

Joe River Watershed District

In Northwest Kittson County, Minnesota

Overall Plan 2004

OVERALL PLAN OF THE JOE RIVER WATERSHED DISTRICT Revised September 13, 2004

Board of Managers

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Table of Contents

I.	Introduction.....	4
II.	Mission Statement.....	5
III.	Description of the District.....	6
	Location and Size.....	6
	Political Units.....	8
	Population Characteristics.....	17
	The Economy.....	18
	Climate.....	19
	Topography.....	20
	Geology.....	21
	Soils.....	22
	Land Use.....	24
	Natural Resources.....	25
	Subwatersheds.....	27
	Surface Water.....	28
	Groundwater.....	32
	Unique Resources.....	33
	Water Use.....	34
	Water Management Plans.....	35
	Other Governmental Plans.....	36
IV.	Existing Conditions, Related Potential Problems, & Solution Alternatives.....	37
	Flood Damage Reduction.....	37
	Natural Resources.....	39
	Other Issues.....	40
V.	Watershed Goals, Objectives, & Desired Outcomes.....	41
	Flood Damage Reduction.....	41
	Natural Resource Enhancement.....	43
VI.	Conflict Between Existing Programs & Policies of Other Organizations.....	45
VII.	Policies & Programs of the JRWD.....	45
VIII.	Summary Statement of District Policy & Commitment.....	50
IX.	Appendix – Rules of the Joe River Watershed District.....	51

I. INTRODUCTION

The Board of Managers of the Joe River Watershed District would like to present this copy of its revised Overall Plan. This document is the culmination of several planning meetings spanning the course of over one year. Input was gathered from landowners, public officials, and others living within the District to produce this plan. A Citizen's Advisory Committee (CAC) and a Technical Advisory Committee (TAC) were convened to help create this plan. Its purpose is to set forth the water management goals and objectives that will guide the Joe River Watershed District (JRWD) Board of Managers for the next decade.

The JRWD was organized on January 31, 1958, the third watershed district established in the State of Minnesota. It has been governed by a 5 member Board of Managers since its inception. The first Watershed District Overall Plan was prescribed by the Minnesota Water Resources Board on December 16, 1958. This first Overall Plan was terminated on December 15, 1986 and on the same day the first Revised Overall Plan was prescribed. The first Revised Overall Plan was replaced by this current 2nd Revision of the Overall Plan.

Since its inception, the JRWD has conducted its business for the sole purpose of the management of water natural resources. The operations of the JRWD are governed by the Minnesota Statutes Chapter 103D. The "parent" State Agency is the Minnesota Board of Water & Soil Resources (BWSR), formerly known as the Minnesota Water Resources Board. As a part of its operations, the District has undertaken a flood control and water management project under the federal PL-566 program in cooperation with the Kittson Soil & Water Conservation District (SWCD) and the USDA Natural Resources Conservation Service (NRCS). Other programs of the District include a water quality monitoring program, culvert inventory, administration of the *Rules of the Joe River Watershed District*, and other data collection activities.

The Rules of the Joe River Watershed District were adopted on September 21, 1988 and became effective on November 16, 1988. These Rules were updated and revised on February 14, 2000. The Rules govern the manipulation of the water based natural resources of the District. Under these Rules, permits are required from the Board of Managers for such activities as ditching, diking, installation of culverts, road construction, water appropriation, and other activities that affect water management.

To date, the JRWD has focused its activities primarily on flood control. The land area of the District is not only affected by flooding on the main channel of the Joe River and its tributaries, but also by the flooding from the Red River of the North. The JRWD, being the furthest land area north and west in the State of Minnesota, is the last area to be affected by the Red River before it enters the Province of Manitoba, Canada. At this point the Red River is several miles wide during a major flood event.

Other problems or issues that are being addressed by the District are erosion control, water quality, wildlife, maintenance of projects, investigation of new projects, information and education, and data collection.

The JRWD has taxing authority and receives funding through levies and through grants and State and Federal programs. The District participates as a member of the Red River Watershed Management Board (RRWMB). Through this organization ½ of taxes collected under the construction fund are turned over to the RRWMB for the purpose of flood control on the Red River of the North. This was authorized by action of the Minnesota Legislature in 1972.

II. MISSION STATEMENT

Minnesota Statutes, Chapter 103D govern all aspects of Watershed districts within the State. It is the intent of the Board of Managers of the Joe river Watershed District to carry out the powers of Watershed Districts as set forth under this Statute. In doing so, the Board of Managers will pay particular attention to flood control, prevention of flood damages, water quality, water supply, erosion and sedimentation, wildlife, maintenance of existing projects, public health, and recreation.

The powers of a watershed district, as stated in Minnesota Statutes, Chapter 103D are as follows:
103D.201 Watershed district purposes.

Subdivision 1. General purposes. To conserve the natural resources of the state by land use planning, flood control, and other conservation projects by using sound scientific principles for the protection of the public health and welfare and the provident use of the natural resources, the establishment of watershed districts is authorized under this chapter.

Subd. 2. Specific purposes. A watershed district may be established for any of the following purposes:

- (1) to control or alleviate damage from flood waters;
- (2) to improve stream channels for drainage, navigation, and any other public purpose;
- (3) to reclaim or fill wet and overflowed land;
- (4) to provide a water supply for irrigation;
- (5) to regulate the flow of streams and conserve the streams' water;
- (6) to divert or change all or part of watercourses;
- (7) to provide or conserve water supply for domestic, industrial, recreational, agricultural, or other public use;
- (8) to provide for sanitation and public health, and regulate the use of streams, ditches, or watercourses to dispose of waste;
- (9) to repair, improve, relocate, modify, consolidate, and abandon all or part of drainage systems within a watershed district;
- (10) to control or alleviate soil erosion and siltation of watercourses or water basins;
- (11) to regulate improvements by riparian property owners of the beds, banks, and shores of lakes, streams, and wetlands for preservation and beneficial public use;
- (12) to provide for hydroelectric power generation;
- (13) to protect or enhance the water quality in watercourses or water basins; and
- (14) to provide for the protection of groundwater and regulate its use to preserve it for beneficial purposes.

It is the Joe River Watershed District's stated mission to:

Utilize and carry out the intended duties of Watershed Districts as directed under Minnesota Statute, Chapter 103D. In doing so, the Board of Managers will apply sound technical, scientific, and practical methods to carry out projects relating to flood control, water quality, water quantity, natural resources, and other water management issues. The District will cooperate and work with other local, state, and federal units of government, private organizations, and individuals to the best of its ability.

The JRWD has been effective in carrying out its intended goals in numerous ways. The District has integrated flood control projects, and has established water quality monitoring and culvert inventory projects in order to accomplish its goals and objectives. Further work and investigations are needed to improve upon past accomplishments.

III. DESCRIPTION OF THE DISTRICT

A. Watershed Setting

1. Location & Size

The land area of the Joe River Watershed district is located in the extreme northwest corner of Kittson County, which is the northwestern most county in the State of Minnesota. The District comprises 79,360 acres of land (124 square miles) in all or parts of the Townships of St. Vincent, Clow, Richardville, Hill, and Hampden. The JRWD is bordered to the west by the Red River of the North (also the MN - ND border), to the north by the Province of Manitoba, Canada, and to the east and south by the Two rivers Watershed District.

Beginning in the southwest corner of the District, the boundary line runs 9.5 miles north following the Red River. The boundary then travels 19 miles east along the Canadian border, where it turns south - south west for a distance of 9.5 miles. The border then travels westerly about 10 miles back to the point of origin. [See figure #1- Basemap]

Joe River Watershed District

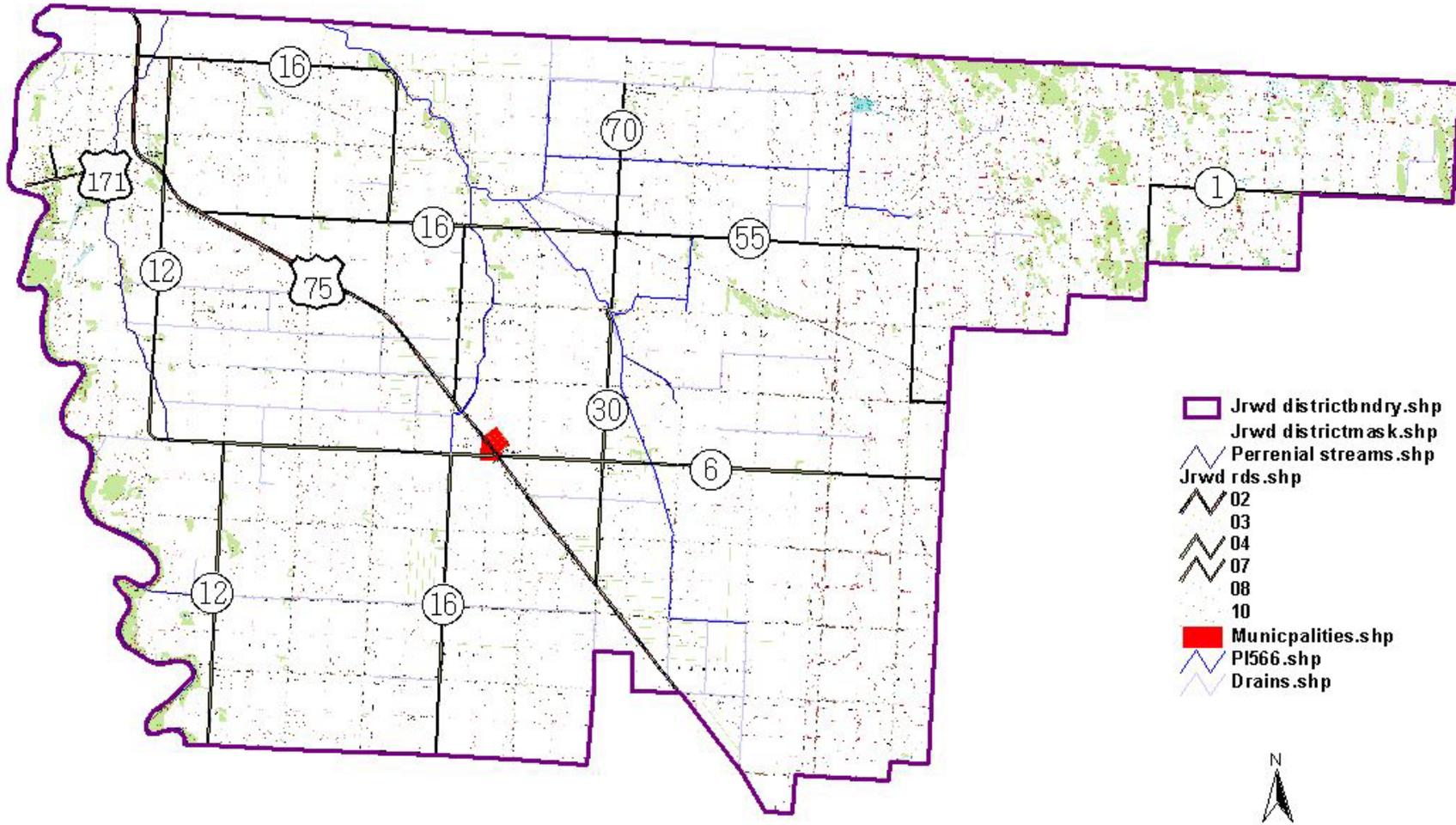


Figure 1. Basemap

2. Political Units within the District

Several International, Federal, State, and Local political units of government exist within the boundaries of the Joe River Watershed District. For the purposes of this plan, the entities pertinent to water management and their jurisdiction are listed below.

International – Regional

The International Joint Commission (IJC): www.ijc.org

Many rivers and some of the largest lakes in the world lie along, or flow across, the border between the United States and Canada. The International Joint Commission assists governments in finding solutions to problems in these waters.

The 1909 Boundary Waters Treaty established the Commission, which has six members. Three are appointed by the President of the United States, with the advice and approval of the Senate, and three are appointed by the Governor in Council of Canada, on the advice of the Prime Minister. The Commissioners must follow the Treaty as they try to prevent or resolve disputes. They must act impartially, in reviewing problems and deciding on issues, rather than representing the views of their respective governments.

The Commission has set up more than 20 boards, made up of experts from the United States and Canada, to help it carry out its responsibilities.

Canada and the United States created the International Joint Commission because they recognized that each country is affected by the other's actions in lake and river systems along the border. The two countries cooperate to manage these waters wisely and to protect them for the benefit of today's citizens and future generations.

These lakes and rivers are used for many purposes. Communities and industries may get fresh water from them, allow waste water to drain into them, or use hydroelectric power generated by the flow of rivers. Farms may use these waters for irrigation. Recreational boats and commercial ships also travel through the inland waters.

These differing needs conflict from time to time. In some cases the International Joint Commission plays the role of authorizing uses while protecting competing interests in accordance with rules set out by the two governments in the Treaty. For example, the Commission may be called upon to approve applications for dams or canals in these waters. If it approves a project, the Commission can set conditions limiting water levels and flows, for example to protect shore properties and wetlands and the interests of farmers, shippers and others. After the structure is built, the Commission may continue to play a role in how it is operated.

When asked by governments, the International Joint Commission investigates pollution problems in lakes and rivers along the Canada-United States border. When communities or industries pollute these waters, both countries may suffer. The governments of the United States and Canada can also ask the Commission to monitor situations and to recommend actions.

The United States and Canadian governments have asked the Commission to bring to their attention, or to investigate, air pollution problems in boundary regions. Air pollution can travel thousands of miles and settle on land or in water far away from the source of the pollution. When air pollutants fall on rivers or lakes they can affect the quality of the water.

In 1991, the two governments signed the Canada-United States Air Quality Agreement and set up an Air Quality Committee to report every two years on progress. The International Joint Commission has been asked to invite comments on the Committee's reports from individuals and groups and to prepare summaries of the views expressed.

The Commission holds public meetings every two years to discuss progress in cleaning up the Great Lakes. It also sponsors conferences, meetings and round table discussions where members of the public and representatives of community groups and other organizations can take part.

You can also have a say in how the rivers and lakes along the Canada-U.S. border are used. Whenever the Commission is asked to approve a dam or other structure in a river or a lake, it asks for views from the public. Commission Boards that monitor the operation of these structures hold regular public meetings. The International Joint Commission is looking for new ways to work with other levels of government and with individuals, research organizations, environmental organizations, unions and the business sector.

The International Joint Commission publishes reports and studies on the progress made and the challenges that remain in restoring and protecting our boundary waters. Its newsletter, *Focus on International Joint Commission Activities*, is published three times a year. Commission publications are free.

Red River Basin Commission: www.redriverbasincommission.org

The **Red River Basin Board**, **The International Coalition** and the **Red River Water Resources Council** have merged and are now known as the **Red River Basin Commission**. The mission of the Red River Basin Commission (RRBC) is: To create a comprehensive, integrated basin-wide vision; to build consensus and commitment to the vision; and to speak with a unified voice for the Red River Basin.

Services provided by the Board are far ranging and impressive. The Board is committed to the accomplishment of basin-wide objectives through international consensus. Conflict resolution, forums for grass-roots input, and advocacy for water management are key components of the service being provided by the Board. Project endorsement, coordination, facilitation, and advocacy by the Red River Basin Board gives strength to any initiatives in the Basin that benefit water quality, quantity and flood control.

The Board also serves as a credible information source for the general public in the Basin and can provide valuable feedback to project proponents.

Red River Watershed Management Board (RRWMB): www.rrwmb.org/default.htm

The Red River Watershed Management Board was created by legislative act in the 1976 session for the purpose of instituting, coordinating and financing projects to alleviate flooding and to assure beneficial use of water in the watershed of the Red River of the North and its tributaries. The scope of the RRWMB's jurisdiction and authority encompasses the area managed by the individual Watershed Districts which have membership on the Board.

There were eight individual Watershed Districts that make up the RRWMB at the time this document was written. These include the Bois De Sioux, Wild Rice, Sand Hill, Red

Lake, Middle-Snake-Tamarac River, Two Rivers, Joe River, and Roseau River Watershed Districts. These make up all of the organized Watershed Districts within the drainage area of the Red River on the Minnesota side of the basin, with the exception of the Buffalo Red River Watershed District.

Federal Agencies

U.S. Army Corps of Engineers (USACE): www.mvp.usace.army.mil/us

The U.S. Army Corps of Engineers is a major Army command with a broad set of missions and capabilities. The Corps is subdivided into divisions and then districts.

The St. Paul District covers an area of approximately 139,000 square miles. Our borders follow the edges of five river basins. This area includes most of Minnesota, the western half of Wisconsin, the northeastern half of North Dakota, and small portions of South Dakota and northern Iowa. The St. Paul District is one of six Corps districts that make up the Mississippi Valley Division. The St. Paul District is responsible for

- supporting inland navigation by operating 13 locks and dams and by maintaining the Nine-Foot Navigation Channel.
- helping local communities reduce damages caused by flooding.
- issuing permits for work in wetlands and navigable rivers.
- operating 16 reservoirs for flood damage reduction, recreation, fish and wildlife habitat and water supply.
- environmental restoration programs to improve fish and wildlife habitat.
- emergency response operations following natural disasters.
- recreation activities at Corps facilities including campgrounds, day-use areas, boat ramps and swimming beaches.

