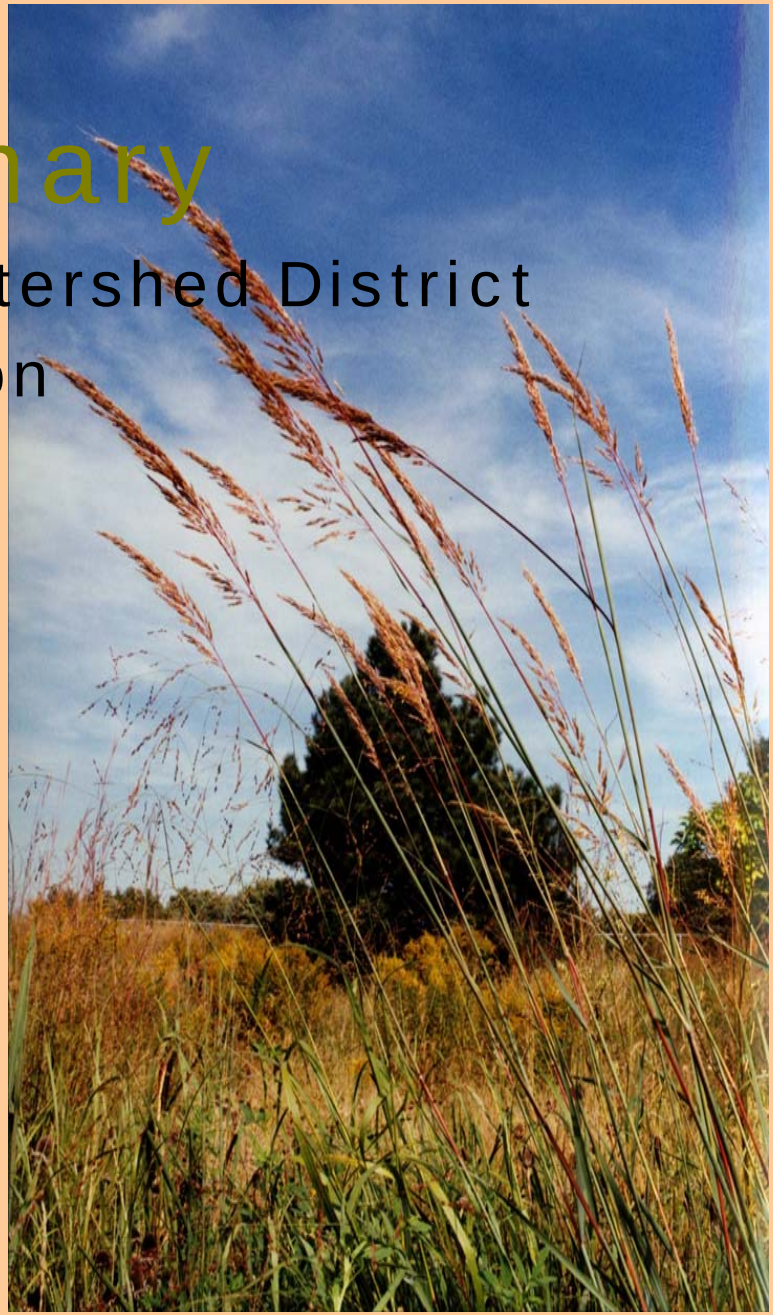
Executive Summary

Lower Minnesota River Watershed District
Guidance to Implementation

May 2004

- Overview
- Recommendations



LOWER
MINNESOTA RIVER
WATERSHED DISTRICT

OVERVIEW

The Lower Minnesota River Watershed District (LMRWD) comprises a diverse landscape that spans the Minnesota River from bluff line to bluff line from Carver Creek to the Mississippi River. Both upland and floodplain features occupy a dominant position among its list of unique resources. The goals of the LMRWD are to:

- Cooperate with the state and federal government in providing river navigation,
- Work in partnership with citizens and local governments to provide evaluation and management of its important natural resources.

The goal of the Guidance to Implementation is to move the LMRWD's implementation agenda forward. It does this by:

- Assessing the current status of resource management within the watershed,
- Identifying and prioritizing specific actions the LMRWD can take to proceed with management of its natural resources.

As part of the study, a comprehensive survey and review of ongoing resource management and monitoring efforts in the watershed was performed. This included a written survey and follow-up discussions with the multiple cities, counties, agencies, and individuals working on resource management within the watershed.

