

# North Dakota State Case Study (Red River Basin)

Analysis of Water Strategies for the Prairie Watershed Region

January 2006

## Notice to Reviewer

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](http://www.iisd.org)) on September 22-23, 2006. The other six case studies cover Saskatchewan, Alberta, Manitoba, Interprovincial Management, Minnesota and International Transboundary Management. 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 January 17, 2006.

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

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# 1 Context

The context of North Dakota water strategies and policies includes the state’s own unique features--hydrological, economic, political--and also the larger federal legislative mandates that underlie and help determine directions in the state’s policies and strategies.

## 1.1 The State Context

The state of North Dakota covers 70,702 square miles, with elevations ranging from 730 feet above mean sea level in the northeast corner of the state to 3,506 feet in the southwest. North Dakota’s economy is based primarily on agriculture, with 90% of land use in the state associated with agriculture. The state’s economy is also fueled by mineral production, manufacturing, and tourism, the latter often associated with water.

North Dakota is separated into two major drainage basins: the Missouri River drainage basin and the Hudson Bay drainage basin. The two basins are separated by a continental divide running from the northeast to southeastern part of the state. The Missouri River drainage basin consists of two major sub-basins, the Missouri and James Rivers; the Hudson Bay drainage basin consists of three major sub-basins, the Souris, Red River systems and the Devils Lake Basin, which has been in recent history a closed basin.

Flows in streams are variable, with some dramatic fluctuations, and 2.5million acres or 6% of the state’s area lie in floodplains.<sup>1</sup> The 1997 flood in the Red River Basin and the ongoing problem of flooding in the Devils Lake Basin illustrate the seriousness of flooding events experienced by the state. The state has 54,427 miles of rivers and streams, with major rivers and their tributaries totaling about 5,100 of these miles.<sup>2</sup> Lakes and reservoirs cover nearly 863,000 acres in the state, with two prominent reservoirs, Sakakawea and Lake Oahe, holding 67% of these waters. Devils Lake holds 73% of the state’s lake waters.<sup>3</sup>

The quality of surface water in the state is variable because of climatic conditions; the quality of groundwater, stored in both bedrock and unconsolidated aquifers (the later is estimated at 60 million AF), varies and is marginal in many areas.<sup>4</sup> To this point, none of the 18 communities using surface water as their municipal water supply exceed water quality standards. Of the 178 communities who use ground water as their municipal supply (94% of incorporated communities), two exceed primary water quality standards and 149 exceed secondary water quality standards.<sup>5</sup> Most farm families as well depend on ground water as the sole source of their water supply. The State Water Commission has concluded that “it is becoming increasingly

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<sup>1</sup> Water in North Dakota: A Reference Guide. North Dakota State Water Commission, pp. 3, 4.

<sup>2</sup> North Dakota 2004 Integrated Section 305(b) Water Quality Assessment Report and Section 303(d) List of Waters Needing Total Maximum Daily Loads, III-1; Water in North Dakota, p. 3.

<sup>3</sup> North Dakota 2004 Integrated Report, I-1.

<sup>4</sup> Water in North Dakota, pp. 4, 5.

<sup>5</sup> Water in North Dakota, pp. 4, 5.

difficult for communities to comply with new federal drinking water quality standards without costly modification or improvement to existing treatment facilities.”<sup>6</sup>

Along with issues of flooding and water quality, a major concern for North Dakota is water supply. Approximately 40% of the population relies on surface water, with larger towns and cities typically located on rivers.<sup>7</sup> Currently, the state has no developed plan of distributing Missouri River water to eastern North Dakota. However, a recent draft study by the Dakotas Area Office of the U.S. Bureau of Reclamation explains that the Red River Valley would suffer significant water shortages during future drought periods and offers seven options for meeting the Valley’s water needs. Four of the seven options include importing Missouri River water.<sup>8</sup> Whatever the option chosen, given the size of such a project, added to the many other water needs of the state, the North Dakota State Water Commission has concluded that “the state will be severely challenged in years ahead to provide revenue to fully implement all projects and programs required to manage and develop the state’s water resources.”<sup>9</sup>

Other issues that have occupied North Dakota water managers in recent years include soil and stream bank erosion, the tension between agricultural drainage and wetland preservation and the impact of water policy on recreation/tourism and fisheries. In particular, prolonged drought in western North Dakota and areas west of the state have caused declining reservoir levels on Lake Sakakawea and Lake Oahe. This, in turn, has resulted in shortages of water for municipal and industrial water supplies and has had negative effects on recreational facilities in these areas.<sup>10</sup>

Exacerbating the problem of low water levels that occur with drought are federal-level policies that determine the management of Missouri River waters. Releases from North Dakota’s Missouri River reservoir system, as authorized by the United States Army Core of Engineers, have contributed to the low water levels in the Missouri River reservoirs. In response to this problem, North Dakota has challenged the Core of Engineer’s handling of Missouri River waters in *North Dakota vs. Ubbelohde* and asked for a revision of the Core of Engineers’ Master Manual, whose directions determine management of the Missouri.<sup>11</sup> If one looks ahead to the potential of tapping Missouri waters to solve water needs in eastern North Dakota, conflicts over water rights may lie in the state’s future as the state, under western water law or prior appropriation, must stand in line with downstream states, who also have interests and claims on this last large river in the United States that does not have all its water appropriated.

## 1.2 Federal Legislation

Two federally legislated acts have had major impacts on the state’s water management. The first, the Federal Water Pollution and Control Act, enacted in 1972 and amended in 1977 when it became known as the Clean Water Act, established the template for all states and federal agencies to engage in regulating discharges of pollutants into the waters of the United States. The

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<sup>6</sup> Water in North Dakota, p. 8.

<sup>7</sup> Water in North Dakota, p. 6.

<sup>8</sup> See Executive Summary: Draft Report on Red River Valley Water Needs and Options. U.S. Department of the Interior, Bureau of Reclamation, Dakotas Area Office (nd; comments requested by October 3, 2005).

<sup>9</sup> Water in North Dakota, p. 8.

<sup>10</sup> Water in North Dakota, p. 11.

<sup>11</sup> North Dakota State Water Commission and Office of the State Engineer. Biennial Report for the period July 1, 2001 to June 30, 2003, p. 7.

second, the Safe Drinking Water Act, was developed specifically to protect, improve and maintain quality drinking water in the United States.

Other federal laws that mandate areas and directions in state water management policy include:

- Endangered Species Act
- Farm Bill
- Fish and Wildlife Coordination Act
- Floodplain Management Executive Order 11988
- Insecticide, Fungicide, and Rodenticide Act
- National Environmental Policy Act
- Navigable Waters – Title 33 of the US Code of Federal Regulations.
- Rivers and Harbors Act
- Wild and Scenic Rivers Act

(See Appendix A for descriptions of the laws and mandates)

Overseeing the federal policies are the following federal agencies, each of whose policies for carrying out federally legislated programs influence or determine water policies and strategies at the state level (noted is the federal agency of which the specific agency is a part):

Agricultural Research Service (Department of Agriculture)  
Army Corps of Engineers (Defense Department)  
Bureau of Indian Affairs (Department of Interior)  
Bureau of Land Management (Department of Interior)  
Bureau of Reclamation (Department of Interior)  
Environmental Protection Agency (Independent agency)  
Farm Service Agency (Department of Agriculture)  
Federal Emergency Management Agency (Homeland Security)  
Fish and Wildlife Service (Department of Interior)  
Geological Survey (Department of Interior)  
National Oceanic & Atmospheric Administration (Department of Commerce)  
National Park Service (Department of Interior)  
Natural Resource Conservation Service (Department of Agriculture)  
United States Coast Guard (Homeland Security Administration)

(See Appendix A for descriptions of the federal agencies)

The state agencies coordinate with all federal natural resource agencies in their planning efforts, depending on the area of the state and issues being addressed.

### **1.3 Overview of Water Strategy Agencies**

Tasks for carrying out water strategy and management in North Dakota are divided among a number of statewide offices and local entities, each of which develops policies and strategies for the area(s) for which it is responsible. Statewide offices include, among others, the Department of Agriculture, Department of Health, Division of Emergency Services, Forest Service, Game and Fish Department, Geological Survey, Parks and Recreation Department, and State Water Commission and State Engineer's Office. The State Historical Society and Extension Service also contribute their expertise and assistance. The agencies with the largest statewide roles in

water management are the State Water Commission and Engineer's Office and the State Health Department. Typically, state agencies work with local and regional jurisdictions, federal agencies, citizens, and non-governmental organizations to manage the water resources and carry out the water statutes and regulations for the State of North Dakota.

Local and regional water managers include Water Resource Districts, Joint Water Resource Districts, County Soil Conservation Districts, Regional Councils, and Municipal, Rural and Industrial Water Systems, together with a number of quasi-governmental and nonprofit groups organized for special purposes or projects.

## 2 Vision and Goals

The North Dakota State Water Commission and Office of the State Engineer together possess the legislated responsibility for comprehensive oversight of water planning and management in the state. Their shared *mission*, as stated in North Dakota State Water Commission and Office of the State Engineer Strategic Plan 2004-2007 is “to improve the quality of life and strengthen the economy of North Dakota by managing the water resources of the state for the benefit of its people.” Their combined *vision* is that “present and future generations of North Dakotans will enjoy an adequate supply of good quality water for people, agriculture, industry, and fish and wildlife; Missouri River water will be put to beneficial use through its distribution across the state to meet ever increasing water supply and quality needs; and successful management and development of North Dakota's water resources will ensure health, safety, and prosperity, and balance the needs of generations to come.”<sup>12</sup>

The State Water Commission and State Engineer's *goals* for the 2004-2007 timeframe include three (Goals 1, 2 and 4) that have guided the work of this combined organization for a number of years, along with three goals (3, 5 and 6) that were added with the Strategic Plan 2004 - 2007:

1. To regulate the use of water resources for the future welfare and prosperity of the people of North Dakota,
2. To develop water resources for the future welfare and prosperity of the people of North Dakota,
3. To manage water resources for the future welfare and prosperity of the people of North Dakota,
4. To educate the public regarding the nature and occurrence of North Dakota's water resources,
5. To collect, manage, and distribute information to facilitate improved management of North Dakota's water resources,
6. To conduct research into the processes affecting the hydrologic cycle to improve the management of North Dakota's water resources.

Two of the three new goals (Goals 5 and 6) recognize the increasing importance of research and disbursement of information in water management. The third new goal (Goal 3), which emphasizes managing water resources, suggests that the State Water Commission is focusing on

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<sup>12</sup> North Dakota State Water Commission and Office of the State Engineer, Strategic Plan 2004-2007, p. 2.

the economic potential of water resources in the state at the same time as it continues its focus on promoting quality of life through its water strategies.

By statute, the Department of Health is the leading regulatory agency for the state's water quality and safety. Its Environmental Health Section has as its *goal* "to safeguard the quality of North Dakota's air, land and water resources." Of the two divisions under the Environmental Health Section whose focus is water quality, one, the Division of Water Quality, articulates as its *vision* that "water quality is essential to public health, our natural environment, and economic development," and prioritizes as its main goal "to safeguard water quality for all uses."<sup>13</sup> The second, the Division of Municipal Facilities, which works with municipalities, political subdivisions, and rural water districts to ensure safe drinking waters, articulates its goal as "protect[ing] public health and our environment"<sup>14</sup>

As mentioned above, a number of other state agencies also participate in specific aspects of water management, each bringing their legislated directives and strategies in the form of their missions, policies, and goals, to the work of developing, regulating, and managing North Dakota's water resources. Policies and priorities among all the state agencies may not always be in complete agreement, and power to implement strategies may not be equal among agencies given widely varied budgets; however, agencies typically communicate among themselves and cooperate on projects in carrying out their respective planning and management functions.

## 2.1 Process

The State Water Conservation Commission (now State Water Commission) was brought into being in 1937 by legislative action in response to the drought of the 1930s, with the charge of "fostering and promoting water resources throughout the state." The Office of the North Dakota State Engineer was created in 1905 to administer water allocation and related land resources. When the Water Commission was established in 1937, the State Engineer was named Chief Engineer and Secretary to the new agency. However, both remained as separate agencies, as they still do today. Over the years, the duties of the State Engineer have been expanded to include regulating drainage, dikes and dams, managing floodplains and administering sovereign land.

In order to carry out the responsibilities legislated by the state as defined by North Dakota Century Code Title 61, the State Water Commission and State Engineer have developed policies and procedures to:

- administer the water laws of the state,
- prepare and maintain a comprehensive plan for future growth and development, and to direct project development in accordance with that plan,
- conduct studies to determine availability and occurrence of the ground and surface waters of the state for the purposes of allocation and management,
- assist local entities of government in the development and construction of water resource projects,
- assist local entities of government in management and maintenance of water resource projects,

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<sup>13</sup> [www.health.state.nd.us/wq](http://www.health.state.nd.us/wq) (accessed 3 October 2005).

<sup>14</sup> [www.health.state.nd.us/](http://www.health.state.nd.us/) (accessed 3 October 2005).