Fish & Wildlife Service (USFWS): <http://midwest.fws.gov/agassiz/>

The U.S. Fish and Wildlife Service is the principal federal agency responsible for conserving, protecting and enhancing fish, wildlife and plants and their habitats for the continuing benefit of the American people. The Service manages the 93-million-acre National Wildlife Refuge System which encompasses more than 520 national wildlife refuges, thousands of small wetlands and other special management areas nationwide. It also operates 66 national fish hatcheries, 64 fishery resource offices and 78 ecological services field stations. The agency enforces federal wildlife laws, administers the Endangered Species Act, manages migratory bird populations, restores nationally significant fisheries, conserves and restores wildlife habitat such as wetlands, and helps foreign governments with their conservation efforts. It also oversees the Federal Aid program that distributes hundreds of millions of dollars in excise taxes on fishing and hunting equipment to state fish and wildlife agencies.

The Great Lakes-Big Rivers Region of the U.S. Fish and Wildlife Service includes the states of Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin. The Region manages 1.2 million acres in refuge land and water on 46 national wildlife refuges and 9 wetland management districts, including more than 240,000 acres in waterfowl production areas. The region also manages 6 national fish hatcheries, 9 fisheries stations, 10 ecological services field offices, and 18 law enforcement field offices.

Region staff are committed to:

- Healthy fish and wildlife trust species (migratory birds, endangered species, interjurisdictional fish) populations, and habitats that support them
- Quality hunting, fishing, wildlife watching, and enjoyment on Service lands by the public
- Expanded partnerships, which offer innovative opportunities to enhance the nation's fish and wildlife resources
- A clearly-defined U.S. Fish and Wildlife Service organization dedicated toward employee excellence, reflecting the nation's rich diversity and providing quality service and decision-making closer to the resources in our trust.

USDA Natural Resources Conservation Service (NRCS): www.mn.nrcs.usda.gov

Mission Statement: The Natural Resources Conservation Service provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment.

Communities and local governments work with NRCS State Offices and local USDA Service Centers to help them protect their natural resources. NRCS also provides information on climatology, water management, watershed planning, and flood control. A coalition of state conservation agencies, The National Association of State Conservation Agencies (NASCA), provides guidance and operates state environmental, sediment control, and soil erosion prevention programs. The Resource Conservation and Development (RC&D) program focuses on improvement of quality of life achieved through natural resources conservation and community development. NRCS can provide grants for land conservation, water management, community development, and environmental needs in designated RC&D areas. The National Association of Resource Conservation and Development Councils (NARC&DC) advocates for local Resource Conservation and Development Councils nationwide. Local RC&D Councils are grass-roots community leaders working collectively in behalf of conservation and sustainable development.

Farmers, Ranchers, and other conservation-minded agricultural producers, rely on NRCS for assistance through conservation programs and technical information to help them protect the natural resources on their land. Your local USDA Service Center can help you plan and install the best conservation practices for your land. Ag producers also work with our partners, locally led Conservation Districts, who strive to increase voluntary conservation practices among farmers, ranchers and other land users.

USDA Farm Service Agency (FSA): www.fsa.usda.gov/MN/

Stabilizing farm income, helping farmers conserve land and water resources, providing credit to new or disadvantaged farmers and ranchers, and helping farm operations recover from the effects of disaster are the missions of the U.S. Department of Agriculture's Farm Service Agency (FSA).

FSA was set up when the Department was reorganized in 1994, incorporating programs from several agencies, including the Agricultural Stabilization and Conservation Service,

the Federal Crop Insurance Corporation (now a separate Risk Management Agency), and the Farmers Home Administration. Though its name has changed over the years, the Agency's relationship with farmers goes back to the 1930s. At that time, Congress set up a unique system under which Federal farm programs are administered locally. Farmers who are eligible to participate in these programs elect a three- to five-person county committee, which reviews county office operations and makes decisions on how to apply the programs. This grassroots approach gives farmers a much-needed say in how Federal actions affect their communities and their individual operations. After more than 60 years, it remains a cornerstone of FSA's efforts to preserve and promote American agriculture.

U.S. Environmental Protection Agency (EPA): www.epa.gov/ow/index.html

EPA's Strategic Plan

Goal 2: Clean and Safe Water

All Americans will have drinking water that is clean and safe to drink. Effective protection of America's rivers, lakes, wetlands, aquifers, and coastal and ocean waters will sustain fish, plants, and wildlife, as well as recreational, subsistence, and economic activities. Watersheds and their aquatic ecosystems will be restored and protected to improve human health, enhance water quality, reduce flooding, and provide habitat for wildlife.

- *Objective 1:* By 2005, protect human health so that 95% of the population served by community water systems will receive water that meets health-based drinking water standards, consumption of contaminated fish and shellfish will be reduced, and exposure to microbial and other forms of contamination in waters used for recreation will be reduced.
- *Objective 2:* By 2005, increase by 175 the number of watersheds where 80 percent or more of assessed waters meet water quality standards, including standards that support healthy aquatic communities. (The 1998 baseline is 501 watersheds out of a national total of 2,262.)
- *Objective 3:* By 2005, reduce pollutant loadings from key point and nonpoint sources by at least 11% from 1992 levels. Air deposition of key pollutants will be reduced to 1990 levels.

Goal 4: Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces, Ecosystems

Pollution prevention and risk management strategies aimed at cost-effectively eliminating, reducing, or minimizing emissions and contamination will result in cleaner and safer environments in which all Americans can reside, work and enjoy life. EPA will safeguard ecosystems and promote the health of natural communities that are integral to the quality of life in this nation.

- *Objective 6:* By 2005, EPA will assist all federally recognized tribes in assessing the condition of their environment, help in building the tribes' capacity to implement environmental management programs, and ensure that EPA is implementing programs in Indian Country where needed to address environmental issues.

Goal 6: Reduction of Global and Cross-border Environmental Risks

The United States will lead other nations in successful, multilateral efforts to reduce significant risks to human health and ecosystems from climate change, stratospheric ozone depletion, and other hazards of international concern.

- *Objective 1:* By 2005, reduce transboundary threats to human health and shared ecosystems in North America, including marine and Arctic environments, consistent with our bilateral and multilateral treaty obligations in these areas, as well as our trust responsibility to tribes.

Federal Emergency Management Agency (FEMA): www.fema.gov/reg-v/

The Federal Emergency Management Agency -- FEMA -- is an independent agency of the federal government, reporting to the President. Since its founding in 1979, FEMA's mission has been clear:

to reduce loss of life and property and protect our nation's critical infrastructure from all types of hazards through a comprehensive, risk-based, emergency management program of mitigation, preparedness, response and recovery.

U.S. Geological Survey (USGS): www.mn.water.usgs.gov

The U.S. Geological Survey has the principal responsibility within the Federal Government to provide the hydrologic information and understanding needed by others to achieve the best use and management of the Nation's water resources. To accomplish this mission, the Water Resources Division, in cooperation with State, local, and other Federal agencies,

- Systematically collects and analyzes data to evaluate the quantity, quality, and use of the Nation's water resources and provides results of these investigations to the public.
- Conducts water-resources appraisals describing the occurrence, availability, and physical, chemical, and biological characteristics of surface and ground water.
- Conducts basic and problem-oriented hydrologic and related research that aids in alleviating water resources problems and provides an understanding of hydrologic systems sufficient to predict their response to natural or human-caused stress.
- Coordinates the activities of Federal agencies in the acquisition of water resources data for streams, lakes, reservoirs, estuaries, and ground water.
- Provides scientific and technical assistance in hydrologic fields to other Federal, State, and local agencies, to licensees of the Federal Energy Regulatory Commission, and to international agencies on behalf of the Department of State.
- Administers the State Water Resources Research Institutes Program and the National Water Resources Research Grants Program.

State Agencies

Board of Water & Soil Resources (BWSR): www.bwsr.state.mn.us

The Minnesota Board of Water and Soil Resources is a state agency that assists local governments to manage and conserve their irreplaceable water and soil resources. The

Board of Water and Soil Resources accomplishes this mission by providing financial, technical, and administrative help to local governments throughout the state.

The board itself consists of 17 members. It meets 11 times per year to make policy decisions, debate grant agreements, and discuss the environmental issues affecting the Board of Water and Soil Resources and its local government clientele.

The Board of Water and Soil Resources' approximately 80 staff members are located in eight field offices throughout the state in St. Paul, Rochester, Marshall, New Ulm, Brainerd, Bemidji, Fergus Falls, and Duluth. The St. Paul field office is co-located with the central office.

Board members and staff use their knowledge of resource management and local and state government to accomplish the Board of Water and Soil Resources' mission through:

Policy development. Through legislative initiative, the Board of Water and Soil Resources seeks policies supportive of soil and water resource management and encourages implementation of those policies through local units of government.

Service to local units of government. The Board of Water and Soil Resources provides local governments with guidelines, training, and technical assistance in developing and administering resource management plans and programs.

Coordination. The Board of Water and Soil Resources uses its members and staff, local planning guidelines, and rules to foster communication among local units of government, state and federal government, citizens, and private interests.

Education. The Board of Water and Soil Resources promotes existing information and education materials and develops new material designed to help local units of government reach their desired audiences.

Funding. The Board of Water and Soil Resources provides state funding for water and soil management carried out by local government.

Department of Natural Resources (DNR): www.dnr.state.mn.us

The mission of the Minnesota Department of Natural Resources is to work with citizens to protect and manage the state's natural resources, to provide outdoor recreation opportunities, and to provide for commercial uses of natural resources in a way that creates a sustainable quality of life.

The DNR mission hinges on the concept of sustainability. To DNR, sustainability means protecting and restoring the natural environment while enhancing economic opportunity and community well-being. DNR endorsed ecosystem-based management as its method to achieve sustainability, and uses the concept of ecosystem integrity as a benchmark to measure progress toward sustainability goals. Sustainability addresses three related elements: the environment, the economy and the community. The goal is to maintain all three elements in a healthy state indefinitely.

Minnesota DNR Central Office is located at: 500 Lafayette Road, St. Paul, MN 55155; Phone: 651-296-6157. Toll free in Minnesota: 888-MINN DNR. Telecommunications device for the deaf (TDD): 651-296-5484. TDD toll-free in state: 800-657-3929.

Pollution Control Agency (MPCA): www.pca.state.mn.us

The Minnesota Pollution Control Agency's (MPCA) purpose is to protect Minnesota's

environment through monitoring environmental quality and enforcing environmental regulations.

In 1967, a growing awareness of the environment's fragile nature led the Minnesota Legislature to create a new state agency, one with a unique challenge and a demanding responsibility: to protect the air, waters and land of our great state. The goal? To make it possible for Minnesotans to use and enjoy the legacy of lakes and rivers, the forests, the plains and the natural resources, while keeping waters clean and air pure.

With that foresight (it would be three years before the first Earth Day and the establishment of the U.S. Environmental Protection Agency), the Minnesota Legislature gave authority to the Minnesota Pollution Control Agency (MPCA) to begin controlling pollution problems in the state.

The results of the MPCA's efforts are obvious: the air, land and water are cleaner now than they were 30 years ago, in spite of a growing population and rising industrialization. Through partnerships with the state legislature, the U.S. Environmental Protection Agency, local governments, industry, environmentalists, educators and the public, the MPCA has made Minnesota a national model of environmental protection.

Now, as then, the MPCA serves Minnesota by: examining the quality of the state's environment; developing rules that protect the public's health and the environment; and helping local government, industry and individuals meet their environmental responsibilities.

The MPCA Citizens' Board sets agency policy and direction and takes action on certain other significant or controversial issues. Under the authority of delegations from the MPCA Citizens' Board, the commissioner directs the day-to-day work of the agency's staff of approximately 750 people, located in eight offices throughout Minnesota.

The MPCA is comprised of five divisions. The Policy and Planning, Environmental Outcomes and Fiscal Services divisions provide support and services for the entire agency.

The Majors and Remediation Division runs regulatory programs that address air emissions, water discharges and hazardous waste generated by larger businesses and municipalities in Minnesota. Most cleanup programs are also administered through this division.

The Regional Environmental Management Division administers programs for smaller, more dispersed sources of pollution. Many of this division's programs focus on water and solid waste.

The MPCA has offices in eight cities across the state of Minnesota.

To contact MPCA by phone, call 651-296-6300 in the Twin Cities area, or toll free at 800-657-3864 if calling from greater Minnesota.

To report spills or environmental emergencies, call the State Duty Officer at 651-649-5451 or toll free 800-422-0798. The MPCA's TTY number is 651-282-5332. The State Duty Officer's TTY number is 651-297-5353, or toll free 800-627-3529.

Department of Agriculture (MDA): www.mda.state.mn.us

The MDA's mission is to work toward a diverse ag industry that is profitable as well as environmentally sound; to protect the public health safety regarding food and ag

products; and to ensure orderly commerce in agricultural and food products.

We are located at 90 West Plato Blvd., St. Paul, MN 55107651-297-2200

Environmental Quality Board (EQB): www.mnplan.state.mn.us/eqb

The Environmental Quality Board at Minnesota Planning draws together five citizens and the heads of 10 state agencies that play a vital role in Minnesota's environment and development. The board develops policy, creates long-range plans and reviews proposed projects that would significantly influence Minnesota's environment.

The mission of the Environmental Quality Board is to lead Minnesota environmental policy by responding to key issues, providing appropriate review and coordination, serving as a public forum and developing long-range strategies to enhance Minnesota's environmental quality. The Environmental Quality Board consists of 10 state agency commissioners or directors and five citizen members. It was established by the Minnesota Legislature in 1973(Minnesota Statutes 116C) to:

- Ensure compliance with state environmental policy
- Manage the environmental review process
- Advise the Governor and the Legislature
- Coordinate environmental agencies and programs
- Study environmental issues
- Convene environmental congresses

Department of Transportation (MN DOT): www.dot.state.mn.us

MN/DOT, or the Minnesota Department of Transportation, was created in 1976 by the Legislature to assume the activities of the former Departments of Aeronautics and of Highways and the transportation- related sections of the State Planning Agency and of the Public Service Department. Today MN/DOT develops and implements policies, plans and programs for aeronautics, highways, motor carriers, ports, public transit and railroads.

In creating the Department of Transportation in 1976, the Legislature determined that MN/DOT would be the principal agency to develop, implement, administer, consolidate and coordinate state transportation policies, plans and programs (Minn. Stat. Ch. 174).

MN/DOT makes special efforts to consider the social, economic and environmental effects of its decisions and aggressively promotes the efficient use of energy resources for transportation purposes. It also maintains close working relationships with the many public and private individuals, groups and associations involved in transportation.

Geological Survey (MGS): www.geo.umn.edu/mgs/

The Minnesota Geological Survey is a unit of the Newton Horace Winchell School of Earth Sciences in the University of Minnesota. The Survey is the University outreach center for the science and technology of earth resources in Minnesota. The Survey conducts basic and applied earth science research, conveys that information to the public through publications and service activities, and promotes earth science education. Minnesota is its exclusive focus.

Local Agencies

www.visitnwminnesota.com/kittson.htm

There are several local agencies that have some sort of mission pertinent to water resources. The above website is a good resource to utilize in learning about the local political subdivisions within the Joe River Watershed District. Listed below are the major units that relate to the activities of the JRWD.

Kittson County Board of Commissioners

Kittson County Soil & Water Conservation District

North Kittson Rural Water

Kittson County Department of Emergency Management

Kittson County Highway Department

City of Humboldt

City of St. Vincent

Townships of St. Vincent, Clow, Richardville, Hill, and Hampden

3. Population Characteristics

Statistics from the U.S. Census bureau indicate that the population of the JRWD and Kittson county has steadily declined since the 1950's. The table below shows the current population trends within selected governmental subdivisions in the Joe River Watershed District.

Kittson County Demographic Information

Kittson County

Population

Source: US Census of Population and MN Demographers
Office Estimates

	1950 Pop. Census	1960 Pop. Census	1970 Pop. Census	1980 Pop. Census	1990 Pop. Census	2000 Pop. Census
Kittson County	9,649	8,343	6,852	6,672	5,767	5,285
Clow township	174	124	104	49	33	37
Hampden twp	117	111	84	64	56	51
Hill township	131	125	63	41	32	18
Humboldt city	143	169	112	111	74	61
Richardville twp	246	196	162	171	126	110
St. Vincent city	272	217	177	141	116	117
St. Vincent twp	338	307	192	127	118	74

4. The Economy

A. Agriculture

Ninety percent of the JRWD is devoted to farming, and farms are generally large with small grains and sugar beets the most common crops. Other crops grown include barley, beans, sunflowers, grass seeds, legumes, canola, and some corn. Land values range from \$225 to \$685 per acre within the District, according to statistics from the Kittson County Assessor's office.

In addition to crops, several beef cattle operations exist, generally in the eastern portion of the District. These operations consist of pasture and hay land. Cattle are let out to pasture during the spring, summer, & fall months and kept in yards during the

winter months.

The nearest agricultural processing facility is the American Crystal Sugar plant located in Drayton, ND. Sugar beets are placed in piles at a piling facility located near Humboldt, and later trucked to the plant. Other crops are shipped out of the area to processing plants via railroad or over the road semi truck. One grain elevator is located in the City of Humboldt and one is also located in the City of Hallock.

B. Industry

Industry contributes in part to the economy of the area. Motor Coach Industries, a bus manufacturing plant located just outside of the District in Pembina, North Dakota, employs 500 to 600 people. This is vital to the population of the small cities of Humboldt and St. Vincent.

Utility companies are another important source of industry. Two natural gas pipelines cross the District and have pumping facilities located near the Canadian border. Great Lakes Gas Transmission's facility is within ½ mile of the international border, located 7 miles east of the US Customs station at Noyes. Excel Energy's station is located along Kittson County State Aid Highway #6 one mile east of the City of Humboldt.