The implementation strategy in the LMRWD's 1999 Water Management Plan was then reviewed in the context of the resource management assessment. Specific activities in the 1999 Plan were refined and prioritized, and additional activities were added based on discussions with stakeholders in the watershed. The result was a prioritized Implementation Guidance table, to allow the LMRWD to move forward in a proactive, systematic fashion.

RECOMMENDATIONS

The Implementation Guidance table is attached. It contains prioritized actions, discussion, estimated costs, and potential partners. The prioritized actions are referenced on the attached watershed map. Key natural resources identified as High priorities for management and protection in the Implementation Guidance table include:

Courthouse, Firemen's, and Clay Hole Lakes
Assumption Creek
Dean Lake
Minnesota River
Nicols Fen
Harnack and Kennealy Creeks

At this point, it is recommended that the LMRWD move forward with the High priority actions in the Implementation Guidance table. The LMRWD's role can take two forms:

- Partner with and enable others to take the lead on activities by providing financial and/or technical resources
- Initiate and take the lead on activities, particularly those that extend across multiple local government boundaries.

The next steps in the process will be to:

- Finalize the priorities for implementation,
- Seek partnerships for management among the various stakeholders in the watershed,
- Identify funding needs and sources,
- Proceed with implementation activities.

Implementation Guidance Table

Priority	Map Index	Action	Comments	Estimated Cost	Potential Partners
High	1A(1,2,3)	Develop management plans for Courthouse Lake 1A(1), Firemen's 1A(2) and Clay Hole Lake 1A(3) that outlines a strategy for protection and/or improvements as may be appropriate for each waterbody	All three resources are currently of good quality. In 2004 (CCES Water Quality report), the three rated mesotrophic as per Carlson's TSI. Courthouse Lake is a designated trout Lake, while Firemen's Lake has a public swimming beach, Clay Hole Lake serves as a stormwater pond for a large watershed Each lake is governed by a set of unique conditions and uses and requires a strategy that reflects these conditions and uses. Work to develop a plan for Courthouse Lake is expected to be minimal (~$2,000) because the Lake has been well-protected through past efforts.	$20,000 - $35,000	City of Chaska, Carver County Environmental Services, Carver County SWCD
High	1B	Outline the watershed, identify stakeholders and initiate efforts for the development of a management plan for Assumption Creek and watershed	Macroinvertebrate monitoring suggests resource is in good shape. However, monitoring by DNR from May 2000 through December 2001 downstream of Highway 212 indicates periodic problems with high water temperatures and low dissolved O2 that violate accepted trout tolerances. Measured discharges ranged from zero to 4.2 cfs above fen/wetland complex and from 0.64-1.1 cfs below fen/wetland confluence. Management plan should address: • Collection, analysis, and interpretation of baseline data on stream flow, temperature, macroinvertebrates, fish, and channel stability as well as groundwater contributions. • Recommendations on additional monitoring needed. • Current and expected future watershed land uses and how the stream would be affected. Estimate impact of Highway 41 crossing. • Delineate watershed and identify the percentage under jurisdiction of each land owner/manager. • A mitigation strategy to protect creek from land use changes, including possible application of low impact development measures and/or adaptation of thermal mitigation / runoff volume control to new developments by communities, land acquisition for open space preservation.	$20,000 - $40,000	Cities of Chanhassen, Chaska, MNDNR, Trout Unlimited, Chaska High School

Priority	Map Index	Action	Comments	Estimated Cost	Potential Partners
High	1C	Keep the integrity of Dean Lake intact by maintaining existing conditions. Work with City and Prior Lake/Spring Lake Watershed District (PLSLWD) to maintain a wildlife corridor around lake	City of Shakopee completed a baseline water quality study on the lake in 2001. Lake is shallow (mean depth = 3') and hypereutrophic (water clarity ~1.5'). Not listed as impaired water on 2002 303(d) list. Will work with PLSLWD as necessary to ensure PLSL channel restoration and outlet maintenance and upgrade. SRF is preparing an EIS for proposed County Road 21 that goes through the area. This report will be available with Scott County in spring of 2004.	< $10,000	City of Shakopee, PLSLWD
High	1D, 1E	Work with the MNRB to compile loading comparisons / summaries for monitored tributaries as data allows (MNRB takes technical lead)	Purpose would be to provide easily interpreted information to provide regional context to LMRWD management efforts and priorities. Use simultaneous period of record to estimate annual loads of water and key pollutants for: - Minnesota River near its entry to LMRWD. - Minnesota River near its exit from the LMRWD. - Tributaries monitored under WOMP program that enter between the two points. Also generate loads per unit or of watershed as well as flow-weighted mean concentrations and key pollutants to help identify “hot spot” tributary watersheds. The LMRWD has assumed costs for the installation, operation, and maintenance of the Flow Gauging Station for the Minnesota River at Ft. Snelling at a cost not to exceed $41,450 for 3 years.	$10,000 - $20,000	Met Council, Minnesota River Board

