International Trans-boundary Case Study (Red River Basin)

Analysis of Water Strategies for the Prairie Water Basin

November 2005

Note to Reader

This document is one of seven jurisdictional and inter-jurisdictional case studies prepared as input to the 2005 Prairie Water Policy Symposium hosted by the International Institute for Sustainable Development (www.iisd.org) on September 22-23, 2005. The other six case studies cover Saskatchewan, Alberta, Manitoba, Interprovincial Management, Minnesota, and North Dakota. The intent of the case studies is to provide a description of strategic and co-ordinated action in relation to water management within the respective jurisdictions.

Information in this case study was obtained from publicly available sources (e.g., Internet and literature sources) and supplemented through interviews with government officials. The information was up-to-date as of October, 2005.

This case study is in an unedited, working paper format.

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1 Context

The Red River of the North flows north from its headwaters in Minnesota, across the Canada-United States international boundary, to its outlet at Lake Winnipeg in Manitoba. It meanders through the flat and fertile valley of the former glacial Lake Agassiz. The river basin occupies substantial portions of North Dakota, northwestern Minnesota, southern Manitoba and a very small portion of northeastern South Dakota. It covers 116,500 square kilometers or 45,000 square miles, excluding the Assiniboine River basin, which joins the Red River at Winnipeg.

The hydrologic system of the Red River basin is complex. It is influenced by many natural and human forces. To deal with this system, dozens of government agencies and organization have evolved with management responsibilities or interests in various aspects of its water and land resources. These resources are managed and controlled through myriad federal, provincial, state and local laws, regulations, rules and ordinances. In addition, there are a number of binational, interstate and international arrangements, as well as committees and working groups that oversee and coordinate many aspects of basin water management.[1]

The realization that actions by either the United States or Canada could directly influence the water resources of the other resulted in the 1909 Boundary Waters Treaty Act. This Act created the ***International Joint Commission***, which is composed of six members, three appointed by the Governor in Council of Canada and three appointed by the President of the United States. The International Joint Commission assists the United States and Canadian Federal governments and the states of North Dakota, South Dakota and Minnesota and the Province of Manitoba in water management matters.[2]

The Red River is unpredictable for the many residents whose daily lives can be influenced by it. A major river system that flows north, the Red River has a long history of flooding. However, the 1997 flood caused more property damage, loss of life and disruption than any of the preceding floods. Catastrophic damages occurred to the residents of Grand Forks, North Dakota, East Grand Forks, and Ada, Minnesota, as well as numerous villages north of the border; these communities were substantially or completely flooded. Although literally within a few inches of complete overtopping of protective levees and dikes, Winnipeg, Manitoba, successfully repelled this flood, but feels a similar or larger future flood is a certainty, and will require more protection. The entire basin was disrupted for months. Communities all along the Red River have their tale of fighting the 1997 flood and innumerable homes and buildings scattered throughout the basin were inundated. The damage from this 1997 flood totaled US $5 billion ($6.85 billion CAN).[3] The flood of 1997 was the impetus of several of the organizations that will be described in the document.

Just getting out of the way of a flood is an immense challenge within the Red River Basin, because of the flood mechanism. Springtime flooding across the region's strikingly flat terrain is

[1] International Joint Commission:
http://www.International Joint_Commission.org/conseil_board/red_river/en/irrb_home_accueil.htm
[2] The International Joint Commission and The Boundary Waters Treaty of 1909
[3] Living with the Red, International Joint Commission, 2000

often caused by spring rains falling on snow, with coincident snowmelt. The mechanism for summer floods is more complex, and is the subject of numerous past and ongoing investigations.[4]

2 Vision and Goals

The goals of the International Joint Commission are to prevent and resolve disputes between the United States and Canada under the 1909 Boundary Waters Treaty and to pursue the common good of both countries as an independent and objective advisor to the two governments. The International Joint Commission rules upon applications for approval of projects affecting boundary or Transboundary waters and may regulate the operation of these projects; it assists the two countries in the protection of the Transboundary environment, including the implementation of the *Great Lakes Water Quality Agreement* and the improvement of transboundary air quality; and it alerts the governments to emerging issues along the boundary that may give rise to bilateral disputes.[5]

2.1 Process

The International Joint Commission has three main Responsibilities:

1) The Commission issues Orders of Approval in response to Applications for the use, obstruction or diversion of waters that flow along, and in certain cases across, the boundary if such uses affect the natural water levels or flows on the other side.
2) Commission also undertakes investigations of specific issues, or monitors situations, when requested by Governments. Implementation of Commission recommendations made under such References is at the discretion of the two Governments.
3) The Treaty also provides for the Governments to refer matters to the Commission for binding decision (but to this date this provision has not been used).[6]

The original emphasis for the Treaty, as described within the document, appears to be directed to the use of the Great Lakes, the Niagara River, the St. Mary and Milk Rivers.