Other industry within the District includes several power line transmissions (PKM & Otter Tail) and telephone transmissions. Ag related businesses are also predominant. Cenex Land O' Lakes operates a bulk fertilizer plant in Humboldt. A service garage and bulk oil station is located between Humboldt and Noyes along US Highway #75. At the Canadian border in Noyes is a port of entry with US Customs. A number of agricultural chemical crop spraying operations serve farmers within the District.

Business and industry has seen a steady decline in the past 10 years with the loss of the Humboldt school, which combined with Hallock and Kennedy schools, the loss of a café in Humboldt, and the closing of the brokerage located at Noyes.

C. Transportation

Transportation within the District consists mainly of a network of highways and rail roads. There are no municipal or regional airports. US highway #75 runs north - south through the middle of the District, and US highway 59 is located 1 mile east of the eastern side of the District for a distance of 1.5 miles north - south. Minnesota State highway #171 connects US highway 75 to the City of St. Vincent and is a major route to cross the Red River into Pembina, ND. A major network of county state aid highways, county roads, and township roads also connect various points within the District (see Figure 1). These range from bituminous to gravel to dirt trails.

Two railroads have depots at Noyes - the Soo Line and Burlington Northern Sante Fe. Burlington's line runs parallel to US highway #75 and the Soo Line runs diagonally NW -SE across the north eastern portion of the District.

B. Physical Features

1. Climate

Kittson County is in the extreme northwest corner of Minnesota, in the heart of the rich Red River Valley. The county, near the center of the North American continent, is well within the great interior climate region, and has a very strong continental climate. Outside of mountain regions, the northwest portion of Kittson County is the coldest location in the United States. Winters are very cold, but summers are mild and pleasant. Daily or weekly extremes of temperature may be great in any season. In Kittson County, the winter temperature averages 4.8° Fahrenheit, and the average daily low in winter is -4.9° F). The lowest temperature, 2 years out of 10, is -38° F. The absolutely lowest temperature observed during the period of record is -51° F, at Hallock on February 11,

1914. In summer, the temperature averages 66.7° F, and the average daily maximum is 78.9° F. The highest summer temperature, 2 years out of 10, is 100° F. The absolutely highest temperature observed was 109° F at Hallock on July 11, 1936.

Of the total annual precipitation of 18.5 inches, 16.7 inches falls during April through September. Thus, only 1.3 inches falls during the colder months. This 1.3 inches is measured in snow water equivalent, not inches of snowfall.

The heaviest one-day rainfall of record was 5.5 inches at Hallock on September 4, 1900. The average number of thunderstorm days per year is 18 days, the greatest number of which, 5 days, come in August. Average seasonal snowfall is 32 inches, and the greatest depth on record is 42 inches. The average number of days during the year with one inch or more of snow on the ground is 126 days. January has the most snow, with 6.6 inches, followed by March with 6 inches.

Relative humidity is at its annual minimum during May at mid-afternoon, when it averages around 45%. It is at its maximum at dawn in the summer and fall, when it averages nearly 85%. November is the most humid month, averaging 77%, and May is the least humid at 60%. The prevailing wind is out of the south - southwest. However, the wind blows from the southeast quadrant slightly over 25% of the time, and from the northwest quadrant on-third of the time.

The average annual windspeed is 13 miles per hour. April is the windiest month when the average windspeed is 15 miles per hour. July is the least windy when it is 11 miles per hour. Strongest winds are usually from the northwest quadrant, the lightest from the northeast quadrant. Southwesterly winds are also usually light with the exception of the summer months. Kittson County is subject to daylong windstorms of gale velocity that may result in extensive blowing dust, and very occasionally may lower visibility to a mile or less. Dust limits visibility to 6 miles or less 0.6% of the time over the year as a whole, which is not a small amount of time relative to most of the United States and most other parts of Minnesota. In April, the figure rises to 4% of the time. Dust reaches minimum impact in August and again in December. In summer, high winds are generally brief, and limited to occasional high velocities (over 50 mph) from the thunderstorm activity. Dust occasionally blows prior to the beginning of rain from such a storm. Such winds produce damage of a localized nature, in a spotty pattern. Hail falls at times in the warmer part of the year, but such storms occur in an irregular pattern and affect relatively small areas.

Sunshine is a vital part of the Kittson County climate, since it is far north. At the summer solstice, day length is 16 hours, 20 minutes, while at the winter solstice, it is 8 hours, 6 minutes. Possible sunshine varies from 70% in July (when the days are also long) to 38% in November (when the days are also short). On a seasonal basis, winter averages 59%, spring 58%, summer 63%, and autumn 47%.

2. Topography

The District and the watershed is within the area once covered by prehistoric glacial Lake Agassiz. The land in the District is very flat. A small portion of the land in the northeast corner from the Canadian border south for 4 to 5 miles has slightly over a 2% slope to the west and northwest. The balance of the watershed from the Canadian border to south of the City of Humboldt has a 0-1% slope to the northwest. Along the Red River the slope is to the northwest. At the Canadian border the elevation of the Red River is 785 feet, the elevation in Section 12 of Hill Township is 798 feet, and at the eastern boundary in Richardville Township the elevation is 953 feet. [SEE FIGURE #2-Elevation Map]

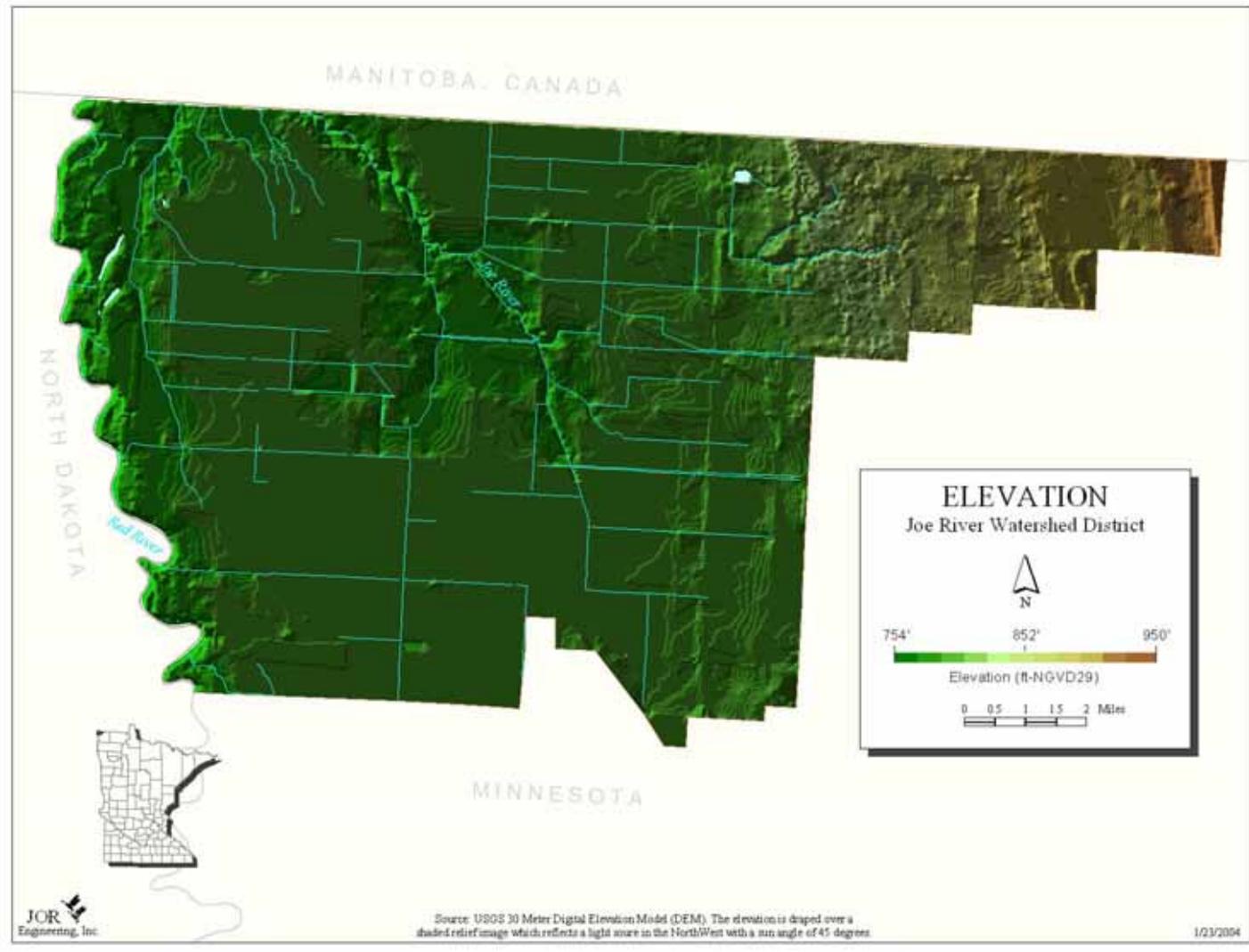


Figure 2. Elevation

3. Geology

Glacial Lake Agassiz covered the entire Red River Valley with its approximate center where the Red River of the North now flows (See Figure #3). This glacial lake receded by stages, each of which is represented by sandy beach deposits and shallow near-shore sands. Some of these sandy deposits occur north and east of the City of Orleans in Kittson County. The fine and textured silt and clay material stirred up by wave action on Lake Agassiz were carried to quiet deep water areas west of the City of Orleans and deposited out as lake clays.

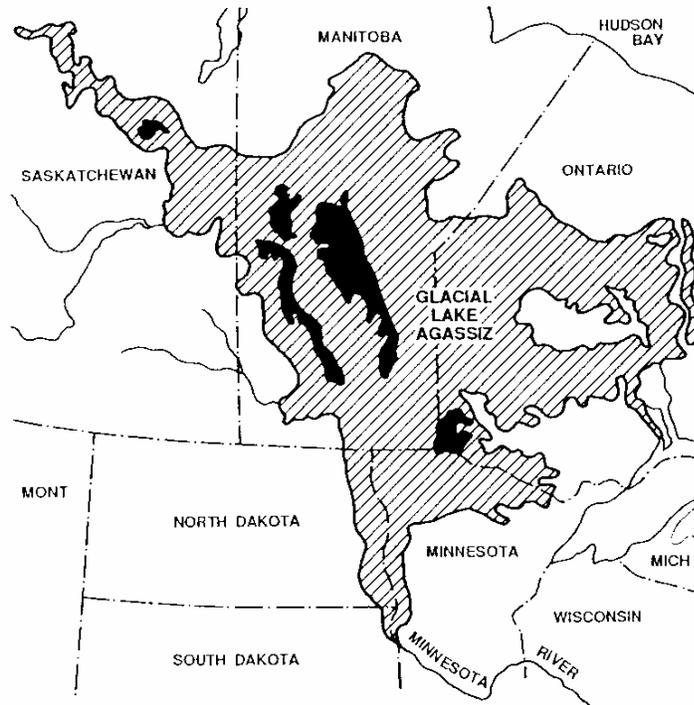


Figure 3. Glacial Lake Agassiz

Geomorphology of the District is dominated by classification known as the Lake Agassiz Level Lacustrine zone. This covers the entire District except in the extreme north east corner of the District and areas adjacent to the Red River. In the north east areas, several small beach ridges occur, and are classified as Lake Agassiz rolling Lacustrine. Along the Red River the geomorphological classification is Fluvial Level Alluvium. [See Figure #4-Geomorphology]

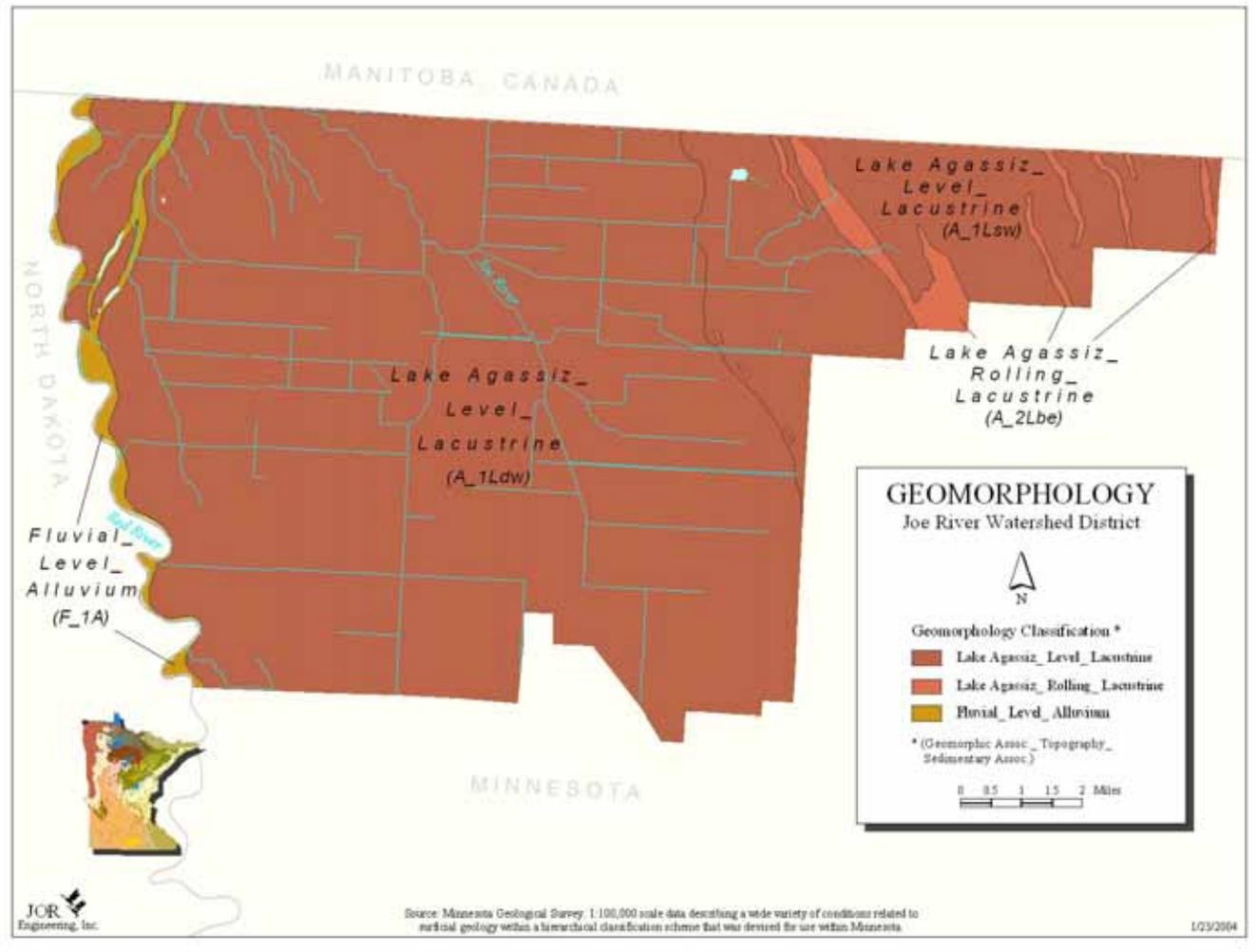


Figure 4. Geomorphology

The lake clays deposited by silts settling to the bottom of Lake Agassiz covered the westerly two - thirds of the District’s land surface. They are about 60 feet thick resting upon 125 feet of glacial material. This material rests upon a thin layer of Cretaceous shale. The shale is underlain by 460 feet of early Paleozoic moraine sediment composed of limestone, shale, and sandstone. At about 645 feet below the surface lies granite bedrock. The sandstone layers contain salt water.