Priority	Map Index	Action	Comments	Estimated Cost	Potential Partners
High	1F	Act as facilitator to bring together various stakeholders in Nicols Fen, Harnack and Kennealy Creeks (and possibly unnamed trout stream #1)	High priority is restoration of eroded channel adjacent to Nicols Fen. MNDNR Parks may have up to $25,000 to contribute as cost-share on restoration of incised channel adjacent to Nicols Fen. USACE has up to $5 million (discretionary funds) available for aquatic ecosystem restoration and wildlife habitat restoration.	<$10,000	City of Eagan, MNDNR, USACE, Gun Club WMO, USFWS
High	1G	Assist City of Burnsville in assessing and possibly devising approach to remediate bank erosion problems along Minnesota River	Highest priority erosion problems are threatening infrastructure such as roads. Inventory of problem areas and field assessment are desirable to evaluate potential remedial measures and determine cost-effectiveness. City would prefer to take bioengineering approach if appropriate.	$5,000-$15,000	City of Burnsville, USACE, Dakota Co. SWCD
Medium	2A	Support City of Eagan in implementation of infiltration features In Cedar Grove	Cedar Grove redevelopment AUAR identifies infiltration and LID as measures to protect Harnack and Kennealy Creek. LMRWD could provide technical or financial assistance in monitoring efficiency of the infiltration unit installed at the Cedar Grove site when needed.	$15,000 - $50,000	City of Eagan, MNDNR, Met Council, Dakota County SWCD
Medium	2B	Assist in implementing Credit River Erosion Control Plan	Forty erosion problem areas along the Credit River were identified by the City of Savage (1996). Fifteen areas are within the LMRWD boundary. Role of rate control may not have been addressed. City has identified corrective actions and planning level cost estimate for improvements in each area. Total estimated construction cost to fix all areas is $660,000. City proposes completion of feasibility study for each project. LMRWD could assist financially or technically with feasibility studies and/or design/construction.	Undetermined	City of Savage

Priority	Map Index	Action	Comments	Estimated Cost	Potential Partners
Medium	---	Develop overall TMDL strategy for all impaired stream reaches within the LMRWD	Identify impaired waters within the LMRWD and contact stakeholders to jointly develop a plan for the development of an overall TMDL strategy. USACE has discretionary funds for planning assistance.	$10,000-$15,000	Various stakeholders, depending on location and jurisdictions affected
Medium	2C	Assist in design / construction of stormwater quality retrofit improvements in downtown Chaska	City expects to install 5 – 10 manufactured BMPs for stormwater quality improvement as part of downtown street reconstruction effort. Feasibility study presenting information on size, location, timeline and cost estimate expected by April 2004. Financial assistance from LMRWD could be used to secure higher and/or larger units to maximize treatment.	Undetermined pending outcome of feasibility study	City of Chaska
Medium	2D	Assist City of Burnsville in assessing restoration potential of unnamed trout streams 4 and 7	Some work done already by City to evaluate resource, including monitoring of stream temperatures. Data suggests that during some times of the year, stream temperatures may be too high to support trout. Beaver activity and channelization are issues as are urban stormwater inputs.	$3,000 – $7,000	City of Burnsville, MnDNR, Dakota Co. SWCD
Medium	2E	Conduct lake and watershed assessment for Black Dog Lake	Data on which to base lake assessment may already have been collected by power company that uses the lake for cooling water. Main task may be to gather and interpret data. Assessment would form basis to scope development of management plan.	$10,000-$15,000	City of Burnsville
Medium	2F	Develop linked P8 model for that portion of the Black Dog watershed within the LMRWD	Black Dog WMO plans to develop P8 model for its part of the watershed starting in 2005. Intent is to get ahead of any TMDLs that could affect the area. LMRWD could cooperate with Black Dog WMO to develop linked model so that entire watershed to MN River is covered. This effort could help the LMRWD develop its TMDL strategy as well.	$10,000 - $15,000	Black Dog WMO, City of Burnsville