The International Joint Commission has been involved with the development of relationships between the states and Canada in relation to the Red River. Described below are the chronological developments of some organizations which are involved in the international partnerships along the prairie Province/State boundary of Canada and the United States. These numerous boards were developed by the Commission to assist in the Responsibilities as described above.

In January 1940, the governments of Canada and the United States requested the International Joint Commission to investigate and report on regulation, use and flow of the Souris River and its tributaries and the apportionment of water between the two countries. Interim Measures for cross-border sharing were designed, and the ***International Souris River Board of Control*** was

[4] Red River Basin Decision Information Network, http://www.rrbdin.org/about/project-background.jsp.
[5] International Joint Commission: http://www.International Joint Commission.org/en/home/main_accueil.htm
[6] The International Joint Commission and, The Boundary Waters Treaty of 1909. 1998

established to monitor compliance with them. These Interim Measures were revised in 1992 and 2000.

In 1948, the International Joint Commission established the ***International Souris-Red Rivers Engineering Board*** to report on the use and apportionment of the waters in the Souris, **Red**, Poplar and Big Muddy River basins and to develop plans of mutual advantage for these waters. With respect to the Red River, the board was involved in flooding and diking issues, Garrison Diversion, Pembina River water supply and flooding, and Roseau River water management.

As reported in the December 2000 report to Canada and the United States by the International Joint Commission, the International Souris River Board of Control and the Souris River portion of the International Souris-Red Rivers Engineering Board were merged into the ***International Souris River Board***. The International Souris River Board assists the International Joint Commission in preventing and resolving disputes relating to the transboundary waters of the Souris River Basin.

In 1964, the International Joint Commission was requested by the governments to study and report on the extent and causes of pollution of the Red River at the boundary and to recommend remedial measures. Governments adopted the water quality objectives recommended by the Commission in April 1968 and agreed that a water quality supervision board be established. The ***International Red River Pollution Board*** was established in June 1969 and provided continuous surveillance of the water quality of the Red River at the international boundary.

In 2001, the two boards, the The International Red River Pollution Board and the Red River portion of the International Souris-Red Rivers Engineering Board were combined to form the ***International Red River Board.*** This merger was officiated as a way to ensure a more ecosystemic approach to transboundary water issues and to achieve operational efficiencies. This Board remains as the main assisting board to the International Joint Commission in regards to Red River issues.

The mandate of the International Red River Board is to assist the Commission in preventing and resolving transboundary disputes regarding the waters and aquatic ecosystem of the Red River and its tributaries and aquifers. The geographical scope of the Board's mandate is the Red River basin, excluding the Assiniboine and Souris Rivers. The Board's activities focus on those factors which affect the Red River's water quality, water quantity, levels, and aquatic ecological integrity.[7]

Grassroots Involvement in the Red River Basin

After a major flood in 1979, a group of concerned citizens organized ***The International Coalition for Land & Water Stewardship in the Red River Basin***. This group, organized as a tax-exempt nonprofit in the United States and a registered charity in Canada, had a grass-roots focus of bringing together parties involved in land and water use to come to agreement on these issues. The International Coalition, through task forces and annual conferences devoted to various water- and land-related issues, attempted to resolve differences, from local to federal levels, in a collaborative manner.

[7] http://www.ijc.org/conseil_board/red_river/en/irrb_home_accueil.html

In 1981, a nonprofit corporation was formed to provide a formal coordination between Minnesota and North Dakota. The impetus to form the **Red River Water Resources Council** came from the US federal budget cuts which terminated the Souris-Red-Rainy River Basins Commission. Membership in the new Council consisted of state agency personnel from the two states, and a citizen at large from each of the two states. Representatives from Manitoba and other US federal agencies acted as official observers. The Council met quarterly, and the meetings were open to the public.[8]

In 1995, several local and state entities developed the idea to have a Red River Basin planning entity that could respond to major water issues in the Basin and provide guidance to resource managers. The group wanted to have representatives from all sectors of private and governmental jurisdictions, serving as a forum for diverse interests that would develop guidance for water resource management. The idea was presented at the 13th Annual Red River Basin Land and Water International Summit, hosted by The International Coalition. The **Red River Basin Board** was formally established in early 1996, with over 200 water resource managers identifying representatives to serve on a planning group, charged with developing the structure, responsibilities and financial support mechanisms.[9, 10]

In 2002, The International Coalition, the Red River Basin Board, and the Red River Water Resources Council, merged to form the ***Red River Basin Commission***, which was charged with the task of producing the Red River water management plan. The Red River Basin Commission has adopted as its mission statement: *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.*

3 Structure and Planning

There are three main organizations that are involved with international trans-boundary water management in the Red River Valley:

- International Joint Commission
- International Flood Mitigation Initiative
- Red River Basin Commission.