4. Soils

In general, the soils in the District are stratified from east to west. In the far east, soils are sandy in nature. A very thin and narrow band of coarse – loamy soil is present in the beach ridge area, and to the west of that is a large area of very fine soils encompassing about 1/3 of the District and occurring in the east-central region of the District. An area of fine – silty soils interspersed with fine textured soils occurs in the west central region of the District, and the area near the Red River is classified as very fine. [See Figure #5- Soil Texture]

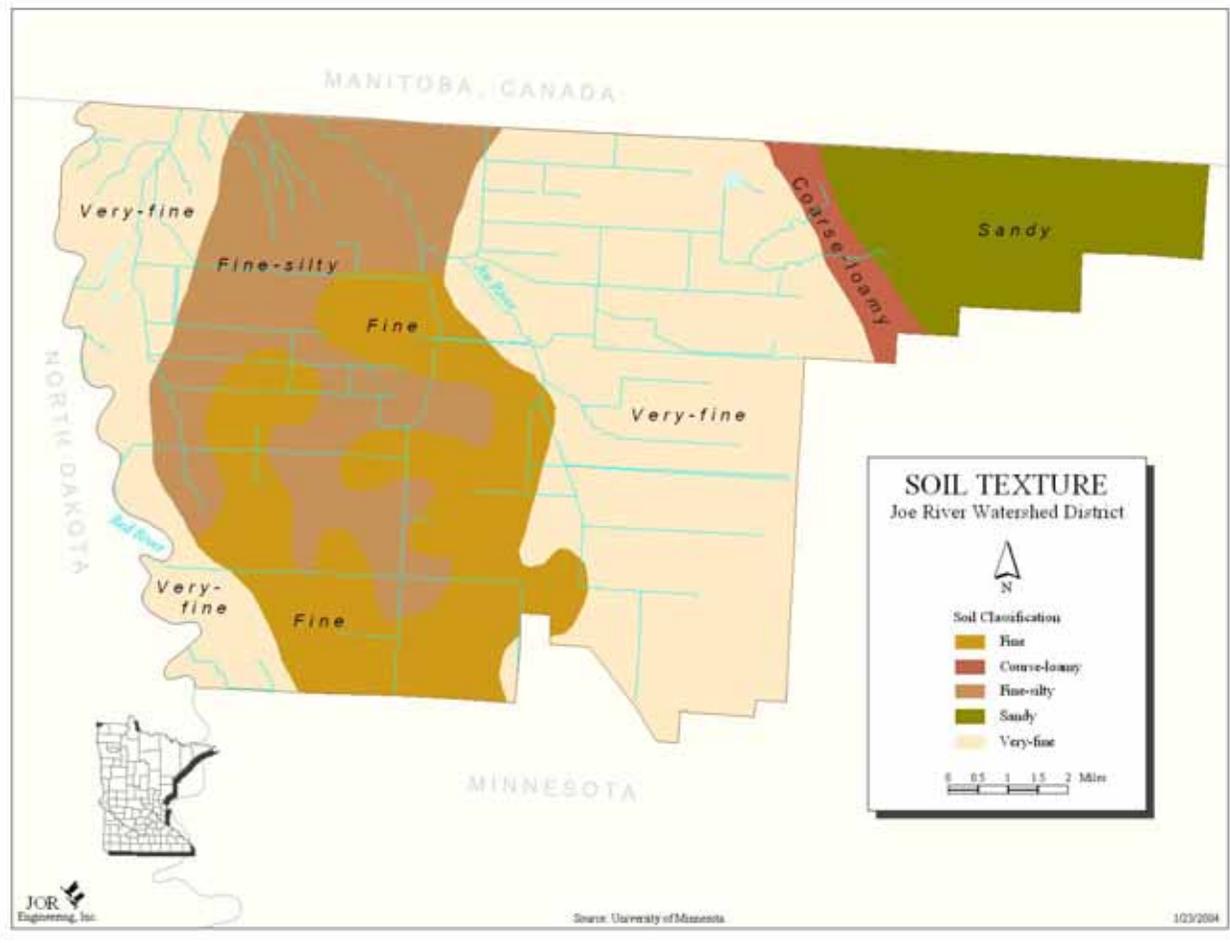


Figure 5. Soil Texture

The majority of soils were formed mainly in Lacustrine silts and clays. The soils association found are Northcote, Bearden-Fargo, and Hegne Northcote associations. These soils associations are nearly level, poorly drained, very fine to medium texture soils. These soils are inherently fertile, permeability is high and available water capacity is generally high. A large area of the JRWD north of a line from Humboldt to Orleans is classified as saline.

A small area of soils formed mainly in loamy till are found in the eastern one-third of the District next to the Canadian border. Percy-Fram and Mavie-foxhome are the two soils associations. Fertility is medium, water holding capacity is low to moderate, and stones and boulders influence use and management.

To the east of these soils, in the extreme eastern portion of the District, are located the Rockwell-Grimstad association, which is a soil that was formed in Lacustrine loams and sands. This is a nearly level, poorly drained and moderately well drained, medium textured soil formed in Lacustrine loamy and sandy material over lake-modified loamy glacial till.

In 1979 a Soil Survey of Kittson County was published, prepared by the U.S. Department of Agriculture, Soil Conservation Service (now NRCS), in cooperation with the Minnesota Agricultural Experiment Station. This publication is the best known reference relating to soils within the JRWD, and copies of the document are on file at the NRCS

office located in the Kittson County Courthouse in Hallock, Minnesota.

The information in the soil survey can be utilized in selecting sites for roads, ponds, building and other structures and for judging the suitability of tracts of land for farming. In addition, foresters, wildlife managers, and planners can utilize information contained within the soil survey

5. Land Use / Public & Private Land Ownership

The present land use for the watershed according to 1989 inventory information is 89% cultivated, 4.73% open shrub grassland, 3.51% deciduous forest, 0.51% Farmstead & Rural Residences, 0.42% water, 0.27% wetlands, 0.26% urban and industrial, 0.28% transitional or idle cultivated land, 0.20% other rural developments, and 0.16% closed shrub grasslands.

Ownership of the land is as follows. The City of St. Vincent comprises 80 acres as does the City of Humboldt. The State of Minnesota - DNR manages 80 acres as part of the Joe River Wildlife Management Area and 80 acres as tax forfeited land. Gas transmission utility companies own approximately 75 acres, and the remainder is in private ownership, mostly as farming operations or residential. [SEE FIGURE #6-Land Use Map]

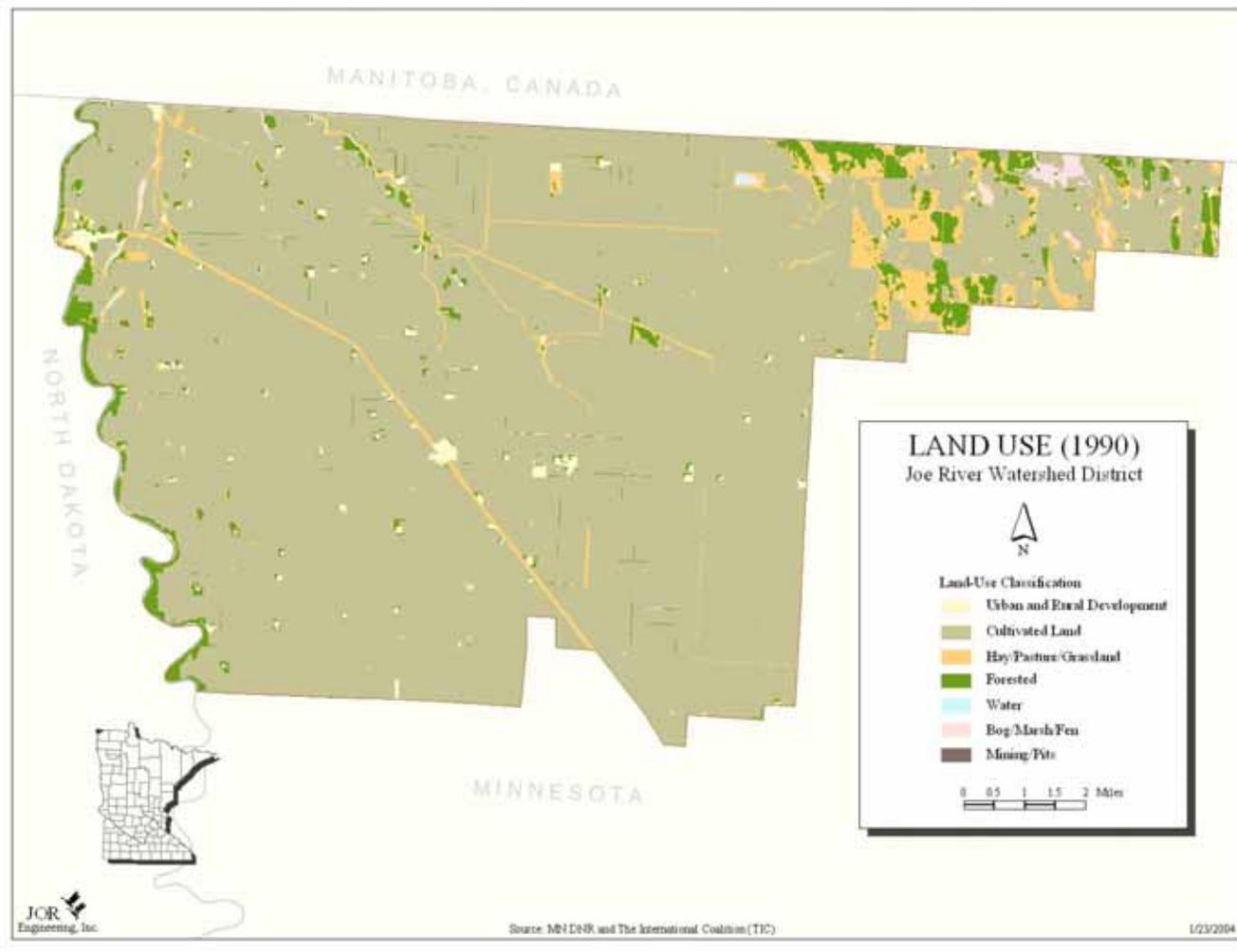


Figure 6. Land Use

6. Natural Resources

A review of the above mentioned land uses within the District gives a good picture of how the natural resources of the District are being used. The broad category of “Natural Resources” includes soils, lakes & rivers, the air, forests, wildlife, minerals, and all of the processes that affect them. The resources of the District are predominantly managed toward agriculture, as seen by the 89% land use in cropland. The quality of natural resources that are present is dependent largely on the point of view of the reader.

The quality of each of the resources listed above in the JRWD are in different levels of integrity relative to the resource. For instance, the quality of the water in the rivers and streams is generally good. However, all of the watercourses within the Joe River (with the exception of the Red River) are intermittent in nature, drying up in the late summer months. This obviously has an impact on the value and occurrence of fish in the streams. Fish can most likely migrate from the Red River into the upper reaches of the JRWD during the spring to spawn, but there is a lack of information as to how many make it back to the Red River as adults. This most likely is dependent on the type of rainfall and snowmelt runoff that occurs and can change from year to year. Most years some percentage of young of the year fish are probably trapped in small pools and either die from suffocation due to summer kills resulting in lack of oxygen or become prey for great blue heron or other types of wading birds. The fishery resource, then can be described as

poor from man's point of view but as good from a heron's point of view!

Wildlife corridors are present and maintained in good shape along the Joe River and the branches and laterals of the PL 566 project. Grass buffer strips were established as a part of the project and are maintained by the JRWD. These buffer strips provide excellent habitat and travel corridors for whitetail deer, fox, raccoon, garter snakes, and many other species.

A forestry resource is present in the eastern most reaches of the JRWD in the areas upstream of the Joe River Wildlife Management area. This is a beach ridge area and as such is not as conducive to tilled cropland. Therefore, about 3.5% of the land area of the District is deciduous forest, and most of it is located in this area. Over the past 10 years, there has been an interest in Kittson County of harvesting and replanting this renewable resource. Almost all of the forest land of the District, excluding about 80 acres, is in private ownership.

The same ridge area is home to most of the remaining wetland acres, open and closed shrub grassland, and pasture and hayland. There is potential in this area to manage the land to enhance these areas and promote the natural resource goals and initiatives that are named in the 1998 Red River Basin Flood Damage Reduction Work Group Agreement.

By and large the greatest natural resource of the JRWD is the very rich soils that are conducive to growing crops such as wheat, barley, sugar beets, canola, sunflowers, and other types of small grains. This natural resource has driven the local economy and the economy of the Red River Valley since settlers first entered the area. It is responsible for the major industry of the area which provides careers and income for the majority of the area's residents.

Land use changes have altered the quality and quantity of natural resources in the watershed. Agricultural lands are common in the western three-fourths of the watershed while some large blocks of grassland and woodland habitats are common in the northern and eastern portions. A beach ridge runs through the eastern one-third and some gravel pits are present. Some wetland areas remain but most areas have been drained. An overall lack of large habitat blocks and a lack of connectivity between existing grasslands, wetlands, brushlands, and woodlands limit the function of the terrestrial habitats in the Joe River Watershed District.

Many of the natural waterways in the watershed have been converted to ditches. The remaining natural waterways and the ditches provide some fish and aquatic habitat but most of these are probably limited to seasonal use. Small waterways here are likely to provide spawning and rearing habitat for northern pike and a limited variety of other species. Flashy flows, susceptibility to extended low flow or no flow periods, unstable channels, and a lack of riparian habitat limit the function of these aquatic resources.

In addition to these general habitat features, the Minnesota DNR has documented several natural heritage elements. The number and type of these elements can be obtained by contacting the DNR. These heritage elements, found on public and private land, include rare and endangered birds, mammals, insects, and unique habitats (DNR heritage database). No known state designated "outstanding resource value waters" or "critical vegetated habitat" as defined in state statutes have been found in this sub-watershed.

C. Water Resources

1. Major Sub Watersheds of the District

The JRWD is made up of 15 separate subwatershed areas. These are identified by the DNR and have been named by assigning a hydrologic unit code to each. Most are tributary to the Joe River, with a few exceptions that either drain directly to the Red River or enter an unnamed coulee near the St. Vincent area. These subwatershed range in size from a few hundred acres to about 25 square miles. [See Figure #7-Subwatersheds].

Joe River WD Subwatersheds

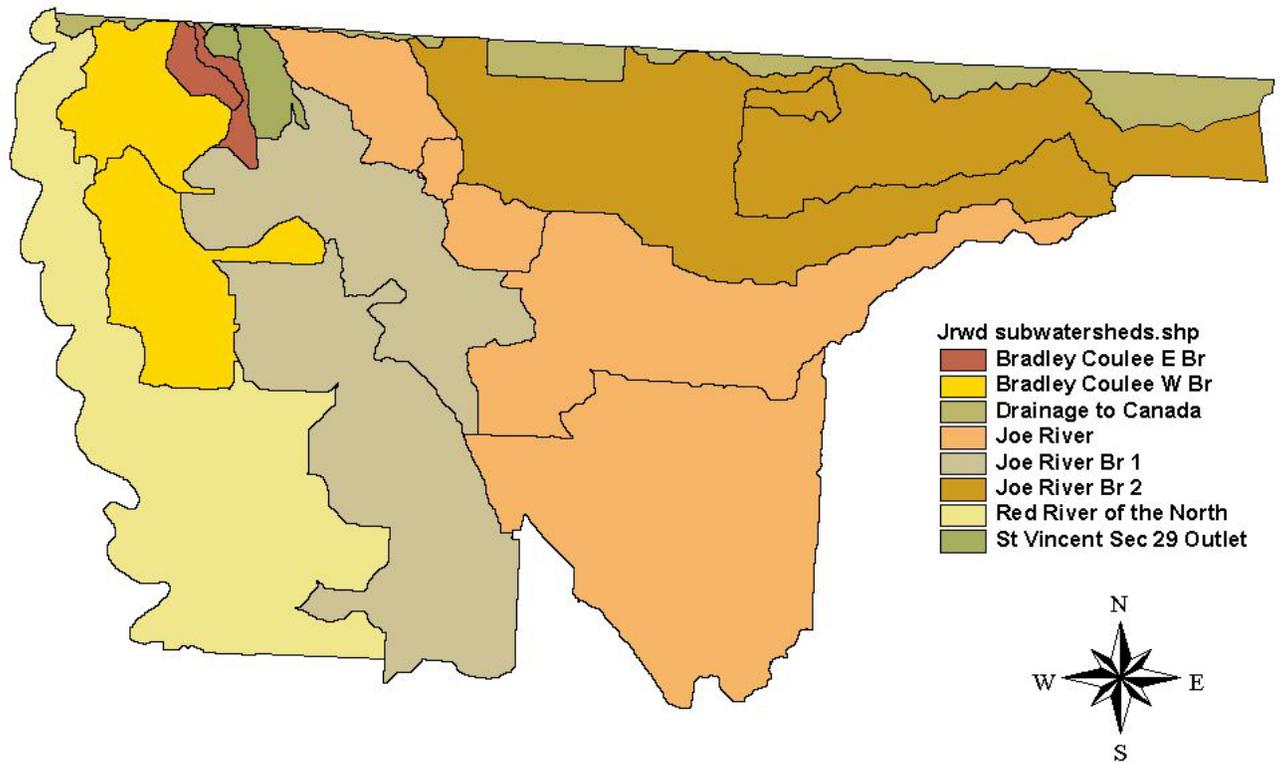


Figure #7

2. Surface Water

A. Rivers & Natural Streams

Joe River:

The Joe River serves as the principle water course within the District and is for which the District is named. The Joe River arises near the southwestern edge of Clow Township, where several small coulees and field drains come together. It then flows northwesterly through sections 30, 19, & 18 of Clow township and sections 12 and 2 of St. Vincent Township and sections 28 and 34 of St. Vincent fraction. It crosses the Canadian border in the NW 1/4 section 28 St. Vincent fraction about 3 ½ miles east of the Red River of the North. It continues northwesterly through Manitoba, Canada and outlets in the Red River at a point 3 ½ miles north of the U.S. - Canadian border.

Salt Coulee:

Salt Coulee drains the central portion of the District. Kittson County Ditch #12 arises near the southern border of the District in the NE corner of Hill Township and flows northward to outlet into Salt Coulee near the City of Humboldt. It then flows straight north and outlets into the main channel Joe River about 2 miles south of the Canadian border. Salt Coulee is also known as Branch 1 of the Joe River PL 566 Project.

Unnamed Coulees:

Several coulee systems are present within the JRWD. These are located 1) in the eastern portion of Clow Township upstream of the Joe River Wildlife Management Area, 2) in the extreme western edge of the District where a coulee channel runs parallel to and 2 miles east of the Red River of the North for about 8 miles, out letting into Canada, and 3) in the NW corner of the District several small systems collectively drain about 7 square miles and outlet directly to Canada. All of these systems are intermittent, only carrying water during spring runoff and summer rains.

Red River:

The Red River serves as the western boundary of the JRWD and is the system that serves as the outlet for the Joe River. The Red River begins about 230 miles south of the U.S. - Canada border and flows through Winnipeg, Manitoba and outlets into Lake Winnipeg. The last 10 miles of the river on the U.S. side serves as the western border for the JRWD. The Red River has a major influence upon the JRWD, especially during times of spring flooding.

B. Lakes

The JRWD is home to two lakes, which actually are small wetland systems with little open water. These water bodies are known as Lake Stella and Lake Cameron, and are both located in the NW corner of the District. Both are type 3-4 wetlands and are characterized by some open water surrounded by cattails. Both are flow through systems and provide little recreational opportunities.

