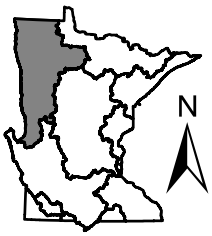
Red River Basin: Conventional Parameters

2006 Impaired Waters Requiring a TMDL (per Section 303 (d) Clean Water Act)

Draft until approved by US EPA



Red River of the North (T)
Joe River (Cl, pH)
Two River (T)
Two River, North Branch (B-F)
Roseau River (DO)
Kittson
Roseau
Two River, Middle Branch (B-F)
Two River, South Branch (B-F)
Thief River (A)
Tamarac River (B-F)
Moose River (DO)
Snake River (DO, T)
Marshall
Snake River (B-F, DO)
Snake River (B-F)
Thief River (DO, T)
Grand Marais Creek (T)
Clearwater River (DO, FC)
Clearwater River (T)
Thief River Falls
Lost River (FC)
Grand Marais Creek (DO, T)
Pennington
Beltrami
Red Lake River (T)
Red Lake
Red River of the North (T)
County Ditch 57 (DO)
Silver Creek (FC)
Poplar Diversion (DO)
Polk
Lost River (DO)
Red River of the North (T)
Unnamed Creek (DO)
Clearwater
Walker Brook (DO)
Poplar River (DO)
Red River of the North (FC, T)
Mahnomen
Wild Rice River (T)
Norman
Clearwater River (DO)
Red River of the North (A, FC, T)
Buffalo River (T)
Clay
Becker
Moorhead
Stony Creek (T)
Red River of the North (FC, T)
Buffalo River, South Branch (B-F)
Red River of the North (T)
Whiskey Creek (T)
Otter Tail
Otter Tail River (DO)
Red River of the North (T)
Otter Tail River (T)
Fergus Falls
Wilkin
Bois de Sioux River (B-F, DO)
Otter Tail River (B-F, T)
Rabbit River (B-F, DO, T)
Mustinka River (T)
Grant
Mustinka River (DO, T)
Traverse
Twelvemile Creek (B-F)
Stevens
Big Stone

Affected Use

- Aquatic Life
- Aquatic Recreation
- Aquatic Life and Aquatic Recreation

Pollutant, Stressor, or Indicator

A = Ammonia
AT = Absence of Trout…
B-F = Fish IBI
B-I = Invertebrate IBI
B-FI = Fish & Invertebrate IBIs
Cl = Chloride
FC = Fecal Coliform
DO = Low Dissolved Oxygen
pH = pH
T = Turbidity
Tm = Temperature

- Major Streams
- Open Water
- Counties
- Major Watersheds
- Major Basins

For additional information concerning impairments, such as station information and monitoring data, see the MPCA Environmental Data Access System. http://www.pca.state.mn.us/data/edaWater

0 5 10 20 30 40 Miles

Minnesota Pollution Control Agency
October, 2005

Red River Basin Pollution Reduction Program
Management Framework for Local Implementation

The #### Subwatershed Example

Chapter 1: Introduction

Preface: As defined by the 1997 Federal list of impaired waters the #### River Subwatershed within the RLWD is imparted for turbidity/D.O./Ammonia. To determine the presence and level of impairment the MN PCA has undergone a detailed monitoring program to determine the extent of the problem. The results of the detailed monitoring appraisal will be available the summer 2002

This document defines a framework for local implementation of pollution reduction activities in areas with impaired waters. The process developed below combines existing local management efforts of the RLWD, local water planners and soil and water conservation district to foster a high level of landowner participation in a small number of priority subwatersheds.

The goal of the program is to incorporate the necessary management framework into the ongoing local watershed management plans to allow for effective implementation towards predicted TMDL source load reduction targets.

The template process below defines how BMP eligibility criteria for pollutant sources could be established to achieve target reduction levels in the #### River Subwatershed. Success of this process relies on establishment of a strong interagency technical advisory committee responsible of the developed of goals and project eligibility.

Chapter 2: Water Quality

[*Summary of TMDL monitoring results and other applicable local and state water quality information.]

The streams of the #### River Subwatershed are not reaching their designated use due to pollution from nonpoint sources. Eroding croplands and streambanks and the lack of nutrient management programs are the major source of nonpoint pollution in the watershed.
Responsibility: Completion of local monitoring grant programs.

