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## INTRODUCTION

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## 1.1 District Overview

The BRRWD, located in northwest Minnesota, comprises an area of 1,379 square miles. The two branches of the Buffalo River traversing and draining the BRRWD are the South Branch of the Buffalo River and the Buffalo River. The South Branch of the Buffalo River receives runoff from several important tributaries including Deerhorn Creek, Stony Creek, Hay Creek, and Whisky Creek. The watercourses consist of a intermingling of natural streams and public and private drainage systems. Most of the land traversed by the South Branch of the Buffalo River is characterized by low relief and is in agricultural production. The South Branch of the Buffalo River generally flows north to the Buffalo River.

There are numerous lakes within the north-eastern portion of the BRRWD at the headwaters of the Buffalo River. These lakes tend to result in reasonably consistent baseflow. The Buffalo River flows generally to the west toward Lake Park and Hawley to the confluence with the South Branch of the Buffalo River, near Glyndon. The Buffalo River then flows in a northwesterly direction to the confluence with the Red River at Georgetown. Wolverton Creek has a relatively large drainage area on the western boundary of the BRRWD and is located in the southwestern portion of the BRRWD. Wolverton Creek flows directly to the Red River of the North, upstream from the Fargo-Moorhead Metropolitan Area (FMMA).

The BRRWD is comprised of portions of Clay, Becker, Wilkin and Otter Tail Counties (see **Table 1.1**). Municipalities within the BRRWD include: Moorhead, Dilworth, Glyndon, Hawley, Lake Park, Audubon, Callaway, Georgetown, Sabin, Comstock, Wolverton, Hitterdal, and Barnesville (**Figure 1.1**). The BRRWD office is located in Barnesville and is responsible for resource management within the District boundary.

The Board of Managers, who is responsible for guiding the direction of the BRRWD, is appointed by the County Board of Commissioners. There are three Managers from Clay County and one Manager each from Wilkin and Becker Counties (**Table 1.2**). A Board member is not appointed by Otter Tail County, primarily because of the small amount of land within the BRRWD, and a 1979 Water Resource Board decision.

The BRRWD also has an advisory committee made up of representatives from all of the Counties within the Watershed District.

**Table 1.1 Counties Comprising the Buffalo-Red River Watershed District.**

County	Square Miles	Acreage	Percentage of District Area
Clay	797	510,080	58
Becker	290	185,600	21
Wilkin	232	148,480	17
Otter Tail	60	38,400	4
Total	1,379	882,560	100

**Table 1.2 Composition of the 2009 Buffalo-Red River Watershed District Board of Managers.**

Name	Position	County
Roger G. Ellefson	Chairman	Wilkin
Gerald L. VanAmburg	Vice Chairman	Clay
Curtis M. Nelson	Treasurer	Clay
John E. Hanson	Secretary	Becker
Breanna Paradeis	Manager	Clay

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## 1.2 District History

The BRRWD, formerly known as the South Buffalo Watershed District, was established on August 31, 1960, and was comprised of approximately 344 square miles in Clay, Otter Tail, and Wilkin Counties (primarily the South Branch of the Buffalo River). Following a severe summer flood in 1975, it became apparent that any rational approach to address flooding needed to include all of the area contributing runoff to the Buffalo River. By order dated September 17, 1976, the State of Minnesota expanded the BRRWD to its current size and changed the name to the BRRWD. The same order expanded the representation on the Board of Managers.

The newly formed Board of Managers adopted their first Overall Plan on January 9, 1978, and submitted the plan to the State for approval. The State approved the Overall Plan on July 26, 1978. The most recent Watershed Management Plan (WMP) was approved by the State on April 22, 1998.

The BRRWD underwent certain modifications in both its territory and Board membership after its establishment. On August 24, 1978, a petition was filed with the Minnesota Water Resources Board by certain landowners in the Lake Olaf area of Otter Tail County. The petition requested that the petitioners' lands be released from the BRRWD jurisdictional boundaries. On November 21, 1978, a hearing was held before a State Examiner on this petition. In December of 1978, the State Examiner recommended to the Minnesota Water Resources Board that the subject lands included in the petition be released from the BRRWD. The Water Resources Board decided in favor of the Hearing Examiner's recommendation and so ruled on January 8, 1979. The Water Resources Board also ruled that the membership composition of the BRRWD Board of Managers be changed to include three members from Clay County, one member from Becker County, and one member from Wilkin County. In essence, the Otter Tail County representative was deleted in favor of the creation of an additional Clay County membership.