- assist in the organization of various legal entities through which water resource projects can be sponsored and operated,
- administer water information/education programs to enhance public understanding of the state's water resources,
- coordinate with federal, state, and local entities in water resources development and management,
- represent the interest of the state in water resources matters in national, state, regional, and international forums.<sup>14</sup>

As noted above, the Department of Health is legislated as the leading regulatory agency for water quality in the state. Its Division of Municipal Facilities works towards the end of ensuring water quality by helping public water systems comply with the federal Safe Drinking Water Act. The Division of Water Quality helps ensure water quality through its functions of permitting, inspecting, sampling and its analytical and monitoring services.

In addition, other state agencies or divisions of an agency are legislated specialized functions in managing water resources for the state. Each agency is responsible for determining and periodically updating its mission, priorities, and strategies for carrying out its functions. Such missions, priorities and strategies are typically driven by specific federal or state water legislation and/or by local, regional or statewide water-related needs.

## **2.2 Content and Formalization**

Along with federally mandated water laws, guiding the state's overall strategies for water management in the state are statewide-level legislation, each state agency's policies and priorities for carrying out the legislated plans, and financial resources made available for water management.

### **2.2.1 State Statutes Guiding Water Management**

North Dakota state law contains numerous water statutes under various areas of the state's Century Code. The State Water Commission is responsible for implementing the majority of statutes related to water within North Dakota. In particular, the State Water Commission has primary responsibility for Title 61 laws relating to water resources in the state, in response to which the Commission has developed the policies and procedures listed in Section 2.1 above. The State Water Commission also has primary responsibility for Title 89 laws relating to administration of water management in the state. Other titles containing state-legislated water statutes include Title 4-Agriculture, Title 23-Health and Safety, Title 43-Occupations and Professions, Title 57-Taxation, Title 33-County Justice Court, Title 22-Guaranty, Indemnity, and Suretyship, Title 38-Mining, Gas & Oil Production, and Title 55-State Historical Society & State Parks.

North Dakota statutes cover a wide variety of water issues. Some statutes establish water management entities such as the State Water Commission (Century Code 61-02), Water Resource Districts (61-16 and 61-16.1), Water Districts (61-35), [Assessment Districts for] Drainage Projects (61-21), and State Board of Water Well Contractors (43-35). Others provide

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<sup>14</sup> North Dakota State Water Commission and Office of the State Engineer, Biennial Report for the period July 1, 2001 to June 30, 2003, pp.1-2, with revisions from working draft of 2003-2005 Biennial Report.

policies for specific areas or programs, such as Appropriation of Water (61-04), Water Conservation (61-15), Floodplain Management (61-16.2), Control, Prevention & Abatement of Pollution of Surface Waters (61-28), Lake Protection and Rehabilitation (61-30), Wetlands (61-32), Sovereign Land Management (61-33), Ground Water Protection (23-33). At times, statutes specify specific actions or programs, such as Artesian Wells (61-20), Waterbank Program (61-31), or Chemigation Regulation (4-35.1).

An umbrella set of assumptions and procedures for managing the state's water, The Declaration of State Water Resources Policy (61-01-26), was legislated in 1999 in response to the anticipation of "ever-increasing demand and anticipated future need for water in North Dakota for every beneficial purpose and use." This legislation established the following seven policies:

1. The public health, safety, and general welfare, including without limitation, enhancement of opportunities for social and economic growth and expansion, of all of the people of the state, depend in large measure upon the optimum protection, management, and wise utilization of all of the water and related land resources of the state.
2. Well-being of all of the people of the state shall be the overriding determinant in considering the best use, or combination of uses, of water and related land resources.
3. Storage of the maximum water supplies shall be provided wherever and whenever deemed feasible and practicable.
4. Accruing benefits from these resources can best be achieved for the people of the state through the development, execution, and periodic updating of comprehensive, coordinated, and well-balanced short-term and long-term plans and programs for the conservation and development of such resources by the departments and agencies of the state having responsibilities therefore. The plans and programs for the conservation and development of these resources may include implementation of a program to cost-share with local sponsors of water quality improvement projects.
5. Adequate implementation of such plans and programs shall be provided by the state through cost-sharing and cooperative participation with the appropriate federal and state departments and agencies and political subdivision within the limitation of budgetary requirements and administrative capabilities, including consideration of cost-sharing for water quality improvement projects.
6. Required assurances of state cooperation and for meeting nonfederal repayment obligations of the state in connection with federal-assisted state projects shall be provided by the appropriate state department or agency.
7. Required assurances of local cooperation and for meeting nonfederal repayment obligations of local interests in connection with federal-assisted local projects may, at the request of political subdivisions or other local interest be provided by the appropriate state department or agency, provided, if for any reason it is deemed necessary by any department or agency of the state to expend state funds in order to fulfill any obligation of a political subdivision or other local interests in connection with the construction, operation, or maintenance of any such project, the state shall have and may enforce a claim against the political subdivision or other local interests for such expenditures.

### **2.2.2 Development of Legislated State-wide Long-range Plans**

Supplementing the 1999 Declaration of State Water Resources is the additional legislation, Statewide Water Development Goals (61-01-26.2), which establishes a specific, long-term plan for developing water projects across the state. The latter legislation identifies major projects and general methods of financing for each biennium from 1999-2001 through 2009-11, and beyond 2011. The projects identified for development in this multi-biennium plan include a) Southwest Pipeline Project, b) Northwest Area Water Supply Project, c) Other municipal, rural, and industrial projects, d) Grand Forks flood control, d) Devils Lake outlet, f) Water to eastern North Dakota, and g) general projects. The legislation estimates the biennial budget from 1999-2011 for each project, with the qualifying statement that “the legislative assembly will support [the legislated programs] to the extent funds are available from the water development trust fund.”

### **2.2.3 Development of Priorities for Carrying Out State and Federal Legislation**

All state and local water management agencies and entities are responsible for functioning under North Dakota state and federal statutes. Particular agencies are given responsibility for carrying out specific statutes. Following is a description of how three major water management agencies, the State Water Commission and Office of the State Engineer in conjunction, and the Department of Health, establish priorities in order to carry out state and federal statutes.

#### *State Water Commission and State Engineer’s Office.*

The State Water Commission and State Engineer’s Office has a history of comprehensive planning. In recent decades, a 1983 State Water Plan was updated in 1992, with another Water Plan following in 1999. Since 1999, three biennial updates, or Water Development Reports, have been completed to serve as supplements to the 1999 State Water Management Plan. The 2001 Water Development Report includes projections through 2050 for water funding needs in North Dakota. According to Gene Krenz and Jay Leitch, the Water Commission’s long-range plans have been flexible and open-ended, and the planning process has allowed for significant public involvement.<sup>15</sup>

The planning that goes into the biennial Water Development Reports accords with state legislation requiring state agencies “Concerned with Intrastate Use of Disposition of *Waters*” “*to develop and maintain a comprehensive water plan for the sound management* of North Dakota’s water resources.”<sup>16</sup> More specifically, the biennial reports serve several purposes: to update the 1999 State Water Management Plan as a way to keep in step with the state’s water needs, to provide current budget information in order to estimate the funds available to address the state’s water needs, and to serve as a vehicle of “formal request” to the state legislature for requesting funds from the state’s Resources Trust Fund.<sup>17</sup> In addition, the 2005-2007 Water Development Report provides an update on the State Water Commission’s cost-share policies.<sup>18</sup> The contents of the Water Development Reports include inventories of statewide water programs

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<sup>15</sup> A River Runs North: Managing an International River. Red River Water Resources Council, 1993, pp. 143-44.

<sup>16</sup> North Dakota State Water Commission and Office of the State Engineer. Biennial Report for the period July 1, 2001 to June 30, 2003, p.13. See also Century Code 61-02-14.

<sup>17</sup> Biennial Report for the period July 1, 2001 to June 30, 2003, pp. 12-13.

<sup>18</sup> 2005-2007 North Dakota Water Development Report: An Update to the 1999 State Water Management Plan. North Dakota State Water Commission, December 2004, p. 1.

and projects and information on state and federal sources of funding, together with the funding priorities for the following biennium.

In addition to the biennial Water Development Reports, the State Water Commission and Office of the State Engineer publish biennial reports describing the principal activities carried out by the State Water Commission and State Engineer's Office under the general policies and procedures as legislated in Title 61 of the North Dakota Century Code. Those "Principal Agency Activities" reported for the biennium from July 1, 2001 to June 30, 2003 consist of the following:

- Develop Missouri River water in ways that will secure North Dakota's share of Missouri River flows for our current and future needs, as reflected in comprehensive water management planning documents and the Pick-Sloan Plan.
- Implement plans for the distribution of Missouri River water through regional water supply systems such as the Southwest Pipeline project, the Northwest Area Water Supply project, and potential Eastern Dakota Water Supply.
- Manage and develop North Dakota's water resources to facilitate economic development and improve quality of life for current and future generations.
- Promote and provide water supplies needed for the expansion and diversification of North Dakota's agricultural industry.
- Work to implement all aspects of the Dakota Water Resource Act of 2000 to provide a reliable source of good-quality water throughout North Dakota in return for the sacrifices made under the Pick-Sloan Plan.
- Complete detailed studies and research that more precisely define the nature and occurrence of water to optimize its conservation and development throughout the state.
- Maintain a water project inventory and water management plan to promote efficiency in meeting North Dakota's future water development and funding needs.
- Refine legislation and policies for administering the Water Development Trust Fund and the Resources Trust Fund through which critical water facilities can be constructed.
- Work with the federal government to implement the state's three-pronged approach (including an outlet to the Sheyenne River, infrastructure protection, and upper-basin management) to solving the Devils Lake area flooding problems.
- Develop policies and initiatives that will stimulate progress toward developing flood control measures along the Sheyenne, Pembina, and Red Rivers, and Devils Lake.
- Pursue cooperative efforts with neighboring states and provinces to plan for beneficial water management of shared water resources.
- Cooperate with agencies that have regulatory authority over North Dakota's waters to protect and enhance the quality of North Dakota's water resources and related ecosystems.
- Enforce weather modification standards, conduct research, and supervise operational cloud seeding programs for hail suppression and rainfall enhancement.
- Provide water education for North Dakota's teachers, youth, and general public.
- Promote expanded development of North Dakota's water-based recreation resource, especially the Missouri River, Lake Oahe, Lake Sakakawea, and Devils Lake.
- Collect water resource data for the purpose of identifying the location, condition, and temporal changes of the water resources of the state.

- Disseminate water resource information to the general public, businesses, and government agencies.
- Manage the water resource database so that it is available and accessible to interested parties.
- Manage state water resources within the framework of North Dakota Century Code.<sup>19</sup>

In addition to reporting the agency's primary activities, the biennial reports specify the primary projects and programs being carried out by each of the agency's five divisions, summarize new state water resources legislation, and provide an overview of revenues and expenditures for the biennium.

### *Department of Health*

As noted above, the work of carrying out the Federal Clean Water Act of 1972 is housed within the Environmental Section of the Health Department. The Environmental Section communicates with the Environmental Protection Agency regarding state programs, enforces compliance with federal and state laws, and conducts environmental chemical analyses.<sup>20</sup> The many legislated regulations that the Environmental Section of the Department of Health carries out are detailed in Century Code 33-16-01-03 under the headings of "Control, Prevention, and Abatement of Pollution of Surface Water" and "North Dakota Pollutant Discharge Elimination System." Current priorities of the Environmental Health Section include implementing strategies to address environmental impacts and problems associated with new developments, administering a state hazardous waste management program, administering a water quality management program for cleaning up targeted lakes and rivers, protecting ground water and drinking water aquifers, and controlling air, radiation, noise and solid waste pollution.<sup>21</sup>

Of the five divisions within the Environmental Section that carry out the Section's priorities, two work directly to assure water quality. The Division of Municipal Facilities works with local entities to secure compliance with the drinking water standards established by the Safe Drinking Water Act through assisting in building or updating water and wastewater systems and training and certifying personnel to run the systems. The Division of Water Quality divides its time among monitoring (sampling and analyzing), permitting, and inspecting and investigating as ways to enforce state and federal environmental laws. Both divisions assist clean local water and wastewater programs to achieve funding for projects.

### **2.2.4 Instruments for Financing Water Management and Programs**

The State Water Commission is the primary fiscal agent for water management in the state, although other agencies with water programs receive state and federal funds to carry out their programs. In the 2003-2005 biennium, the State Water Commission reported a total cost of active projects of \$99,183,357.<sup>22</sup> To fund these water projects, the State Water Commission is authorized to issue bonding. In addition, the State Water Commission has a number of direct sources of funding, whose amount, as explained below, can vary from year to year. Currently,

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<sup>19</sup> Biennial Report for the period July 1, 2001 to June 30, 2003, p. 2. Please note that the Biennial Report for the period July 1, 2003 to June 30, 2004 is in preparation.

<sup>20</sup> [www.health.state.nd.us/shs/EHSchief](http://www.health.state.nd.us/shs/EHSchief) (accessed 3 October 2005)

<sup>21</sup> [www.health.state.nd.us/ehs/EHSchief](http://www.health.state.nd.us/ehs/EHSchief) (accessed 3 October 2005).

