North Dakota

State Water Commission
and Office of the State Engineer

Biennial Report
for the period July 1, 2009 to June 30, 2011

Governor Jack Dalrymple - Chairman
Todd Sando, P.E. - Chief Engineer-Secretary and State Engineer

North Dakota State Water Commission

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May 1, 2011

Governor Jack Dalrymple
600 East Boulevard Ave.
Bismarck, ND 58505-0001

Secretary of State Al Jaeger
600 East Boulevard Ave.
Bismarck, ND 58505-0001

RE: 2009-2011 Biennial Reports, N.D.C.C. § 54-06-03; N.D.C.C. § 54-06-04; and other applicable law

Dear Governor Dalrymple and Secretary of State Jaeger:

It is with great pride in the State Water Commission and the Office of the State Engineer that we present our biennial report for July 1, 2009, through June 30, 2011. This report highlights key events, accomplishments, and other pertinent activities of the State Water Commission and the Office of the State Engineer during that timeframe for your information and consideration.

Respectfully submitted,

Todd Sando, P.E.
Chief Engineer-Secretary and State Engineer

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North Dakota State Water Commission

MISSION

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.

PHILOSOPHY & VALUES

In the delivery of services to the citizens of North Dakota, we the employees of the State Water Commission and the Office of the State Engineer value fairness, objectivity, accountability, responsiveness, and credibility. We pledge to use professional and scientific methods to maintain only the highest of standards in our delivery of services to our constituents.

AGENCY GOALS

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

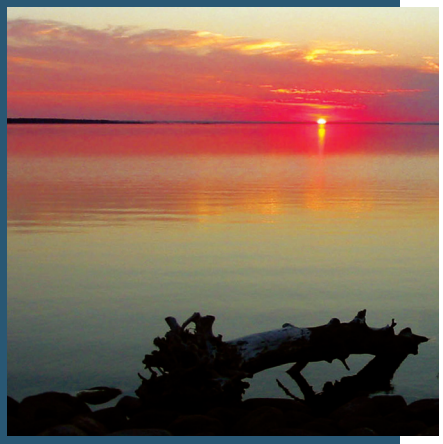
GOVERNOR Jack Dalrymple
Chairman

Todd Sando P.E.
Secretary & State Engineer

ORGANIZATION

The State Water Commission (SWC or Commission) consists of the Governor as chairman, the Commissioner of Agriculture as an ex-officio member, and seven members who are appointed by the Governor to serve terms of six years each. The terms of office for appointees are arranged such that two terms and not more than three terms shall expire on the first day of July of each odd numbered year. The Commission appoints a Secretary (the State Engineer) as its executive officer, who employs a staff as needed to carry out the work of the Commission.

The State Water Commission is located primarily in the State Office Building near the State Capitol in Bismarck, North Dakota. In addition, the Commission has a field office in West Fargo.



HISTORY AND MANDATES

The Office of the State Engineer was created in 1905 to regulate and administer matters concerning allocation of the state's water and related land resources in compliance with article XI, § 3 of the North Dakota Constitution, which declares all waters to be property of the state for public use. In 1937, additional duties were added to this office when the State Engineer was designated Chief Engineer and Secretary to the Commission.

The State Water Commission was created by legislative action in 1937, as a result of the drought of the 1930s, for the specific purpose of fostering and promoting water resources development throughout the state.

AGENCY POLICIES

The State Water Commission and the Office of the State Engineer have developed procedures and policies based upon the comprehensive legislation contained in Title 61 of North Dakota's Century Code 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 purpose 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.
- 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 understanding of the state's water resources.
- Coordinate with federal, state, and local entities in water resources management and development.
- Represent the interests of the state in water resource matters in national, state, regional, and international forums.

PRINCIPAL AGENCY ACTIVITIES

- Develop Missouri River water in ways that will secure North Dakota's share of Missouri River flows for our current and future needs.
- 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, the Western Area Water Supply project, and the Red River Valley Water Supply project.
- 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.
- 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 management plan to promote efficiency in meeting North Dakota's future water development and funding needs.
- Continue to implement the state's three-pronged approach to solving the Devils Lake area's flooding problems.
- Develop policies and initiatives that will stimulate progress toward developing flood control measures wherever feasible.
- 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 resources.
- 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 accessible to interested parties.
- Manage state water resources and sovereign lands within the framework of North Dakota's Century and Administrative Codes.

On the morning of June 1, 2011, 7 of 28 spillway gates were opened at Garrison Dam for the first time ever to release floodwater.

2011 WATER RESOURCES LEGISLATION

House Bill 1107 provided that a person filing written comments regarding a proposed appropriation of water may also request an informational hearing on the application. "Adjudicative proceeding" and "informational hearing" were defined.

House Bill 1206 established the Western Area Water Supply Authority. The mission of the authority is to treat, store, and distribute water to western North Dakota to provide for the supply and distribution of water to the people of western North Dakota for domestic, rural water, municipal, livestock, industrial, oil and gas development, and other purposes.

House Bill 1318 authorized the board of directors of the Garrison Diversion Conservancy District to establish special assessment districts for irrigation works.

House Bill 1335 exempted water transfers used to control flooding from actions that may be brought under either N.D.C.C. chapter 32-40 or 61-28 against an owner or operator of a water transfer used to control flooding for violation of the state's water pollution control laws if the water transfer does not require a national pollutant discharge elimination system permit and complies with the conditions in the state's water quality standards established to protect aquatic life.

House Bill 1413 removed the requirement that if the State Engineer finds that buildings, structures, boat docks, debris, or other manmade objects situated in, on the bed of, or adjacent to waters that have been determined to be navigable by a court are likely to be a menace to life or property or public health or safety, the State Engineer may issue an order to the person responsible for the object that the danger be imminent.

House Bill 1459 required artificial subsurface drainage systems comprising 80 acres of land area or more to have a permit.

Senate Bill 2020 appropriated $459,415,420 to the State Water Commission. The bill amended Chapter 20 of the 2009 Session Laws, relating to Fargo flood control project funding, to provide that funds appropriated for Fargo flood control may be used for right of way acquisition costs, excluding the purchase of dwellings, in addition to land purchases and construction. The bill further amended chapter 20 of the 2009 Session Laws to provide that no more than 10 percent of Fargo flood control project funds may be used for engineering, legal, planning, or other similar purposes and deleted the requirement that these funds are not subject to the 65 percent funding requirement contained in 2009 Senate Bill No. 2316. The bill also amended Chapter 20 of the 2009 Session Laws to provide that the city of Fargo, Cass County, and the Cass County Joint Water Resource District must approve any expenditures made under that section and that costs incurred by nonstate entities for dwellings or other real property that are not paid by state funds are eligible for application by the nonstate entity for cost-sharing with the state. The bill would have required the State Engineer to require water permit holders to purchase and maintain remote metering devices for the metering of water used pursuant to temporary, conditional, or perfected water permits and sold for oil and gas purposes and would have provided that the State Water Commission may provide up to $500,000 for a reimbursement program for the purchase and installation of remote water metering devices. The Governor vetoed the remote water metering and reimbursement provisions on May 18, 2011.

Senate Bill 2068 provided that the State Engineer or the State Engineer's authorized designee may execute contracts approved by the State Water Commission.

Senate Bill 2254 extended the time period in which a petition requesting an election upon the abolishment of a weather modification authority must be presented to the board of county commissioners from not later than 45 days before the next countywide election, to not later than 60 days before the next countywide election.

Senate Bill 2280 required artificial subsurface drainage systems comprising 80 acres of land area or more to have a permit.

Senate Bill 2282 increased compensation for the members of the State Water Commission and Atmospheric Resource Board from $62.50 per day to the amount provided for members of legislative management under N.D.C.C. § 54-35-10.

Senate Bill 2283 increased the maximum levy for maintaining, cleaning out, and repairing a drain from $1.50 per acre in any year to $2 per acre in any year.