3.1 International Joint Commission

Provisions of the 1909 Boundary Waters Treaty stipulate that use, obstruction or diversions affecting the natural level of water on either side of the boundary after January 11, 1909, were to be allowed only if approved by the ***International Joint Commission*****.** Waters were not to be polluted on either side to the injury of health or property on either side of the boundary. The treaty also provides an avenue for the governments to present questions or matters of differences

[8] Krenz Gene, Leitch, Jay. 1993 A River Runs North, Managing an International River, pg 139
[9] Minnesota Pollution Control Agency – Red River Basin – Water Quality Basin Planning; http://www.pca.state.mn.us/water/basins/redriver/wqp.html
[10] 1996 International Land and Water Stewardship conference

between the two countries to be referred to the International Joint Commission for study and resolution of differences.[11]

The International Joint Commission recognized the devastating effects of the 1997 flood and recognized the need for cross-border cooperation in addressing flood-related issues. Through the request of both the United States and Canada governments, the International Joint Commission convened a task force to study and make recommendations on means to reduce, mitigate and prevent harm from future flooding in the basin. The task force completed the report "*Living with the Red – A report to the Governments of Canada and the United States on Reducing Flood Impacts in the Red River Basin."* The development of this report led the International Joint Commission to establish the International Red River Board, as was previously discussed in Section 2.1.

International Red River Board
The directive assigned to the board by the International Joint Commission in February 2001 is to:

- Assist the International Joint Commission in preventing and resolving transboundary disputes regarding the waters and aquatic ecosystem of the Red River and its tributaries and aquifers;
- Maintain an awareness of basin activities that affect stream flows, water quality and ecosystem health of the Red River and its transboundary tributaries;
- Provide a forum for identification, discussion and resolution of existing and emerging water-related issues;
- Recommend appropriate strategies to the International Joint Commission concerning water quality, quantity and aquatic ecosystem health objectives;
- Encourage and facilitate development and maintenance of flood-related data and information systems and flood forecasting and hydrodynamic models;
- Determine compliance with agreed-upon objectives;
- Monitor flood preparedness and mitigation activities and their potential effects on the transboundary aquatic ecosystem;
- Encourage public involvement;
- Provide annual reports and any other reports requested to the International Joint Commission;
- Keep the International Joint Commission informed of any committees, working groups formed by the International Red River Board, plans for any public meetings.

The International Red River Board established two committees to enable them to better achieve their mandate, the ***Red River Aquatic Ecosystem Committee*** and the ***Hydrology Committee***.

Red River Aquatic Ecosystem Committee.
This committee was established in 1995 by the International Red River Pollution Board (now the International Red River Board) and charged with the following duties:

- Develop recommendations and implementation details for biological monitoring in the watershed;
- Develop recommendations and implementation details for monitoring for non-native species;

[11] Red River Basin Board Inventory Team Report, Water Institutions, October 2000.

- Develop recommendations on integrated monitoring in the watershed; and
- Develop recommendations and implementation details on establishing and maintaining a central water quality database.

The Aquatic Ecosystem Health Committee[12] recommended adopting an aquatic health goal for the basin based on Dr. James Karr's definition of biotic integrity: *Assure that water resources of the Red River of the North basin support and maintain a balanced community of organisms with species composition, diversity and functional organization comparable to natural habitats within the basin without regard to political boundaries.*

Planning and Implementation: The Aquatic Ecosystem Committee has five main categories under which all monitoring objectives can be grouped:

- Assessment of current status of aquatic ecosystem health in the Red River Basin
- Assessment of past, current and future trends of aquatic ecosystem health in the Red River Basin
- Assessment of early warning indicators of aquatic health in the Red River Basin
- Cause and effect monitoring and diagnosis
- Socioeconomic linkages to aquatic ecosystem health.

Once the monitoring objective(s) are stated, developing a specific monitoring design takes place. A process for periodic peer review and feedback is part of the design, because it is important to review goals, objectives and monitoring designs and reassess them due to current and future aquatic ecosystem health monitoring and assessment needs. The committee incorporates existing monitoring programs and projects into the draft framework, recommends future studies and provide san updated status report on basin health at the annual meeting of the International Red River Board, using existing and any new information, including recommendations for short- and long-term monitoring and integrated information on water quality, bio-monitoring and hydrology.