<sup>22</sup> 2005-2007 North Dakota Water Development Report, p. 3.

the primary sources of direct funding administered through the State Water Commission include the following:

#### Water Development Trust Fund

The Water Development Trust Fund consists of a state-legislated allocation of 45% of funds received for the 1998 tobacco settlement. Amounts available from the fund vary, with revenues estimated to climb from the present estimate of \$20.8 million for the 2003-2005 biennium to a high of \$33.1 million for years 2007-2017 and then down again to current levels through 2025.<sup>23</sup>

#### State General Fund

Funds from the state's General Fund for financing water resource programs have been "effectively eliminated" during the 2001-2003 and 2003-2005 biennia through funding transfers from the Water Development Trust Fund to the General Fund. It is not yet known whether similar transfers will occur in the 2005-2007 biennium and beyond.<sup>24</sup>

#### Resource Trust Fund

The Resource Trust Fund is determined by the income to the state from oil extraction, with 20% of an oil extraction tax earmarked for water-related projects and energy conservation. The estimate from this fund for the 2003-2005 biennium is \$9.8, for the 2005-2007 biennium \$12.5 million.<sup>25</sup>

#### Dakota Water Resources Act - Municipal, Rural and Industrial Water Supply Program

The state of North Dakota receives federal water development monies through the Bureau of Reclamation as mitigation for changes to the original plan for Garrison Diversion. An agreement reached between the state of North Dakota and the federal government in 1986, the Garrison Diversion Unit Reformulation Act, provided a \$200 million grant to the state, of which the state had received \$191 million by 2004. These funds have allowed the state to help fund regional and rural (including tribal) water supply projects up to 75% of project costs, as well as to continue projects in irrigation development, research (the Oakes Test Area), and recreation, fish and wildlife mitigation and enhancement initiatives.<sup>26</sup>

An amendment in 2000 to the Garrison Diversion Reformulation Act, the Dakota Water Resources Act, added to available state water funding \$200 million for state Municipal, Rural and Industrial water systems, \$200 million for tribal Municipal, Rural and Industrial water systems, \$200 million for the Red River Valley Water Supply Project, and \$32.5 million for environmental and recreation needs. Actual amounts of funding available through these additional grants are determined by year-to-year federal appropriations. As could be expected, the Municipal, Rural and Industrial Water Supply Programs have allowed regional and rural and

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<sup>23</sup> 2005-2007 North Dakota Water Development Report, p. 8.

<sup>24</sup> 2005-2007 North Dakota Water Development Report, p. 7.

<sup>25</sup> 2005-2007 North Dakota Water Development Report, p. 7.

<sup>26</sup> [www.garrisondiv.org/pages/publicinfo/history/index.epl](http://www.garrisondiv.org/pages/publicinfo/history/index.epl) (accessed 20 December 2005).

tribal water systems to originate and develop to the point that most of the counties in North Dakota have water supply programs, with a number of these programs making plans to expand their areas of service.<sup>27</sup>

An additional way in which the State Water Commission assists in financing statewide water development is through its Cost-Share Program, a program that was originated through legislative process in 1943. State legislative action in 1987, Funding from Resource Trust Fund, established a process for determining which projects should be granted a cost-sharing percentage from the Resource Trust Fund (see Century Code 89-06. 01-03). Sponsors of projects that are approved for funding enter into a contract or agreement with the State Water Commission and State Engineer's Office. This agreement includes statements that describe the scope of the project, a plan for disbursing funds, and insurance and indemnification. The State Water Commission and State Engineer's Office may review and inspect the final project before making final payment.<sup>28</sup>

The Department of Health provides financial assistance to water projects in several ways. The Division of Water Quality's Nonpoint Source Pollution Management Program administers federal grants to state or local groups who have programs to control nonpoint pollution. The Division of Municipal Facilities administers the Clean Water State Revolving Loan Fund Program (with shared control by the State Water Commission) and the Drinking Water State Revolving Loan Fund Program, both of which provide low-interest loans (80% federal, 20% state monies) together with assistance with bond sales.

State agencies may also raise monies through their activities. The idea behind the two Revolving Loan Fund Programs administered by the Division of Municipal Facilities is to use the principle and interest from loan paybacks from municipalities and other entities to help fund new requests for water and wastewater projects. The Game and Fish Department is allocated budget funds through the state legislative process, but the agency's main source of revenue comes from hunting and fishing license fees together with federal excise taxes on hunting and fishing equipment. A small percentage of the Department's budget comes from a state income tax check-off for nongame wildlife and from federal monies for the protection of endangered species.

Funding of water projects also occurs at the local or regional levels. Each County Commission designates funds up to four mills from their general fund to the county's Water Resource District(s), who, in turn, determine how the funds will be used in their water district. In addition to administering the county funds to specific water projects, local Water Resource Districts have the power to arrange for bonding to support water projects in their district or in cooperation with other Water Resource Districts. Formal Joint Water Resource Districts can receive up to an additional 2 mills from each of the counties making up the Joint District. Local or Joint Water Resource Districts also have the power to create assessment districts, with the requisite vote of the citizens who will bear the assessment, making citizen involvement and knowledge of water issues particularly important factors in strategy and decision-making around water issues at the local and regional levels.

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<sup>27</sup> Strategic Plan 2004-2007, p. 17.

<sup>28</sup> Strategic Plan 2004-2007, p. 9.

### 3 Planning Institutions

North Dakota owns all waters within its boundaries. Both state and federal governments have jurisdiction. At the state level, the legislative Natural Resources Committees have first review of most water legislation. The budgets are reviewed by the Finance Committees. As noted above, the state agencies that carry out the development, management and regulation of North Dakota's waters include the State Engineer's Office & State Water Commission and the Environmental Section of the Department of Health, together with a number of other agencies, each with its own functions, mission, and budget. Water strategy also occurs on the regional, county and city levels through Regional Councils, Joint Water Resource Boards, Water Resource Boards, and Municipal, Rural and Industrial Water Systems.

#### 3.1 Implementation Strategies

To help facilitate and implement the state's water development plans, individual water management agencies employ internal strategic planning. An example of this planning is the Strategic Plan 2004 - 2007 developed by the Office of the State Engineer and State Water Commission. This agency plan details specific projects and/or programs, from those that constitute the state's current priorities, that the agency is responsible for carrying out. The goals of the strategic plan according to Dale L. Frink, North Dakota State Engineer, are to "clearly document agency direction and expectations," to evaluate the agency's goals as a means of ensuring that the agency is meeting its constituents' expectations, and to identify objectives for key projects and "defined tasks and actions" that will guide the work of divisions to meet these objectives.<sup>29</sup>

In specific, the Strategic Plan 2004 - 2007 inventories the primary projects and programs to be carried out for the state by the State Water Commission and Office of the State Engineer, including basic objectives and action plans for each project or program, together with target dates for completion. The strategic plan also documents which agency-wide goal(s) a given project or program satisfies. Those projects and programs listed, by division, in Strategic Plan 2004 - 2007 include:

- 1) Division of Atmospheric Resource: Cooperative Observer Network, Cooperative Research program, and Cloud Modification Project
- 2) Division of Water Appropriation: Economic Development program, Water Resource Data Information Dissemination, Water Resource Monitoring, Water Resource Research, Water Rights Administration & Processing, Water Rights Evaluation & Adjudication, and Water Supply Studies
- 3) Division of Water Development: Cost-Share program; Dam Safety program; Devils Lake Flood Control; Floodplain Management; Investigations, Maintenance and Minor Construction; Municipal, Rural & Industrial Water Supply program, Northwest Area Water Supply, Project Design, Red River Valley Water Supply Project; Regulatory Program, and Southwest Pipeline Project
- 4) Division of Planning & Education: State Water Management Plan, Water Education for Teachers Program, and Watershed Plan Coordination.

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<sup>29</sup> North Dakota State Water Commission and Office of the State Engineer. Strategic Plan 2004 - 2007, p. 1.

Planning and strategizing about the state’s water resources also occur across North Dakota’s water management agencies. An example of such planning is the comprehensive overview of areas of water management and agency responsibilities developed in the course of writing the 1999 State Water Management Plan. The working draft document describes an implementation strategy for state-level planning under four categories of water management: 1) Development and/or Use of Water Resources, 2) Fish and Wildlife, 3) Water Quality, and 4) Water Rights and Allocation. Under each category are listed the “topics” or areas managed by state agencies and the particular agency(ies) responsible for managing programs in the area. The following table provides a nutshell summary of this division of responsibility among state agencies, omitting descriptions of specific functions or programs and references to specific statutes, both of which are available on the draft document:<sup>30</sup>

Category	Topic	Department/Agency
Development and/or Use of Water Resources	Water Supply: municipal, industrial, agricultural	Department of Health, State Water Commission
	Water Supply: rural & community programs	State Water Commission Department of Health
	Water Supply: irrigation, recreation, and fish and wildlife	State Water Commission
	Flood Control	State Water Commission
	Emergency Flood Response	State Water Commission Emergency Management
	Drought Response	Emergency Management State Water Commission
	Dams, dam safety	State Water Commission
	Hydro-power development	N/A
	State Water Planning	State Water Commission
	Water Conservation	State Water Commission
	Water reclamation & reuse	N/A

<sup>30</sup>See [www.swc.state.nd.us/WaterLaws/ndwatpolicy.pdf](http://www.swc.state.nd.us/WaterLaws/ndwatpolicy.pdf) (accessed 25 September 2005). Changes in the implementation strategy described in the table may have occurred since 1998 when the State Water Management Plan was developed.

	Groundwater resources	Department of Health Geological Survey State Water Commission State Industrial Commission
	Groundwater research	State Water Commission
	Wild and Scenic Rivers	State Water Commission
Fish and Wildlife	Fisheries Management	Parks and Recreation Dept. Game and Fish Department
	Aquaculture	N/A
Water Quality	Water Quality Management	Department of Health State Water Commission Parks and Recreation Dept. Geological Survey Forest Service
	Point Source Pollution	Geological Survey State Industrial Commission Public Service Commission Department of Health State Water Commission Department of Agriculture
	Water Quality Infrastructure	N/A
	Non-Point Source Pollution	Department of Agriculture State Water Commission Department of Health Geological Survey Extension Service
	Source Water Protection	Department of Health State Water Commission
	Drinking Water Quality	Department of Health
	Surface Water Quality Protection	Department of Health
	Ground Water Quality Protection	Department of Health State Water Commission Geological Survey

	Water Quality: Research	Department of Health State Water Commission
	Wetlands	Department of Agriculture State Water Commission
Water Rights and Allocation	Water Allocation	State Water Commission
	Tribal Water Rights	Individual Tribes State Water Commission
	Water Supply: rural & community programs	State Water Commission

### 3.2 Water Agency Structures

Statewide agencies, together with local and regional entities, cooperate in determining and carrying out water strategy in the state. Following are descriptions of the state agencies and local, regional or special governmental entities that participate in the state’s water management.

#### 3.2.1 State Agencies

A variety of official state agencies participate in researching, strategizing, and carrying out North Dakota’s water resources programs. Following are brief descriptions of the state agencies that play leading roles in the state’s water resource planning.

##### State Water Commission & State Engineer’s Office

As previously noted, the State Water Commission and the State Engineer’s Office work together closely. The State Water Commission consists of the Governor (Chairman), the Commissioner of Agriculture (ex officio), and seven members appointed by the Governor to provide regional representation. The seven members serve six-year, overlapping terms. The State Engineer is appointed to serve the dual role as Secretary and Chief Engineer to the State Water Commission, in addition to heading up the Office of the State Engineer. The State Engineer manages staff as needed to carry out the aims of the State Water Commission together with the statutory responsibilities of the Office of the State Engineer.

The State Engineer is the chief officer in charge of regulation, administration and allocation of North Dakota’s water. The position’s authorities include water rights allocation, drainage control, dike and dam safety, floodplain management and sovereign land management. The State Engineer is responsible for issuing water right permits, drainage permits for projects of state or regional significance, permits involving dams and dikes and other water storage facilities such as waste-water holding ponds, and sovereign lands permits (Century Code 61-02-02). The State Engineer must also review all technical documentation associated with proposed development in regulatory floodways.

In order to accomplish the multidisciplinary tasks that the State Water Commission is called to achieve, the State Engineer employs staff within five divisions:

- *Administrative and Support Services*- Provides the overall direction of agency powers and duties as described in state water laws. Specifically, includes basic record keeping, coordination of water resource programs with other government agencies, and working with contracts and agreements necessary to carry out investigations, planning, and cooperative projects with various other water resource development agencies.
- *Atmospheric Resource Board* - Protects the rights of the public concerning the effects of planned hail suppression (cloud seeding) programs. Also works to improve cloud seeding, issues permits, and keeps record of all cloud seeding efforts.
- *Planning and Education Division* - Develops and maintains the State Water Management Plan. In addition, participates in studies leading to the completion of local, state, regional, and national water resources and land management plans; monitors water resource issues to identify possible impacts on North Dakota's water resources; represents the North Dakota Water Commission in various regional and national planning entities; and provides educational material and courses to educate adults and students about North Dakota's water resources.
- *Water Appropriations Division* - Focuses on allocation and management of the state's water resources by identifying the availability and quality of water in the state; assists public entities with water supply problems; assesses impacts of water supply development on groundwater levels, stream flows, and water quality; processes water permit applications; and provides recommendations to the state engineer on water applications.
- *Water Development Division* - Prepares engineering and feasibility reports and makes recommendations for the design of water resource projects. Also provides assistance to local water resource boards and communities developing floodplain management strategies; manages the design and construction of the Southwest Pipeline; and works toward the development of the Northwest Area Water Supply system.