LEGAL ACTIONS

Manitoba v. Norton. - Manitoba asserts that the U.S. Bureau of Reclamation (Bureau) violated the National Environmental Policy Act (NEPA) by failing to prepare an Environmental Impact Statement for the Northwest Area Water Supply (NAWS) project. Manitoba is concerned that the project will bring Missouri River basin biota to the Hudson Bay basin, causing harm to the environment. North Dakota intervened in the lawsuit to protect the state's interests. North Dakota, as well as the Bureau, filed motions to dismiss the case on the ground that because the dispute concerns the relations of the United States with another country, and relations governed by a treaty, the judiciary is without jurisdiction over the dispute. The District Court for the District of Columbia rejected the motions. All parties then filed summary judgment motions. The court denied the state's motion and the Bureau's motion but granted in part Manitoba's ruling that NEPA requires the Bureau to complete additional environmental analysis. The Bureau and state appealed this decision to the Court of Appeals for the District of Columbia, but dismissed their appeals after the Bureau decided to go ahead with additional environmental review. That work culminated in an Environmental Impact Statement issued in December 2008. After it was issued, the State of Missouri sued the Bureau, raising NEPA claims and a claim under the 1944 Flood Control Act. Missouri's suit was consolidated with Manitoba's (Missouri v. Salazar). The suit has delayed project construction on the water supply from Lake Sakakawea, however, other pipeline work connecting northern communities was allowed by the Court to continue.

In March 2010, the Court issued its decision finding that the Bureau did not satisfy its NEPA requirements in two areas, that is, it did not take the required "hard look" at adverse project consequences in Canada and any that might arise with use of Missouri River water. The state filed a motion for reconsideration on the latter issue. The Bureau also filed a motion for reconsideration on the same issue and also seeking clarification on whether the Corps should still be considered a defendant in the case in light of Missouri's failure to brief its claim regarding the Corps' need to permit the project. In March the Court issued another order, granting the state's motion to allow further work on the project, work that would not compromise ultimate decisions on water treatment. In June 2010, the court issued its order denying the state's motion and the federal government's motion. The Bureau, after some delay, has gotten its Supplemental EIS work underway. On October 2010, the state filed a motion asking the judge to modify the injunction to allow additional work on the Minot water treatment plant and to allow design work on the intake plant at the Missouri River. Manitoba did not oppose the motion, but Missouri opposed that part of it seeking authority to do design work on the intake plant. In October 2010, the Court denied that part of the motion related to the intake plant. The state formally asked the Missouri Attorney General's Office to re-consider its opposition to allowing design work on the intake plant but it has refused to do so. The Bureau's work on the EIS continues.

Montana v. Wyoming and North Dakota. - Montana alleges that Wyoming violated the terms of the Yellowstone River Compact. North Dakota is a party to the action because it is a party to the Compact. In May 2011, the United States Supreme Court issued its opinion on Montana's first exception to the special master's report. The Court ruled that Montana's increased-efficiency allegation failed to state a claim for breach of the Compact, thereby confirming the special master's earlier ruling. In June 2011, the special master issued a modified Case Management Order, which provides for additional meetings between Montana and Wyoming to discuss their differences regarding bifurcation.

The Manitoba border dike near Neche, ND, 2009.

Alvin Peterson v. Office of the State Engineer. - In June 2010, the Office of the State Engineer alleged that Mr. Peterson has an unauthorized dam and ordered its removal. An administrative hearing was held, and the State Engineer adopted the Administrative Law Judge's recommended order requiring Peterson to maintain the dam at 1543.5 feet mean sea level (feet) and to construct and maintain a channel through or around the dam to allow for overflow. Mr. Peterson appealed the State Engineer's decision to the Walsh County District Court where the State Engineer's order was affirmed in part and reversed in part. Mr. Peterson was required to maintain the dam at 1543.5 feet. Mr. Peterson appealed to the North Dakota Supreme Court and the State Engineer cross-appealed. All briefs have been submitted and oral argument is scheduled for September 2011.

"Administer the water laws of the state."

The Manitoba border dike - with water backed up on the U.S. side.

Third Party Claim in Pembina County Water Resource District, et al v. Government of Manitoba, et al. against North Dakota State Water Comm'n, et al. - Some years ago, the Pembina County Water Resource District and several municipal entities sued the Government of Manitoba, Rural Municipality of Rhineland, Rural Municipality of Montcalm, Rural Municipality of Stanley, and the Town of Emerson, Manitoba over damage caused in North Dakota as a result of the Manitoba border dike. In August 2010, the Rural Municipalities of Rhineland and Stanley filed a third party claim against Pembina County, Cavalier County Water Resource District, the North Dakota State Water Commission, and 30 named individual landowners. The Third Party Claim seeks contribution and indemnity from the third parties for their alleged actions (along with those of the plaintiffs) in increasing the flow of water in the Pembina River, which caused or contributed to the damages claimed by the plaintiffs (Pembina County Water Resource District, city of Pembina, township of Pembina, township of Walhalla, city of Neche, township of Neche, and township of Felson). A claim is also made that the individual third parties constructed dikes along the Pembina River to limit or prevent breakout flows that would naturally occur, resulting in increased flow of water northward. It is further alleged that one or more of the third parties created or acquiesced to the creation of embankments in Pembina County that block the eastward movement of surface water and divert flows northward. Lastly, it is alleged that Pembina County constructed County Road 55 to prevent or limit water overflowing the Pembina River from moving southward. The Third Party Claim alleges that the actions of the third parties have increased water flows and caused or contributed to the flooding and resulting damage complained of by the plaintiffs. A Notice of Motion and associated filings were submitted to the Federal Court – Trial Division in October 2010 for: 1) an Order striking the third party claim filed by the Rural Municipalities of Rhineland and Stanley (the "Municipal Defendants") against the Third Parties (the "Third Party Claim"), without leave to amend, for want of jurisdiction, and for failing to disclose a reasonable cause of action; 2) in the alternative, an Order dismissing the Third Party Claim against Pembina County, Cavalier County Water Resource District, and the North Dakota State Water Commission on the basis of state immunity; 3) in the further alternative, an Order staying the Third Party Claim against the Third Parties on the basis of the doctrine of forum non conveniens. Municipal Defendants filed responses. A hearing on the Motion was in held February 2011, and is awaiting the judge's order.

