, water supply, maintaining water quality, navigation of lakes, erosion, development, flooding, fish and wildlife management, land alteration, drought condition and identification and discussion of short and long term water issues facing the CLWD.

The Board Water Plan Review Committee is scheduled to meet with representatives of Cormorant Lakes Watershed District on July 9, 1999, to review and discuss the revised plan.

The primary mission of the Cormorant Lakes Watershed District is "...to enhance the quality of water in the lakes within its jurisdiction. To accomplish this, the District must ensure that wise decisions are made concerning the management of streams, wetlands, lakes groundwater, and related land resources which affect these lakes."

The Board of Managers have established certain goals and objectives for the management of water resources throughout the District. The plan focuses on 11 priority goals that are outlined below.

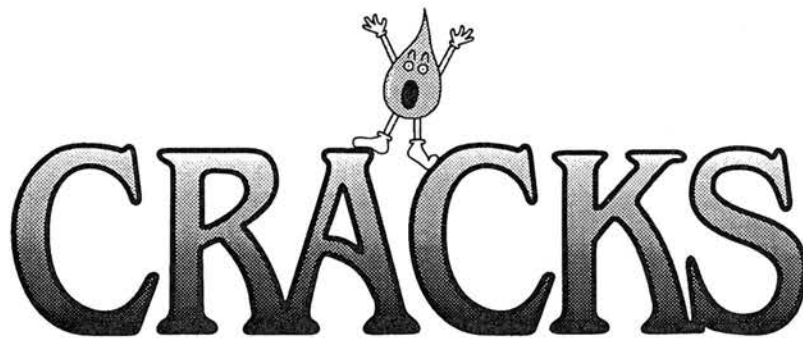
- **Goal 1:** Insure an adequate supply of high-quality surface and groundwater for public and recreational use in drought cycles.
- **Goal 2:** The control or alleviation of damage by floodwaters and continue efforts to develop a permanent operating plan for the outlet.
- **Goal 3:** Maintain or improve water quality of all surface water and groundwater resources within the CLWD.
- **Goal 4:** The CLWD will support all viable projects for reducing erosion that may impact water quality.
- **Goal 5:** The CLWD will implement and monitor a program of erosion control and sedimentation management within all non-judicial ditch systems under its jurisdiction.
- **Goal 6:** All subwatersheds of the CLWD will be inventoried and evaluated for erosion potential and control.
- **Goal 7:** The CLWD will promote the enhancement of fish and wildlife habitat where it is determined to be in the best interest of the public and landowners of the CLWD.
- **Goal 8:** Promote recreational opportunities whenever possible within projects of the CLWD.
- **Goal 9:** All initiatives of the CLWD should utilize potential cooperative efforts with the appropriate Federal, State, County, Township, School Districts and local governments.
- **Goal 10:** The CLWD shall seek to inform and educate residents, non-residents and visitors within its jurisdiction of all its ongoing activities and projects.
- **Goal 11:** The CLWD shall continue to inform and educate the public within its jurisdiction of the benefits of the conservation of water and soil in the preservation and enhancement of our natural resources.

Board staff is reviewing the Cormorant Lakes Watershed District Revised Watershed Management Plan to determine whether they have satisfied all relevant requirements of the law and rule.

The Water Planning Partners of Southeastern Minnesota
invite you to
The 1999 Local Water Planners Conference

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APR 30 1999

Water Quality:
Don't Let it Slip Through the



June 22 - 23, 1999

at the

*Radisson Plaza Hotel
150 South Broadway
Rochester, Minnesota*

Water Quality: Don't Let it Slip Through the CRACKS

The 1999 Local Water Planners Conference

June 22 - 23, 1999

*Radisson Plaza Hotel
150 South Broadway
Rochester, Minnesota*

EVERY COUNTY REPRESENTED AT THE CONFERENCE WILL RECEIVE A FREE CITIZEN'S STREAM MONITORING KIT

MONDAY, JUNE 21 (Evening)

5 - 8 PM Registration

6:30 PM Wild Cave Tour - pre-conference field trip (no charge; maximum 20)



TUESDAY, JUNE 22

8 - 9 AM Registration and Continental Breakfast
Poster Presentation Area Open All Day

9 AM Welcome
Commissioner Heather Robins, Rice County
Chairperson, SE MN Water Resources Board

9:05 "From Plains to Blufflands: Landscapes of Southeastern Minnesota"
A multi-media presentation produced and developed by Robert J. Hurt, Architectural Environments, with an introduction by Mary Kells, Board Conservationist, MN BWSR

9:30 - 10:15 "Filling in the Cracks: Plans and Programs for Water Protection"
Bob Kuzelka, Associate Professor, University of Nebraska - Lincoln and Consultant to the Groundwater Guardian Program

10:15 - 10:30 Break

10:30 - 11:15 "Karstscapes of Minnesota"
Dr. Calvin Alexander, Department of Geology and Geophysics, University of Minnesota

11:15 - 12:30 Lunch Break
Welcome
Commissioner Jim Rossman, Chairperson, Olmsted County Board

12:30 PM Concurrent Session A 

Hypoxia: A Minnesota Perspective
Wayne Anderson, MPCA- South District
Dr. David Mullah, Dept. of Soil, Water, and Climate, University of Minnesota

A Water Planner's Role in Water Treatment Issues
David Abazs, Water Planner, Lake County Soil and Water Conservation District

Round Pegs in Square Holes: How Watershed Planning and Local Water Planning Can Co-Exist

Minnesota's Citizen Watershed Decision-Makers

Kathy Draeger, Environmental Ground, Inc.