In September of 1980, a Joint Powers Agreement was enacted between the Lower Red River Water Management Board (LRRWMB) and the BRRWD that provided for membership status on the LRRWMB. At that time, the BRRWD appointed its first representative to the LRRWMD. In 1991, The LRRWMB changed its name to the Red River Watershed Management Board (RRWMB). The RRWMB has since expanded its membership to include the Bois de Sioux Watershed District. Since 2003, the BRRWD has not been a member of the RRWMB.

In 1984, the BRRWD approved and enacted a Joint Powers Agreement with the Wild Rice Watershed District (WRWD). The purpose of the Joint Powers Agreement was to allow the assessment of certain benefiting lands outside of the Watershed District's territorial jurisdiction to certain existing legal drainage systems.

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## 1.3 Purpose of the Watershed Management Plan

The BRRWD is required to prepare a Watershed Management Plan (WMP) per Minnesota Statute 103D (<http://www.revisor.leg.state.mn.us/>). The WMP is an important tool for identifying problems and issues, goals, and long and short-term strategies to address these issues and attain the goals. The WMP also inventories resources, assesses resource quality, and establishes regulatory controls, programs, or infrastructure

improvements needed to manage the resources within the watershed. The WMP provides guidance for the BRRWD to manage the water and natural resources within the watershed boundary.

The first WMP for the District was accepted and approved by the State of Minnesota in 1979. The latest plan revision was completed in 1998. Land use and issues change over time. Minnesota Statute 103D, Section 405, establishes the requirement that the WMP must be updated and revised every 10 years. This WMP has been compiled to meet the statute requirements. The WMP also provides an opportunity to evaluate the success of activities identified within the previous plan and provide guidance for future activities and projects to address the BRRWD's changing needs.

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## 1.4 District Role in the Red River Watershed Management Board

The Minnesota Legislature created the RRWMB in 1976 to establish an organization with a basin-wide perspective concerning flooding. The activities of the RRWMB have historically centered on flood control. Previous efforts in dealing with the flooding problems within the Red River Basin consisted of single projects within a localized area, planned with primary regard to local benefits. The RRWMB actively promotes a basin-wide perspective for water management. The BRRWD Board of Managers voted in 2002 to remove itself from the structure of the RRWMB. Future membership as a member District of the RRWMB is subject to mutual agreement between the BRRWD Board of Managers and the RRWMB.

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## 1.5 Plan Relationship to the Red River Basin Flood Damage Mediation Agreement

The BRRWD Board of Managers decided early during the WMP planning process to develop a Plan consistent with the myriad policy, legal, and planning requirements established for Watershed Districts within the Red River of the North Basin. During the 1990s, there were frequent disagreements between Watershed Districts and resource management agencies over the most effective and environmentally preferable methods to reduce flood damages. After the U.S. Army Corps of Engineers (USACE) and Minnesota Department of Natural Resources (DNR) completed a joint Environmental Impact Statement (EIS) in 1996 on the cumulative effects of flood control projects under the

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purview of the RRWMB, the controversy reached its peak. Consequently, in May 1997, the Minnesota Legislature authorized funding for a “mediation” process to resolve the disputes regarding the environmental effects of flood control projects, the preferred methods to reduce flood damages, and a process to develop mutually agreeable solutions.

In December 1998, an agreement to reduce flood damages and improve natural resources in the Minnesota portion of the Red River Basin was reached by representatives of Watershed Districts, state and federal agencies, environmental organizations, and private landowner representatives. The Agreement forged by this group, known as the Red River Basin Flood Damage Reduction Work Group (RRBFDWG), provided for a new collaborative approach to planning and implementing both flood damage reduction and natural resource enhancement projects. A copy of the agreement is shown in **Appendix M**. Key elements of the agreement are clearly identified goals for both flood reduction and natural resources; comprehensive watershed planning; early consultation and collaboration among all stakeholders; and a cooperative approach to permitting projects. Many of the current planning requirements were established by the Flood Damage Reduction Mediation Agreement in 1998 (see <http://www.rwmb.org/files/FDRW/FDRAGMT.pdf>).

The BRRWD also decided early during the WMP planning process to develop a Plan consistent with the project development requirements established by the RRWMB (<http://www.rwmb.org/html/info.cfm?ID=5>). Developing a plan consistent with these planning requirements maintains consistency among the Watershed Districts within the Red River Basin.