STATE WATER COMMISSION MEMBERS AS OF JUNE 30, 2011

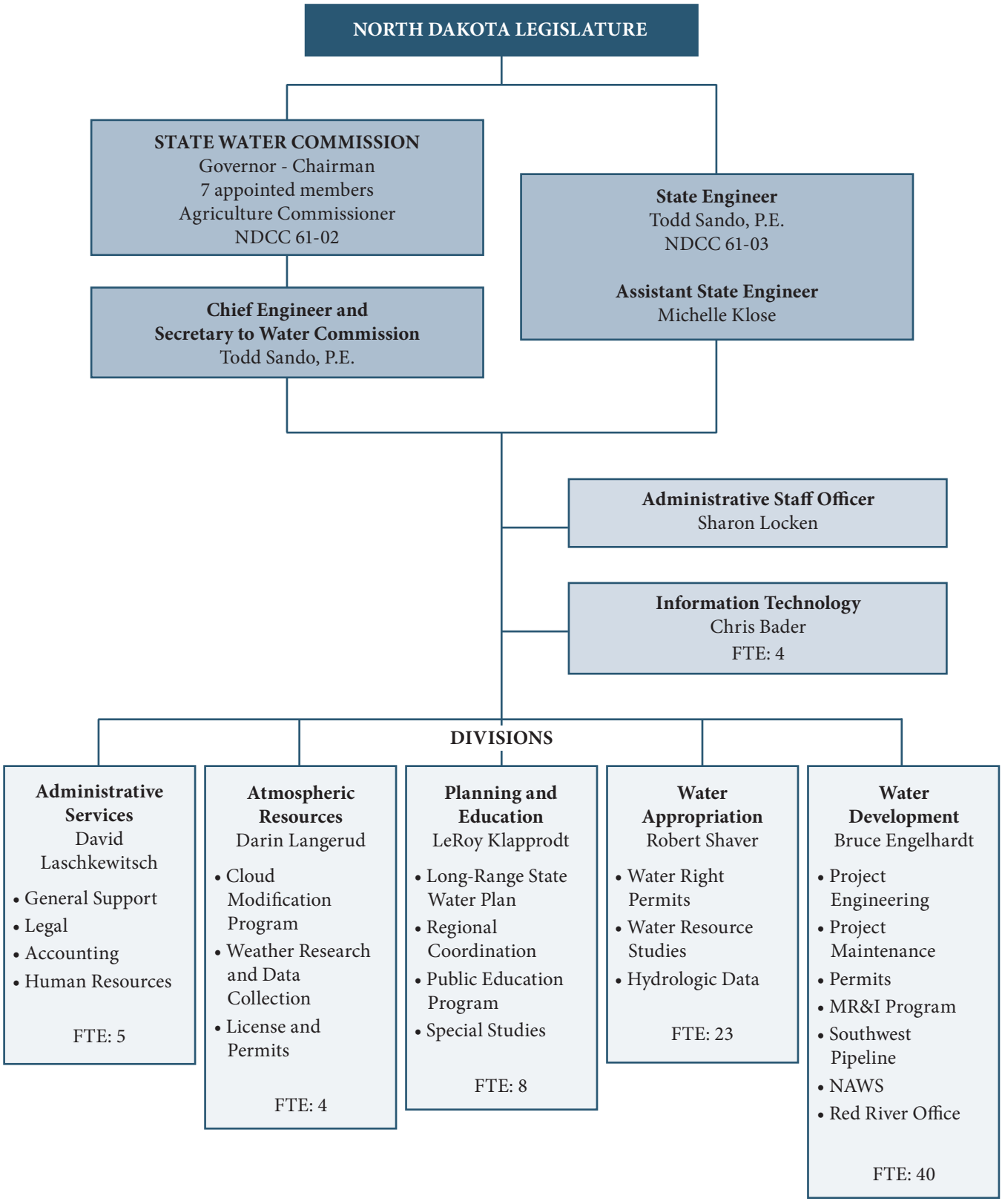
NAME	POSITION	APPOINTED	TERM ENDS
Jack Dalrymple	Governor-Chairman		
Doug Goehring	Department of Agriculture		
Robert Thompson	Member from Page	March 1, 1993	June 30, 2013
Douglas Vosper	Member from Neche	August 15, 2008	June 30, 2013
Jack Olin	Member from Dickinson	March 1, 1993	June 30, 2015
Harley Swenson	Member from Bismarck	March 1, 1993	June 30, 2015
Arne Berg	Member from Devils Lake	December 7, 2006	June 30, 2017
Maurice Foley	Member from Minot	December 8, 2006	June 30, 2017
Larry Hanson	Member from Williston	July 1, 1999	June 30, 2017

STATE WATER COMMISSION MEETINGS JULY 1, 2009 THROUGH JUNE 30, 2011

DATE		LOCATION
August 18, 2009		Bismarck
September 1, 2009	(conference call)	Bismarck
November 12, 2009		Bismarck
December 11, 2009		Bismarck
March 11, 2010		Bismarck
April 5, 2010	(conference call)	Bismarck
June 1, 2010		Bismarck
July 28, 2010	(conference call)	Bismarck
September 1, 2010		Bismarck
October 26, 2010		Bismarck
December 10, 2010		Bismarck
March 28, 2011		Bismarck
May 31, 2011	(work session)	Bismarck
June 21, 2011		Bismarck
June 30, 2011	(conference call)	Bismarck

NORTH DAKOTA STATE WATER COMMISSION
ORGANIZATIONAL CHART

(Total Full Time Equivalents of 86 personnel)



STATE WATER COMMISSION EMPLOYEES
AS OF JUNE 30, 2011

ADMINISTRATIVE SERVICES DIVISION

State Engineer: Todd Sando

Assistant State Engineer: Michelle Klose

Administrative Staff Officer: Sharon Locken

Director of Administrative Services: David Laschkewitsch

Account/Budget Specialist: Pam Jahner

Human Resource Officer: John Brintnell

Paralegal: Rosemary Pedersen

Administrative Assistant: Karen Heinert

IT Administrator: Christopher Bader

Data Processing Coordinator: Paul Moen

Data Processing Coordinator: Travis Stramer

GIS Specialist: Rodney Bassler

ATMOSPHERIC RESOURCE BOARD

Division Director: Darin Langerud

Executive Staff Officer: Kelli Schroeder

Environmental Sciences Administrator: Mark Schneider

Environmental Scientist: Daniel Brothers

WATER APPROPRIATION DIVISION

Division Director: Robert Shaver

Administrative Assistant: Stephanie Clooten

Hydrologist Managers: Royce Cline, Jon Patch, Steve Pusc, William Schuh, Alan Wanek

Hydrologists: Rex Honeyman, Andrew Nygren, Scott Parkin, Gordon Sturgeon, Kimberly Fischer, Jennifer Morin

Water Resource Engineer: Daniel Farrell, Robert White

Water Resource Senior Manager: Michael Hove

Water Resource Project Manager: James MacArthur

Engineering Technicians: Kelvin Kunz, Albert Lachenmeier, Neil Martwick, Merlyn Skaley

Rotary Drill Operator: Terry Olson

Equipment Operator: Roger Nelson

PLANNING AND EDUCATION DIVISION

Division Director: LeRoy Klapprodt

Administrative Assistant: Dawn Petersen

Water Resource Education Program Manager: Bill Sharff

Water Resource Planners: Michael Noone, Linda Weispfenning

Natural Resource Economist: Patrick Fridgen

Research Analyst: Larry Knudtson

Graphic Artist: Sheila Fryer

WATER DEVELOPMENT DIVISION

Division Director: Bruce Engelhardt

Administrative Assistant: Melissa Behm

Water Resource Engineer Managers: J. Tim Fay, Timothy Freije, Randy Gjestvang, Karen Goff, Jonathan Kelsch, Jeffrey Mattern, John Paczkowski, Julie Prescott, David Nyhus, Kelly Casteel, Sindhuja S. Pillai-Grinolds, Erwin Curry

Water Resource Engineers: Laura Ackerman, Dwight Comfort, Waylon Erdmann, James Lindseth, Mitchell Weier, Aaron Carranza

Engineering Technicians: Daniel Bahm, Jeffrey Berger, Tom Engberg, Edward Gall, Chance Nolan, Daniel McDonald, Terrence McCann, Clint Cogdill

GIS Specialist: Leland Krein

Water Resource Project Managers: Darron Nichols, Daniel Sauter

Water Resource Program Administrator: Gerald Heisler, Jeffrey Klein,

Realty Officer: Roger Kolling

Water Resource Senior Managers: Dale Binstock, Perry Weiner

Maintenance Supervisor: Carl Duchscher

Silver Jacket Liaison: Michael Hall

ADMINISTRATIVE SERVICES DIVISION

The Administrative Services Division provides the overall direction of agency powers and duties as described in the state's water laws. The activities include the State Engineer and Water Commission's operations, as well as accounting, information technology, records, and support services for all agency programs.

Budget and fiscal control work is accomplished within the provisions of statutory law and principles or rules of that law. Agency accounting consists of keeping financial records, preparation of financial statements and reports, project or program cost accounting, preparation of budgets, and proper control of various funds appropriated by the state legislature.

A considerable portion of time is spent in coordination of water resource programs with federal agencies and other state and local entities. The division works with contracts and agreements necessary to carry out investigations, planning, and cooperation with various other agencies in water resources development. A close liaison is maintained with irrigation districts, water resource districts, and the Garrison Diversion Conservancy District.

The State Engineer serves as North Dakota's representative on various boards and associations. Presently the State Engineer is the United States Co-chairman of the International Souris River Board and Chair of the Missouri River Association of States and Tribes. He is on the board of directors for the Red River Basin Commission, Red River Water Resource Council, the Red River Retention Authority, the Upper Missouri Water Users Association, and the North Dakota Water Education Foundation. He also serves as executive council member of the Western States Water Council, member of the National Water Resource Association, board of director's ex-officio member of the North Dakota Water Users Association, and member of the Association of Western States Engineers.

State Engineer Todd Sando at the Garrison Dam Spillway in 2011.