C. Wetlands; Natural - Altered - Drained

0.27% of the land area of the District is made up of wetlands. The U.S. Fish & Wildlife Service's National Wetlands Inventory (NWI) lists the location of wetlands

within the District and identifies what type they are classified as and whether they have been drained or altered. This map is available through the District’s geographic information system upon request. The U.S. Dept. of Agriculture - Natural Resources Conservation Service also has a listing of wetlands located on agricultural land.

Generally speaking, a majority of the wetlands in the District have been drained since the early 1900's. This was done for the purpose of agricultural production and is evidenced by the numerous drainage ditches within the District. The drainage of wetlands has enabled the use of the land to grow crops and has fueled the local economy in the area. The NE corner of the District is an area with lower grade farm land and therefore most wetlands in this area remain either in tact or in a partially drained state.

D. Artificial Drainage Systems

Three types of artificial drainage systems are present within the JRWD. These include 1) County drainage ditches, 2) the Joe River PL 566 Flood Control Project, and 3) Agricultural Drains - Private Systems - Group Ditches - Road Ditches.

1. Kittson County Drainage Ditches

Table #1 below details each county ditch system within the District.

DITCH	LOCATION	JURISDICTION
Kittson Co. Ditch #12	Sect. 2 & 11 T162 R50; Sect. 26 & 35 T163 R50	Kittson County
Kittson Co. Ditch #17	Sect. 5 T163 R49	Kittson County
Kittson Co. Ditch #20	Sect. 31, 32, 33 T164 R49; Sect. 36 T164 R50	Kittson County
Kittson Co. Ditch #22	Sect. 23, 26, & 36 T163 R49; Sect. 2 & 11 T162 R49	Kittson County
Kittson Co. Ditch #28	Sections 20, 21, 22, 30 T163 R50, Sect. 25 T163, R51	Kittson County
Kittson Co. Ditch #29	Sect. 33,34,35,36 T163 R50; Sect 5 &6 T162 R50; Sect 1 T162 R51	Kittson County
Kittson Co. Ditch #30	Sect. 5 & 6 T163 R49; Sect. 1 T163 R50	Kittson County

Table 1. Kittson County Ditch Systems

2. PL - 566 Project

In 1963 the JRWD partnered with the Natural Resources Conservation Service (formerly Soil Conservation Service) and the Kittson Soil & Water Conservation District to prepare a work plan for flood control under the Federal Public Law 566 Program. Installation of the structures and channel work relative to this plan took place between 1968 and 1971.

The project consisted of the outlet, 11.7 miles of main channel improvement, Branch #1 consisting of 3.9 miles, Branch #2 consisting of 6 miles (also lots #1 & #2 comprising 0.81 miles), Branch #3 and interceptor comprising 2.17 miles, and Branch #4 comprising 0.81 miles.

The improved system consists of 26.47 miles, which has done an excellent job of removing excess water within the Joe River Watershed District. [See Figure #8-Joe River WD Watercourses].

The channel improvement serves the purposes of flood prevention and improvement of water management off the land. The channels were designed to contain a 10 year frequency storm.

Joe River WD Watercourses

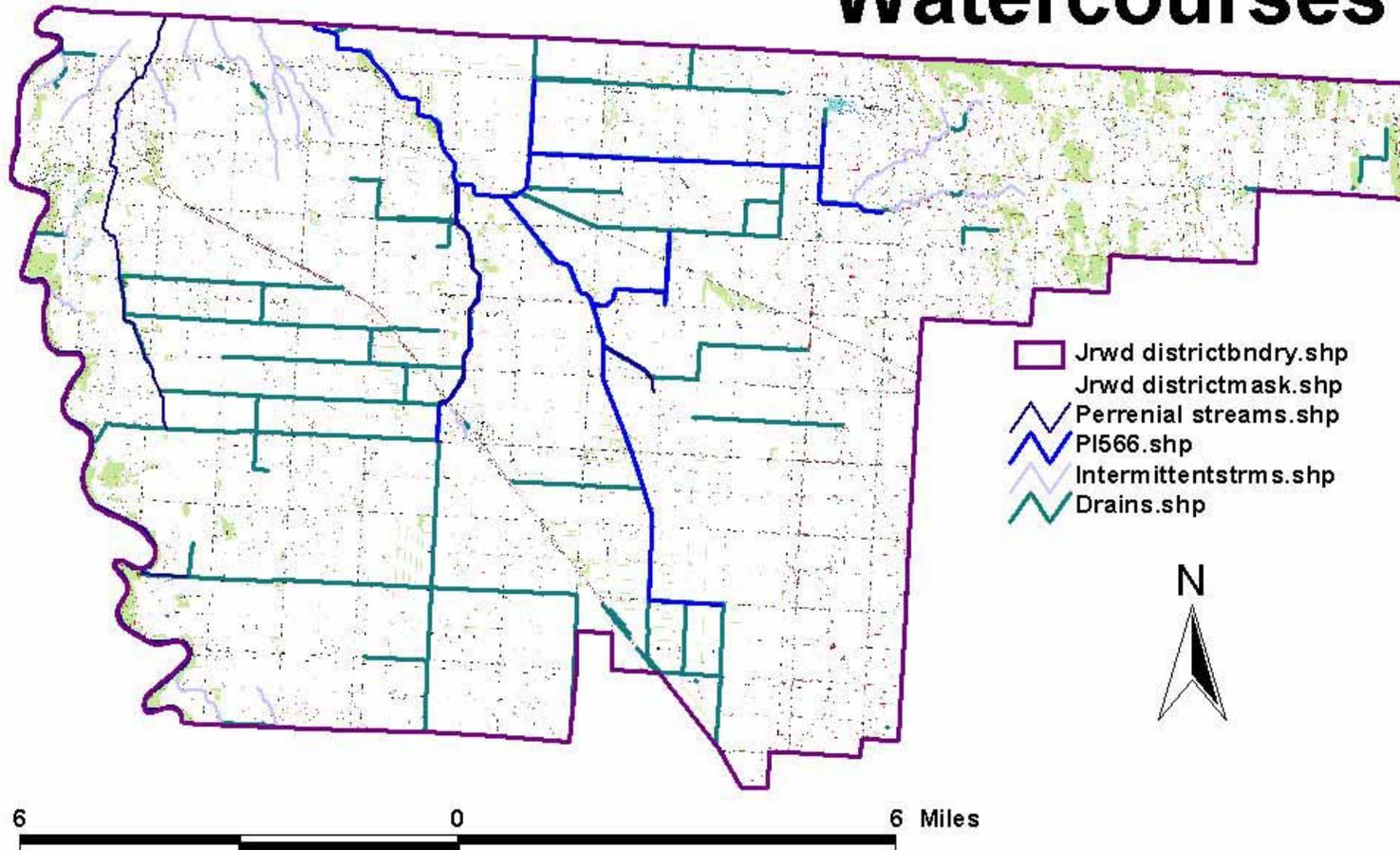


Figure 8. Joe River WD Watercourses

The wildlife structure was also installed and the stored water has resulted in a shallow lake. The structure is located in the north one half of the NW 1/4 section 34 Township 164 North, Range 49 West and occupies about 49 acres. Its outlet is at the southwest corner of the impoundment.

The construction of the project was performed by the Platte Valley Construction Company of Nebraska at a cost of \$350,000. The contract called for 26.26 miles of multiple purpose channel improvements with side inlets, rock fords, road culverts and seeding of 255 acres. The District accepted the completed project on June 26, 1971.

During project planning and the assessing of benefits to affected properties, the Kittson County Board of Commissioners requested they be allowed to pay the cost of bridges on the highways crossing the Joe River and to maintain them in lieu of any assessment. The managers approved this request, and five bridges were installed by the County at an estimated cost of \$200,000.

Since the original construction a few miles of channel improvement have been added by the landowner in sections 20, 21, and 22 Clow Township. Two drop structures were installed also.

The performance of the work of improvement have been above expectation of all concerned parties. There was much improvement in excess water removal in the area affected. All construction has stood the test of excessive runoff conditions, both in spring and summer seasons.

The Work Plan, prepared and completed in 1963 by technicians of the NRCS, followed after an application for technical and financial assistance was made by the Kittson SWCD and the Kittson County Board of Commissioners, under the authority of the Watershed Protection and Flood Prevention Act (Public Law 566, 83rd Congress, as amended).

The improvement of the Joe River channel and its tributaries was carried out by the cooperative efforts of affected citizens and groups found in our local, state, and federal levels of government.

3. Other Systems

Other drainage related systems within the JRWD include agriculture drainage installed by individual farmers, group ditches designed and installed in the 1950's and 1960's by the NRCS, and road ditches installed by State, County, and Township road authorities. These types of systems all represent different levels of drainage for different purposes, but nonetheless exist within the District and carry water from upper areas to lower areas.

E. Water Management Structures

One water management structure exists within the JRWD, and was constructed as part of the aforementioned PL 566 Project. It is located in the NW corner of section 34 fraction of Clow Township (T164N, R49W), ½ mile south of Canada and 8 miles west of the NE border of the District.

The structure consists of a 30" half round drop inlet with 34 feet of 18" corrugated metal pipe spillway. The structure has no drawdown capability, and there is an emergency spillway that is 75' wide. An earthen dike was constructed 2,000 feet long and with a top width of 8 feet. Construction date was from February 1968 to September 1969 under contract with the Natural Resources Conservation Service (formerly Soil Conservation Service).

The original cost of the structure was \$3,365 and was split between the JRWD, the Kittson SWCD, and DNR. The cost included 21 dugouts within the impoundment. The size of the impoundment is 47 acres at elevation 815.5 feet, msl, which is the normal pool. The pool has a maximum depth of 4 feet and an average depth of 2 feet. The upstream watershed size is 525 acres.

The impoundment was developed by the Department of Conservation, Division of Game and Fish, SCS, the JRWD, and the Kittson SWCD for the purpose of flood control and wildlife development. It was part of the "Work Plan for Watershed Protection and Flood Prevention – JRWD". This plan was prepared in 1963 under the authority of the Watershed Protection and Flood Prevention Act by the Kittson SWCD and Kittson County Board of Commissioners with assistance from SCS and the Forest Service. An operation and maintenance agreement was entered into on February 23, 1968 by the State of Minnesota, Dept. of Conservation and the JRWD.

3. Groundwater

The lake clay found over the western 2/3 of the District is over one hundred feet thick. This deposit yields no water to wells. Occasional lines of silt and very fine sands yield less than one gallon per minute, and such wells commonly go dry during late summer and fall. The water quality is poor; it is salty with a bitter taste and unsuitable for human consumption and for livestock. Chloride content generally is 500 to 1000 parts per million.

Beneath a thin till layer is a large depth of limestone, mudstone, sandstone, and shale resting on granite. The water quality of wells in this layer is poor. Water is brine-like and highly saline and unsuitable for nearly all domestic and agricultural uses.

From settlement period until 1979 potable water for domestic and livestock purposes was obtained from surface water in watercourses, use of farm cisterns or by hauling supplies from a nearby community water system. Since 1979, water is obtained via the North Kittson Rural Water System, which utilizes gravity flow pipelines from wells located near Lake Bronson, Minnesota – 30 miles to the southeast and situated in the Two Rivers Watershed District.

Evaluation of the ground water system depends upon knowing where water enters, how fast it moves through the soil and subsurface layers, and where it leaves the ground water reservoir. Movement of ground water is controlled by the geologic units that make up the reservoir.

Water is a solvent that is in motion within the groundwater reservoir and tends to approach chemical equilibrium with the materials in the reservoir. Because of this continuous chemical charge towards equilibrium, water quality information provides a basis for the interpretation of movement of water in the ground water reservoir - chemical changes in water type (the dominant ion or ions in solution) and total dissolved solids can be used to interpret water movement.

Pollution of the ground water by man's activities is considered minimal, because of the depth of the lake clay above the underground aquifer and the absence of any large dischargers.

4. Unique Water & Land Related Resources

A. Outstanding Resource Value Waters

No known outstanding resource value waters as defined by Minnesota statute exist within the JRWD.

B. Rare & Endangered Species

The Minnesota County Biological Survey has inventoried Kittson County and keeps a detailed record of its finding. The following excerpt is from their web page. Information on rare and endangered species is available from them.

The Minnesota County Biological Survey (MCBS) began in 1987 as a systematic survey of rare biological features. The goal of the Survey is to identify significant natural areas and to collect and interpret data on the distribution and ecology of rare plants, rare animals, and native plant communities.

Native habitats surveyed by MCBS contribute to a sustainable economy and society because they:

- Provide reservoirs of genetic materials potentially useful in agriculture, medicine, and industry.
- Provide ecological services that contribute to the quality of air, soil, and water.
- Provide opportunities for research and monitoring on landscapes, native plant communities, plants, animals and their relationships within the range of natural variation.
- Serve as benchmarks for comparison of the effects of resource management activities.
- Are part of natural ecosystems that represent Minnesota's natural heritage and are sources of recreation, beauty and inspiration.

C. Critical Vegetated Habitats

1. Buffer Strips

As a part of the Joe River Watershed District's PL 566 Project, grass buffer strips were installed along, adjacent, and parallel to the channel work that was done. These buffer strips serve as a filter strip that removes sediment that is carried from the adjacent agricultural fields. The sediment is removed by the grasses which results in a benefit to water quality and also to prevent silting in of the waterway thereby reducing a potential channel maintenance problem. These

buffer strips also are a benefit to wildlife, as they serve as a “greenway” and provide a travel corridor for animals such as whitetail deer, fox, raccoon, garter snake, several species of birds, and many others. One other benefit these strips provide is an economic one. In late summer and fall, the JRWD allows some producers to clip the grass for hay. This provides local farmers a source of feed for cattle and also provides a boost to the local economy.

2. Ridge Areas

The area of the JRWD in the furthest northeast portion, upstream of the Wildlife Impoundment, is an area that may be of special interest. This area typically is of a rocky nature because of the glacial till deposited. Therefore, it has less tilled acres and is more of a hay - pasture - open grassland area. There may be benefits to study this area further to determine the feasibility of wetland restoration or management of the area for wildlife, prairie restoration, prairie seed harvesting, and other resource opportunities.

D. Water Use

1. Surface Waters

Surface water within the JRWD is not used by any municipalities, nor is it used extensively for any farming operations. The saline and brackish nature of the water makes it unsuitable. Prior to 1979 potable water for domestic and livestock use was obtained by use of farm cisterns or by hauling supplies from nearby community systems. Since 1979 most usable water has been supplied by the North Kittson Rural Water System, which has wells located in the Two Rivers Watershed District.

Surface water from the Red River can be and is used for industrial, municipal, and agricultural uses, after treatment. Pembina, North Dakota, located just across the river, uses river water for its municipal source. There are no entities at this time within the JRWD using the Red River as a source of water.

2. Groundwater

Because of the conditions of the groundwater underlying the JRWD described in the groundwater section above, there is little or no groundwater use. As stated above, the North Kittson Rural Water system is the main supplier of potable water, and their supply comes from wells located in the east central part of Kittson County, within the Two Rivers Watershed District.

3. Inventory of Public Water Supplies

The Cities of Humboldt & St. Vincent and the Village of Noyes are the only population centers within the JRWD. The rest of the population of the District lives on farmsteads. Most residents within the District get their water supply from the North Kittson Rural Water System (NKRW).

The NKRW system began its project in July 1979. The system serves most of the rural farmsteads within the District and also all of the towns. The wells are located outside of the Joe River Watershed District and do not affect groundwater within the District. The system starts in Lake Bronson (within the Two Rivers Watershed District) and runs via pipeline to the north to the Canadian border and also west to the Red River. The water lines range from 12" down to 2" in size. There are two water towers on the system that have a capacity of 75,000 gallons. In addition, water towers in Lake Bronson & Hallock

are also used. The system is governed by a water board consisting of seven members. The total gallons pumped in 1983 were one hundred two million gallons and the amount that left the system was ninety three million gallons.

4. Inventory of Municipal Wastewater Treatment Systems

The Cities of Humboldt, St. Vincent, & Noyes are all small (<100 population) unsewered communities served by properly constructed and maintained septic systems and drain fields. Rural farmsteads are typically served also by septic tanks and drain fields. These septic systems and individual sewage treatment systems have worked satisfactorily in the past and it is generally accepted that they will continue to be adequate into the future.

E. Existing Water Management Plans & Programs

1. County Water Management Plans

Kittson County has had a Comprehensive Local Water Plan (CLWP) since 1990. This plan consists of inventories of surface and ground water, monitoring and data collection initiatives, and implementation plans to protect, preserve, and promote wise use of these water sources. The JRWD has partnered with CLWP initiatives in the past and will continue to do so whenever possible. This partnership helps to eliminate duplication of efforts and pools resources to help efficiently manage water resources.

Kittson County is also the drainage authority over many of the legal ditches within the JRWD. As such they are responsible for annual inspection, maintenance and repair activities. This responsibility lies with the County Commissioners. Any proposed new ditch systems or improvements to existing systems by law must be petitioned to the JRWD.

2. Kittson Soil & Water Conservation District (SWCD)

The KSWCD provides technical aid to landowners, upon request, for water removal, wind erosion control through field windbreaks and farmstead plantings and assistance in crop rotation on farms. Conservation plans for land operators are prepared by the technical staff of this agency.

Conservation tillage (reduced and no till) systems are encouraged by the supervisors of the SWCD to further reduce sheet and wind erosion.

Annually since 1971, the SWCD provided personnel to inspect the Joe River Project with the JRWD Managers and their other guests. Maintenance inspection sheets for the elements of the Joe River Project are completed, signed and filed in the offices of the JRWD and the SWCD.

Wetland Conservation Act: Since 1991 the SWCD has been the local government unit charged with administering the WCA. This State of Minnesota law fosters the no net loss of wetlands. This law regulates the draining or filling of wetlands and requires mitigation (replacement of impacted wetlands) for any projects that reduce the acreage of wetlands.