Hydrology Committee

The Hydrology Committee was established by the International Red River Board, which assigned the following five tasks to it:

- Develop recommendations on how the flood mitigation responsibilities of the Board will be met;
- Develop recommendations and implementation details on establishing and maintaining a natural flow database for the Pembina, Roseau, Aux Marais and Red Rivers;
- Develop recommendations on possible solutions with respect to the Little Minnesota River/Lake Traverse/Red River interconnection;
- Develop recommendations, in consultation with International Joint Commission staff, on a policy to deal with interjurisdictional drainage; and
- Develop recommendations and implementation details on establishing and managing a central water usage database.

[12] A Framework and Work Plan for Aquatic Ecosystem Health Monitoring and Assessment in the Red River Basin. Prepared by the Red River Aquatic Ecosystem Health Committee for the International Red River Board

Red River Basin Decision Information Network[13]
Following the 1997 flood, a need for better information and different types of data, especially geo-spatial (GIS) data and improved tools for flood fighting was recognized. The International Joint Commission began developing the ***Red River Basin Disaster Information System***. Developed in cooperation with the Global Disaster Information Network, the intent of the Red River Basin Disaster Information System is to be an internet-based decision-making support tool for flood related emergency management within the Red River Basin. The intent was to make data available to those responsible for solving flooding problems, fostering international cooperation and strengthening inter-organizational ties.

The Red River Basin Disaster Information System is an internet-based decision support system, providing a one-stop portal to information about water management within the basin. This information includes databases, references, technical tools, communication tools and GIS data. It was originally conceived as a method to provide access to multiple sources of data and information across the Internet (distributed database), through a map interface tool. Successful development of the web site, defining of data needs of users and conceptually developing tools believed useful to local decision makers was accomplished. The initial project phase, completed in 2000, identified a number of significant challenges related to non-uniform standards and formats for geo-spatial data between states, lack of or inaccessibility of geo-spatial data and technological limitation for the implementation of internet-based tools. Additional funding was secured to continue the network's development.

Recognizing the need to share and disseminate data of all types, the Red River Basin Disaster Information System is now called the ***Red River Basin Decision Information Network.***
The International Water Institute has become the web base administrator for this site, using North Dakota State University as an internet service provider. The web address is: http://www.rrbdin.org.

3.2 International Flood Mitigation Initiative

In the aftermath of the 1997 flood, the governments of the United States and Canada jointly sponsored the ***International Flood Mitigation Initiative*** for the Red River. The International Flood Mitigation Initiative was the first watershed-wide program funded by *Project Impact: Building Disaster Resistant Communities*, a national disaster mitigation initiative developed by the U.S. Federal Emergency Management Agency. For this first regional and international project of its kind, Federal Emergency Management Agency Director James Lee Witt asked the Consensus Council in Bismarck, North Dakota, to assemble Canadian and US participants in a consensus process, with bi-national staffing. The Initiative sought to build consensus on a comprehensive set of practical initiatives to reduce future flood damages in the Red River basin and to strengthen basin community resources to accomplish this goal, with its mission being: *To promote and develop achievable and action-oriented flood mitigation goals and implementation strategies by engaging citizens, their communities and governments.*

Its vision is: *By the Year 2010, the community of the Red River Basin has addressed flooding through mitigation that achieves significant flood damage reduction goals while enhancing economic, social and ecological opportunities.*

[13] Red River Basin Decision Information Network: http://www.rrbdin.org/about/project-background.jsp

Participants in the International Flood Mitigation Initiative included representatives of the states of Minnesota and North Dakota and the province of Manitoba including legislators; provincial and state executive branch officials with responsibilities for public health, the environment, water, and natural resources; representatives of federal emergency management, environment and water agencies; political leaders; local government officials; disaster relief agencies; environmental organizations; business and banking groups; university leaders; charitable foundation representatives; international agencies; and water management agencies.

Goals of the International Flood Mitigation Initiative were:

Developing basin-wide cooperation, coordination and citizen participation: To develop and support implementation of a basin-wide approach for forecasting, cooperation and communication for flood mitigation in ways that assure accountability, citizen assistance, responsiveness to local concerns, and public awareness and participation.

Forging public-private and community partnerships: To forge lasting partnerships among government, private and non-profit organizations and communities to ensure best practices in flood mitigation.