INFORMATION TECHNOLOGY (IT) SECTION

The State Water Commission utilizes information technology in almost all aspects of water resource management. The primary responsibility of the IT section is to provide the technology infrastructure required to support the scientific and regulatory functions that the agency utilizes to meet it's stated mission.

During the 2001-2003 biennium, the agency IT infrastructure was restructured to provide a technology framework capable of meeting the growing challenges anticipated over the next decade and beyond. Since that time, the agency's IT infrastructure has been enhanced and expanded to leverage both open source and commercial solutions to provide the best possible tools to meet the demanding requirements associated with water resource management. By implementing open source solutions wherever possible, the agency has produced an IT infrastructure that is both flexible and cost-effective, and one that has afforded the Water Commission the ability to grow and evolve agency capabilities without significant increases in associated IT costs.

As the demands on the state's water resources continue to grow and evolve, the Water Commission is faced with additional challenges to provide more and better information related to the state's water resources. These challenges continue to place an increasing emphasis on both the spatial and temporal relationships that are inherent to managing water resource systems. In order to address these areas, the agency has developed and deployed additional spatial and graphical tools to address the complex relationships within the water resource data. In many cases, these tools have been integrated directly

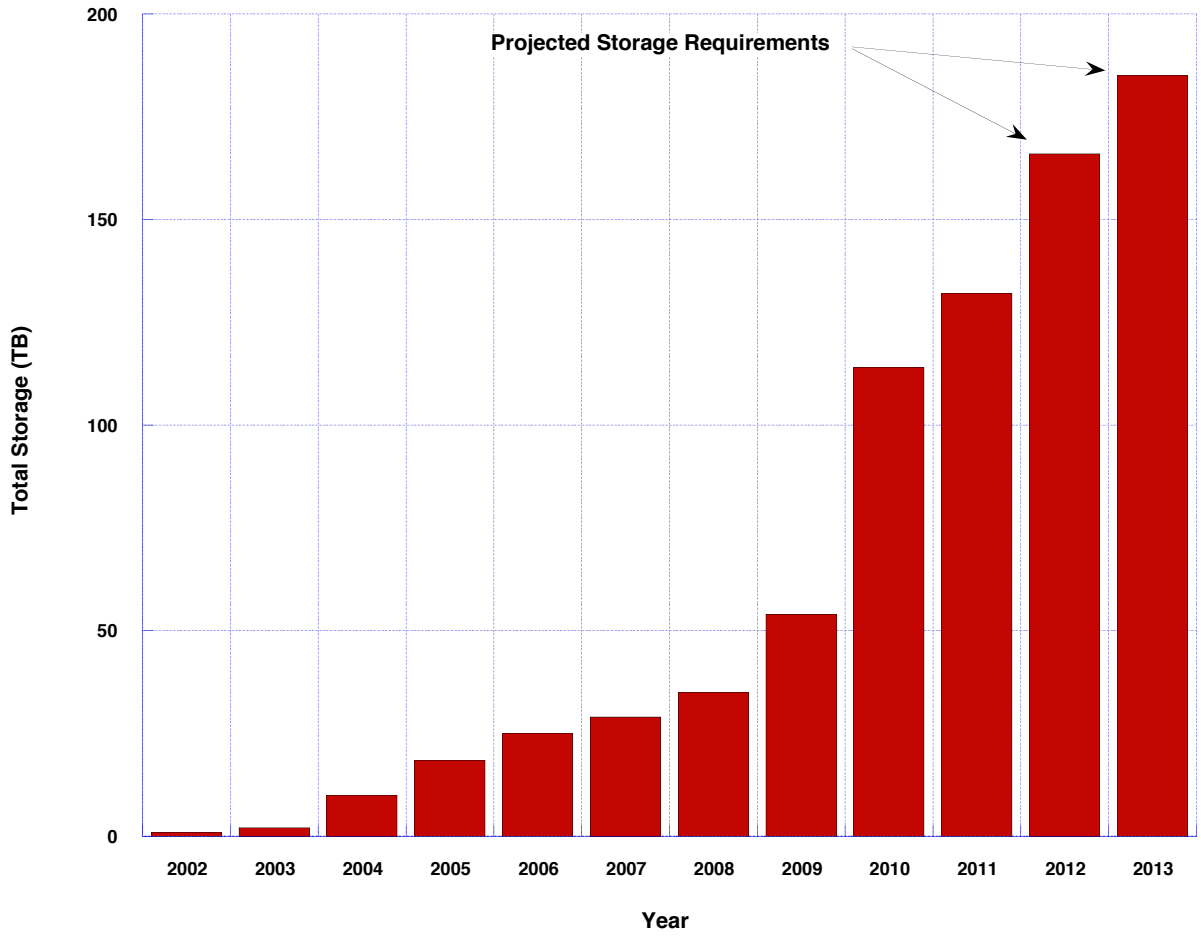
into the data management applications to address these complexities within the data development and data management processes.

Beyond the basic requirements and demands for better tools and management capabilities, the agency has also been faced with significant demands for additional bandwidth and capacity. As more and more data are collected to support an array of management initiatives, an additional burden is placed on the IT infrastructure to provide the necessary storage, bandwidth, and computational capabilities to store, process, and analyze these data. Increasing demands for aerial imagery and LiDAR data have placed tremendous demands upon the agency infrastructure for data storage and for the associated tools to maintain and disseminate these data. From 2002 to 2011, the SWC storage infrastructure has grown from just under 1 TB to over 132 TB (See Figure).

In addition to the tools and resources that are used internally, the Water Commission has also leveraged the IT infrastructure to provide complete access to all of the data resources that the agency maintains to the public through an array of web services. All of the water resource data for North Dakota are made available through the agency web site (http://www.swc.nd.gov). This includes all of the site information that is used for monitoring ground water resources in the state, which includes subsurface lithology, water levels, water chemistry and associated site information. The agency web site also includes precipitation data, dams, drains, dikes, and other retention structures that are monitored by the Water Commission.

In order to provide a more effective means of utilizing these data, most of the water resource data has also been integrated into the agency map service web site as well (http://mapservice.swc.nd.gov). In addition, the Water Commission also maintains a site dedicated to the surveying community that includes more than 2,800 Government Land Office plat maps along with all of the first and second order benchmarks (http://survey.swc.nd.gov).

Recently, the Water Commission has also developed a new map service that was originally designed to address the storage and dissemination of the massive amounts of LiDAR data that are currently being collected in North Dakota (http://lidar.swc.nd.gov).



ATMOSPHERIC RESOURCE BOARD

The Atmospheric Resource Board (ARB) is a quasi-judicial, quasi-legislative advisory and rule-making board under the supervision of the State Water Commission. ARB is co-located with the SWC and functions as one of its divisions.

The ARB is comprised of ten members: Seven are appointed by the Governor, with ex-officio members including the State Engineer, the Director of the State Aeronautics Commission, and a representative of the Environmental Section of the Department of Health.

The primary functions of the ARB are to:

- Carry out administrative procedures required for the licensing of weather modification contractors and the permitting of cloud seeding operations and research activities;
- Develop and maintain a system for the collection of data and records of all operational weather modification activities;
- Conduct research into atmospheric precipitation processes to assess and improve the effectiveness of cloud seeding technology;
- Promulgate rules and regulations governing cloud seeding activities to ensure environmental and public safety;
- Monitor and evaluate cloud seeding activities and report back to sponsoring entities; and
- Monitor, collect, and disseminate accurate climate and precipitation data.

NORTH DAKOTA CLOUD MODIFICATION PROGRAM

The North Dakota Cloud Modification Project (NDCMP) served six western counties during the 2009-2011 biennium. Those counties were Bowman, McKenzie, Mountrail, Ward, Williams, and part of Slope. At the conclusion of the biennium, the project target area covered 6.7 million acres of western North Dakota.

The NDCMP has two goals: 1) suppression of damaging hail; and 2) enhancement of rainfall. Suitable clouds over two multi-county operational districts were treated during June, July, and August of each summer of the biennium. Eight twin-engine aircraft operated by Weather Modification Inc. of Fargo, were deployed under contract to the ARB and participating counties. Operations were directed by project meteorologists from radar operations centers based in Bowman and Stanley.