Shoreland & Floodplain Ordinance: The SWCD has been given authority by Kittson County to administer both the County Shoreland and Floodplain ordinances. These ordinances govern building and other activities in shoreland, floodplain, and floodway areas.

The Kittson SWCD prepares an annual plan which details their goals and initiatives for each year. These goals & initiatives are closely linked with the programs outlined above and are available from the SWCD upon request.

3. Other Local Government Plans

There are no other known local government plans that deal with water related issues within the JRWD.

4. State Agency Water & Resource Management Plans

A request was made at the beginning of the update of this 10 year Overall Plan to all State agencies to supply any information relating to plans and initiatives dealing with water management within the JRWD. No State agencies responded to this request. However, an attempt is made to outline below programs that the District knows of.

DNR: The DNR operates numerous programs relating to water natural resources and these will not be detailed here. However, worth noting is the Protected Waters program administered by the Division of Waters. In 1984 a map was published listing all protected wetlands and watercourses within Kittson County. A permit is required from the DNR before any work is started which would alter the course, current, or cross section of water courses and drain or fill certain wetlands. The DNR should be contacted for details of this regulatory program.

MPCA: The Minnesota Pollution Control Agency is also responsible for many programs too numerous to cover here. Among these are the Total Maximum Daily Load program, various water quality monitoring programs, the feedlot program, and NPDES permits, which relate to construction projects which by their nature are conducive to causing soil erosion and sedimentation.

BWSR: The Board of Water & Soil Resources deals with the Wetland Conservation Act, State Cost Share Program, Watershed District overall plans, Comprehensive Local Water Planning, and the State Water Plan.

LCMR: The Legislative Commission Minnesota Resources reviews state programs relating to natural resources and provides a funding source for certain programs.

5. Federal, Regional, & International Programs

Many federal, regional, & International agencies, organizations, and groups exist that also deal with water natural resources and have an effect on the resources within the JRWD. Worth mentioning are the Red River Watershed Management Board, Red River Basin Board, The International Coalition, the U.S. Army Corps of Engineers, the U.S. Geological Survey, and the International Joint Commission. For information on these organizations and their programs, please refer to the prior section listing the names and web sites of each.

IV EXISTING CONDITIONS, RELATED POTENTIAL PROBLEMS, & SOLUTION ALTERNATIVES - Assessment & Issue Identification -

A. Flood Damage Reduction

The Joe River Watershed District Board of Managers has discussed the pertinent issues with regard to water quantity. A Citizen's Advisory Committee was convened and a Technical Advisory Committee was consulted in order to provide public and agency input to this process. A public meeting was also held with the general public, city and township officials invited to gather input. These issues are listed and ranked in priority order below.

1. Drainage – The Board of managers has determined that the drainage systems that are in place and the maintenance of them are the number one priority within the District. Two issues have been identified relating to drainage and are detailed below.
 - i. Some areas of the District do not serve as adequate outlets for drainage systems. This was identified as a moderate problem that exists watershed wide.
 - ii. Culverts within the subwatersheds of the District need to be studied and adequately sized to be able to pass the water that flows through them from their upstream drainage area in a timely manner. A culvert sizing strategy needs to be addressed. This is a moderate issue that exists watershed wide.
2. Flooding
 - i. Summer rain events are the number one flooding issue because they are the events that cause loss of and damage to crops. Crop loss is site specific in the JRWD and is a highly ranked problem if drainage systems are blocked or are not functioning properly. This is a minor problem if the drainage systems are functioning.
 - ii. Spring flooding is viewed as a high problem in the western 2/3 of the JRWD. This is because of the high frequency of events over the past 10 years and also because of the damage to public roads, culverts, bridges, and other infrastructure. These floods also cause a large amount of debris to be scattered over the landscape and instigate a huge cleanup effort.
 - iii. Overland flooding is viewed as a moderate problem that is site specific within the District. This is associated with areas near the ridge in the east and along coulees and other waterways where breakouts occur.
3. Stream Flows – Stream flows have been identified as an important function in the maintenance of waterways. Extremely high flows contribute to erosion problems, while a more sustained flow helps to stabilize bank side slopes and limit vegetation growth within the channel.
 - i. Soil erosion and the consequent siltation limits channel capacities. The deposition of sediment results in blockages and contributes to cattail growth. This is identified as a relatively low problem and is limited to the PL 566 project area.
 - ii. Another issue related to flow is overland flooding relative to areas where field drains connect to main drains. Generally the field drains cannot enter the main

drains if the water is high in the main drain. This causes water to back into fields and in some cases travel overland. Erosion has also occurred in the fields and this has been deposited in the main drain where the field outlet is located. This also was identified as a low problem limited to the PL 566 project area.

4. Flood Damages

- i. Damage to County and Township roads and culverts was identified as a high problem during spring flooding and not as severe during summer events. This was viewed as a watershed wide problem.
- ii. Damages related to farmsteads and residential areas are a high problem in the western 2/3 of the District. This is mainly due to the Red River flooding and backup on the Joe River and coulees because of this flooding.

5. Drought – Although drought was ranked as the 5th most important issue, it has been low throughout the 1990's. This issue and its affects need to be studied and documented in order to formulate goals and objectives to deal with it.

6. Other Flood Related Issues

- i. The entire watershed district, with special attention to the western 2/3, has been experiencing a steady out-migration of residents. This is in large part due to the frequency and severity of flooding within the past 10 years and its impact on farming. Population statistics confirm that people are leaving. This is a moderate to high problem.
- ii. The JRWD, County, Townships, and Cities are experiencing a reduction in funding because of the out-migration of people. This results in a lower tax base and therefore a reduction in program funding. In turn, public infrastructure will deteriorate as the funding deteriorates. This was identified as a moderate to high problem.

7. Lake Levels – The two lake areas within the District are non recreational (outside of migratory bird hunting) and do not sustain a fish population. These are important wetland areas and should be managed appropriately.

8. Groundwater – All groundwater within the District is alkaline and cannot be used for domestic or agricultural purposes. Therefore the groundwater supplies cannot be developed. The North Kittson Rural Water System has solved the water supply problems of the District, utilizing wells located outside of the District and installing a delivery network of towers and piping.

B. Natural Resources

The Joe River Watershed District Board of Managers has discussed the pertinent issues with regard to natural resource enhancement. A Citizen's Advisory Committee was convened and a Technical Advisory Committee was consulted in order to provide public and agency input to this process. A public meeting was also held with the general public, city and township officials invited to gather input. These issues are listed and ranked in priority order below.

1. Erosion & Sedimentation

Areas of erosion contribute to sedimentation throughout the Watershed District. Specifically identified as problem sedimentation areas are locations where field ditches enter into a main drainage ditch. Erosion taking place in the fields and upstream areas contributes to sedimentation of these main drainage ways. This leads to reduced capacity of drainage systems and increased vegetation such as cattail, which is an undesirable situation with regard to ag drainage. This was viewed as a moderate problem.

2. Water Quality

Because no surface water is used either by municipalities or by rural farmsteads, water quality is not a concern with respect to drinking water. There are no swimming areas within the JRWD, and therefore there is not a water quality concern in that respect. Water quality is a concern, however, with respect to maintaining the integrity of natural resources within the District. Therefore, water quality should be monitored both on the Joe River and on the Red River. A water quality monitoring program has been conducted by the Kittson Soil & Water Conservation District since 1991, with between one and three sites being monitored on the Joe River at various times. Data and reports are on file with the Kittson SWCD.

3. Protected Watercourses

Several coulee systems and other waterways have been identified by the Minnesota DNR as 'protected'. As such, a permit is required from the DNR before certain activities are undertaken on these waterways. Over time these waterways tend to silt in and become overgrown because of both wind and water erosion. It has been the responsibility of each individual landowner to acquire a permit and either hire a contractor or clean the waterway themselves for the portion of it that traverses their land. This results in portions of the waterways being cleaned but other portions left to silt in depending on the philosophies or financial wherewithal of each landowner.

An identified issue is to provide for some means to obtain permits and maintain the entire reach of these waterways from beginning to end. This would provide enhanced agricultural drainage and prevent damage to crop land, overland flooding, and erosion and sedimentation.

4. Fish and Wildlife Habitat

- i. Beaver dams are an annual maintenance problem along the ditches, coulees, and other natural watercourses within the District. These beaver dams cause drainage problems and potential crop loss to the agricultural areas of the District.
- ii. The Joe river currently does not support an active fishery. Certain species of fish utilize the Joe River to spawn in the springtime. The percentage of these fish survive to return to the Red River is unknown. Since most waterways within the District are intermittent, they dry up usually by mid to late summer. This prevents the use of the river by fish on a year around basis.
- iii. Large habitat blocks consisting of undisturbed forest, grassland, wetland, or prairie are desirable from a natural resources enhancement standpoint. These areas provide habitat, filter sediment and pollutants, provide renewable resources, and perform other desirable functions. Habitat blocks of forest – grassland – wetland exist in the eastern 1/3 of the District.

- iv. The Joe River Wildlife Management Area operates a wildlife pool located behind a weir. This provides habitat for waterfowl and other aquatic related species.
5. Water Based Recreation Activities
- a. The aforementioned Joe River WMA provides waterfowl hunting and bird watching opportunities. Worth noting is that the township road leading to the WMA needs improvement.
 - b. A wetland area known as Lake Stella also provides some hunting and bird watching activities.
 - c. The Red River is an excellent fishery, providing walleye, sauger, northern pike, and world class catfishing opportunities. The Red River also provides excellent canoeing, boating, and bird watching opportunities.

C. Other Issues

1. International Issues

The Joe River begins in the USA and outlets into the Red River in the Province of Manitoba, Canada. This leads to many management hurdles to cross. A different water management entity exists in Canada with a different way to manage the resources. Communication between the two Countries is important.

V. WATERSHED GOALS, OBJECTIVES, AND DESIRED OUTCOMES

The Board of Managers of the Joe River Watershed District will take a very active role in carrying out the following goals and strategies. While all items listed are desirable outcomes, it may not be possible or feasible for the District to accomplish them in whole or in part on its own. It is the intention of the District to undertake as many of the following strategies as possible, while looking to combine and coordinate its efforts with other public and private entities on the local, state, and federal levels. By doing this, the Board feels that all efforts can be maximized for the betterment of all.

A. Flood Damage Reduction

1. Maintain and improve existing road ditches, legal ditches, natural watercourses, and other waterways when possible to control runoff resulting from a 10 year storm event.

Priority Issues:

- a. Reduce the number of drainage systems with outlets that are in disrepair.
- b. Address beaver dams on ditches and natural watercourses.
- c. Address blockages in drainage systems from sediment, vegetation, and other causes.
- d. Reduce the ‘flashiness’ of the hydrograph related to ditches and natural watercourses.
- e. Assess existing ditch capacities relative to the 10 year adequacy.

Strategies:

- a. Monitor and assess the condition of existing drainage systems by doing annual inspections and surveys and creating a data base of problems and possible solutions.

- b. Inventory all side inlets to legal ditches and consider programs and funding to reduce erosion potential
 - c. Coordinate program funding through Kittson County and the State of Minnesota to remove problem beavers and beaver dams on ditches and watercourses.
 - d. Investigate and utilize strategies such as culvert sizing, impoundments, wetland restoration, and others to provide a more constant or even flow within watercourses.
 - e. Utilizing ditch law, petition projects, consultation with road authorities, and other means, improve / construct ditches to a 10 year capacity for agricultural lands.
2. Reduce the frequency, duration, and peak of flood events.

Priority Issues:

- a. Reduce road and culvert damages from flooding.
- b. Reduce damages to cropland from flooding (delayed planting, destroyed crops).
- c. Reduce damages to pastures from flooding.
- d. Address beaver dams on ditches and natural watercourses.
- e. Address issues relating to runoff control (detention, culvert sizing, etc.)

Strategies:

- a. Inventory and identify locations to be used as impoundment areas. Once these areas have been located, investigate the financial, social, and environmental feasibility of construction.
- b. Inventory and identify repetitive damage areas to roads, culverts, and other infrastructure and utilize flood proofing methods to protect them from recurring damages.
- c. Inventory and identify repetitive damage areas to cropland and pasture and utilize impoundments, culvert sizing, wetland restoration, diversions, diking, and other methods to protect them from recurring damages.
- d. Inventory and identify areas subject to repetitive overland flooding and take measures to reduce or eliminate the flooding.
- e. Coordinate program funding through Townships, Kittson County and the State of Minnesota to remove problem beavers and beaver dams on ditches and watercourses.

3. Provide protection from and reduce damages to public and private property resulting from a 100 year flood event.

Priority Issues:

- a. Reduce damages to and loss of residential areas and public infrastructure resulting from flooding

Strategies:

- a. Identify farmsteads located in the 100 year floodplain and take measures to either remove them or protect them by ring diking or other structural measures.
- b. Work with mainstem regional and State organizations to reduce the peak discharge related to Red River flooding.
- c. Identify public infrastructure with a history of repetitive damages and take measures to either remove, modify or otherwise protect it.

4. Work with legislators to maintain and improve needed funding mechanisms.

Priority Issues:

- a. While current levels of funding are helpful, they are inadequate to address the large number of Flood Damage Reduction and Natural Resources Enhancement needs both locally and regionally.

Strategies:

- a. Attend the Minnesota Association of Watershed Districts Annual Meeting and Legislative Breakfast to keep current with pertinent issues and provide input regarding local issues.
- b. Work with the Red River Watershed Management Board to seek legislative funding and initiatives for designated programs.
- c. Contact and work with local legislators to seek legislative funding and initiatives for designated programs.
- d. Maintain current funding levels and seek accelerated additional funding for programs and projects relating to flood control and natural resource enhancement activities.

B. Natural Resource Enhancement

1. Sustain and Improve Surface Water Quality

Priority Issues:

- a. Reduce erosion and sedimentation to waterways and wetlands.
- b. Restore more natural hydrographs to waters in the watershed (reduce flashiness).
- c. Restore and rehabilitate unstable stream channels in the watershed.
- d. Identify potential sources of point and nonpoint pollution and monitor surface water to determine total maximum daily loads.

Strategies:

- a. Monitor and assess the condition of existing drainage systems by doing annual inspections and surveys and creating a data base of problems and possible solutions.
- b. Inventory all side inlets to legal ditches and consider programs and funding to reduce erosion potential.
- c. Investigate and utilize strategies such as culvert sizing, impoundments, wetland restoration, and others to provide a more constant or even flow within watercourses.
- d. Continue funding and coordination of the Kittson SWCD water quality monitoring program, and seek expansion to monitor additional sites.
- e. Coordinate monitoring efforts with the Red River Watershed Management Board, Kittson SWCD, and the Minnesota Pollution Control Agency to identify baseline water quality, potential impaired waters, and potentially initiate TMDL studies and implementation plans.

2. Reduce Erosion and Sedimentation

Priority Issues:

- a. Restore more natural hydrographs to waters in the watershed (reduce flashiness).
- b. Restore and rehabilitate unstable stream channels in the watershed.
- c. Establish and maintain functional buffers along ditches. This should include the use of side inlets to minimize erosion from fields.
- d. Encourage land use practices that reduce erosion, provide buffers, and provide wildlife habitat. (i.e. tillage practices, buffer strips, & other best management practices).

Strategies:

- a. Investigate and utilize strategies such as culvert sizing, impoundments, wetland restoration, and others to provide a more constant or even flow within watercourses.
- b. Inventory ditches and waterways to identify areas where bank sloughing is occurring and identify measures to restore or repair them.
- c. Inventory and identify areas that currently do not have buffers along ditches and waterway. Utilize existing programs and funding to encourage buffers in these areas.
- d. Work with Kittson SWCD and USDA to promote the utilization of best management practices to reduce erosion and provide wildlife habitat opportunities. These bmp's include, but are not limited to tillage practices, buffer strips, and wind breaks.

3. Participate in Efforts to Enhance, Establish and Protect Stream Corridors and Riparian Areas

Priority Issues:

- a. Restore and rehabilitate unstable stream channels in the watershed.
- b. Identify and protect existing riparian corridor/areas.
- c. Establish functioning riparian areas along all waterways in the watershed.
- d. Establish and maintain functional buffers along ditches. This should include the use of side inlets to minimize erosion from fields.

Strategies:

- a. Investigate and utilize strategies such as culvert sizing, impoundments, wetland restoration, and others to provide a more constant or even flow within watercourses.
- b. Inventory ditches and waterways to identify areas where bank sloughing is occurring and identify measures to restore or repair them.
- c. Inventory and identify areas that currently do not have buffers along ditches and waterway. Utilize existing programs and funding to encourage buffers in these areas.
- d. Work with Kittson SWCD and USDA to promote the utilization of best management practices to reduce erosion and provide wildlife habitat opportunities along stream corridors and riparian areas.

4. Participate in Efforts to Enhance, Provide, and Protect Habitats

Priority Issues:

- a. Restore more natural hydrographs to waters in the watershed (reduce flashiness).
- b. Restore and rehabilitate unstable stream channels in the watershed.
- c. Maintain and restore fish passage in streams throughout the watershed.
- d. Identify and protect existing wetland habitats.
- e. Enhance degraded wetland habitats (identify these first).
- f. Establish new wetlands (need to identify where and for what purpose).
- g. Establish and maintain functional buffers along ditches. This should include the use of side inlets to minimize erosion from fields.
- h. Protect and enhance large habitat blocks (grassland, wetland, forest).
- i. Identify and protect existing upland habitats.