Coordinated oversight and funding: To recommend a method for establishing basin-wide coordinated oversight and for securing funding and other resources needed to achieve these flood mitigation goals.

Enhancing environment, economy and community: To recommend and support flood mitigation practices which enhance ecological benefits, economic development, heritage preservation, and social, cultural and recreational opportunities.

Protecting people and property: To recommend and support flood mitigation strategies that protect human life, property and well-being.

The International Flood Mitigation Initiative developed 12 institutional mechanisms and projects that operationalize its goals:

1. Basin-wide coordination
2. Basin legislator forum
3. The Greenway on the Red
4. Water storage and retention projects
5. Farm Stewardship Initiative
6. Floodplain Architecture Institute
7. Local mitigation plans
8. Broadcast media partnerships
9. Print media partnerships
10. Research, Mapping and Education Institute
11. Student and teacher education
12. Flood insurance/lender compliance

The following discussion relates to the 12 International Flood Mitigation Initiative mechanisms that have been accomplished, or are still ongoing.

The Basin Legislator Forum is a regular gathering of Manitoba, Minnesota, North Dakota and South Dakota legislators from the Red River Basin to increase understanding of basin-wide

issues (including flood mitigation) faced by each jurisdiction and to lay a foundation for building cooperative agreements among the jurisdictions. This group of 30 legislators from the four jurisdictions has met annually since 2001. They deal not only with water/flood mitigation but also energy transmission, renewable energy, agriculture harmonization, animal health, food safety, and joint tourism efforts.

The Greenway on the Red has as its mission statement: "*To promote the development of a greenway system on the Red River of the North and its tributaries that mitigates floods and protects people through education and partnerships that enhance the economy, environment and communities of the Red River Basin*." The Greenway on the Red will coordinate the establishment of a 600-mile/960 kilometer continuous Greenway from Lake Traverse in South Dakota to Lake Winnipeg in Manitoba, collaboratively with partners in North and South Dakota, Minnesota and Manitoba. The overriding purpose of this contiguous Greenway will be to mitigate the destruction and hardship caused by inevitable flooding in the Red River Basin. In addition, the Greenway will provide multiple on-the-ground benefits through riparian restoration; water quality enhancement; farmer/landowner incentives; community strengthening; and increased recreation, tourism, and economic development. In the spring of 2004, Manitoba Premier Gary Doer and the Governors of North and South Dakota and Minnesota agreed to the establishment of the greenway. Two organizations, Rivers West – Red River Corridor Association Inc., in Manitoba and Greenway on the Red in the US, led by the local Audubon chapter, were to lead the initiative in their respective jurisdictions. The Red River Greenway Strategy report is the result of that endeavor and outlines a proposed strategy for the Manitoba portion of the greenway.

More specifically, goals for the development of the greenway would include: contributing to the biodiversity in the Red River Valley; maintaining/enhancing riverbank stability; enhancing Red River water quality; assisting in mitigation of flood damage; attracting local citizens and tourists to the area; and enhancing economic development opportunities. Each of these goals translates into benefits that the Red River corridor will accrue with the establishment of the greenway.

RiverWatch is a media partnership which has created a regular program for television and radio and an extensive web site. RiverWatch is a partnership between Prairie Public Broadcasting, the International Flood Mitigation Initiative, the viewing and listening public and more than 28 local, state, federal and communication partners. During a flood event, RiverWatch provides current and reliable television and radio news and weather updates on flooding and flood mitigation throughout the Red River Valley of the North. Weather forecasts and river level update information are provided daily by the University of North Dakota's Regional Weather Information Center, The National Weather Service and Environment Canada. Year-round expanded information is posted daily on the website, http://www.riverwatchonline.org. It includes public information and education about the river, flood preparation, flood recovery, and flood mitigation in the Red River Valley. In addition, the RiverWatch project, with guidance from members of the Red River Center for Watershed Education, has developed student- and teacher-friendly educational materials. These lessons can be used with most science and social studies curriculums for students at the fourth, fifth and sixth grade levels and are available on request. The RiverWatch team continues to gather information in preparation of next spring's potential flood events.

International Water Institute was conceived by the International Flood Mitigation Initiative in 2000. The Institute established an International Management Board in 2001 that was charged with oversight of the *Red River Center for Watershed Education* and the *Center for Flood Damage and Natural Resource Center*. The management board adopted a set of bylaws that clearly articulate the organizational mission and objectives and the roles of board members and staff. The Institute began working with Tri-College University, a collaborative (U.S. Tax Code 501(c)(3) tax-exempt nonprofit organization) effort between North Dakota State University, Concordia College and University of Minnesota Moorhead, to develop an administrative framework that preserved the Institute's International mandate and basin-wide scope. Through agreements, Tri-College University provides administrative support and financial accounting to the Institute and serves as the nonprofit vehicle for grant proposals.