The most recent evaluations of the program indicate a 45 percent reduction in crop-hail losses, a six percent increase in wheat yields, and up to a 10 percent increase in rainfall.

The direct economic impact of rainfall enhancement from cloud seeding was evaluated by Bangsund and Leistritz (2009) at two intervals, 5 and 10 percent. These two numbers reflect the long-term evaluations of the NDCMP's ability to increase rainfall. In the five percent scenario, the value of increased crop production is estimated to yield $8.4 million annually, while in the 10 percent scenario the value of increased production is estimated to yield $16 million annually.

The analysis of hail reduction or hail suppression shows the average crop value saved through cloud seeding is $3.7 million per year. Including hail

suppression benefits, the total direct impact in the 5 percent rainfall scenario is $12 million annually, while the total direct impact in the 10 percent scenario is $19.7 million. These results yield a benefit-to-cost ratio, based on 2011 project costs, of 15 to 1 for the 5 percent scenario, and 25 to 1 under the 10 percent scenario.

Under the 5 percent rainfall scenario, total direct impacts from the NDCMP were estimated to average $12 million annually. This additional net revenue would generate secondary economic activity of $25 million annually, resulting in gross business volume of over $37 million, or $15.87 per planted acre.

In the 10 percent rainfall scenario, total direct impacts from the NDCMP were estimated to average $19.7 million annually. This additional net revenue would generate secondary economic activity of $40.9 million annually, resulting in gross business volume of $60.5 million, or $25.89 per planted acre.

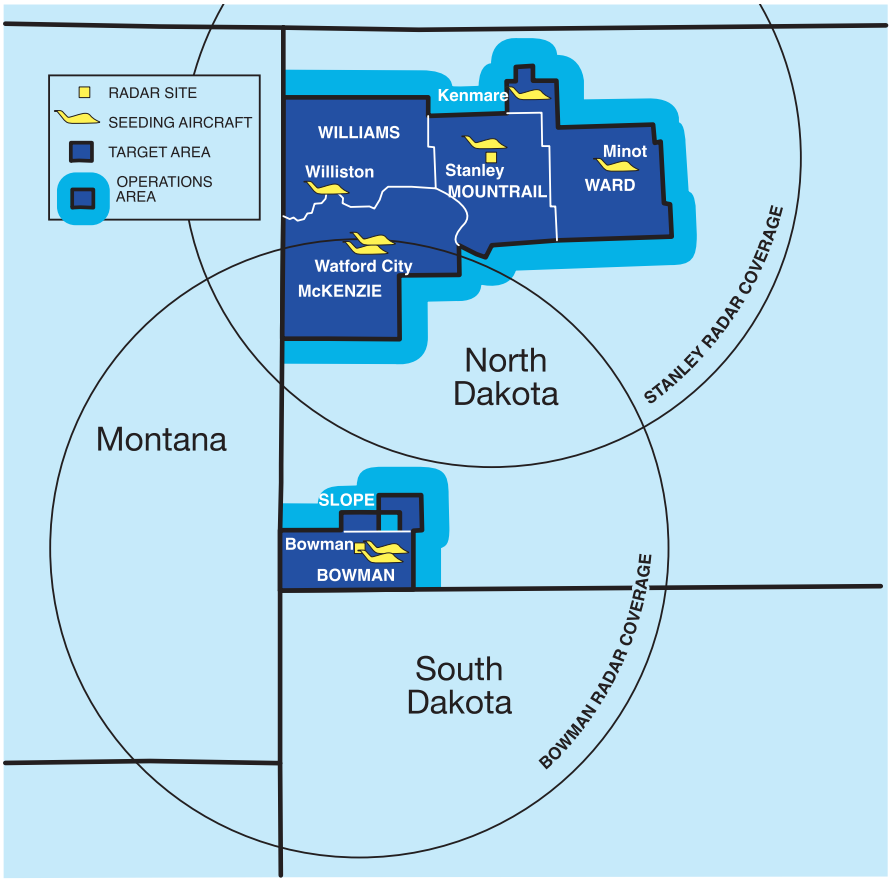
WEATHER RADAR OPERATIONS

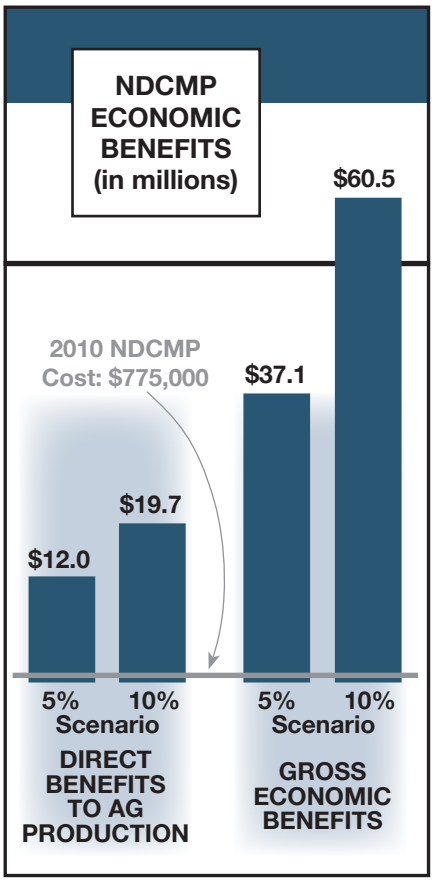
The ARB continued to operate two WSR-74C weather radars during the last biennium. Radars were located in facilities at the Bowman and Stanley airports and continued to operate at approximately one-quarter the cost of previously leased systems. Images from both radars are available and updated every six minutes on the SWC website during the operational season.

The Bowman radar is sited at the coverage limits of the National Weather Service (NWS) radars located at Bismarck, Billings, Glasgow, Rapid City, and Williston, and thus provides lower atmosphere coverage of southwestern North Dakota, southeastern Montana, and northwestern South Dakota, not available from NWS radars. In order to alleviate this situation, ARB partnered with eight counties in the area who pledged $24,000 to operate the Bowman radar year-round. They are: Billings, Bowman, Dunn, Golden Valley, Slope, Stark, (North Dakota), Fallon, (Montana), and Harding, (South Dakota). Real-time radar images and raw data were provided on the SWC website.

STATEWIDE PRECIPITATION OBSERVATIONS

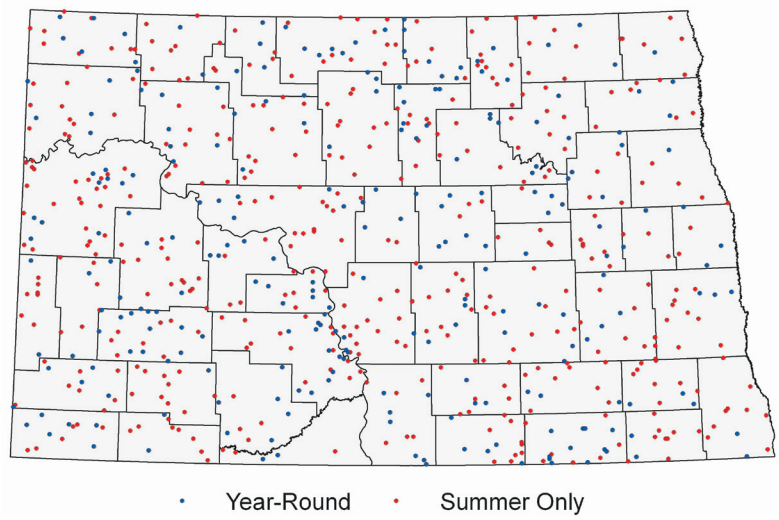
The ARB Cooperative Observer Network (ARBCON) continued observing North Dakota precipitation during the biennium. ARBCON observers numbered about 750 volunteers statewide, building on a database dating back to 1977.