### Department of Health

The Environmental Health Section's **Division of Water Quality** divides its major responsibilities into four major programs, with specific functions under each:

- Ground Water Protection Program:
  - Source Water Protection for Public Water Supplies
  - Ambient Ground Water Monitoring
  - Underground Injection Control
  - Ground Water Investigations and Remediation
  - Facility Site Reviews to Protect Ground Water Resources
  - Emergency Response
- Waste Water Program:
  - North Dakota Pollution Discharge Elimination System
  - Storm Water Pollution Prevention
  - Animal Feeding Operations
  - Septic Pumper Registration
- Surface Water Protection Program
  - Nonpoint Source Pollution Prevention
  - Total Maximum Daily Loads

- River and Lake Assessments
- Fish Consumption Advisories
- Special Projects
  - Water Quality Standards
  - Section 401 Water Quality Certification
  - Devils Lake Issues
  - Missouri River Issues
  - Interstate and International Water Issues
  - EIS Review<sup>31</sup>

The Division of Water Quality also maintains a number of databases tracking both ground water and surface water quality. Its Surface Water Quality Management Program, described later in this report, is responsible for monitoring and assessing the state’s lakes, reservoirs, rivers, streams and wetlands.

The **Division of Municipal Facilities** carries out four programs to ensure that public water systems comply with drinking water standards established by the Safe Drinking Water Act:<sup>32</sup>

- Drinking Water Program - monitors contaminants; provides sanitary surveys; reviews plans and specifications and provides technical assistance to ensure that all new or modified water systems meet state criteria prior to construction; monitors fluoridation to ensure optimum levels; tests for and helps remedy lead contamination in schools and licensed care facilities.
- Operator Training and Certification and Facility Inspection Program - provides annual classroom training and certification for operators of water and wastewater systems as required by state law along with on-site “over-the-shoulder” training of water and wastewater operators to assist them in maintaining compliance; also provides inspections of water and wastewater facilities to help ensure compliance.
- Clean Water State Revolving Fund - applies for and administers annual funds from the Environmental Protection Agency for the following types of projects: wastewater treatment plants, sewer rehabilitation, sludge management, nonpoint source activities, storm water control, CSO abatement, toxics management, and landfills. Works together with the state Bond Bank to raise the state’s 20% matching funds.
- Drinking Water State Revolving Fund - applies for and administers annual funds from the Environmental Protection Agency for drinking water projects prioritized according to the state-developed ranking system that consider six factors: water quality (up to 35 points of 100), water quantity (up to 20 points), affordability (up to 15 points), infrastructure adequacy (up to 15 points), consolidation or regionalization of water supplies (up to 10 points), operator safety (up to 5 points). Works together with the state Bond Bank to raise the state’s 20% matching funds.

In carrying out its programs, the Division of Municipal Facilities works with many entities, including municipalities, political subdivisions, rural water districts, Water Resource Boards, businesses, industries and individuals.

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<sup>31</sup> [www.health.stae.nd.us/wq/](http://www.health.stae.nd.us/wq/) (accessed 30 September 2005).

<sup>32</sup> Full descriptions of the four programs can be accessed from the Division of Municipal Facilities’ home web page, [www.health.state.nd.us/MF/](http://www.health.state.nd.us/MF/).

### Department of Agriculture

The North Dakota Department of Agriculture's primary purpose is to be a strong advocate for the interests of farmers, ranchers, and rural communities in the state. Under Century Code 4 - 01, the Department of Agriculture has regulatory responsibilities in the areas of dairy, poultry, apiary, animal health; pesticide use and handling (distribution, storage, transportation and disposal); plant and plant products export certification; licensing of livestock dealers and livestock auction markets; and the control of noxious weeds.

The North Dakota Department of Agriculture is an active participant in the Waterbank program, whose goal is to save small potholes and marshes from drainage. Leases associated with the Waterbank Program are acquired for ten-year periods. Priority is given to tracts of land that offer public access, have restorable wetlands, and a ratio of one acre of wetlands to three acres of adjacent uplands.

The Department of Agriculture is also one of the primary enforcement agencies involved in implementing the General State Management Plan for Pesticides and Ground Water through investigations of pesticide violations. The general premise of this plan is to prevent water degradation by pesticides while protecting their beneficial use.

The Department of Agriculture serves as a team member in the Groundwater Pesticides Sensitivity Program, which has developed digitalized maps by county of all North Dakota land. The maps, which are available to the public via website, classify all ground areas according to the degree to which application of pesticides to the specific area may degrade ground waters (see Section 4, Implementation, for further description of the program).

### Department of Emergency Services

On July 1, 2005, the state's Division of Emergency Management and State Radio Communications became the Department of Emergency Services. The Department of Emergency Services, with its two divisions, Division of Homeland Security and Division of State Radio Communications, functions to provide systems "for effective mitigation, preparation for, response to, and recovery from, manmade or natural disasters."<sup>33</sup> The Department of Emergency Services provides emergency planning, training and program assistance to counties, cities, tribal governments and state government and also coordinates with other states. During emergencies and/or disasters, including flooding events, Emergency Services activates the state's emergency operations center and staff, acts as liaison with local disaster managers, and coordinates emergency operations in cooperation with relevant agencies and entities.<sup>34</sup> It also distributes to appropriate state, federal and local entities situation reports that describe emergency conditions as they occur and evolve. The Department also works with restoration, including restoration of the environment following natural disasters and developing requests for Presidential disaster assistance.

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<sup>33</sup> [www.state.nd.us/des/about](http://www.state.nd.us/des/about) (accessed 8 October 2005).

<sup>34</sup> Basic Document of the North Dakota Emergency Operations Plan. N.D. Division of Emergency Management, 1976/2003, p. 12

### Forest Service

The Forest Service administers statewide forestry programs, managing 13,278 acres of state forestlands. The agency provides technical assistance relating to the management of private forestlands, state forestlands, urban and community forested areas, tree plantings, wildlife, and fire protection throughout the state. The Forest Service contributes to managing water quality in the state through its programs of Streamside Management Zones and Forestry Best Management Practices, the latter a voluntary program intended to serve as a basis for sound management decisions.

Forest Service provides assistance to Natural Resources Conservation Service and Soil Conservation Districts in carrying out their forestry projects. Currently, Forest Service is providing technical assistance to the Red River Regional Council for its Riparian project along the Red River by assessing riparian needs and assisting landowners to carry best practices, with the goal of protecting water quality.

### Game and Fish Department

The Game and Fish Department's mission is "to protect, conserve and enhance fish and wildlife populations and their habitat for sustained public consumptive and appreciative use." The agency's goal for its Fishing Emphasis Area is "to manage North Dakota waters in cooperation with other interests to provide the maximum sustainable quality and quantity of fishing opportunities for the enjoyment of the public." The primary focus in the Fishing Emphasis Area is on habitat, with the agency attempting to address issues of aging reservoirs and variable levels of water in fishable water bodies.

The Fishing Emphasis Area is broken into four programs: 1) Rivers and Streams, 2) Small Lakes and Reservoirs, 3) the Missouri River System, and 4) Devils Lake. In two of these groups, Rivers and Streams and Small Lakes and Reservoirs, the agency has further identified 50 priority bodies of water for purposes of planning ways to address specific problems confronting those waters.<sup>35</sup> These priority water bodies are the focus of the Game and Fish Department's Save Our Lakes program, although the program can address other waters as well, all of which continue to be managed with general management plans for their category.<sup>36</sup>

### Geological Survey

The agency mission of the North Dakota Geological Survey is "to investigate the geology of North Dakota, to administer regulatory programs and act in an advisory capacity to other state agencies, and to provide public service and information to people of North Dakota."

Some activities of the North Dakota Geological Survey include investigations of geologically hazardous areas within the state, particularly flood prone areas to support other agencies' regulatory and emergency services. In addition to publishing technical reports on these investigations, the Geological Survey produces educational publications designed to help the general public better understand the nature of flooding. These include flooding history, causes, impacts, and the terminology, as well as statistics used to describe it. The Geological Survey has

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<sup>35</sup> North Dakota Game and Fish Strategic Plan, March 2005, Introduction to "Fishing Emphasis Area."

<sup>36</sup> Save Our Lakes brochure.

also been involved in a cooperative effort with the Natural Resource Conservation Service to develop digital maps of North Dakota's soil resources.

The agency has regulatory authority over core and drill samples, coal exploration, geothermal resources, paleontological resources, subsurface minerals, and Class III injection wells. The agency issues permits for drilling coal exploration; geothermal (ground source) heating and cooling systems; investigation, excavation, or collection of paleontological resources on state owned land; exploration, development and production of subsurface minerals not covered in the oil, gas and coal regulatory programs; and the disposal of fluids into Class III wells.<sup>37</sup>

The agency maintains a number of databases, including GPS-CBS data, topographic maps, and digital soils data.

#### Parks and Recreation Department

The Parks and Recreation Department is responsible for managing and maintaining the state owned parks' system. The agency consists of four divisions: Administrative, State Parks, Planning and Natural Resources, and Recreation. The State Parks Division manages the state's 16 state parks, and the Planning and Natural Resources Division administers programs associated with North Dakota's Natural Areas and Nature Preserve Act. The Parks and Recreation Department also administers the Land and Water Conservation Fund, a federal program established in 1964 that provides 50/50 matching grants to states and their political subdivisions for projects that enhance outdoor recreation and space for the public. The Walsh County Park Board was the first recipient of the state's Land and Water Conservation Fund Award of Excellence for Project Administration for the construction of a swim beach at Homme Dam.

### **3.2.2 Other Local, Regional or State-wide Entities**

A number of local, regional, or statewide entities possess state and/or federal legislated roles for carrying out water resource planning in the state. Following are brief descriptions of the makeup and functions of a number of these entities.

#### Water Resource Districts

With a history dating back to 1935, Water Resource Districts are local governmental units charged with managing the surface water within a district's political boundaries and watersheds. In 1973 Water Resource Districts were required in all counties and are established along county lines (three counties, Cass, Bottineau and Morton Counties, have more than one Water Resource District). Water Resource Districts have legislated mandates to:

1. Meet jointly with other water resource boards within a common river basin at least twice each year . . . for the purpose of reviewing and coordinating efforts for the maximum benefit of the entire river basin.
2. Cooperate with other water resource boards of a common river basin and provide mutual assistance to the maximum extent possible.
3. Exercise jointly with other water resource districts within a river basin to effectively resolve the significant and common water resource management problem or problems of the river basin or region and to jointly develop a comprehensive plan for the river basin or region.

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<sup>37</sup> [www.state.nd.us/ndgs/regulations/regulation%20start](http://www.state.nd.us/ndgs/regulations/regulation%20start) (accessed 20 September 2005).

4. Encourage all landowners to retain water on the land to the maximum extent possible in accordance with sound water management policies, and to carry out to the maximum extent possible the water management policy that upstream landowners and districts that have artificially altered the hydrologic scheme must share with downstream landowners the responsibility of providing for proper management and control of surface waters.
5. Address and consider fully in the planning of any surface water project the downstream impacts caused by the project . . . .
6. Require that appropriate easements be obtained in accordance with applicable state and federal law when projects will cause an adverse impact to lands of other landowners (Century Code 61-16.1-10).

Water Resource Districts are routinely involved with various permitting processes, including issuing drain, dam, dike, and other water storage structure permits. They also may sponsor larger projects, as instanced by Southeast Cass County Water Resource District's lead role in carrying out the Sheyenne River Diversion Project for West Fargo and the West Fargo south to Horace area.

Each Water Resource District is provided a budget from a countywide levy limited to four mills for each individual district and up to an additional two mills for joint boards (Century Code 61-16). Water Resource Districts develop their own budgets, subject to approval by their County Commission. In addition, Water Resource Districts can fund projects through special assessment districts, user fees, or revenue bonds.

#### Soil Conservation Districts

Soil Conservation Districts are a local unit of government organized under authority of the North Dakota Soil Conservation District Law. Soil Conservation Districts are typically established along county lines. They have comprehensive plans for the conservation of soil resources and the control and prevention of soil erosion within the district. They may carry out education, promotion and recognition activities within their district. They also have the authority to conduct surveys, investigations and research relating to soil erosion and the prevention and control measures needed.