Two Centers of focus were developed by the International Water Institute. They are described below:

R*ed River Center for Watershed Education* was formed to create and implement education and professional programs in watershed science. The Center partners with K-12 and community education, resource management professionals, and decision makers in an effort to enhance leadership capacity and decision-making in surface water quality issues affecting the Red River of the North Watershed. The Center serves as the catalyst organization whose mission transcends across the basin without constraints of state or provincial jurisdictions.

The Center's Mission statement is*: Building basin-wide leadership for sustainable living in the Red River of the North Watershed*, and its objectives are to:

- Become a facilitator and coordinator among all major parties involved in Red River Basin education.
- Develop well-researched and locally-established watershed education programs for schools and their communities, through formal K-12 education, as well as complementary non-formal education channels.
- Design and institute a communications network among participants in the education program to further advance educational outcome in light of the basin as a shared system.
- Develop a within-basin process for supporting continuing education and professional development of basin educators, natural resource managers and policy makers related to watershed education and local-to-basin-wide flood mitigation.

The ***Center for Flood Damage and Natural Resource Center*** was formed to establish an international partnership of government agencies, basin organizations, private sector professionals and universities to identify, prioritize and address flood damage reduction and natural resource research needed within the Red River Basin. The Center for Flood Damage and Natural Resource Center is also responsible for hosting a biennial International Water Conference.

The mission statement for the center is: *To provide a forum for collaborative research and communication relative to flood damage reduction and natural resource protection via basin*

universities, private industry, government agencies and non-government organizations, and its objectives are to:

- Utilize technical and professional expertise to help resolve critical water management issues.
- Facilitate enhanced networking of research professionals from higher education institutions, plus federal, state and local agency personnel, environmental groups and other citizens of the Red River Basin to cooperate in solving the critical water management and natural resource issues in the basin.
- Provide opportunities for students to receive education, perform research, and gain experience on subjects important to the region.
- Prepare students for future employment while providing valuable basic and applied research.[14]

3.3 Red River Basin Commission

The Red River Basin Commission as identified in Section 2, formed through the integration of three other international and interstate groups. The Commission is recognized as a nonprofit organization under the laws of Canada (NCA 317A) and the United States [501(c)(3)]. As previously stated, the **mission** of the Commission 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 Commission."* Four goals were identified by the Commission to affect the mission:

- Provide leadership in developing the basin-wide vision
- Develop partnership strategies in creating basin-wide vision
- Develop strategies to communicate the basin-wide vision
- Provide direction for data and research needs in shaping the basin-wide vision.[15]

The Commission is truly international when one looks at the make-up of the Board of Directors, consisting of 41 members broadly representing North Dakota, Minnesota, South Dakota, Manitoba, First Nations and Tribal affiliations.[16] As the Commission formed, it also adopted programs and goals that the previous organizations were developing. A major project that the Commission continued with was developing the Natural Resources Framework Plan.

The Plan was developed over a period of several years and included comprehensive Inventory Reports of the Basin's resources and issues. These Inventory Reports were then assembled and taken to the citizens in the Basin through "Face to Face Forums." These Forums helped develop the goals for the Framework Plan. The Plan was completed by staff at the Commission's office in Moorhead, Minnesota, in June 2005. The Plan was distributed to almost 800 individuals and agencies throughout the basin, across the international boundary. In keeping with the public process, the Commission continues to seek input to the Plan from the recipients through a survey that was also provided. The Plan includes 13 Basin Goals with objectives. The Plan is not a regulatory document, instead it is to be considered a guide to all Basin stakeholders as they plan and undertake their own objectives of land and water management within the Basin. The Natural Resource Framework Plan identified the **Vision** of the Commission, which is: *A Red River Basin*

[14] International Water Institute: http://www.tri-college.org
[15] Red River Basin Commission, Governing Documents, Article II
[16] Red River Basin Commission, Governing Documents, Article V

where residents, organizations and governments work together to achieve basin-wide commitment to comprehensive integrated watershed stewardship and management.