Priority	Map Index	Action	Comments	Estimated Cost	Potential Partners
Medium	---	Evaluate further potential implementation opportunities for Wedgewood Marsh, Blue Lake, Colman Lake, Nine Mile Lake, Gun Club Lake, Fisher Lake, Nyssens Lake, Gillford Lake, Cyess Lake, Rice Lake, Long Meadow Lake, Snelling Lake, Riley Creek, Bluff Creek, Carver Creek, East Chaska Creek, Chaska Creek	Could be considered as part of subsequent project/phase.	Undetermined	Various cities, watersheds, counties

Lower Minnesota Watershed District

Location Map: Monitoring, Studies, and Implementation Priorities

Figure 2.1

Monitoring Sites
- Lower MN River WD
- City of Savage
- Nine Mile Creek
- City of Bloomington
- MPCA
- USGS
- CCES
- MCES
- RPBC

- River/Stream
- Lower MN River Watershed District Boundary
- County Boundary
- Lakes
- 1C Implementation Priorities (see table below)
- (1) Study Locations (see table below)

Bonestroo Rosene Anderlik & Associates Engineers & Architects

1.75 0 1.75 3.5
Miles

HENNEPIN COUNTY
CARVER COUNTY
SCOTT COUNTY
DAKOTA COUNTY

Minnehaha Creek
Saint Paul
Minneapolis
Airport
SNELLING LAKE
Mendota Heights
Richfield
GUN CLUB LAKE
Eagan
LONG MEADOW LAKE
Kennealy Creek
Nicols Fen
Harnack Creek
Unnamed #4
Unnamed #7
Bloomington
BLACK DOG LAKE
Nine Mile Creek
Purgatory Creek
Riley Creek
Eden Prairie
Airport
RICE LAKE
RICE LAKE
GRASS LAKE
BLUE LAKE
FISHER LAKE
OVERLOOK LAKE
NINE MILE LAKE
COLMAN LAKE
CARGILL LAKE
Burnsville
Savage
Shakopee
Chanhassen
Chaska
East Chaska Creek
Chaska Creek
Assumption Creek
CLAY HOLE LAKE
FIREMEN'S LAKE
COURT-HOUSE LAKE
STRUNKS LAKE
CHASKA LAKE
GIFFORD LAKE
DEAN LAKE
Eagle Creek
Credit River
Carver
Carver Creek
1A 1B 1C 1D 1E 1F 1G 2A 2B 2C 2D 2E 2F
1 2 3 4 5 6 7 8

IMPLEMENTATION PRIORITIES

1A	Develop protection strategy for Courthouse, Firemen's, and Clay Hole Lakes
1B	Initiate efforts for management plan for Assumption Creek
1C	Maintain integrity of Dean Lake
1D	Compile loading comparisons/summaries for monitored tributaries of MN River
1E	Compile loading comparisons/summaries for monitored tributaries of MN River
1F	Facilitate stakeholder actions on Nicols Fen and Harnack and Kennealy Creeks
1G	Assess/remediate bank erosion along MN River
2A	Implement infiltration features in Cedar Grove
2B	Implement Credit River erosion control
2C	Construct stormwater quality retrofit improvements in downtown Chaska
2D	Assess restoration potential of unnamed streams #4 and #7
2E	Conduct lake and watershed assessment for Black Dog Lake
2F	Develop P8 model for Black Dog Lake watershed

ID	***STUDY LOCATIONS/NAMES***
1	Carver County Planning Study of Ravine and Bluff Areas Along the MN River - Carver County (2000)
2	Erosion Survey for the Credit River - City of Savage (1996)
3	Bluff Creek Watershed Natural Resources Management Plan - City of Chanhassen (1996)
4	Nicols Fen, Kennealy and Harnack Creek Project, Metro Greenway Planning Grant #01-13 (2002)
6	Fen Management Plan - City of Savage (1999)
5	Eagle Creek Corridor AUAR and Fen Management Plan - City of Savage (1995)
7	Cedar Grove AUAR - City of Eagan (2002)
8	Bluffs EAW - City of Mendota Heights (2003)

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