Chapter 3: Estimated Pollutant by Source

Using existing data from the County SWCD, County Water Plan, and WD Overall Plan estimate (using only best available information) the amount of pollution from agricultural lands, and streambanks in the watershed. Using preliminary data determine amount of phosphorus [organic] carried in runoff from agricultural land to a receiving stream. The amount of sediment reaching streams from eroding agricultural lands and streambanks was also estimated.

In the #### River Subwatershed, about [* #] percent of the sediment deposited in streams annually is derived from agricultural upland erosion. [* Number] percent of the sediment reaching streams originates from streambank erosion. [*Approximately [* #] percent of the total sediment is contributed from shoreline erosion.

The following is a summary of specific ***estimated*** pollutant sources:

Feedlot Runoff

[* Number] feedlots in subwatershed.
These feedlots were found to contribute [*] pounds of phosphorus. [organic] to surface waters, annually.

Streambank Erosion

[* Number] stream miles in Subwatershed.
[* Number] tons of sediment reach streams from eroding sites.
There are [* #] miles of eroding sites.

Shoreline Erosion

[* Number] miles of reservoir or lake shoreline were found to have severe, moderate, or mild erosion from eroding sites.
[* Number] tons of sediment are delivered to the reservoir, annually.
[* Number] landowners have mild, moderate, or severe erosion sites.

Upland Sediment

[* Number] tons of sediment are delivered to streams.
[* Number] percent from cropland.
[* Number] percent from grazed woodlots and woodlots.
[* Number] percent from pastures.

Urban

Responsibility: LWP/WD/SWCD modeling, data and analysis by technical advisory committees for local plans.

Chapter 4: Project Pollutant Reduction Objectives

Sediment Objective

As estimated by integrating the preliminary water quality monitoring results with the estimated pollutant by source, the WD planning TAC and CAC has recommended a [* #] percent reduction in overall sediment delivered in Subwatershed. To meet this pollutant reduction objective, the following reductions are needed:

Optional objectives

[* Number] percent reduction in sediment reaching streams from agricultural uplands in subwatershed.

[* Number] percent reduction in streambank sediment delivered to all streams and a [* #] percent overall repair of streambank habitat in subwatershed.
[* Number] percent reduction in shoreline sediment delivered to the reservoir.

Phosphorus Objective

Recommended a [* #] percent reduction in overall phosphorus delivered in Subwatershed. To meet this pollutant reduction objective, the following reductions are needed:

Optional objectives:

Reduce overall phosphorus [organic] load by [* #] percent.

[* Number] percent reduction in phosphorous [organic] pollutants from feedlots in subwatershed.

[* Number] percent reduction in phosphorous [organic] pollutants from manure spread on unsuitable acres in subwatershed.

Achieve the sediment objective above.

In addition, the TAC /CAC has set an objective of restoration of [* 10] percent of degraded or prior converted wetlands.

Urban Objectives

Responsibility: Technical advisory committee of local planning programs.

Chapter 5: Eligibility Criteria – Determining if landowner in subwatershed is eligible for program funding.

Cost-share funds for installing pollutant control measures will be targeted at operations, which contribute the greatest amounts of pollutants. Cost-share funds will be available through a combination of County SWCDs, TMDL implementation, County Water Planning /NRBG, FDR, ACOE, MDH, and non-governmental organization conservation funds. These BMP cost-share rates will range from 70 to 100 percent. The County SWCD and RLWD will assist landowners in applying BMPs.

The RLWD and SWCD will contact all landowners who are eligible to receive cost-share funds during the implementation phase. Specific sites or areas within the subwatershed will be designated as either "eligible," or ineligible. Eligible sites need not control every eligible source to receive cost-share assistance.

The following is a brief description of significant pollutant sources and project eligibility criteria:

<u>Agricultural Lands</u>

All agricultural lands contributing sediment to streams at a rate greater than [* #] tons per acre per year will be classified as eligible for implementation and be brought down to a rate of [* #] tons per acre per year. This involves an estimated [* #] acres of cropland.

The BMPs identified by the RLWD/SWCD in the Overall Plan will emphasize both improving farm management and controlling pollutants. Cost share rates are listed below and include both a local /regional and state/federal component.

Feedlots

The objective for feedlot runoff control is to reduce COD loading to streams by a total of [%.] Based on past experience, sites contributing a COD load greater than [*#] pounds on an annual basis will be designated as eligible for cost-share. All eligible landowners need to divert the clean upland water and roof runoff away from the animal lot.