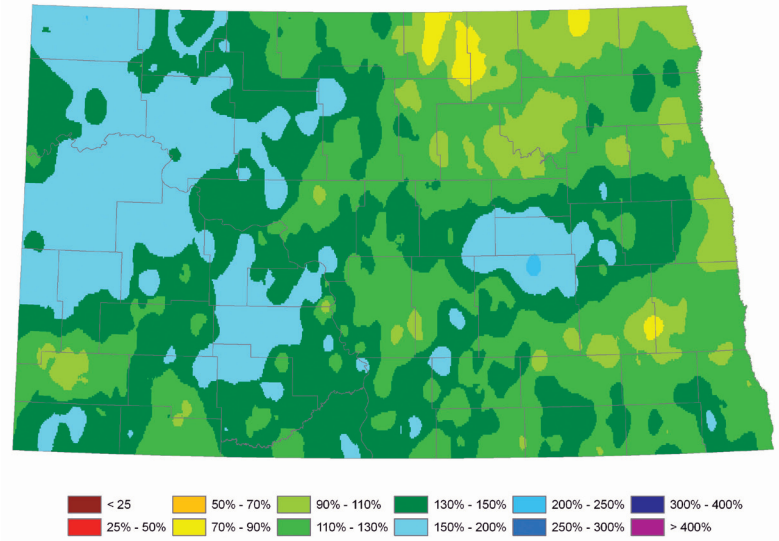


North Dakota Cloud Modification Project (NDCMP) target areas.

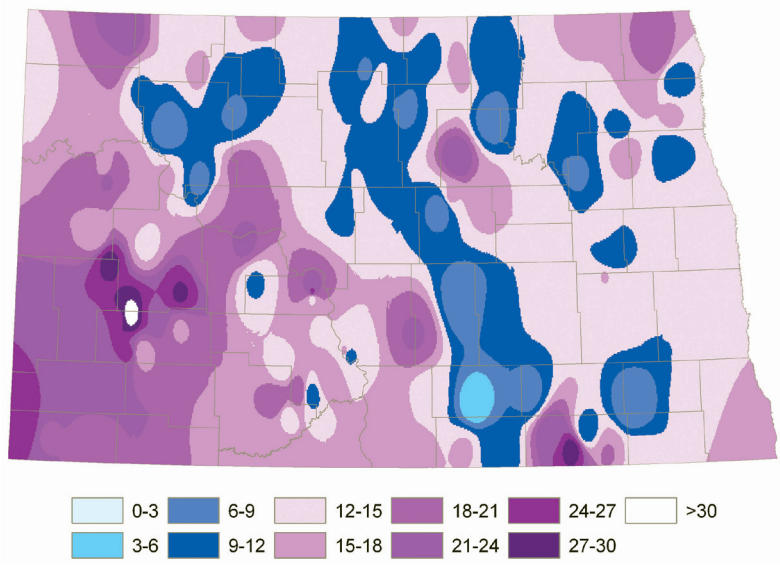
2011 ARBCON SITES



April - September 2011 Percent of Normal Rainfall



January 2011 Snowfall (in inches)



ARBCON began reporting snowfall for the first time on October 1, 2010. This was in response to the increased need for snow and snow water equivalent data in the state to assist in flood forecasting and water management. About 200 observers participated in the first year, more than doubling the number of local snow reporting stations previously in the state. ARB expects continued expansion of the number of year-round observers in the near future.

Observers continued to transition to Internet reporting during the biennium. Internet reporters enter their daily reports directly through the SWC website after logging in with a unique username and password, making the data available sooner than those submitted on monthly reporting cards. About 25 percent of observers are utilizing online reporting, a number which will continue to grow in future years.

Rain, hail and snow data, as well as color maps depicting monthly and growing season precipitation, departure from normal, and 30-year averages can be publicly accessed and downloaded directly through the SWC website. The data have proven to be very helpful in the assessment of excess rain, snow and attendant flooding, as well as in the monitoring and delineation of drought in North Dakota.

RESEARCH AND DEVELOPMENT

Research during the 2009-2011 biennium focused on a cooperative program between ARB, the University of North Dakota's (UND) Atmospheric Science Department, the National Center for Atmospheric Research (NCAR), Fargo-based Weather Modification Incorporated (WMI), and Ice Crystal Engineering (ICE) in Kindred. The Polarimetric Cloud Analysis and Seeding Test 3, or POLCAST3, conducted its third field campaign from June 21 to July 23, 2010.

A WMI aircraft was contracted to seed clouds in North Dakota within 100 km of the UND radar with ICE hygroscopic flares, which generate large numbers of small salt particles. The randomized seeding experi-

ment produced 14 cases (5 seeded, 9 not seeded) during the period, bringing the total number of randomized cases collected thus far to 27.

In addition to UND's advanced polarimetric Doppler weather radar and the instrumented seeding aircraft, UND's Citation II research jet also participated in POLCAST 3 and collected data from both seeded and unseeded clouds. Numerical modeling and complementary surface instrumentation at UND rounded out the forecasting and data collection efforts.

Analysis of the data is ongoing with interim results expected by the end of 2011. Current plans call for a fourth season of field operations during the summer of 2012.

STUDENT INTERN PROGRAMS

Eighteen intern copilots from the UND John D. Odegaard School of Aerospace Sciences participated in the NDCMP during the last biennium. All were trained at UND for a full academic year prior to their participation. Since the board's inception in 1975, 318 intern pilots have logged well over 20,000 hours of flight time in the conduct of cloud seeding operations in North Dakota's skies.

In addition to recording the time, location, duration, and meteorological conditions during all seeding and reconnaissance missions - the pilots are fully qualified to fly the aircraft, providing an additional safety margin. Because of the experience they gain, many intern copilots have returned to the NDCMP as Pilots-in-Command (PICs) in subsequent years. Interns are paid an hourly wage and are considered temporary employees of the ARB during the summer months.

The weather modification pilot training program is the only one of its kind in the United States and provides a significant number of qualified cloud seeding pilots for projects elsewhere in the U.S. and around the world.

ARB also retained undergraduate students majoring in atmospheric science as intern meteorologists during the 2009-2011 biennium. A total of six student interns assisted NDCMP field meteorologists at radar-equipped operations centers in Bowman and Stanley, and at the ARB offices in Bismarck. Like the intern pilots, intern meteorologists continue to demonstrate their enthusiasm and dedication to the NDCMP and provide a pool of better-qualified persons to serve future projects as radar meteorologists.

PLANNING AND EDUCATION DIVISION

The primary responsibility of the Planning and Education Division is to maintain and update a Water Management Plan for the State of North Dakota. Division staff members also participate in numerous regional, state, local, and inter-office planning activities; manage the agency's water education programs; provide technical assistance; and coordinate environmental reviews.

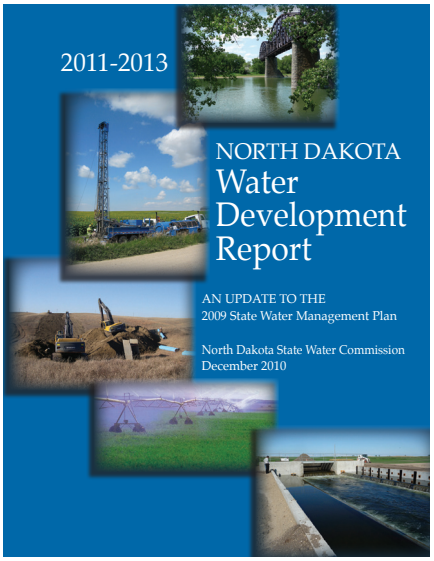
Specific staff responsibilities include:

- Maintaining a water project inventory and water management plan to promote efficiency in meeting North Dakota's future water development and funding needs;
- Leading or participating in special studies that result in water resource and related land management plans at various levels of government;
- Monitoring water resource issues and advising decision makers on possible impacts to North Dakota's water management objectives;
- Representing the State Engineer and State Water Commission on regional, national, and international natural resource planning bodies such as the Red River Water Resources Council, Pembina River Basin Advisory Board, International Water Institute, and Red River Basin Commission, to name a few;
- Assisting joint water resource management boards to develop watershed management plans;
- Providing opportunities for adults and students to increase their understanding about North Dakota's water resources and how these resources are managed; and
- Coordinating and managing interagency project reviews.