Soil conservation districts may make available to land occupiers within the district agricultural and engineering machinery and equipment, seeds and seedlings or other equipment for the prevention and control of soil erosion. They may cooperate and enter agreements with other units of government at the local, state and federal level to assist the district in providing for the conservation of the soil and soil resources of the district.

Currently, 15 to 20 Soil Conservation Districts around the state are working in their districts to carry out the Nonpoint Source Pollution Program administered through the Health Department as Section 319(h) of the Clean Water Act. The Nonpoint Source Pollution Program funds both nonpoint source water quality assessment and efforts to address identified problems.

Soil Conservation Districts are governed by a board of three elected soil conservation district supervisors elected at the time of the General Election, who serve six-year terms. Upon resolution of the three elected supervisors, a Soil Conservation District may appoint two

additional supervisors who shall serve for a term of one year. The supervisors of North Dakota soil conservation districts have the authority to levy a tax, not exceeding one mill, for the payment of the expenses of the district.

### Joint Water Resource Districts

Joint Water Resource Districts are formed under the Joint Exercise of Powers statute for Water Resource Districts legislated in 1975. The statute encourages individual water resource districts to cooperate on water development projects and to solve collectively water management problems. As noted, provisions are already included in the mandates to individual Water Resource Districts to meet and cooperate with other water resource districts in a river basin “to effectively resolve the significant and common water resource management problem or problems of the river basin or region and to jointly develop a comprehensive plan for the river basin or region.” The Joint Exercise of Powers statute formalizes those relationships among Water Resource Districts by giving two or more boards the right to exercise power jointly as defined by the joint boards, together with the right to disperse monies to carry out combined projects, with the joint boards able to levy up to two mills, in addition to their budget as individual boards, to carry out these projects.<sup>38</sup> In addition, Joint Water Resource Districts can fund projects through special assessment districts, user fees, or revenue bonds. The State Engineer’s Office offers technical assistance in carrying out projects determined by the Joint Water Resource Districts.

Currently the most active Joint Water Resource Districts are the Devils Lake Joint Water District, Red River Joint Water District, Upper Sheyenne Joint Water District, and the newly formed Missouri River Joint Water District.

### Regional Councils

In 1969, under the direction of the North Dakota Office of Intergovernmental Assistance, eight Regional Councils were created within the State of North Dakota (Century Code 54-40-08). The geography of the Regional Councils copies the delineation of the federal Natural Resource Conservation Services. Three of the eight Regional Councils (III, IV and V) are located within the Red River Basin: Region III, the North Central Planning Council, has its headquarters in Devils Lake; Region IV, the Red River Regional Council, is headquartered in Grafton; and Region V, the Lake Agassiz Regional Council, has headquarters in Fargo.

The mission of Intergovernmental Assistance Regional Councils is “to provide the people of North Dakota with effective, efficient and customer oriented administration of federal and state programs for community development, energy efficiency/renewable energy, housing, and self sufficiency.”

The Red River Regional Council is currently implementing a five-year program to create 100 miles of riparian zones throughout the Red River Basin (see detailed description of this program in Section 6). Additional programs sponsored by the Red River Regional Council include a multi-watershed program addressing the Mount Carmel Dam Watershed, the Renwick Dam Watershed, the Homme Dam Watershed, and the Icelandic Aquifer.

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<sup>38</sup> See Century Code 61-16.1-11 Joint exercise of powers for details.

The Regional Councils have no regulatory, permitting, or taxing authority. However, they are given broad and generalized responsibilities in the North Dakota statutes

### Garrison Diversion Conservancy District

The Garrison Diversion Conservancy District, whose mission is “to provide a reliable, high quality and affordable water supply for the benefit of North Dakota,” has a complex history. Born out of the 1944 Flood Control Act (Pick-Sloan Missouri Basin Program) and revised or reformulated via federal legislation in 1965 and 1986, with further revision in 2000, the scope of Garrison Diversion activities can be difficult to pinpoint.<sup>39</sup> Currently, Garrison Diversion describes its work and impact as residing in five programs: Municipal, Rural and Industrial Water; Environmental Benefits; Recreation and Tourism; Agricultural Benefits; and Operation and Maintenance (of existing Garrison Diversion Unit facilities).<sup>40</sup> Within the past three years, the Board of Directors have identified seven initiatives towards which to direct their primary attention: 1) federal appropriation, 2) municipal, rural and industrial water supplies, 3) agriculture and high value crops, 4) Red River Valley water needs, 5) natural resources, 6) recreation and tourism, and 7) legislative and administrative issues.<sup>41</sup>

The Garrison Diversion Conservancy District is comprised of 28 North Dakota counties, each of which issues a one-mill levy to support the Conservancy District and elects a citizen to serve a four-year term on its board of directors. Directors serve on at least one of seven standing committees: Executive, Agriculture and Natural Resources, Budget and Finance, Engineering and Operations, Municipal Rural and Industrial, or Public Relations and Recreation. The Conservancy District is also responsible for the operation together with maintenance and replacement of the Garrison Diversion Unit Missouri River Basin Project for which the Conservancy District receives federal funds.<sup>42</sup> In cooperation with the State Water Commission, the board of directors maintains or contracts for the maintenance of irrigation and water supply within the district.

Supporting a number of the water development programs in the state are annual federal mitigation funds that go to the Garrison Conservancy District. These funds are administered by the State Water Commission, which allocates them to assist areas of the state in need of water supply for rural, municipal and industrial use. Other authorized uses for Garrison federal mitigation funds, as defined in the most recent federal revision, the 2000 Dakota Water Resources Act, include fish and wildlife, recreation, irrigation, flood control, stream flow augmentation, and ground water recharge.<sup>43</sup>

### **3.3 Planning Aspects of North Dakota Water Strategy**

Water management in North Dakota is distinct in several of its features, including the direct involvement of the state’s governor in water planning as chair of the Water Commission, the role of appointed citizens in decision making at both state (Water Commission) and local levels (Water Resource Districts, Joint Water Resource Districts, Soil Conservation Districts), and, as

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<sup>39</sup> [www.garrisondiv.org/pages/publicinfo/reassessment/index.epl](http://www.garrisondiv.org/pages/publicinfo/reassessment/index.epl) (accessed 20 December 2005).

<sup>40</sup> [www.garrisondiv.org/pags/programs/index.epl](http://www.garrisondiv.org/pags/programs/index.epl) (accessed 20 December 2005).

<sup>41</sup> [www.garrisondiv.org/pages/publicinfo/reassessment/index.epl](http://www.garrisondiv.org/pages/publicinfo/reassessment/index.epl) (accessed 20 December 2005).

<sup>42</sup> [www.garrisondiv.org/page/districtorg/index.epl](http://www.garrisondiv.org/page/districtorg/index.epl) (accessed 20 December 2005).

<sup>43</sup> [www.garrisondiv.org/pages/dwra/index.epl](http://www.garrisondiv.org/pages/dwra/index.epl) (accessed 20 December 2005).

mentioned earlier, the flexibility and openness of the planning, together with attempts to work by consensus, and often with opportunities for broad citizen input into the planning process.

### **3.3.1 Interdepartmental Planning**

In both the State Water Commission and State Engineer's Office and the Department of Health, projects and programs typically involve work across divisions. In Strategic Plan 2004-2007, the State Engineer explains that the planning that went into the strategic plan was "not the work of one or two individuals, but . . . the work of all those involved in the agency's projects and programs." The document explains as well that although the State Engineer's office contains five divisions, that many of the programs "require staff contributions from multiple divisions."<sup>44</sup>

Similarly, a number of divisions within the Department of Health's Environmental Section work together to monitor, regulate and develop clean water in the state.

### **3.3.2 Inter-agency Cooperation**

Various agencies, state and federal, also share responsibilities for developing and carrying out programs and projects. As an example of a major cooperative program, the State Water Commission and Engineer's Office worked together with the U. S. Geological Survey to study ground water resources, whose comprehensive data continues to guide decision and strategy-making in the state. This program, moreover, was the first such comprehensive inventory of counties completed by a state.<sup>45</sup>

As an example of how cooperation among agencies occurs in the beginning stages of planning is a recent organizational meeting to plan strategy for the Sovereign Land Plan, a program initiated by State Engineer's Office. The goal of this Plan is to develop a comprehensive management plan for the state's sovereign lands, with specific attention to the ownership of lake/riverbed bottoms. At an initial planning meeting, representatives from the following agencies participated: Water Commission & State Engineer's Office, Department of Health, Game and Fish Department, Historical Society, Parks and Recreation Department and Garrison Diversion Conservancy District.

Other examples of agencies sharing responsibilities for projects include the following:

- Permitting for Water Well Construction and certification of water well contractors - responsibilities shared by Water Commission and Department of Health
- General emergency drought response - shared by Water Commission and Department of Emergency Services
- Wellhead Protection Program - shared by Department of Health, Geological Survey and Water Commission
- Subsurface Minerals Program and Underground Injection Control Program - shared by Geological Survey and State Industrial Commission
- Standards of Water Quality - shared by Department of Health and Water Commission
- Water Pollution Control Board - shared by Department of Health, Water Commission and Geological Survey

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<sup>44</sup> North Dakota State Water Commission and Office of the State Engineer, Strategic Plan 2004-2007, pp. 1, 4.

<sup>45</sup> Water in North Dakota, p. 20.

- Coal Exploration Program - shared by Geological Survey and State Industrial Commission
- Surface Mining and Reclamation Operations - shared by Public Service Commission, Geological Survey, Department of Health and Water Commission
- Pre-construction Site Review - shared by Department of Health, Geological Survey and Water Commission
- Underground Waste Facility - shared by State Industrial Commission and Geological Survey
- Chemigation Regulations - shared by Department of Agriculture and Water Commission
- Water Protection Strategy for Pesticides - shared by Department of Agriculture, Water Commission, Department of Health, Geological Survey and Extension Service
- Ground Water Monitoring Well Construction Requirements - shared by Water Commission and Department of Health
- Underground Injection Control Program - shared by Department of Health and Geological Survey
- State Waterbank Program - shared by Department of Agriculture and Water Commission<sup>46</sup>

### 3.3.3 Shared Planning Across Entities

State agencies work with local entities and individuals in a number of ways. Regular connections between state and local agencies occur through the biennial planning process that aligns itself with the legislative schedule of the state. This biennial planning process for water projects is initiated by the State Water Commission and State Engineer's Office. The Water Commission sends to local Water Resource Districts and other local entities an invitation to submit their requests for water project funding. These requests are then studied and prioritized according to state statute and set into time frames for funding and implementation.

Individual agencies regularly work with local entities through their specific programs. As articulated by the Department of Health, "we advance our mission by networking, facilitating local efforts, collaborating with partners and stakeholders, and providing expertise in developing creative public health solutions."<sup>47</sup> An example of this partnering already noted is that between the Department of Health (Division of Water Quality) and local Soil Conservation Districts, who are the main partners in carrying out the Nonpoint Source Pollution Program. Other examples involve bringing direct local players into the decision-making. For instance, the Division of Water Quality regularly sets up working committees to strategize "common sense" solutions to meeting federal criteria. Such committees might consist of representatives from producer groups, agricultural associations and other local units together with representatives from the Departments of Agriculture and Health, among others. One such group came up with the strategy of using water spreading systems rather than use of ponds to meet a federal criterion.

State agencies also regularly work with federal agencies to strategize difficult problems. An example is the Devils Lake Stabilization Study, which brought together multiple agencies from both state and federal level to work cooperatively to address the problem of the fluctuating level

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<sup>46</sup> See [www.swc.state.nd.us/waterLaws/ndwatpolicy.pdf](http://www.swc.state.nd.us/waterLaws/ndwatpolicy.pdf) (accessed 21 September 2005).

<sup>47</sup> [www.health.state.nd.us/ndhd/pubs/legguide99](http://www.health.state.nd.us/ndhd/pubs/legguide99) (accessed 25 October 2005)

of this large body of water that possesses “highly valued fishery and recreation opportunities.”<sup>48</sup> Participating in this study were the State Water Commission and State Engineer’s Office, Game and Fish Department, Garrison Diversion Conservancy District, and the Department of Health, together with the United States Bureau of Reclamation, U.S. Army Corps of Engineers, and the U.S Geological Survey.

A final example of broad planning illustrates both the cooperation of a number of agencies and levels in carrying out a single project, and also the way these connections may occur through informal as well as formal structures. The Groundwater Pesticides Sensitivity Program digitalized soils in all North Dakota counties and developed a way to overlay these maps with the digitalized maps of the state’s aquifers available through the State Water Commission and Engineer’s Office, together with information about the characteristics of individual pesticides. The program has taken the further step of making this information available to the public via website in order that all pesticide users and professionals can make informed decisions about applying pesticides without contaminating ground waters. This major project, just at its completion, has a variety of players: individual researchers at North Dakota State University who initiated the concept and provided research throughout the effort; the state Agriculture Department, which assisted the researchers in obtaining funding and who are implementing and will continue to carry out and update the program; the state Geological Survey who provided matching funding to that obtained from the United States Department of Agriculture, together with the software program that overlays the digitalized soil and aquifer maps; and the U.S. Natural Resources and Conservation Service, which certified the accuracy of the original digitalized soil maps and will supply updates to the soil maps in order to support this program many years into the future.