This WMP has, therefore, been developed to be consistent with the responsibilities of the BRRWD in accordance with:

- Watershed Law (i.e., MS 103D);
- Drainage Law (i.e., MS 103E);
- The Red River Basin Flood Damage Reduction Workgroup Agreement (December 9, 1998) and subsequent guidance information, some of which includes:
  - Technical and Scientific Advisory Papers;
  - Project Compatibility and Readiness Evaluation; and
  - Project Implementation Process and Procedures.
- Red River Watershed Management Board Funding Requirements contained within Application Procedures for Funding Flood Damage Reduction Projects and Related Programs (March 16, 2004);
- State Environmental Review (Minnesota Environmental Policy Act);

- Federal Environmental Review (National Environmental Policy Act);
- Federal Laws (e.g., cultural resources, Threatened and Endangered species, water quality standards);
- State Laws (e.g., work in protected waters); and
- Local approvals (e.g., zoning, consistency with land use plans).

The process used by the BRRWD to identify, develop, and select projects and programs consistent with these requirements is described in detail within **Chapter 6** of the WMP.

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## 1.6 Plan Structure and Function

The watershed management plan for the BRRWD is organized according to the required contents described in the Watershed Management Plan Guidelines by the Minnesota Board of Water and Soil Resources per Minnesota Statute 103D.405. In addition, the plan conforms to the guidelines set forth in the Red River Basin Flood Damage Reduction Work Group Agreement (December 1998).

The overall BRRWD has also been divided into seven planning regions (**Figure 1.2**). These planning regions have been established as each area within the District has different issues related to it. The structure of this WMP has also, in kind, been divided on a planning region basis. Details for each of the Planning Regions are presented as Appendices to this WMP. Much of the detailed information from the Planning Region discussions has been used to create the main body of the WMP. The WMP organizational framework will act as a springboard where the various issues related to each specific planning region can be presented, and the goals and policies that are relevant to those issues can be discussed in a focused way.

Unlike previous plans, great effort has been made in this plan to quantify the goals of the BRRWD for both water quantity and quality as well as natural resource enhancement. These goals are broken down by planning region. In some cases the quantitative goals are yet to be established by ongoing studies that will not necessarily be completed by the closure of the plan revision. Placeholders for this information will be left in the plan with the quantitative goals being adopted as they are developed.

A new concept of regional assessment locations (RALs) is utilized in this plan document (**See Section 5 for more details on the RAL concept**). The RALs identified by the BRRWD provide the backbone of the monitoring plan for the District. A minimum of one RAL is located within each planning region. Some planning regions have multiple RAL to help to provide more detailed information. The intention of the RALs are to provide an



analysis point to document trends in water quality and quantity, and natural resource enhancements as well as to document overall effects as a result of the combination of the activities of the District and others within the various subwatersheds and planning regions of the BRRWD.

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## 1.7 Previous Plan Success

The degree, or amount, of success toward accomplishing the goals of the previous WMPs can be subjectively evaluated. The previous WMPs identified several general goals. **Table 1.3** presents a self-assessment of the progress toward accomplishing the most current goals. The amount of progress is generally ranked as low, moderate, or high. A low amount of progress generally indicates a low priority for the BRRWD relative to implementation. A moderate amount of progress generally indicates that another local, state, or federal agency is principally responsible for leading the efforts to achieve the goal. A high amount of progress is generally indicated by the actual construction of projects or the implementation of specific programs.

The goals are for the most part are broad and, generally, progress has been made toward those goals with a high priority for the BRRWD. Items, such as drainage administration and cooperation in support of erosion reduction, have been performed. Other items, such as erosion, flooding, and degradation of biotic habitat, are recurring issues inherent for the area of the BRRWD. Concrete evidence of plan success can be based upon actual projects that were completed in the effort to meet these goals.

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## 1.8 Review of Existing Rules and Permit System

The rules and permit system of the BRRWD has been in effect since May 21, 1979. In a typical year, the District processes more than a hundred permit applications. In general, an alteration that would affect the drainage patterns on more than five (5) acres of land requires a permit from the BRRWD. The BRRWD attempts to process permit applications within 30 days of receiving the application from the applicant. A copy of the current BRRWD Rules can be found in **Appendix H**.