Strategies:

- a. Investigate and utilize strategies such as culvert sizing, impoundments, wetland restoration, and others to provide a more constant or even flow within watercourses.
- b. Inventory ditches and waterways to identify areas where bank sloughing is occurring

- and identify measures to restore or repair them.
- c. Inventory and identify areas that currently do not have buffers along ditches and waterway. Utilize existing programs and funding to encourage buffers in these areas.
- d. Work with Kittson SWCD and USDA to promote the utilization of best management practices to reduce erosion and provide wildlife habitat opportunities.
- e. Identify opportunities to enhance fisheries habitat and fish passage through culverts, bridges, and other structures.
- f. Work with local, state, & federal agencies to restore and enhance wetlands and large habitat blocks where feasible.

5. Support the Expansion of Water Based Recreation

Priority Issues:

- a. Install public access for boats & canoes, hunting, and other forms of recreation.

Strategies:

- a. Inventory probable sites to locate access.
- b. Procure funding from DNR and other partners and work with them to install access.

VI. CONFLICT BETWEEN EXISTING PROGRAMS & POLICIES OF OTHER ORGANIZATIONS

In this planning process, a few areas were addressed whereby conflicts either have occurred or could potentially occur. This section will attempt to identify these areas and suggest a course of action to take to resolve any conflicts.

DNR Protected Watercourses: Watercourse identified on the DNR Protected Waters list are experiencing sedimentation. These watercourses are tied to private, legal, and public systems as either outlets or inlets. The DNR requires permits to do maintenance along these watercourses, and in many cases this constitutes an undue hardship for landowners in that a \$500 permit fee is needed to obtain the permit. In many cases additional funds are spent in obtaining the permit because survey information and other data is required. It is the position of the JRWD that to do minor cleaning of sediment to restore the watercourse to its prior condition should not require a permit. Coordination and communication needs to take place regarding this issue.

FEMA & Floodplain Ordinances: Farmstead equity is decreased due to the inability to construct buildings that are needed that would pose little damage if flooded.

Wildlife Concerns: Depredation of crops by deer, geese, and other wildlife; Wolves are a threat to farm livestock and pets.

VII. POLICIES AND PROPOSED ACTIONS OF THE DISTRICT [IMPLEMENTATION PLAN]

1. Project Identification & Investigations

- a. Potential and / or Proposed Projects

Impoundments: The District is investigating areas where it is logical to locate flood control impoundments. By constructing one or more impoundments, the Board of Managers believes that overland flooding can be reduced as well as the resultant damages to cropland,

public infrastructure, and residences. These impoundments will have the most direct benefit to the immediate downstream area from where they are sited, but will also have some effect on the main stem Red River flooding. The District has identified one site located in the northeastern portion of the District to locate an impoundment. Further study is needed to determine if it is feasible to construct an impoundment on the site.

Ditch Projects: As of the writing of this Overall Plan, the District is acting on one ditch petition project. A group of landowners submitted a ditch petition to the Board of Managers and the project is thus proceeding according to the Ditch Law, Minnesota Statutes 103E. An engineer has been appointed to prepare and submit a report to the Board regarding the feasibility to construct the ditch. If the findings are favorable, a panel of three viewers will be appointed to determine the area benefited by the proposed ditch and a public hearing will follow to hear comment from all affected landowners. If the ditch proposal is determined to be prudent and feasible, it will then be constructed.

PL – 566 Project: As previously mentioned in this document, the District has an established project that it inspects annually and performs maintenance as needed. It is the intention of the Board of Managers to continue to inspect and maintain the channels and structures that are a part of the project.

Farmstead Ring Dikes: The District has been involved with a cost share program to construct farmstead ring dikes. Under this program, state funding and funding from the Red River Watershed Management Board is utilized to plan, design, and construct ring dikes around eligible farmsteads for the purpose of flood protection. Funding is provided at 50% state, 25% RRWMB, 12.5% JRWD, and 12.5% landowner. The District will continue this program as long as there is a need and as long as funding is available.

b. Miscellaneous Studies, Investigations, and Inventories

- i. Drainage along the Canadian border in Richardville and eastern Clow townships meanders. Some of the drainage flows north into Canada, and some flows from Canada south into Minnesota. This area should be studied to get a better idea of the drainage patterns and thereby manage and control runoff.
- ii. The Board of Managers is aware of several areas where its boundary with the Two Rivers Watershed District may be incorrect. Lands currently within the Two Rivers WD appear to actually drain to the Joe River WD in sections 3, 9, and 10 of Richardville Township. In addition, there also appear to be lands within the Joe River WD that may drain to the Two Rivers WD along the common boundary. The Joe River Watershed District will work with the Two Rivers Watershed District to correct these inconsistencies.

2. Regulation of Activities by Watershed District

a. Rules & Regulations

The District adopted the *Rules of the Joe River Watershed District* on September 21, 1988 and amended the *Rules* on February 14, 2000. These rules govern all activities that deal with water and water management within the District.

The Managers of the Joe River Watershed District accept the responsibilities with which

they are charged as a governing body by Minnesota Statutes. Said Board of Managers, in the conduct of the duties and responsibilities conferred upon them, do not intend to usurp the authority or responsibilities of other agencies or governing bodies, however, said Board of Managers will not avoid their responsibilities and obligations.

It is the stated intent of the Managers herein that no person shall be deprived or divested of any previously established beneficial use or right, by any rules of the District, without due process of law. All rules of this District shall be construed according to this intention.

Further, it is the intention of the Managers to promote the use of the waters and related resources within the Watershed District in a reasonable and orderly manner so as to improve the general welfare and public health for the benefit of the residents of the Watershed District.

b. Permits & Licenses

The following is an excerpt from the *Rules of the Joe River Watershed District* and details what activities require a permit before any work is undertaken:

WATERSHED DISTRICT PERMIT

A permit shall be obtained from the Watershed District prior to any work being commenced for:

- (A) Any public street, road or highway construction project which by means of its construction has any effect on the quantity or quality of water runoff, or any other type of construction which may affect runoff or disposal site quantity or quality.
- (B) Any bridge, dike, culvert, or drain across any natural drainageway, lake or wetland.
- (C) Any diking, excavating, grading or filling adjacent to any drainageway, lake or wetland. This is not to be construed to include maintenance of roadways.
- (D) All water uses other than for domestic purposes, provided however that a permit shall not be required for the reasonable taking of water for purposes of lawns or noncommercial private gardens.
- (E) Any artificial drainageway cut across a subwatershed to thereby deliver water into another subwatershed.
- (F) Any diversion of water by any artificial means into any legal drainage system from any land not assessed to that drainage system.
- (G) Any alteration of any private or legal drainage system.
- (H) Construction, alteration, repair or removal of any dike or reservoir.
- (I) Any new field ditching, draining an area in excess of twenty (20) acres.

3. Resource Management Programs

a. Data Collection

- i. **Culvert Inventory:** The Board of Managers authorized a culvert inventory and completed the project during the summer of 2001. This data collection initiative involved locating every culvert within the District and recording information pertinent to each. Field inventory sheets were filled out and included information on the culvert's diameter, length, location, flow line elevation vs field elevation, and comments relative to the condition of the culvert. This information will be entered into the District's geographic information system and be used to provide a better understanding of the water flow patterns within the District. The information will also be used in conjunction with a hydrologic model that is being developed for the District.

b. Watershed and Hydrologic Studies

- i. **Hydrologic Model:** As a part of this overall planning update, the District has contracted services to produce a hydrologic model of the Joe River Watershed District. This model will enable the Board of Managers to assess the runoff conditions that exist within each subwatershed within the District and the conditions within the District as a whole. This, in turn, will be extremely beneficial when planning projects intended to manipulate the runoff conditions to provide flood control, address low and peak flow conditions within watercourses, predict flooding, control erosion and sedimentation, and address wildlife and natural resource concerns. This modeling effort is intended to be a ‘work in progress’, and will be calibrated as runoff information is collected and analyzed.

c. Monitoring Programs

- i. **Water Quality:** The Board of Managers realizes that water quality is an important element relating to the natural resources of the District and that maintaining good water quality is important. Therefore, the District has cooperated with the Kittson SWCD and Kittson County in a water quality program through the Kittson County Comprehensive Local Water Planning Program. As such, the District has in the past contributed resources to help the Kittson SWCD design and carry out a water quality monitoring program. Three locations on the Joe River have been monitored for various parameters, including dissolved oxygen, pH, alkalinity, temperature, ammonia, Kjeldahl, and total nitrogen, ortho phosphorous, alkalinity, and fecal coliform bacteria. In addition, some water samples have been tested for the presence of pesticides. The results of water quality monitoring are on file with the Kittson SWCD. The District will in the future continue to assist in this program and will coordinate sampling with the Kittson SWCD as the lead agency.
- ii. **Stream Flow:** Stream flow monitoring and data collection to date has been undertaken by the US Geological Survey at selected points on the Red River and during periods of flooding at various other locations within the District. This information is available from the USGS. As the development of the hydrologic model progresses, it may be necessary for the District to begin collecting additional data. The data needed will be at selected sites on the Joe River and its tributaries. In addition to supplementing information for the hydrologic modeling, stream flow information will be helpful in analyzing the water quality data. Therefore, the District will design and implement a stream flow monitoring program as the need and funding arises.

d. Technical and Financial Assistance Programs

- i. **Buffers:** During the planning process, several issues were identified pertinent to erosion, sedimentation, wildlife habitat, and other concerns. The establishment of buffer strips along ditches, coulees, and other watercourses is one way to address these issues. Whenever possible, the District will work to maintain existing buffer strips and establish new ones wherever it is deemed feasible. This will be done by providing financial and technical assistance to landowners and cooperating agencies. Existing programs such as the Conservation Reserve Program, the Reinvest in Minnesota Program, the Conservation Reserve Enhancement Program, and others will be utilized to help accomplish

this initiative.

- ii. **Best Management Practices:** The District will work with other cooperating agencies such as the NRCS, SWCD, and BWSR to promote best management practices designed to control erosion, reduce sedimentation to ditches and waterways, and to sustain high quality resources.

4. Public Information & Education Programs

- i. **Envirothon:** The District has in the past provided assistance in the area of education to the Envirothon. This is an outdoor, hands on, natural resources competition for high school students organized and put on by the SWCD's in northwest Minnesota. At this competition, teams of students must answer questions at different stations dealing with soils, aquatics, current events, wildlife, and forestry. Teams earn points for each question answered correctly, and the top three teams advance to a state competition, where they compete again for the chance to compete nationally. Over 160 students participated in 2002.

5. Intergovernmental Coordination and Cooperation

- i. **International:** The Board of Managers has identified the need to work with government agencies located in Manitoba, Canada that deal with water management. Since the Joe River exits the USA and flows through a portion of Manitoba before it outlets into the Red River, several issues exist that need to be addressed. The JRWD intends to open communications with Manitoba to work on watershed related issues such as channel maintenance, flood control, water quality, and natural resource issues. In addition, many issues are also related to the main stem Red River. Cooperation and coordination will be sought with Manitoba regarding Red River issues as well.
- ii. The JRWD is currently a member of the Red River Watershed Management Board and participates in all activities related to its operation. The JRWD will continue to participate in this organization and encourage upstream storage projects, water quality monitoring, legislative activity and support, and input into regional issues affecting the Red River.
- iii. It is the intention of the JRWD to work with and provide input to all local, state, federal, and regional agencies having to do with the management of the area's water natural resources.
- iv. The JRWD will participate in the Mediation Agreement set forth in proceedings of the Red River Flood Damage Reduction Work Group. This agreement was struck in the late 1990's as a result of mediation stemming from a lawsuit between the RRWMB and the DNR and USCOE. The agreement details how flood damage reduction projects will be planned and designed and considerations for natural resources enhancement will be built in when feasible and practical. A copy of this Mediation Agreement is on file with the District.

VIII. SUMMARY STATEMENT OF DISTRICT POLICY AND COMMITMENT

The Board of Managers of the Joe River Watershed District will carry out all duties and responsibilities as set forth under Minnesota Statutes, 103D. In doing so, particular attention will be paid to flood damage reduction, soil erosion, agricultural channels, and natural resources. The flooding associated with the Red River of the North continues to be a particular concern, both in an overland flooding situation and from backup into the main stem of the Joe River. Wind erosion needs to be addressed through activities of the District in cooperation with other local entities such as the Kittson SWCD. Water quality will continue to be addressed through monitoring and assessment. While many accomplishments have been made, there is much work to be done in care of surface and ground water, and the maintenance and improvement of the soil resources of man-made structures related to water management.

The foregoing Overall Plan offers a description of the Watershed District, its several problems, and contains suggestions as to possible solutions. However, it must be remembered that the District cannot undertake the task of solving the problems alone. The individual landowners in the District can and must take responsibility and institute specific projects by proper petition under Minnesota law. It must also be recognized that water management beneficial to the landowner is dependent upon the voluntary cooperation of each individual landowner within the District. In addition, other units of government and private organizations need to bring to the table their resources and expertise to help solve the problems.

The Board of Managers can and will to the best of their ability correlate, assist, and see that the various projects are carried out, as required by law, to proper completion after the desire for improved conditions has been expressed by the respective landowners, units of government, private organizations, or other interested persons or parties of the Watershed District.

The Joe River Watershed District desires to achieve a balance among the soil & water programs to fit its agricultural economy and environmental needs. It is the intention of the Board of Managers to extend to the local, state, and federal governments, all other political subdivisions of government, and agencies, and to all persons complete cooperation and understanding, and to accomplish as nearly as possible, in the manner provided by law, the purposes for which the District was created.

APPENDIX A.

RULES & REGULATIONS

RULES OF THE JOE RIVER WATERSHED DISTRICT

SECTION 1.0 INTRODUCTION

The Joe River Watershed District was established by order of the Minnesota Board of Water and Soil Resources on January 31, 1958. The district encompasses 124 square miles located in northwest Kittson County, Minnesota.

1.1 Purpose

The purpose of these rules is to implement the intent of the Minnesota Watershed Act, more fully set forth in Minnesota Statutes Chapter 103D, as said legislation affects the Joe River Watershed District. Said rules are adopted pursuant to the provisions of M.S. § 103D, and are deemed to be necessary, proper and desirable to implement the provisions of M.S. § 103D in any and all provisions for which the district was established.

1.2 Adoption of Rules

The managers shall comply with the following procedure in adopting rules:

- (a) A copy of the proposed rules or amendments shall be submitted to each manager of the district at least 30 days prior to its adoption by the managers.
- (b) Any proposed rule or amendment shall be adopted by majority vote of the managers after a public hearing has been held on said proposed rule or amendment. The public hearing shall be at a date, time and place set by the Board and notice of said hearing shall be given to the public by reasonable publication in a newspaper of general circulation in Kittson County .
- (c) The original copy of the rules shall be kept in the files of the managers and, in addition, copies shall be prepared for distribution to all entities as required by law
- (d) Each rule adopted by the managers shall have the full force and effect of law.

1.3 Rules

The managers of the district shall be empowered to amend the rules of the district. Any interested person may petition the Board of Managers for an amendment to the rules.

1.4 Inconsistent Provisions

If any rules herein contained are inconsistent with the provisions of M.S. § 103D, or other applicable laws of the State of Minnesota, the provisions of said Chapter 103D or other applicable law shall govern.

1.5 Severability

In the event that any section, phrase, clause or condition of these rules is declared to be invalid by a court of competent jurisdiction, the same shall not affect the validity of these rules as a whole and only the part so declared to be invalid shall be affected.

1.6 Rights of Appeal

Any person believed to be adversely affected by the adoption or enforcement of these rules, or by any action of the managers arising out of and pursuant to the adoption or enforcement of said rules may appeal from the rules or any action taken thereon in accordance with the appellate procedure and review provided in M.S. 103D.

SECTION 2.0 POLICY STATEMENT

2.1 General Policy

The managers of the Joe River Watershed District accepts the responsibilities with which they are charged as a governing body by Minnesota Statutes. Said board of managers, in the conduct of the duties and responsibilities conferred upon them, do not intend to usurp the authority or responsibilities of other agencies of governing bodies, however, said board of managers will not avoid their responsibilities and obligations.

It is the stated intent of the managers herein that no person shall be deprived or divested of any previously established beneficial use or right, by any rules of the district, without due process of law. All rules of this district shall be construed according to this intention.

Further, it is the intention of the managers to promote the use of the waters and related resources within the Watershed District in a reasonable and orderly manner so as to improve the general welfare and public health for the benefit of the residents of the Watershed District.

2.2 Interrelation with Other Units of Government

It is the stated intention of the managers to cooperate with all federal, state and local units of government and their respective agencies in the conservation of the natural water resources for the common good of the public, and also to act as a coordinating agency for said governmental units and agencies in the development and carrying out of policies, procedures, and regulations concerning water and related resources within the district.

2.3 Review of Local Ordinances Before Passage

Copies of proposed county, municipal and township ordinances relating to surface water drainage, flood plains, and shoreland use within the Watershed District shall be submitted to the managers 45 days prior to the first public hearing for review and comment.

2.4 Submission of Local Ordinances After Passage

Ordinances relating to surface water drainage, flood plains, and shoreland use shall be submitted to the managers within 15 days after passage.

SECTION 3.0 DEFINITIONS

For the purposes of these Rules, certain words and terms are herein defined as follows. In the absence of a definition hereinafter, the definitions established for the State of Minnesota by statute or by case law shall apply to these Rules unless clearly in conflict, clearly inapplicable, or unless the context makes such meaning repugnant thereto:

BOARD, MANAGERS, OR BOARD OF MANAGERS shall mean managers of the Joe River Watershed District acting as a board and not as individuals, unless specifically stated to the contrary.