## 4 Implementation

In addition to the Nonpoint Source Pollution Program and the Groundwater Pesticides Sensitivity Program described above, several other programs represent dimensions of how water management programs are implemented in the state.

### 4.1 Representative Implemented Programs

The **Surface Water Quality Management Program**, housed in the Department of Health’s Division of Water Quality, developed and maintains an extensive database of water quality in North Dakota. The program collects chemical and biological samples from a total of 2000+ water bodies and 1800+ discreet segments of rivers and streams in the state. This data is analyzed to determine whether surface waters meet standards in four beneficial use categories as defined by state water quality standards: 1) aquatic life, 2) recreational, 3) drinking water supply, and/or 4) fish consumption. Attempts are made to analyze all available data, whether from local Water Resource Districts or from other states, e.g., Minnesota. Data is posted regularly to the U. S. Environmental Protection Agency STORET database. When a use is assessed as partially or totally unsupported, the cause and source of the pollutant(s) causing the use impairment are identified in the assessment. A comprehensive report is prepared biennially

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<sup>48</sup> A River Runs North, p. 130.

for the U.S. Environmental Protection Agency. The most recent North Dakota Integrated Section 305(b) Water Quality Assessment Report and Section 303(d) List of Waters Needing Total Maximum Daily Loads was submitted in 2004. The Program also submits a biennial report to the state.

The Surface Water Quality Management Program illustrates an instance where significant direction for the program comes from an external federal source, in this instance the U.S. Environmental Protection Agency, although strategy continues to develop at the state agency level. Because of the required biennial reporting to the external federal agency, the Program has a defined timeframe for its work. The state and Division of Water Quality can be commended here for being the first state to have all its data into the STORET database and also for being the first state to include biological as well chemical information in its monitoring and reporting, suggesting that the state program included goals and timeframes beyond those mandated by the external agency. Also notable is the statement in the May 27, 2004, letter from the Environmental Protection Agency approving North Dakota's 2004 Integrated Report that commends the state Program "for its thorough public participation process." This commendation suggests that the North Dakota agency and program directors set the goal of including "all available data" in their analysis and found strategies for achieving that goal.

The budget for the Surface Water Quality Management Program comes largely from the U.S. Environmental Protection Agency, with the 106 funds, which are granted to all states, requiring only small matching funds from the state.

The **Southwest Pipeline Project** represents a construction program of some magnitude that involved as main players the state Legislature, a board of local representatives, state agencies, and private contractors. The legislated goal for the Southwest Pipeline Project was "to provide for the supplementation of the water resources of a portion of the area of North Dakota south and west of the Missouri River with water supplies from the Missouri River for multiple purposes, including domestic, rural, and municipal uses" (Century Code 61-24.3). The Southwest Water Authority, a 14-member elected board representing the 12-county region within the boundaries of the Project, was created by legislative action in 1991 to operate the Pipeline built and owned by the State Water Commission.

The State Water Commission oversees the construction of the Project, with much of the work carried out by private contracts. The budget for carrying out a project of this magnitude has been made possible by the funds made available for development of rural, municipal and industrial water supply systems in North Dakota through the Garrison Diversion Reformation Act of 1986. The Southwest Pipeline currently serves 32,000 residents in southwest North Dakota.

The State Water Commission and State Engineer's Office includes the Southwest Pipeline Project as one of its priority projects in its Strategic Plan 2004-2007. The two objectives for the Project for the 2004-2007 timespan include completing construction of the water distribution system in the Medora-Beach service area and beginning construction in the Oliver, Mercer and North Dunn regional service areas. Six action steps are identified for meeting this objective, with each step given a target date for completion.<sup>49</sup>

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<sup>49</sup> Strategic Plan 2004-2007, p. 23.

The **Save Our Lakes Program**, developed by the North Dakota Game and Fish Department in the last several years, has as its goal “to develop projects and work with existing programs to enhance and restore aquatic habitat in order to protect the fishery resources of North Dakota.”<sup>50</sup> The Program was developed out of the Department’s concern with practices that are accelerating the aging of bodies of water in the state. In particular, the Department notes how erosion and sedimentation threaten the life of reservoirs and lakes, problems already being addressed with the Department’s Best Management Practices program in combination with conservation easements and watershed modeling.

The Save Our Lakes Program will attempt to develop projects as well as work with existing programs. Its objectives include trapping and/or removing sediments in lakes and reservoirs, evacuating noxious water, creating buffer strips, as well as controlling noxious and invasive species. Some of the instruments the Department has identified to accomplish these objectives include waste containment facilities, bank stabilization projects, ground cover modeling to locate highly erodible areas, and sedimentation dams.<sup>51</sup>

The Game and Fish Department’s development of goals and objectives for the Save Our Lakes Program precedes identifying budget sources to carry out the Program. Part of the Program’s strategy for achieving its objectives is to work cooperatively with agencies at all levels in order to identify sources of funding that align themselves with the goal of the Program. Without specific budgets for program objectives, the Program is unable to set exact timelines. Its main form of prioritizing involves identifying “priority waters based on criteria such as watershed condition, recreational use, and opportunity for success”; however, the Program does not limit itself to these prioritized waters.

**Water Education for Teachers (“Project WET”)**, a program of the State Water Commission and State Engineer’s Office, has as its goal to educate the public about North Dakota’s water resources. Its objective is to “develop, promote, deliver, and provide” to both educators and students a number of educational materials, experiences and programs. These programs range from institutes and in-service training for teachers to water science programs and classroom or other-venue events for students. These instruments are intended to help both educators and students to acquire and apply knowledge about water resources and uses as well as to evaluate their own actions towards the state’s water resources.<sup>52</sup> The Water Education for Teachers Program has evolved into a national program supported by many states, agencies and organizations and is known as “Project WET”.

The program’s primary budget support comes from a Section 319 Grant from the U.S. Environmental Protection Agency, whose funding is critical to continuing the program. This program is among those programs given priority by the State Water Commission and State Engineer’s Office in their Strategic Plan 2004-2007, which contains a specific action plan, together with dates, for carrying out the program through 2007.

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<sup>50</sup> Save Our Lakes brochure, April 2003

<sup>51</sup> Save Our Lakes brochure.

<sup>52</sup> Strategic Plan 2004-2007, p. 25.

#### 4.2 Representative Programs Arranged by Goals

The following table summarizes the implementation of six programs described in 4.2 or preceding sections of the report. Examples were chosen to represent a number of goals for water management, a cross section of agencies, and varied methods of financing. The projects are arranged by goal, using the six goals articulated by the State Water Commission and State Engineer’s Office in their Strategic Plan 2004-2007. It is important to note that each program or project, while categorized under one primary goal, may be furthering a number of goals. For example, both the Surface Water Quality Management Program and the Groundwater Pesticides Sensitivity Program are based on extensive, continuing research, though neither program is listed under that category.

Goal	Policy Instruments (programs, projects)	Financing/ Implementing Group(s)
Regulate the use of water resources for the future welfare & prosperity of the people of ND	Surface Water Quality Management Program	U.S. Environmental Protection Agency/ Water Quality Division of Department of Health
Develop water resources for the future welfare & prosperity of the people of ND	Southwest Area Pipeline Project	U.S. Bureau of Reclamation via Municipal, Rural and Industrial Water Supply Program; Cost-sharing and bonding via State Water Commission/ State Water Commission & State Engineer
Manage water resources for the future welfare & prosperity of the people of North Dakota	Save Our Lakes Program	Grants (to be sought out) via local, state and federal agencies/ Game and Fish Department
Educate the public regarding the nature and occurrence of ND’s water resources	Water Education for Teachers Program (WET)	U.S. Environmental Protection Agency/ State Water Commission & State Engineer
Collect, manage, and distribute information to facilitate improved management of ND’s water	Groundwater Pesticides Sensitivity Program	U. S. Department of Agriculture, Geological Survey, N.D. Dept. of

resources		Agriculture/ N.D.S.U., ND Department of Agriculture, augmented by Department of Health and Natural Resources Conservation Services; Geological Survey
Conduct research into the processes affecting the hydrologic cycle to improve the management of ND's water resources	Nonpoint Source Pollution Program	U.S. Environmental Protection Agency (Clean Water Act Section 319[h])/ Water Quality Division of Department of Health, Soil Conservation Services

## 5 Monitoring and Review

Formal process or outcome indicators, nor formal mechanisms for learning and adapting built into goals and objectives or into the implementation of most programs, are not included in this document. These elements are present, however, in informal or implicit ways in most projects and programs. This section will provide several examples from the programs and projects described in Section 4 of the informal or formal use of assessment instruments for gauging process or outcomes and/or for assessing the effectiveness of a program or project.

In the **Surface Water Quality Management Program**, progress is measured in a number of ways. A basic measure is the number of water bodies or segments of rivers and streams, together with additional data, from which water is collected, analyzed and taken into account in drawing conclusions about the quality of the state's surface waters. A second basic measure of self-assessment is the effectiveness of scales used to categorize the findings. For instance, the Surface Water Quality Management Program employs two scales, one to designate use, a second to designate the degree of impairment for each use. The Program can also employ baseline data from whatever point in time is most relevant, beginning with data from 1968, through current information from 1993 to present in the revised STORET system. The Surface Water Quality Management Program is in the process of developing a monitoring council made up of stakeholders and others, who will review the ongoing data analyses with the goal of learning from the data and using it to raise new questions or chart new directions.

As described above, the **Groundwater Pesticides Sensitivity Program** was developed by a number of individuals and agencies over a number of years; thus, the Program did not have a single set of process or outcome indicators. A central implied outcome indicator, however, was the completing of digitalized maps for all North Dakota counties, a process that was given a five-year time frame to complete at a certain point in the process but was completed in four years from that point. Those working with this Program also plan to use baseline data on groundwater collected by the Health Department to track degradation or improvement in ground waters, and thus to assess the degree to which the public information on where it is not safe to use pesticides is heeded. The Program can also keep track of the number of visits to the web site containing the digitalized maps.

The **Water Education for Teachers Program** has not yet had funds available for a comprehensive evaluation of the degree to which learning about water has improved in the state. The program does, however, regularly employ evaluation tools on which participants in water education programs can describe the value of their learning experience. For instance, teachers fill out evaluations that comment on instructor and instruction methods, where and when the training is held, the quality of materials, and the degree to which the instruction is relevant to the teacher's subjects and grade levels, among other questions. This tool is used to help determine changes in future instruction. In addition to written evaluations are daily oral "idea polls" employed in multi-day summer institutes, allowing change in instruction to occur more immediately.

In conclusion, the programs and projects described above may benefit by building more formal process and outcome indicators into their planning from the beginning of the program, although such indicators are implicit or assumed in most programs and projects.

## **6 Multi-Level Coordination and Participation, Watershed Partnerships**

Multi-level coordination and participation occurs both through the formalized program of water management in the state and also through quasi-governmental and nonprofit groups who come together to solve common water resource problems. Some of these groups form multi-level coordination around a watershed, such as the Joint Water Resource Boards or the Red River Water Management Consortium; others form around a particular effort, such as the Red River Basin Riparian Project or the North Dakota Water Users and North Dakota Water Education Foundation. Depending on their goals, these organizations may team up with others in a region of the state, such as the Joint Water Resource Boards; or with other states, such as the Lake Agassiz Water Authority, Red River Water Management Consortium, and the Red River Basin Riparian Project. Some also coordinate with both other states and with provincial government, such as the Red River Basin Commission. Typically, representatives from state agencies or divisions will participate in these entities organized around particular watersheds or efforts in order to facilitate coordination between the special entities and the state agencies. Examples of multi-level coordination efforts follow:

### **6.1 Watershed Plan Coordination Program**

Recognizing the importance of local watershed planning in the state, the State Water Commission has formalized attempts to encourage watershed-level planning. One way of doing this is by giving programmatic status to the effort through the Watershed Plan Coordination program. This program allows the State Engineer's Office to offer technical assistance to regional planning efforts. Recent examples include supporting with technical assistance the Devils Lake Basin Water Management Plan and the Fargo-Moorhead and Upstream Feasibility Study Phase I. The State Water Commission has also worked with several regional watershed groups, assisting start-up planning groups for the Upper Sheyenne, the Red River, and Missouri River.

In addition, Water Resource Districts may decide on their own to engage in multi-district projects, thus allowing for projects to go ahead that may not be possible for a single county or water district to fund.

### **6.2 Lake Agassiz Water Authority**

The Lake Agassiz Water Authority illustrates a watershed partnership for accomplishing a particular purpose. It also illustrates the working together of more than one state; although the agency is based in North Dakota, it invites participation by some Minnesota cities and towns.