STATE WATER MANAGEMENT PLAN

By virtue of North Dakota Century Code, Section 61-02-14, Powers and Duties of the Commission; and Section 61-02-26, Duties of State Agencies Concerned with Intrastate Use or Disposition of Waters, the Commission is required to develop and maintain a comprehensive, short and long range water plan for the sound management of North Dakota's water resources. The plan reviews water management and cost-share policies, and recommends revisions as circumstances require.

The last major revision of North Dakota's water Management Plan was completed in 2009. For several subsequent bienniums, as in the past, Water Development Reports (WDR) are completed to serve as updates to the plan.



In December 2010, the Planning and Education Division completed the 2011-2013 WDR. The purpose of the 2011-2013 WDR is: to serve as a supplement to the 2009 State Water Management Plan; to provide up-to-date information regarding North Dakota's current and future water development project needs and cost-share policies; to provide current information regarding North

Dakota's ability to fund those water development needs; and to serve as a formal request for funding from the Resources Trust Fund during the 2011 Legislative Session.

As in the past, the WDR includes a list of potential water projects for development. The potential projects list for the 2011-2013 biennium was developed by contacting water interest groups, including water resource districts, joint water boards, state and federal agencies, cities, and other water user groups, to request their input into the planning process. As a result, project sponsors from all corners of the state submitted water projects that they were interested in advancing.

With that information, and in cooperation with the North Dakota Water Coalition, the Commission developed a priority project budget. This inventory/budget lists all of the state's priority water development projects and project categories for the 2011-2013 biennium that the state works to advance and fund.

AGENCY STRATEGIC PLANNING

In advance of the 2011 Legislative Assembly, the Planning and Education Division coordinated the development of an agency strategic plan for the Water Commission and Office of the State Engineer. The purpose of a strategic plan is to provide agencies with an opportunity to set the bar for themselves, and to more effectively measure performance in the future. This process is expected to continue on a biennial basis.

To develop the 2011-2013 Water Commission and Office of the State Engineer Strategic Plan, project and program managers were asked to provide input regarding their expectations for future progress through June 30, 2013. As part of that effort, they were asked to provide project and/or program objectives that they will strive to accomplish during the strategic planning timeframe, as well as specific tasks that will be completed to achieve their objectives.

DEVILS LAKE BASIN PLANNING EFFORTS

In previous bienniums, Planning and Education Division staff played an integral role in assisting the Devils Lake Basin Joint Water Resource Board in their efforts to review, update, and implement the Devils Lake Basin Water Management Plan (DLBWMP) – initially completed in 1995. During the 2009-2011 biennium, emphasis was focused on tracking implementation of previously stated goals and incorporating major changes that have occurred in the basin, such as the construction of all the major outlet structures. This plan is a critical component of the state's three-pronged approach to solving flooding problems in the Devils Lake basin.

Work on the DLBWMP during the 2009-2011 biennium will be published in a 2011 update, which will have two main objectives.

The first is to involve local citizenry for their experience and expertise. Through that process, four subject committees (agriculture, economic development, recreation, and wildlife and fisheries) were created to represent the four broad areas of interest in the basin.

The second, is to develop a list of specific goals that reflect recent major developments in the basin and the more general objectives developed in the DLBWMP, and to track progress on those goals prior to the next update of the plan in 2015. The goals identify areas of the highest priority as defined by each of the subject committees.

As part of this process, the Planning and Education Division provided technical planning assistance, as well as staff resources for re-writing and publishing the document, and website development.

UPPER SHEYENNE RIVER BASIN PLANNING EFFORTS

Planning and Education Division staff provided frequent support and guidance in the continued development of a joint water board in the watershed above Lake Ashtabula - similar to the Devils Lake board. Accomplishments have included a two-year study on water quality trends in the Sheyenne River. In addition, staff also assisted the Upper Sheyenne River Basin Joint Water Resources Board with an update of a conceptual water plan that identifies water resource development needs, and focuses resources towards achieving specific objectives. Currently, the Sheyenne Board is working with other entities to identify potential water storage sites to aid in the flood fighting effort in the Red River Valley

EXTENDED STORAGE ACREAGE PROGRAM (ESAP)

During the 2009-2011 biennium, the ESAP continued to be administered. In 2010, the original ESAP contract expired, and efforts to renew the contract, which required an interagency agreement amongst four federal agencies, were ultimately unable to receive approval from the EPA. In order to assure the maximum duration of water storage for the program, the SWC developed a new contract that would operate under the protections of the still extant interagency agreement, which will expire along with the contract on Dec 31, 2014. There are seven landowners participating in ESAP - storing water on 232 acres and totaling 486 acre-feet annually.

RED RIVER BASIN PLANNING EFFORTS

Throughout the 2009-2011 biennium, Planning and Education Division staff members continued to actively contribute to the Red River Basin Commission's (RRBC) planning and education advancements through involvement on several committees. In recent years, planning staff members have served on the RRBC's Long Term Flood Solutions advisory and technical committees, as well as other RRBC sub-committees.

The RRBC is regarded as the primary facilitator in advocating and resolving water and related land management issues from a basin-wide inter-jurisdictional perspective. The Commission supports efforts that promote basin-wide goals and objectives that result in cooperation and coordination among varied water management organizations and interests.

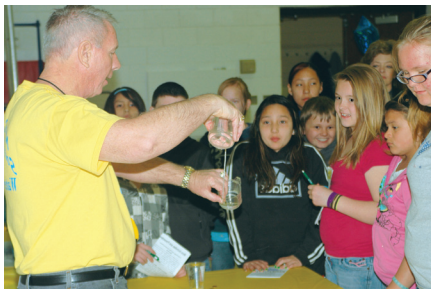
MISSOURI RIVER MANAGEMENT

Planning and Education Division staff continued to provide technical assistance to the Missouri River Joint Water Resource Board in their grass-roots efforts to improve management of the Missouri River basin's natural resources. In the wake of the unprecedented flood events along the Missouri River main stem during the summer of 2011, it is expected that Commission staff will be involved in several local and regional post-flood planning and system management review efforts.

INTERAGENCY PROJECT REVIEWS

Planning and Education Division staff continue to conduct and coordinate interagency environmental reviews involving projects associated with Community Development Block Grants and Loans, highway improvements, airport improvements, dike/levee projects, water storage impoundments, municipal water supply projects, and various federal and state water, land, and wildlife management plans, studies, Environmental Assessments and Environmental Impact Statements. On average, 33 inter-agency environmental reviews were conducted monthly during the 2009-2011 biennium for a total of 800.

Environmental review comments address compliance requirements involving State Engineer and State Water Commission regulatory responsibilities in issuing permits pertaining to water appropriation, floodplain management, sovereign lands, and the construction of dikes, levees, dams, drains, and water holding ponds. Staff members also provide information concerning the location of wells and benchmarks.



PROJECT WET

The SWC began development of its WET (Water Education for Teachers) Program in 1984. Today, Project WET is an international supplemental and interdisciplinary water education program for K-12 formal and non-formal educators, K-12 students, and the general public. North Dakota Project WET became the pattern for its growth worldwide that now involves 50 states and 50 foreign countries on five continents. Since 1997, North Dakota Project WET has enhanced its scope and vision with the innovative Explore Your Watershed extension of WET.

Project WET is delivered to K-12 educators through multi-credit watershed institutes, single-credit workshops, non-credit workshops, seminars, in-service sessions, and preservice teacher workshops. K-12 students receive water education programs directly through their own classroom and through education events such as youth camps, youth science events, youth water festivals, community water or environmental awareness events and youth/adult water action projects. Adults receive water education through community water or natural resource education events and general community events.

Project WET facilitates and promotes the learning, awareness, knowledge, exploration, and stewardship of North Dakota water resources, and how water interacts with both the human and natural environments within the watersheds of North

Dakota. Programs are carried out through the development and dissemination of indoor, outdoor, and classroom-ready experiences and teaching aids. Materials and resources are hands-on, easy-to-use, non-biased, age appropriate, adaptable, and contemporary.

Project WET K-12 educational programs and resources for educators reached 252 educators in one to three-hour teacher in-service sessions, 40 preservice teachers in six hour workshops, 130 educators in single-credit workshops, and 52 educators in summer watershed multi-credit institutes, for a total of 474 K-12 educators.