DEPARTMENT OF NATURAL RESOURCES or DNR shall mean the Minnesota Department of Natural Resources.

DESILTATION BASIN OR STRUCTURE shall mean any pond, depression, structure or other device either natural or man-made, which because of its configuration is able to reduce the velocity of moving water with a resulting disposition of silt particles onto the bottom of such basin or behind such structures.

DETENTION BASIN OR STRUCTURE, shall mean any pond, dike depression, structure or other device which creates a storage of water by detaining or slowing down the outflow of the water by natural or man-made means.

DOMESTIC WATER USE shall mean the use of water for common household or farm use.

DRAINAGEWAY shall mean any natural or artificial channel which provides a course for the flow of water, whether that flow be continuous or intermittent.

GENERAL WELFARE shall include any act or thing tending to improve or benefit or contribute to the safety or well-being of the general public or benefit the inhabitants of the district. General Welfare shall be synonymous with "Public Welfare" or "Public Benefit".

PERSON shall mean any individual, firm, partnership, association, or corporation, but, does not include public or political subdivisions or governmental subdivisions.

PLAN is a map, drawing, report, photograph or other similar supportive exhibit for a proposed work project.

PONDING AREA shall mean any natural or man-made depression capable of retaining or detaining runoff waters and may be either permanent or intermittent in that regard, but, in the case such ponding area shall have been designated as such in a report or on a plan of the Watershed District or of a report or plan of another governmental subdivision.

PUBLIC HEALTH shall be any act or thing or condition which tends to improve the general sanitary conditions of the district.

RETENTION BASIN or STRUCTURE shall mean any pond, dike, depression, structure or other device, either natural or man-made, which because of its configuration is able to retain surface runoff waters.

SHORELAND shall mean land located within the following distances from public waters:

- (1) One thousand (1,000) feet from a normal high water mark of a lake, pond or flowage,
- (2) Three hundred (300) feet from a river or stream bank.

STORM SEWER shall mean a system of pipe installed for the specific purpose of transporting surface and-or underground waters from one location to another and said system need not be continuously constructed only of pipe, but, may include reaches of flumes, spillways, or open-channels.

SUBWATERSHED shall mean

WATERSHED DISTRICT shall mean the legally established agency named and referred to as the Joe River Watershed District, when the first letters are capitalized. When the word "district" appears without capitalization, it shall mean the lands contained within the boundary of the governmental unit, the Joe River Watershed District, as established by the Minnesota Board of Water and Soil Resources.

WORK or WORKS shall mean any construction, maintenance, repair or improvements, whether specifically in regard to water resources or not, carried out within the district.

"SHALL" and "MAY" as used in these Rules shall be construed to indicate a mandatory and a permissive state or condition respectively.

SECTION 4.0 PERMIT REQUIREMENTS

The requirements of obtaining a permit for certain uses of water or for performing certain works within the district are intended for effectuating the purposes and intent of the Minnesota Watershed Law and the District's Overall Plan.

4.1 General Requirement

- (a) All permits, when issued, shall be signed by a member of the Board of Managers.
- (b) No works or use requiring a permit shall be commenced prior to the issuance of the permit. Permits received after the work has already been completed will be subject to a \$50 permit fee.
- (c) Unless specified in the permit, works for which a permit is given must be completed within one year. The managers may further require, as a condition of all permits, that they be notified when said work is completed.
- (d) Application for a permit will be acted upon within 60 days from the date the managers receive the application and required date.
- (e) If a permit application is refused or granted subject to conditions, the applicant may, within 30 days, demand a hearing on the application before the board of managers.
- (f) Obtaining a permit from the managers does not relieve the applicant from the responsibility of obtaining any other additional authorization required.
- (g) Applications for a permit shall be filed with or mailed to the secretary , the engineer, or a manager for the District, or watershed office.
- (h) A plan should accompany the application, and the managers may request additional information.
- (i) All applications shall be substantially in a form prescribed by the Board of Managers. A copy of this form is attached to these rules.

4.2 OTHER PERMITS

Obtaining a permit from the District does not relieve the applicant from the responsibility of obtaining any other additional permission required.

4.3 WATERSHED DISTRICT PERMIT

(A) A permit shall be obtained from the Watershed District prior to any work being commenced for:

- (J) Any public street, road or highway construction project which by means of its construction has any effect on the quantity or quality of water runoff, or any other type of construction which may affect runoff or disposal site quantity or quality.
- (K) Any bridge, dike, culvert, or drain across any natural drainageway, lake or wetland.
- (L) Any diking, excavating, grading or filling adjacent to any drainageway, lake or wetland. This is not to be construed to include maintenance of roadways.
- (M) All water uses other than for domestic purposes, provided however that a permit shall not be required for the reasonable taking of water for purposes of lawns or noncommercial private gardens.
- (N) Any artificial drainageway cut across a subwatershed to thereby deliver water into another subwatershed.
- (O) Any diversion of water by any artificial means into any legal drainage system from any land not assessed to that drainage system.
- (P) Any alteration of any private or legal drainage system.
- (Q) Construction, alteration, repair or removal of any dike or reservoir.
- (R) Any new field ditching, draining an area in excess of twenty (20) acres.

4.4 FORM OF PERMIT

All permits will be issued to the permittee on a form prescribed by the Board of Managers as amended from time to time. A copy of this form is attached to these Rules.

4.5 PERMIT PROCEDURE

The following procedures shall be followed by the applicant and the Watershed District before a permit is issued and during the prosecution of the work for which said permit has been issued:

- (A) Applicant shall obtain copies of any application forms from the Watershed District.

- (B) The Board of Managers may charge a field inspection fee to the applicant pursuant to Minnesota Statutes, 103D.
- (C) If, in the opinion of the Board, it is necessary for the Watershed District Engineer or other consultant to review the application and all exhibits, view the site, and make a report to the Watershed district as to the technical implications of the work, costs incurred by the Watershed District during this review shall be borne by the applicant.
- (D) The Board of Managers may, at its discretion, require the applicant to appear before the Board to present his application for permit and to give any testimony the Board feels proper in making a decision as to the granting or refusal of the permit.
- (E) If the permit is issued, the applicant shall abide by all of the conditions of its issuance and shall, in any case, be responsible for the timely notification to the Watershed District of the commencement of work so that proper observation and inspection can be made. The applicant shall also notify the District upon completion of the work.
- (F) If required by the managers of the Watershed District, the applicant shall file a bond or other approved form of escrow deposit with the managers in an amount set by the managers and conditioned on performance by the applicant of authorized activities in conformance with the terms of the permit.

Said bond or escrow deposit shall be filed prior to issuance of the permit. The bond or permit shall be deposited with the Watershed District Board Secretary before any work is commenced, and when work is completed in a satisfactory manner, the bond or escrow deposit shall be released to the applicant. If the work is of such a nature that the fact of acceptable completion is difficult to determine immediately after the completion thereof, the Watershed District may retain the bond or escrow deposit for a period not to exceed six (6) months at which time a final determination of acceptability shall be made.

If the Watershed District determines that the work is not acceptable, the bonds or other escrow deposit shall be forfeited and the Watershed district shall complete the work using those funds. Unused bond funds shall be returned to the permit holder after completion of the work by the Watershed District. If said bond funds are insufficient to complete the work, the Watershed District may complete the work and assess the permit holder under the enforcement provisions of the statute and these rules.

- (G) If the Board determines that it is necessary to monitor an activity authorized by permit, all such monitoring costs may be charged and collected from the permit holder.
- (H) The fees and costs (B), (C), & (G) herein shall not be charged to an agency of the United States or any governmental unit in this state.

SECTION 5.0 DRAINAGE

5.1 GENERAL RULES FOR DISPOSAL OF SURFACE WATER

- (A) Surface water shall not be artificially removed from upper land to and across lower land without adequate provision being made on the lower land for its passage, nor shall the natural flow of surface water be artificially obstructed so as to cause an overflow onto the property of others.
- (B) Every person shall use his land reasonably in disposing of surface water and may turn into a natural watercourse all the surface water that would naturally drain there, but he may not artificially discharge into a watercourse more water than it has capacity to carry nor burden a lower landowner with more water than is reasonable under the circumstances.

5.2 COUNTY AND MUNICIPAL ORDINANCES DEVELOPMENT AND DRAINAGE PLANS.

- (A) Copies of existing county and municipal ordinances relating to surface water drainage and shorelands within the District shall be filed with the Managers.
- (B) The Board of Managers may, at its discretion, require each municipality within the District to amend its present, or if it has none, to prepare a municipal drainage plan in accordance with Watershed District guidelines for the same for the management and transportation of surface water resulting from urban development and identify in the municipality's land development guides and drainage plans the wetlands to be left in their natural state which must not be used as dumps, fill sites, or otherwise altered without a permit from the Board. Municipalities shall, prior to final adoption, file with the Managers their proposed land

development guide and drainage plan with a statement as to proposed development standards are deemed to be applicable and in conformity with the Watershed District's Overall Plan. The Board shall file its comments with the municipality within 90 days thereafter.

- (C) Where runoff from lands that are urban or suburban in character is contributing to the pollution of the waters of the District, a suitable system of catch basins, filters, and settling ponds shall be maintained and cleaned by the local municipality.
- (D) To provide for coordinated management of surface waters a developer of land shall submit the development drainage plan to the Board and also to any municipality that is involved or affected by the proposed activity. All such plans must receive the Board's approval before commencement of any kind of improvement.
- (E) In addition to the requirements of the standards and criteria of municipal ordinances, improvements will not be allowed in the shore areas that will adversely affect the ability of the marshes or adjacent shorelines from preventing or reducing the flow or pollutional discharges directly into permanent surface waters of the District or adversely affect their efficiency in this respect.

5.3 DESIGN CRITERIA FOR DRAINAGE PLANS AND STORM WATER SYSTEMS

- (A) Storm water drainage shall be discharged through wetlands, retention basins, or such other treatment facilities as may be adequate for the purpose prior to entering the receiving bodies of public waters.
- (B) Diversion of storm water through wetlands shall be considered for existing or planned surface drainage wherever wetlands occur naturally and are feasible as receiving bodies.
- (C) Wetlands passing storm waters shall have adequate outlets.
- (D) Temporary storage areas or retention basins scattered throughout developed areas shall be constructed where feasible to maximize upstream storage and to reduce peak flows, erosion damage and construction costs.
- (E) Natural vegetation shall be used to reduce erosion in waterways between developed land and retention basins.
- (F) Wide, shallow grass waterways, where feasible, shall be used as overflow channels from retention basins to form an above ground drainage network.
- (G) In any proposed development, the possibility shall be considered of detaining storm water from a natural drainage area within that same area. Many tracts are amenable to this concept and whole developments may be handled by this method.
- (H) If facilities for temporary storage are necessary, they shall be designed for no less than a 100-year storm.

SECTION 6.0 EROSION AND SEDIMENTATION

Runoff of needed moisture from sloping lands, eroding and carrying with it sediment from those lands from the banks of natural drainageways, constitutes a serious problem. It shall be the policy of the Managers to encourage the adaptation of proper land use practices and other methods to help reduce said erosion and sedimentation.

3.1 7.1 To Control & Alleviate Soil Erosion and the Siltation of the Drainageways & Lakes of the District.

- (A) All drainageways therein shall be constructed so as to reasonably minimize soil erosion, giving due consideration to the intended capacity of the drainageway, its depth, width and elevation, and the character of the soils through which the drain passes.

- (B) Sloping lands abutting drainageways, lakes, ponds, or reservoirs shall be used in such a manner so as to provide reasonable control of sediment.
- (C) Any construction project within the boundaries of the District which requires the movement of earth or the removal of vegetation or topsoil such as, but not limited to, subdivision improvements, road construction, ditch or channel construction and maintenance, and similar improvements, shall provide for the prevention of erosion by wind and water both during and after construction. The person or governmental subdivision responsible for the work may, at the discretion of the Board of Managers, be required to submit a plan to the Watershed District which shall show or describe the construction practices to be utilized to avoid and control erosion. A work schedule and timetable for erosion control measures shall accompany the time schedule for construction.
- (D) Individuals or developers carrying out the erosion control measures, with permit, and all subsequent owners of the property involved, shall effectively maintain all erosion control features.
- (E) Conditions placed on any permit granted pursuant to this regulation shall include, but not be limited to, the following:
 - (1) Work in or near public waters and drainage systems shall be conducted so as to minimize increases in suspended solids and turbidity of runoff or receiving waters.
 - (2) Materials used in erosion prevention, such as riprap, shall be nonpolluting under any foreseeable conditions, and shall be installed consistent with good engineering practices and in such a way to assure effectiveness and permanence.
 - (3) The Watershed district shall be notified immediately of any harmful disturbance to public waters or drainageways.
 - (4) Fill material shall be non-polluting.
 - (5) Spoils shall be prevented from entering public waters or drainageways.
 - (6) All bare ground areas after construction shall be seeded to a grass mixture to prevent soil erosion and the spread of noxious weeds.

SECTION 7.0 POLLUTION CONTROL

In order to provide for the abatement of the pollution of public and private water resources as a part of a comprehensive program to eliminate the pollution thereof, the Watershed District shall have the power and authority to impose certain preventive and remedial measures to promote the public health and general welfare, to promote safety and sanitation, and to improve the quality of the waters thereof for general use.

7.1 Discharges from Municipal and Industrial Waste Treatment Plants.

The Board of Managers may, at its discretion, require each municipality, industry, and feedlot operator discharging wastes directly into any stream, lake or watercourse within the District to file with the Board a copy of its current NPDES permit issued by the Minnesota Pollution Control Agency describing the effluent standards and limitations prescribed by the Agency. Pursuant to M.S. 103D the Board or its designate shall have the right to enter upon any lands of the District for the purposes of inspection, monitoring and testing the quantity and quality of the discharge, and shall have the right to install whatever hydrological recording and testing devices it may deem necessary. Any permit violations found shall be reported immediately to the discharger and to the Agency for appropriate action. Should the discharger fail to abate the violation in a reasonable period of time the Board may, at its discretion, require the discharger to appear at a special meeting to show cause why the violation should not be abated, pursuant to its authority under M.S. 112.43, Subd. (1)(12).

SECTION 8.0 REVIEW OF PLANS AND PLATS

In order to carry out the intent of the Minnesota Watershed Act, and to provide for assurance that the development of the district and its natural resources is carried out in an orderly manner, the Watershed District Board of Managers shall require the submission of certain plans and documents for various types of improvement, developments, projects, and proposals, and may, at its discretion, review and report on these activities together with suggestions, recommendations, and requirements as to their contemplated effect on the water resources of the District.

SECTION 9.0 ENFORCEMENT POWERS OF MANAGERS

10.1 Manner of Enforcement

Any provision of these rules or any order or stipulation agreement made, or any permit issued by the Board of Managers of the Watershed District may be enforced by criminal prosecution, by injunction pursuant to Chapter 103D of the Minnesota Statutes, by action to compel performance, restoration, abatement and other appropriate action.

Any violation of these rules or of any order of stipulation agreement made, or a violation of any permit issued by the board of managers of the watershed district is a misdemeanor in accordance with Chapter 103D of the Minnesota Statutes.

10.2 Powers of Ordinance

Pursuant to Chapter 103D, the Managers shall have a limited authority to adopt rules to control encroachments, the changing of land contours, the placement of fill and structures of every type, to prevent the placement of encumbrances or obstructions and to restore the previously existing land contours and vegetation. The Managers may by rule provide a procedure whereby the Watershed District can do the work required and assess the cost thereof against the affected property as a special assessment. Such rule shall be applicable only in the absence of county or municipal ordinances for the regulation of these items listed above herein.

10.3 Contractor's Liability

Any individuals, firms, corporations, partnerships, associations or other entities contracting to perform services regulated by these rules shall be responsible for ascertaining that all permits herein required have been obtained and that all work performed complies with all requirements of the rules. Contractors in violation shall be subject to all sanctions or penalties, criminal or civil, imposed by these rules.

SECTION 10.0 PUBLIC MEETING, HEARINGS AND RECORDS

11.1 Meetings

All meetings of the Watershed District, whether regular or special, shall be open to the public and shall be held at a time, date and place as determined from time to time by the managers.

11.2 Hearings

Any member of the public may request a public hearing on the approval of a permit. Notice of a public hearing shall be given as required by statute. Testimony given and received at such public hearings may be recorded and witnesses may be sworn as required by statute or at the discretion of the Board.

11.3 Waiver of Hearing

Unless required by statute, the Managers in their discretion may waive a public hearing on any application for a permit and make their order granting or refusing such application. If said application is refused or granted subject to conditions, the applicant may, within thirty days, demand a hearing on the application.

11.4 Records

The records of the Watershed District shall be public records as required by state statute and shall be open to the public for inspection to that extent required. It is the stated intention of the Board of Managers to cooperate with all persons, governmental subdivisions and governmental agencies in the promotion of the conservation of the natural resources of the district and to share information with the public for the common good.

SECTION 11.0 GENDER NEUTRAL

Where appropriate, the masculine includes the feminine, the plural includes the singular, and vice versa

SECTION 12.0 EFFECTIVE DATE

Provisions of these Rules shall become effective upon the passage by the Board of Managers, publication, and hearings as required by law.

SECTION 13.0 ADOPTION These Rules are hereby adopted pursuant to Minnesota Statutes Chapter 112, on 9-21-88, effective on 11-16-88, and amended pursuant to Minnesota Statutes Chapter 103D.341 on February 14th, 2000.

Chairman

Secretary

THE BOARD OF MANAGERS
JOE RIVER WATERSHED DISTRICT