The Lake Agassiz Water Authority was legislated for the purpose of ensuring a dependable, long-term and sufficient water supply to eastern North Dakota and to their neighbors in Minnesota who live in the Red River watershed. This Authority was established by North Dakota legislation "to provide for the supply and distribution of water to the people of eastern North Dakota for purposes, including domestic, rural water, municipal, livestock, light industrial, and other uses, with primary emphasis on domestic, rural water, and municipal uses; and provide for the future economic welfare and prosperity of the people of this state, and particularly the people of eastern North Dakota, by the bulk purchase of water from the Garrison Diversion Conservancy District delivered by the Red River valley water supply project for beneficial and public uses" (Century Code 61-39).

The Lake Agassiz Water Authority consists of cities and water districts located in that part of the state which is included within the boundaries of Cavalier, Pembina, Walsh, Nelson, Grand Forks, Griggs, Steele, Trail, Barnes, Cass, Ransom, Sargent, and Richland Counties and that pay dues to the authority. Minnesota cities may join the authority, provided a portion of the city is located within five miles of this state, or if the city uses the Red River for its primary water supply. Cities and water districts pay dues to the Authority as determined by the Authority. In addition, the group is eligible to apply for bonding to the State Water Commission for projects to deliver water to eastern North Dakota.

### **6.3 Red River Management Consortium**

The Red River Management Consortium, a second organization working with water supply for eastern North Dakota, illustrates even more comprehensive multi-level coordination, with two states, private enterprise, and both state and federal agencies partnering together to solve water supply and quality issues.

The Red River Management Consortium was organized in 1996, with the Energy & Environmental Research Center and major stakeholders in the Red River of the North Basin teaming up in order to find economical, practical and timely solutions to water supply and water quality. The overall goal of the Consortium is “to develop a long-term watershed management strategy focusing on water quantity and quality.” It is expected that this program will become a model for watershed management that other areas of the United States can use to respond to environmental and water quantity concerns while allowing for economic development.

Consortium members direct the research, development, and demonstration activities of the Consortium. Involvement in the Consortium by representatives of municipalities, industry, and other entities within the basin provides a balanced perspective on watershed issues. In addition, consortium members have the opportunity to exchange information, opinions, and strategies in an open, nonpolitical forum.

Currently, members include the following:

- American Crystal Sugar Company
- Cargill
- Cass County
- City of East Grand Forks
- City of Fargo
- City of Grand Forks
- City of Moorhead
- Grand Forks County Commission
- Grand Forks County Water Resource District
- J.R. Simplot Company
- North Dakota Pig Cooperative
- Pembina River Basin Advisory Board
- Red River Regional Council
- Xcel Energy

An advisory group consisting of representatives of state and federal agencies has been established to provide input. This advisory group currently includes representatives from the Minnesota Pollution Control Agency, the Minnesota Department of Natural Resources, the North Dakota State Department of Health, the North Dakota State Water Commission & State Engineer’s Office, U.S. Department of Agriculture, Manitoba Conservation, U.S. Environmental Protection Agency, and the Red River Basin Commission.

A yearly work plan is developed based on member interests and priorities. Semiannual meetings update consortium and advisory board members on the status of planned activities. An annual report is prepared and distributed.

Red River Water Management Consortium activities are currently divided into six major tasks:

- Technology assessment, development and demonstration
- Water resource assessment and analyses
- Anthropogenic impacts on water resources
- Water resource monitoring

- Education and information dissemination
- Development of a watershed management strategy

The \$5,000 annual contribution of every member is pooled and leveraged by funds from the U.S. Department of Agriculture. Thus membership in the Red River Water Management Consortium gives each participant direct access to far more research and development activity than individual members could otherwise afford. Discussions are under way with a number of industries, municipalities, and other vested stakeholders for membership in the consortium.

#### **6.4 Red River Basin Riparian Project**

Initiated by the Red River Regional Council, the Red River Basin Riparian Project was established to directly assist and educate landowners on the restoration, protection, and effective management of riparian area within the Red River Basin. The end result of this effort is to attain a proper functioning riparian condition that will result in long-term measurable improvements in the health of river systems.

The goals of the project are to:

1. Influence land management choices in the watersheds of the basin that improve forest condition, protect water resources and improve water quality.
2. Restore a minimum of 100 river miles during the project term.
3. Establish up to eight demonstration sites in the Red River Basin.
4. Coordinate delivery of multiple programs involving riparian management by combining efforts of the project sponsors and contributing agencies.
5. Provide direct assistance to landowners and communities in managing riparian areas.
6. Utilize existing GIS technology and capabilities for data handling and presentation, for assessing needs, planning management techniques, and for monitoring changes in the riparian areas.
7. Increase the awareness and expertise of resource managers, policy makers and landowners.
8. Produce 300 management plans representing 30,000 acres in priority areas, outlining forest management practices aligned with North Dakota Forest Best Management Practices.

Participants in the project include:

- Energy and Environmental Research Center
- Minnesota Department of Natural Resources
- Natural Resources Conservation Service
- North Dakota Forest Service
- North Dakota State Water Commission and State Engineer's Office
- Red River RC & D
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- Local landowners
- Minnesota Pollution Control Agency
- North Dakota Department of Health
- North Dakota Game and Fish Department

- Red River Joint Water Board
- Soil Conservation Districts
- U.S. Environmental Protection Agency
- University of North Dakota Department of Geology and Geological Engineering

The Red River Basin Riparian Project clearly illustrates multi-level cooperation by state as well as cooperation among local citizens, state agencies and federal agencies.

## **6.5 First Nations**

The State Water Commission and the Garrison Diversion Conservancy District work cooperatively with North Dakota tribes to achieve the water supply development authorized in the Dakota Water Resource act.

Most recently, work has begun to establish a cooperative effort between First Nation Tribal groups and the state of North Dakota to quantify Tribal groups' reserved water rights. This work was initiated by the Turtle Mountain Band of Chippewa, who passed a resolution (2604-02-04) requesting that a Water Rights Negotiation process begin with the State of North Dakota for the purpose of quantifying its reserved water rights. Subsequently, it was determined that state law did not contain a procedure to allow the state to negotiate with the tribes or the Federal Government to quantify reserved water rights.

As a result, a resolution was passed by legislative action in 2005 that directs the Legislative Council to study the process of negotiating and quantifying reserved water rights and to "report its findings and recommendations, together with any legislation required to implement the recommendations, to the [2007] Sixtieth Legislative Assembly." This process may involve a comprehensive study carried out cooperatively by the State Engineer and the Turtle Mountain Band of Chippewa to determine the availability and quality of surface and ground waters within and adjacent to the Turtle Mountain Band of Chippewa reservation.

## **6.6 North Dakota Water Users and North Dakota's Education Foundation**

Citizen groups also have functioned for many years as part of North Dakota's water management. The non-profit agency, North Dakota Water Users, was established in 1959, "dedicated to protect, develop and manage North Dakota's water resources." Over the years, the organization has attracted a wide membership consisting of both citizens and representatives from state and local water governmental units. Its annual conventions have for many years brought together those who participate in making water strategy decisions for the state. The organization also lobbies for water projects. Programs listed on the agency's website as "specific goals" include: Red River Valley water supply; an outlet for Devils Lake; Northwest Area Water Supply Project; Southwest Pipeline Project; flood control projects; rural water systems; water for industry, recreation and wildlife; municipal water supply; water management projects and programs; irrigation; river and bank protection; water education.

A second nonprofit organization, the North Dakota Water Education Foundation, shares a director and office with North Dakota Water Users. The Foundation's goal is "to develop and implement water information and education programs to increase awareness, understanding and knowledge about water resource issues in North Dakota." The Foundation publishes a magazine,

North Dakota Water, and offers a course on North Dakota water along with water tours to citizens. Both organizations illustrate the dedication of private citizens to the work of developing and managing the state’s water resources through citizen involvement and education. In particular, the organizations have understood the vital role of public awareness and understanding to effective development and management of the state’s water resources.

## 7 North Dakota Interview Contacts

We wish to thank the following water agency personnel for answering questions and providing information:

Tom Berg, Staff Forester, Forestry Service

Kathleen Donahue, Planning Officer, Division of Homeland Security, Department of Emergency Services

Dennis Fewless, Director Water Quality Division, Department of Health

Thomas Fischer, Chair, Southeast Cass Water Resource District; North Dakota House of Representatives

Mike El, Water Quality Division, Department of Health

Randy Gjestvang, State Water Commission & State Engineer, Fargo office

LeRoy Klapprodt, Director Planning and Education Division, State Water Commission & State Engineer

Jeff Olson, Manager of Plant Industries, Department of Agriculture

Greg Sandness, Coordinator Nonpoint Source Pollution Program, Water Quality Division, Department of Health

## APPENDIX A

Supporting Descriptions of Federal Laws and Agencies<sup>53</sup>

### Federal Laws

#### Endangered Species Act

The Endangered Species Act promotes the conservation of endangered plants and animals as well as the habitats in which these federally listed species are found. The U.S. Fish and Wildlife Service maintains a list of endangered plants and animals. Under the provisions of this act, it is unlawful to participate in the “taking” of any of the listed endangered species. It is also unlawful to manipulate adversely the habitat of an endangered species or to import or export listed species, whether interstate or foreign commerce.

#### Farm Bill

The Farm Security and Rural Investment Act of 2002 (Farm Bill) represents the single most significant commitment of resources toward conservation on private lands in the Nation’s

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<sup>53</sup> Source, Red River Basin Commission, Inventory Reports, 2000.

history. The legislation responds to a broad range of emerging natural resource challenges faced by farmers and ranchers, including soil erosion, wetlands, wildlife habitat, and farmland protection. Private landowners will benefit from a portfolio of voluntary assistance, including cost-share, land rental, incentive payments, and technical assistance.

The 2002 Farm Bill places a strong emphasis on the conservation of working lands, ensuring that land remain both healthy and productive. The conservation provisions build upon past conservation gains and respond to the call of farmers and ranchers across the country for additional cost-share resources. The 2002 Farm Bill also ensures greater access to the programs by making more farmers and ranchers eligible for participation. A new conservation program established as part of the 2002 Farm Bill, the Conservation Security Program, has awarded more than \$4.6 million to 290 North Dakota Farmers and ranchers in four watersheds, who have established contracts to meet Tier I, II, or III levels of soil and water quality on the land under their management. Two additional watersheds will be eligible to participate in the 2006.

### **Fish and Wildlife Coordination Act**

This act requires the Secretaries of Agriculture to work with state and federal agencies to “protect, rear, stock and increase” quantities of game. The Fish and Wildlife Coordination Act also requires studies of sewage, trade wastes and other polluting substances to see how they influence or adversely affect wildlife. A later amendment requires consultation with the Fish and Wildlife Service before constructing or modifying any stream or river structure (under Federal permit or license) that may influence wildlife numbers in the affected areas.

### **Floodplain Management Executive Order 11988**

Prior to the development of Executive Order 11988, studies had shown the number of flood damages losses throughout the US were steadily increasing, despite increased funding and construction of flood control devices. Results of previous studies further determined that non-structural, in addition to structural mitigation efforts, would be needed to deal more effectively with flood hazards.

Executive Order 11988 directs Federal agencies to make efforts toward reducing flood damages through mitigation efforts when avoidance was not permissible. Executive Order 11988 also outlines a mandatory cooperation between the Water Resources Council, Council on Environmental Quality, and the Federal Insurance Administration in order to improve the procedures among the several agencies.

### **Insecticide, Fungicide, and Rodenticide Act**

This Act was primarily developed to give the EPA greater control over the sale and use of pesticides. Later amendments to the bill require that all pesticides used in the United States be registered and that all persons involved in their application be certified. By requiring the registration of pesticides, the EPA can better determine and control the potential environmental risks posed by these chemicals.

### **National Environmental Policy Act (NEPA)**

When federal monies are used to develop or institute major federal programs, the federal agency must also follow the National Environmental Policy Act, the national charter for protection of

the environment in the United States. First passed by Congress in 1970, this Act establishes policies, sets goals and provides the means for federal agencies to inform the public of federal decisions affecting the environment. It further provides that federal agencies must have high quality, accurate scientific analysis, expert agency comments and public scrutiny before major projects are undertaken. Documentation must concentrate on pertinent issues significant to the action that is being undertaken. The documentation is intended to help public officials make better-informed decisions to protect, restore and enhance the environment.

The Council on Environmental Quality is an independent group that has developed the regulations that the National Environmental Policy Act documents must comply with. The Environmental Protection Agency reviews documents submitted by federal agencies at the completion of their work and then approves or disapproves the documents submitted. If the documents are disapproved, the Environmental Pollution Agency works with the submitting agency to bring the documents into compliance, before any final decision can be made by the lead agency. This process provides checks and balances to all federal projects of significant magnitude.

### **Rivers and Harbors Act**

This act prohibits construction of any structure that will influence or adversely affect the navigation or flow of any US waterway. Any construction, modification or improvements to rivers or navigable waterways must first be approved by the Army Corps of Engineers.

#### **Navigable Waters**

To be classified as a navigable waterway in the United States, *Title 33 Code of Federal Regulations* specifies that the waterway must satisfy the “general conditions: a) past, present or potential presence of interstate or foreign commerce; b) physical capabilities for use by commerce. Types of commercial use of a waterway are extremely varied and will depend on the character of the region, its products, and the difficulties or dangers of navigation. It is the waterbody’s capability of use by the public for purposes of transportation of commerce which is the determinative factor, and not the time, extent or manner of that use.