The 13 Basin-wide goals were developed through the Inventory Reports that were developed by Basin inter-governmental and citizen involvement. These 13 goals include:

- Manage natural resources based on watershed boundaries, rather than political
- Integrate natural resources management
- Increase applied research and data management to support decisions
- Improve stakeholder participation and awareness of land and water issues
- Maintain state-of-the-art flood forecasting tools for the Basin
- Reduce risk of flood damages for people, property and the environment
- Ensure that flood response and recovery programs meet the needs of all
- Maintain urban and rural drainage systems to enhance productivity while minimizing impact to others
- Maintain, protect and restore surface and ground water quality
- Ensure the appropriate use and sustainability of the Basin's surface and ground water
- Increase soil conservation efforts within the basin
- Conserve, manage and restore diversity and viability of native fish and wildlife populations and their habitats
- Enhance and develop recreational infrastructure and access to the Basin's natural resources

The Plan also includes an "Action Agenda" which is a table of ongoing activities that organizations and agencies around the basin are developing. This will be the "living" portion of the plan so that citizens and agencies can know what projects are being completed to further the understanding of what is happening around the basin to further the goals and objectives.

The Commission has divided itself into four main working Centers:

- Leadership
- Partnership
- Technical Resources
- Communications

These Centers serve to focus the efforts of the staff and Board. The Center emphasis areas were developed directly from the original goals at the formation of the Commission. The Board has divided itself into committees that work within the Center Areas. A major focus for the Communication Center is the Annual Red River Basin Land and Water International Conference. The International Coalition for Land and Water Stewardship in the Red River Basin started this conference in 1983 as a means to inform and educate Basin stakeholders to the issues of the Red River Basin.

The Commission has participated in program development with the International Joint Commission and the International Red River Board. Two projects of interest include:

- ***Comprehensive Flood Mitigation Plan*** – This document was developed as a result of the "Living with the Red" publication (International Joint Commission) after the 1997 flood. The Governors of North Dakota, South Dakota, and Minnesota and the Premier of

Manitoba signed a Memorandum of Understanding for Flood and Drought Mitigation on the Red River in April of 2004. The Red River Basin Commission assisted the International Red River Board in developing a framework document that would lead the States and Province toward endorsement of the Plan.

- ***Mainstem Modeling*** – This effort has involved the Province of Manitoba, States of North Dakota and Minnesota, the US Army Corps of Engineers, and the Energy and Environmental Resource Center in developing a "seamless" hydrologic model that can be used to determine strategies for flood damage reduction. The emphasis has been to utilize hydrology information from many sources and synthesize it using one model, the Mike 11 Model, so that many agencies can then use it for planning purposes. The Red River Basin Commission is working closely with all of the agencies and private engineers to facilitate this project.

3.4 Independent International Program

Pembina River Basin Advisory Board
The *Pembina River Basin Advisory Board* was formally established in January 1998 as the result of a series of discussions aimed at forming a basin-wide group to formulate a water management plan for the entire Pembina River Basin. The Pembina River Basin Advisory Board includes representation from the United States and Canada and intentionally includes "advisory" in its name to emphasize that it has no intention to undermine the authority held by other jurisdictions. The formal purpose of the Pembina River Basin Advisory Board is to develop and cause to be implemented a comprehensive water management plan for the Pembina River Basin and to facilitate and pursue the resolution of interjurisdictional issues. Over the past few years, the Pembina River Basin Advisory Board has received technical assistance from the Red River Water Management Consortium through the membership of the Resource Conservation and Development Councils.[17]

Roseau River Watershed Plan
The *Roseau River International Watershed* agreement is the result of a three-year effort coordinated by the Red River Basin Commission. The **mission** statement of the Roseau River International Watershed is *"to promote, provide and conduct an international alliance between Manitoba and Minnesota which will work towards the proper management of the resources of the Roseau River Watershed, including flood control, economic, human and natural resources, and water quality and quantity."*

The Roseau River International Watershed, consisting of the Rural Municipalities of Piney, Stuartburn, Franklin and Montcalm; the Roseau River Anishinabe First Nation Government and the Red River Basin Commission, will develop a comprehensive, integrated watershed plan for the Canadian portion of the Roseau River that is compatible with the plan now being developed for the United States portion of the river. The Roseau River Watershed Plan will be the first comprehensive, integrated watershed plan developed in the Province of Manitoba since the declaration of the Manitoba Water Strategy by the provincial government in 2003. One of the integral purposes of watershed planning is to ensure that water resources are managed and

[17] Pembina River Basin Advisory Board web page, http://www.undeerc.org/watman/html/member.html.

protected for both current and future generations. The goals of the Roseau River International Watershed Plan are:

- Ensure personal safety;
- Reduce flood damage to infrastructure, farmland and property;
- Provide for water supply and
- Facilitate the involvement of governmental agencies for new economic development