Manure Spreading

All operations in the subwatershed are eligible for cost-sharing for nutrient management planning. RLWD/SWCD/County staff will direct efforts toward operations having a greater potential need for nutrient management planning and little suitable land for spreading. A nutrient management plan may identify the need for winter storage of manure because of limitations of winter spreading on steep slopes and on fields near water.

Streambanks

Sites with a lateral recession of greater than [* 0.5] feet per year will be Eligible.
There will be an emphasis on controlling bank erosion and improving fish and wildlife habitat in subwatershed, to enhance water quality and habitat conditions.

Shoreline

Eligible sites are those with moderate or mild erosion. Moderate sites are defined as having streambanks less than [* three] feet in height, with a lateral recession rate of greater than [* 0.1] feet per year. Mild erosion sites are defined as having bank heights of [* 3.0] feet, with lateral recession rates greater than [* 0.05] feet per year. See tables in chapter two for a summary of eligibility criteria.
Responsibility: Technical advisory committee

Chapter 6: Project Implementation

Project implementation is scheduled to begin in [* year]. Cost-share agreements can be signed from [**year** –year*], all practices must be installed with [*years]. Landowners must maintain practices for at least ten years from the installation of the final practice on the agreement. BMPs can be installed as soon as a landowner signs a cost-share agreement with the RLWD].

Information and Education

The MPCA will provide [* $] to the RLWD for conducting an information and education program in the #### River Subwatershed. The activities will include BMP demonstrations, tours, newsletters and public meetings.

Funds Needed for Cost Sharing, Staffing, and Educational Activities

The MPCA will award grants to RLWD for cost sharing, staff support and educational activities. Table [*] includes estimates of the financial assistance needed to implement activities necessary to achieve predicted target TMDL pollutant reductions.

Cost Estimates for the #### River Management- table

	Total Cost and Financial Responsibility	Implementation Responsibility
Cost Sharing		RLWD, SWCD, County
Local	_____% from State C/S program	
Watershed	_____% from project funds	
Regional	_____% from Red Board mediation funds	
State	_____% from BWSR spec. project or challenge Grant, or MDH source water program.	
Federal	_____% from MPCA 319/TMDL	
Other	_____%NGO or non-profit	
Educational Activities	Potential sources above with local in-kind	RLWD, SWCD, County
Administration	_____ from MPCA to match in-kind.	RLWD, SWCD, County

Chapter 7: Project Evaluation and Monitoring

The evaluation strategy will involve collecting, analyzing and reporting information to track progress in two areas:

1. Administrative: Progress in providing technical and financial assistance to eligible landowners, and carrying out education activities identified.

2. Pollutant Reduction Levels: The RLWD in partnership with County SWCDs and County water Planners will calculate the reductions in pollutant loadings and report findings at annual meetings.

Chapter 8: Execution of Interagency Agreement

The signatories below agree to uphold their responsibility to implement the workplan as defined above.

_____

_____

_____

_____

Summary Table of Actions and Responsibilities

Action	Description	Responsible Party
Water Quality Monitoring	Determine level of impairment	MPCA support of local monitoring efforts
Estimate Pollutants by Source	Rough estimate using best available information of the "breakdown" of the source of pollutants- feedlot, streambank, shoreline upland or other.	Watershed District TAC including strong involvement from SWCD, local water planners and MPCA and other state agencies.
Project Pollutant Reduction Objectives	Reduction objective for sediment and Phosphorus and optional reduction for each source listed above.	MPCA will present TMDL reduction objective for impaired waters to Watershed District TAC. The local Plan, with advice from TAC, will modify TMDL goal if monitoring or field data indicates objective is unachievable.
Eligibility Criteria for cost share and other funding	Targeting operations/ sites for cost share and other incentives that contribute greatest amount of pollutants. *Example:* Sites that deliver 2 tons /acres/yr. sediment or 50 pounds of 50 P delivered according to FLEVAL.	Partnership of SWCDs, Watershed District and local water planner with involvement from state agencies.
Project Implementation	Enrolling eligible landowners to install practices to achieve objectives. Program administration and education are also components.	A committed fund should be established to ensure a consistent level of local implementation. The level of financial responsibility of the various sources (federal/ state/ regional/ local and NGO's) for administration and project implementation /cost sharing has yet to be determined.
Project Evaluation	Regular monitoring and analysis to determine progress toward objectives.	Component of local administrative program.