Section 329.7of Title 33 states that a waterbody may be entirely within a state, yet still be capable of carrying interstate commerce. “Where a waterbody extends through one or more states, but substantial portions, which are capable of bearing interstate commerce, are located in only one of the states, the entirety of the waterway up to the head of navigation is subject to Federal jurisdiction.” In North Dakota, the Red River and Missouri River fall under the federal definition of navigable waterway and under federal jurisdiction.

### **Wild and Scenic River Act**

In the late 1960s, it became apparent that a significant number of rivers within the United States were being dammed, dredged, diked or diverted or otherwise degraded at an alarming rate. In response, Congress developed the Wild and Scenic River Act, which designated a number of rivers having outstanding characteristics to be left in their original free-flowing condition. This act protects designated rivers from most development (including Federally licensed dams and

diversions) on publicly held lands. However, development on private land along the corridor of these protected river segments is still permitted.

## **Federal Agencies**

### **Department of Agriculture**

#### Natural Resources Conservation Service

The Natural Resources Conservation Service (formerly known as the Soil Conservation Service) was developed in response to the soil erosion problems of the 1930s. Today the Natural Resources Conservation Service is still primarily involved in working with private landowners to preserve the soil, water, plants, air, and animals of the United States, following its mission, “to provide leadership in a partnership effort to help people conserve, improve, and sustain natural resources and the environment.” To more effectively implement conservation practices at the local level, the Natural Resources Conservation Service works with more than 3,000 Soil and Water Conservation Districts throughout the country.

The Natural Resources Conservation Service administers the Conservation Security Program,, a program established as part of the 2002 Farm Bill to encourage soil and water conservation by rewarding agricultural producers who meet high standards of conservation practices (see description under Farm Bill above). The agency has no specific regulatory or permitting authority other than project and program implementation.

#### Farm Service Agency

The mission of the Farm Service Agency is “to ensure the well-being of American agriculture, the environment, and the American public through efficient and equitable administration of farm commodity programs; farm ownership, operating and emergency loans; conservation and environmental programs; emergency and disaster assistance; domestic and international food assistance and international export credit programs.” The Farm Service Agency promotes the development and implementation of environmentally sound farm programs to ensure protection of the nation’s natural resources. In promoting these types of programs, the Farm Service Agency contributes to maintaining cleaner surface and ground water sources through programs such as the Conservation Reserve Program and Swampbuster provisions.

To qualify for market transition payments involving the commodity programs, farm operators must agree to abide by the Conservation Compliance and the Wetland Conservation (Swampbuster) provision of the 1996 farm bill.

### **Department of Commerce**

#### National Oceanic and Atmospheric Administration

One operating branch of the National Oceanic and Atmospheric Administration is the National Weather Service, which provides weather, hydrologic, and climate forecasts and warnings for the United States and its territories and adjacent waters “for the protection of life and property and the enhancement of the national economy.” The agency has a broad range of databases that support its work.

## **Department of Defense**

### US Army Corps of Engineers

The US Army Corps of Engineers provides engineering, management and technical support to the Department of Defense, other federal agencies, and state and local governments. Functions include planning, designing, building, operating and maintaining projects providing flood control, water supply, hydroelectric power, navigation, environmental restoration/protection, recreation, disaster relief and recovery assistance.

The legislative origins of the US Army Corps of Engineers' regulatory program include the Rivers and Harbors Acts of 1890 (superseded) and 1899. Various sections establish permit requirements to prevent unauthorized obstruction or alteration of any navigable water of the United States. The most frequently exercised authority is contained in Section 10 (33 U.S.C. 403), which covers construction, excavation or deposition of materials in, over or under such waters or any work which would affect the course, location, condition or capacity of those waters. The authority is granted to the Secretary of the Army. Other permit authorities in the Act are Section 9 for dams and dikes, Section 13 for refuse disposal and Section 14 for temporary occupation of work built by the United States. Various pieces of legislation have modified these authorities but not removed them.

In 1972, amendments to the Federal Water Pollution Control Act added what is commonly called Section 404 Authority, (33 U.S.C. 1344) to the program. The Secretary of the Army, acting through the Chief of Engineers, is authorized to issue permits, after notice and opportunity for public hearings, for the discharge of dredged or fill material into waters of the United States at specified disposal sites. Selection of such sites must be in accordance with guidelines developed by the Environmental Protection Agency in conjunction with the Secretary of the Army (Guidelines 404[b][1]).

Two regional offices administer programs and regulatory activities in the Red River Basin. The St. Paul District is responsible for planning activities for all states in the basin plus permitting activities associated with the Minnesota and South Dakota portion of the basin. The Omaha District Office is responsible for permitting activities in the North Dakota portion of the basin.

## **Department of Interior**

### Bureau of Indian Affairs

The Mission of the Bureau of Indian Affairs is “to enhance the quality of life, to promote economic opportunity, and to carry out the responsibility to protect and improve the trust assets of American Indians, Indian tribes, and Alaska natives.” This is accomplished through the delivery of quality services and maintaining government-to-government relationships within the spirit of Indian self-determination.

The Bureau of Indian Affairs is responsible for administering federal programs for federally recognized Indian tribes and promoting Indian self-determination. In addition, the Bureau has a trust responsibility emanating from treaties and other agreements with Native groups. The

Bureau provides other services, including, but not limited to, law enforcement, social services, education, housing improvements, loan opportunities for Indian businesses and leasing of land.

The Bureau of Indian Affairs provides federal services to approximately 1.2 million American Indians and Alaskan Natives who are members of more than 557 federally recognized Indian tribes in Alaska and the contiguous United States. The Bureau administers 43,450,266.97 acres of tribally owned land, 10,183,530 acres of individually owned land, and 417,225 acres of federally owned land held in trust status.

Under the authority of the Native American Graves Protection and Repatriation Act, the Bureau of Indian Affairs has the authority to protect Indian burial grounds both above and below the earth's surface.

### US Bureau of Land Management

The goal of the Bureau of Land Management is to sustain “the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.” The agency functions under a number of federal laws, including the 1976 Federal Land Policy and Management Act, which declares that “public lands be retained in Federal ownership, unless as a result of the land use planning procedures provided in [the] Act it is determined that disposal of a particular parcel will serve the national interest.” The agency manages a wide variety of resources, among which is fish and wildlife habitat. One of the Bureau of Land Management's programs, Wild and Scenic Rivers, is located under the Bureau's National Landscape Conservation System, whose goal is to help protect some of the country's “most remarkable and rugged landscapes. “

Currently, the Bureau administers 261 million surface acres of the United States' public lands, located primarily in 12 Western states. This includes 59,700 acres of surface land in North Dakota, together with 56 million acres of subsurface mineral rights. The field office for North Dakota is located in Dickinson, with the main office for the state located in Montana.

### US Bureau of Reclamation

The mission of the Bureau of Reclamation is “to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.” The Bureau of Reclamation participates in managing the nation's water and related resources. The agency is currently responsible for providing water to one out of every five western farmers for irrigation. In addition, it is responsible for the operation of 58 hydroelectric plants that deliver 10 trillion gallons of water for municipal sources annually. Historically, the Bureau has supplied agricultural water to the arid western portions of the United States. More recently, the emphasis has changed from building dams for water supply to water resource management and conservation activities to better utilize existing supplies. A project authorized by Congress in 1965 is the North Dakota Garrison Diversion Project, whose purpose is to supply water to portions of North Dakota for various purposes. Since its inception, the project has been modified a number of times. Most recently, legislation presented to Congress in 1999 to modify the project to enable its completion, including providing a water supply to eastern North Dakota and the Red River Basin.

The agency has no specific regulatory or permitting authority other than project and program implementation.

#### US Fish and Wildlife Service

The mission of the US Fish and Wildlife Service is “working with others to conserve, protect, and enhance fish and wildlife and their habitats for the continuing benefit of the American people.”

The US Fish and Wildlife Service is involved with federal permitting processes requiring consultation concerning effects on threatened and endangered species. Consultations are associated with such laws as the Clean Water Act and the National Environmental Policy Act that requires analysis of impacts of projects and programs. Activities include implementation of the Endangered Species Act (listing, reclassifying and delisting species), implementation of the North American Waterfowl Management Plan, management of the National Wildlife Refuge System, conservation of migratory birds, fisheries and wildlife research, development and management of fish hatcheries, habitat conservation, administration of federal aid, Pittman-Robertson and Dingell-Johnson Program funds and wildlife law enforcement.

#### US Geological Survey

The mission of the US Geological Survey is “to provide the Nation with reliable, impartial information to describe and understand the earth; minimize loss of life and property from natural disasters; manage water, biological, energy, and mineral resources; and enhance and protect our quality of life.”

The US Geological Survey works with local, state and federal agencies and Indian Tribes to collect data and conduct interpretive studies on water, biological, energy and mineral resources to enable better management of natural resources. They are the lead federal agency in collecting and interpreting water quality and quantity resource data and information, including monitoring stream flows, lake levels and ground water levels of numerous aquifers.

The US Geological Survey provides a variety of additional water-related databases including: real-time water data and National Water Information Systems. These databases keep historical records of stream flows at more than 20,000 locations. The Suspended-Sediment Database provides a record of sediments and associated contaminants found within the nation’s waterways. Other information includes Water Use Maps, a Hydro-Climatic Data Network and various GIS data for water resources.

The Agency has no regulatory, permitting or taxing authority.

#### National Parks Service

Beyond seeing water as a factor in shaping landscape, the National Parks Service sees water as a natural resource to be studied and protected. Indeed, in its role of managing more than 16 million acres of wetlands, the National Parks Service is “a key participant in the preservation, restoration, and management of wetland habitats across the United States.” Types of wetlands under Parks Service management include swamps, bogs, marshes, mud flats, shallow ponds, wet meadows, among other areas. In managing these wetlands, the National Parks Service works to

provide, along with recreational opportunities, protection of fish and wildlife habitat, erosion control, and maintenance of stream flow and water quality, among other factors.<sup>54</sup> Parks Service also works to educate citizens and promises a Water Resources Environmental Contaminate Encyclopedia due out in 2006.

## **Homeland Security Administration**

### Federal Emergency Management Agency

The mission of the US Federal Emergency Management Agency is “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.”

The Federal Emergency Management Agency was founded in 1979 by Executive Order by President Carter to merge and better coordinate the disaster related responsibilities of numerous federal agencies. The agency administers the National Flood Insurance Program. The Federal Emergency Management Agency plays a key role in managing the nation’s water sources, as well as providing standards for mitigation measures. It provides Flood Insurance Rate Maps for communities enrolled in the National Flood Insurance Program.

The Federal Emergency Management Agency maintains an extensive database of flood related maps through its Map Service Center which include Digital Flood Insurance Rate Maps, Flood Insurance Rate Maps, Digital Q3 flood data, community status in the National Flood Insurance Program, Flood Map Status Information Service and Letters of Map Change. It also has a database of federally claimed disasters from past years including the state, county and type of disaster. Data regarding the allocation of disaster funds is also available. The information includes the amount of disaster funds allocated, what the funds were allocated for and the county in which the funds were distributed.

### US Coast Guard

The Eighth Coast Guard District, with district office in New Orleans, LA, is comprised of North Dakota, South Dakota, Wyoming, Nebraska, Iowa, Colorado, Kansas, Missouri, Kentucky, West Virginia, Tennessee, Arkansas, Oklahoma, New Mexico, Texas, Louisiana, Mississippi and Alabama and parts of Pennsylvania, Ohio, Indiana, Illinois, Wisconsin, Minnesota, Florida and Georgia to the Gulf of Mexico (the coastal end of the Seventh and Eighth Coast Guard District land boundary.)

Because the Red River is a “navigable” water under the definition, that it borders between two states, the US Coast Guard has authority to the extent of commerce and therefore the licensing of vessels and operators in regards to commerce. This applies to vessels and operators hired for recreation purposes, such as fishing or tour guides.

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<sup>54</sup> [www.nature.nps.gov/water](http://www.nature.nps.gov/water) (accessed 17 October 2005).

## **Independent Federal Agency**

### Environmental Protection Agency

The primary purpose of the Environmental Protection Agency is to protect the integrity and quality of the nation's waters and environment. The mission of the Environmental Pollution Agency is "to protect human health and to safeguard the natural environment, air, water, and land upon which life depends."

The Environmental Protection Agency actively enforces Federal regulations in the Red River Basin and throughout the country to ensure human health and to reduce environmental risks. The Environmental Pollution Agency is also involved in working with other nations such as Canada to protect the global environment.

The Environmental Protection Agency has authority under the Clean Water Act to establish national criteria for water quality standards. The state water quality standards are based upon the national criteria.

The Environmental Protection Agency maintains the *STORage and RETrieval System for Water and Biological Monitoring Data (STORET)*, a database consisting of records related to water quality and biological monitoring data. All states are required to enter their water quality measurements into STORET, so that they can be accessed by the agency and the public for use in the 319 program.