A BRRWD permit is required for the following:

- Construction of an artificial drainageways across a subwatershed into another watershed;
- Diversion of water into a legal drainage system from lands not assessed for the drainage system;
- Works or alterations of any legal drainage system under the jurisdiction of the Board of Managers;
- Drainage of any wetland;
- Construction, removal, or abandonment of a reservoir having a surface area of five acres or more;
- Construction of a bridge or placement of a culvert on any natural or legal drainage system;
- Change in the bed, banks, or shores of natural drainageways, lakes, or wetlands;
- Placement of obstructions or disposal of wastes directly or indirectly into a natural or legal drainage system;
- Excavation, grading, or filling of, or near, any natural or legal drainage system;
- All water uses other than domestic use; domestic use is limited to sources serving twenty-five or fewer people;
- Crossing of natural drainageways or established legal drainage systems by pipelines or underground utilities lines.

On occasion, landowners or entities have violated the rules of the District. The District attempts to remedy these violations by working with the violating individual or entity. At times, the enforcement of the District rules has required Court orders to compel landowners to comply with the rules of the District.

**Table 1.3 Assessment of Progress Toward Accomplishing Goals Identified in the Previous Watershed Management Plan.**

Goal in Previous Watershed Management Plan	Progress Toward Accomplishing Goal	Comments
Goal A-1: To alleviate the damage caused by floodwaters.	High	<p>Constructed several projects including:</p> <ul style="list-style-type: none"> <li>• 2006 Moorhead Interstate-94 flood control project</li> <li>• Moorhead/Dilworth/Hawley EDA projects</li> <li>• Deerhorn Creek Off-Channel Levee project</li> <li>• Georgetown Levee project</li> <li>• Kragnes Ring Dike</li> <li>• Turtle Lake Outlet</li> <li>• Grove Lake Outlet</li> </ul> <p>Also implemented the farmstead ringdike program. Several additional projects are in the planning stages.</p>
Goal A-2: Administer and maintain the drainage systems of the District	High	<p>Successfully administered responsibilities under 103E. Projects completed include:</p> <ul style="list-style-type: none"> <li>• Clay County Ditch No. 11-North-Improvement</li> <li>• Clay County Ditch No. 59-Improvement</li> <li>• Clay County Ditch No. 53-Improvement</li> <li>• Clay County Ditch No. 68-Establishment</li> <li>• Clay County Ditch No. 69-Establishment</li> <li>• Clay –Wilkin Judicial Ditch No. 1, Branch 4 - Improvement</li> </ul> <p>Also, handled numerous repairs in accordance with 103E. Annual cattail/weed spraying program.</p>

Goal in Previous Watershed Management Plan	Progress Toward Accomplishing Goal	Comments
Goal A-3: Undertake measures that will help to provide an adequate supply of high quality surface and groundwater for public and private use.	Low	Generally lead by municipalities, therefore low District priority in previous plan. District has cooperated with water management partners including the City of Moorhead and the City of Barnesville on wellhead protection efforts.
Goal B-1: To protect and/or improve the water quality of the surface and groundwater resources.	Moderate	Provided financial support to River Watch. Completed a Minnesota Pollution Control Agency Section 319 project addressing sedimentation. Completing a new 319 project intended to address sedimentation issues through the implementation of best management practices. Expectation is to incorporate these practices into the current WMP.
Goal C-1: To cooperate and support projects that have the purpose of reducing erosion.	Moderate	See comments under Goal B-1. In addition, the District supports SWCDs within the District with additional funding for sediment control basins and buffer strip establishment/conservation measures. Monetary support from the District is used as grant matching funds which allow the SWCDs to obtain additional funding for soil conservation. The District is currently cooperating with the Becker SWCD on a buffer and sediment control project on Hay Creek.
Goal C-2: To pursue a program of erosion control and sedimentation management within all ditch systems.	Low	Generally completed erosion and sedimentation activities as a component of a flood control, natural resource enhancement, or a drainage system project. No special programs have been implemented (e.g., cost-sharing program for buffer strips along drainage systems). Preliminary work underway for determining the best measures to reduce erosion from fields and within banks completed as part of a Minnesota Pollution Control Agency Section 319 project. The District is currently cooperating with the Natural Resources Conservation Service and the Soil and Water Conservation District on stabilizing Wolverton Creek/Comstock Coulee.
Goal D-1: Promote the maintenance of biotic diversity.	Low	Generally lead by state or federal agencies. The District has implemented natural resource enhancement components when possible on projects.