Developing Minnesota Water Plan 2000

Marilyn Lundberg, Environmental Quality Board

Workshop: Wellhead Protection: Strategies to Protect Drinking Water Supplies
MN Department of Health Wellhead Protection Planners
Dave Neiman, Minnesota Rural Water Association

1:45

Concurrent Session B



Workshop: Problem Solving Using a Geologic Atlas
Howard Hobbs, Senior Scientist, Minnesota Geological Survey
Jan Falteisek, Hydrologist Supervisor, MN DNR

Workshop: The MPCA's Citizen Stream Monitoring Program:
A Comprehensive Yet Simple Approach
Laurie Sovell, Coordinator, Citizen Stream Monitoring Program, PCA

Implementation - How to Get Practices on the Land

Linda Meschke, Coordinator, Blue Earth River Basin Initiative

Using Information from Land Use Studies to Make Better Ground Water Resource Protection and Landscape Management Decisions

Jennifer Maloney, MPCA Ground Water Monitoring and Assessment Program

Mower County's Water Quality Testing Program

Bill Buckley, Director, Mower County Environmental Health

Ryan Kraft, Mower County Water Quality Specialist

Creating Baseline Ground Water Quality Data From Information That Usually Slips Through the Cracks

Jim Stannard, Environmental Technician, Dodge County Environmental Quality

3:00 - 3:30

Concurrent Session C



To Alter or Not to Alter: The Stearns County Shoreland Alteration Process
Greg Berg, Wetland/Shoreland Specialist, Stearns County Environmental Services

Recycling Water While Protecting Human Health and the Environment
Ken Olson, U of M Extension Educator, On-Site Sewage Treatment Homeowner Education

Wild Rice/Marsh River Basin Assessment - A Public Process to Evaluate Water Quality Using a Watershed Inventory Process

Mark R. Deutschman, PhD, Project Manager, Houston Engineering, Inc.

GIS Mapping of Conservation Lands

Barbara Weisman, Planner, Sustainable Agriculture/Ag Development, Minnesota Department of Agriculture

3:45 - 4:15

Concurrent Session D



Dakota County Wetland health Evaluation Program: A Citizen Monitoring Program
Charlotte Shover, Coordinator, Dakota County Environmental Education Program

Water, Water Everywhere and Not a Drop to Drink: Russian Water Quality Exchange
Marshall Senior High School Russian Exchange Program on Water Quality
(Holly Kesteloot, Ryan Snodgrass, Tanya Van Keulen, students)

Policy, Criteria, Principles, and Skills for Sustainable Watershed Stewardship in the
Ramsey-Washington Metro Watershed District
Louise Watson, Planning and Education Coordinator, Ramsey-Washington Metro Watershed District

French Lake Water Quality Improvement Project
Jon Kruger, Rice County Environmental Health Specialist

4:30 - 5:00 Concurrent Session E ★ ★ ★ ★ ★ ★ ★ ★ ★

Development in Winona County: the Revenue/Cost Relationship - Impacts on Water Quality?
Todd Bram, Director, Winona County Planning and Zoning

The Hydro-Illogical Cycle: Public Awareness in Plain English
Larry Johnson, Project Coordinator, Whitewater River Watershed Project

Lawn Care and Water Quality: Finding the Balance
Jerome Spetzman, MN Department of Agriculture

Pesticides in Minnesota's Rivers and Streams
Paul J. Wotzka, Surface Water Hydrologist, MN Department of Agriculture

5:00 - 6:00 Hors d'oeuvres and Cash Bar
Music by Eric Mohring and Mark Nelson

6:00 Evening Banquet
Awards Presentations - Doug Thomas, MN BWSR

"Keeping Your Balance in a Teeter Totter World"
Dennis Gannon, EdS, Licensed Psychologist

8:00 Riverwalk
Take a stroll along the Zumbro River and learn about the Rochester Flood Control Project with Deborah Foley of the U.S. Corps of Engineers



WEDNESDAY, JUNE 23

7:30 - 8:30 Breakfast Buffet
With a visit by Terra Loam, Spirit of the Earth

9 AM - 4 PM All Day Field Trips and Workshops
★ The Urbanizing Watershed
★ Karst Features and Mystery Cave Tour
★ Mighty Mississippi Tour
★ Lake Management Tour
★ Rosgen Stream Classification Training
★ Wetland Delineation Workshop
★ Project W.E.T. Workshop
★ Agricultural Land Management Tour

Conference Sponsors:

*Southeast Minnesota Water Resources Board, Minnesota Board of Water and Soil Resources,
Minnesota Pollution Control Agency, Minnesota Department of Natural Resources*