These goals will be achieved by working closely with the project partners and local level stakeholders in identifying priority issues within the watershed. Due to the transboundary nature of the Roseau River Watershed, the Canadian watershed plan is intended to be linked to a similar plan already completed for the American portion of the watershed. The Canadian watershed plan will be a living document that will be updated and revised on a regular basis and will afford rural municipalities, businesses, First Nations, farmers, landowners, and local residents with a chance to see proper water management and economic development in southeastern Manitoba. Local level input and involvement is an essential part of the planning process. The Department of Water Stewardship within the Province of Manitoba is a project partner and appointed a representative to serve on the project Steering Committee. A Technical Advisory Committee, consisting of 23 federal, provincial and non-government agency representatives, was established to provide technical expertise and information for the project. The Red River Basin Commission hired a project planner to organize, establish, initiate and complete the watershed plan and is also providing financial and project management services for the project.

The project commenced in September 2004; the target completion date is March 2006.

4 Multi-level Coordination

4.1 Minnesota State and Manitoba Province

The Minnesota Pollution Control Agency has an agreement with the Province of Manitoba regarding feedlots and their effect on water quality. Generally, the agreement provides that if a feedlot is planned within five miles from the international border, the agency that has permitting authority over the feedlot will contact the other agency to inform them of the feedlot to be built, and allow a period for comments to be received from that agency.[18]

4.2 International Red River Board

State, federal and provincial representative act in co-chair capacities for this organization. The committee membership for the Hydraulic and Aquatic Ecosystem Health committees are made up of non-profit organizations, state, federal, provincial and local jurisdictions. The Aquatic Ecosystem Health committee meets once in the summer

4.3 Red River Basin Commission

The Commission is made up of 41 Board members who represent the Province of Manitoba, the states of South Dakota, North Dakota, and Minnesota; as well as tribal affiliations, local jurisdictions, and environmental organizations. The diversity of board members allows the

[18] Jim Ziegler, Minnesota Pollution Control Agency, Personal Communication

Commission to interact and coordinate programs with many levels of and specialties of water and land management resource managers in the Basin.

4.4 International Water Institute

The Institute has a board of 13 representatives from many arenas: federal, state, local, environmental, and academic from Minnesota, North Dakota, and Manitoba. This diversity translates into many levels of coordination on projects.

5 Implementation

Implementation aspects of strategic and coordinated action for water management in the Red River Basin are discussed below and focus on two areas, namely the mix of policy instruments implemented and the funding mechanisms that are in place to support this implementation.

5.1 Specific Policy Instruments

The following are a list of some of the key policy instruments directed at water management in the Red River Basin.

Activity Theme	Legislation	Key Policy Instruments	Status
Education	Red River Basin Commission	Natural Resources Framework Plan	Ongoing
	International Joint Commission	Red River Basin Decision Information Network	Ongoing
	Prairie Public TV	RiverWatch	Ongoing
	International Water Institute	Red River Center for Watershed Education	Ongoing
Water Quality	Red River Basin Commission	Nutrient and Ion database assembly	Ongoing
	International Red River Board	Aquatic Ecosystem Health Committee	Ongoing
	North Dakota	Red River Basin Bioassessment	Ongoing
	Minnesota	Biological monitoring	Ongoing
	International Water Institute	Nutrient and Ion database Analysis	New
Flooding	Red River Basin Commission	Mike 11 Model for flood damage reduction modeling	Ongoing

	International Red River Board International Water Institute	Comprehensive Flood Mitigation Plan Center for Flood Damage and Natural Resources	On hold Ongoing
Conservation	Rivers West (MB) & Audubon	Greenway on the Red	Ongoing
Recreation	River Keepers, Fargo Based organization	Promote education and use of The Red River	Ongoing

5.2 Funding

Funding for most programs in the Red River Basin come from state, federal, local organizations, and grants from foundations and agencies. Personnel from the various agencies that represent their agency on committees are supported by their respective agencies.

6 Monitoring, Evaluation and Improvement

The states of Minnesota and North Dakota are funding a biological assessment of the Red River mainstem and tributaries. The states will also be conducting a basin-wide ecosystem health assessment.

The United States Geological Survey includes monitoring of flows and water quality throughout the Red River Basin as part of its duties. This information is available to the public through an internet based site through the agency.[19]

Water quality data is collected by the states of North Dakota and Minnesota on a regular seasonal basis. The information is reported annually by the North Dakota Department of Health and the Minnesota Pollution Control Agency and is available to the public through the US Environmental Protection Agency website database, STORET.[20]

[19] http://waterdata.usgs.gov/nwis/sw
[20] http://www.epa.gov/storet/dbtop.html