Project WET K-12 educational programs and resources for students reached 8,029 students through major water festivals and 6,674 students through youth camps, youth science programs, youth community programs, and other youth water education events, for a total of 14,703 students. Project WET also served 3,310 adults and youth in community water or natural resource education events and general community events.

NORTH DAKOTA WATER MAGAZINE

Since 1993, various water interests in North Dakota have pooled resources through the North Dakota Water Education Foundation to publish a magazine titled North Dakota Water. This magazine provides a broad spectrum of high quality information about the state's water resources to the widest possible audience. Over the course of the 2009-2011 biennium, average monthly distribution of the magazine was approximately 13,200. Readers include the general public, local, state, and federal agencies, and elected officials.

The Planning and Education Division develops the State Water Commission's contribution - a three-page section called The Oxbow and an occasional feature page titled The Water Primer. The former is designed to inform readers about the State Water Commission's projects and programs as well as local, state, and national water management issues. The latter highlights interesting or little known facts about water and related land resources.

DROUGHT DISASTER LIVESTOCK WATER SUPPLY PROJECT ASSISTANCE PROGRAM

The Drought Disaster Livestock Water Supply Project Assistance Program (Program) provides cost-share assistance to livestock producers with livestock water supply shortages caused by drought. The Program was originally created in 1991 in response to a severe statewide drought, but it was only administered for a short period of time.

The Program was last funded during the 2007-2009 biennium. However, Program management was required well into the 2009-2011 biennium.

OTHER GOVERNMENTAL AND NON-GOVERNMENTAL ORGANIZATION INVOLVEMENT

The Planning and Education Division also participated, to varying degrees, on several other governmental and non-governmental organizations, providing input from the State Engineer and State Water Commission's perspectives. During the previous biennium, staff were involved to some degree with the Army Corps-sponsored Fargo-Moorhead Metropolitan Area Flood Risk Management Study, the Missouri River Recovery Implementation Committee, Missouri River Authorized Purposes Study, and the Missouri River Ecosystem Restoration Plan; the International Water Institute; Red River Water Resources Council; Little Missouri Scenic River Commission; Voices for Oahe; Devils Lake Outlet Advisory Committee; Aquatic Nuisance Species Task Force; and Friends of Lake Sakakawea.

Devils Lake Water Institute participants and instructors.

WATER APPROPRIATION DIVISION

The Water Appropriation Division is responsible for the appropriation and management of the state's water resources in accordance with Article XI of the North Dakota Constitution and Chapter 61 of the North Dakota Century Code. The laws are based on the Doctrine of Prior Appropriation. The following principal activities fulfill these responsibilities:

- Identify the availability and chemical quality of the state's water resources;
- Assist municipalities and other public entities in developing solutions to particular water supply problems;
- Assess the impacts of existing water use on ground water levels, stream flow, and chemical quality of water for the purposes of future allocation and management;
- Collect, store, and disseminate data on stream flow, spring flow, ground water, lake levels, water quality, and water use;
- Carry out the administrative procedures required for water permit applications, water permits, and water rights;
- Conduct analyses and provide recommended decisions to the State Engineer on water permit applications;
- Develop and maintain a system for the storage and retrieval of water permit records;
- Monitor the utilization of each conditional and perfected water permit through annual water use reports, and maintain a permanent record; and
- Participate in committees and task forces pertaining to water quantity and/or quality issues as required.

WATER RESOURCE DATA

Ongoing exploration for ground water resources as well as monitoring and regulation of known aquifer systems require test-drilling and monitoring well installation. During the biennium, 34,850 feet of test drilling was completed, 212 new observation wells were installed, and an additional 39 test holes were drilled, where no well was installed. In addition, 101 older wells were properly plugged and abandoned.

The program for collecting water resource data involves several aspects. The major components of the program are the collection of samples for water quality analyses from surface and ground waters, the collection of water level data from surface and ground waters, the acquisition of water use data from surface and ground waters, and the monitoring of surface water flows.

During the biennium, 5,095 water samples were collected and analyzed for chemical constituents. These samples were collected from streams at gage stations, selected observation wells and production wells, and selected surface water bodies. These data are used to determine the suitability of the chemical quality for beneficial use, and to interpret areal hydrology. In addition, these data were used to assess changes in the quality resulting from the stresses of both man-induced processes like pumping, and natural processes caused by climatic variations.

Over 4,521 wells and surface water bodies are measured for water levels. These are predominantly observation wells, but some lakes, sloughs, and production wells are measured. These data reflect the changes in the surface and ground waters resulting from natural climatic variations and from pumping for beneficial use. These data are essential for making decisions on water permit applications

and overall water management, present and future.

The agency supports the operation of 40 stream flow gages as part of a cooperative program with the U.S. Geological Survey (USGS). The cost of these gages is, for the most part, shared equally by the State Water Commission and the USGS.

Water use information is submitted annually from more than 3,000 water permit holders. Approximately 570 additional permits have the associated water use estimated, based upon evaporative losses from reservoirs. This information is essential for evaluating the impacts of withdrawals authorized by water permits on ground water levels and stream flow, and making decisions on water permit applications. The pie chart on page 22 shows the relative volume of use by the major categories in 2010. The bar graphs on page 23 show the trend for the last 11 years for each of the three major categories of use (irrigation, municipal, and industrial).

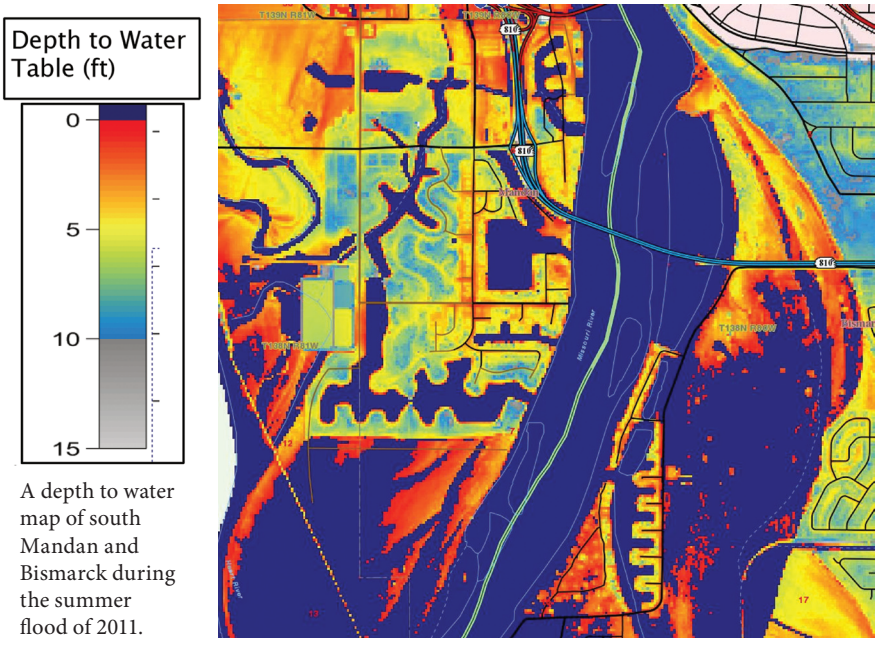
During the 2011 legislative session some concern was expressed about the ability of the State Engineer to accurately monitor oil field industrial water use. In response, beginning in 2012, the State Engineer will require all industrial water permit holders for oil field water depots with annual allocations exceeding 15 acre-feet to report monthly water use and beginning and ending water meter readings. Meter readings will be periodically checked by Water Appropriation Division staff to corroborate reported meter readings. In addition, during 2012, the Water Appropriation Division will purchase and deploy three remote water metering telemetry (satellite) systems to determine the utility of this method of water use monitoring.

Water permit applications for the 2009-2011 biennium and a summary of the actions taken on them are listed in the table on page 24. There were 619 temporary water permits issued by the State Engineer during the 2009-2011 biennium. The total volume of water allocated was 29,645 acre-feet. Exactly 92 temporary permits were from ground water sources, with a total volume of 13,965 acre-feet, and 527 temporary permits were from surface water sources, with a total volume of 15,675 acre-feet.

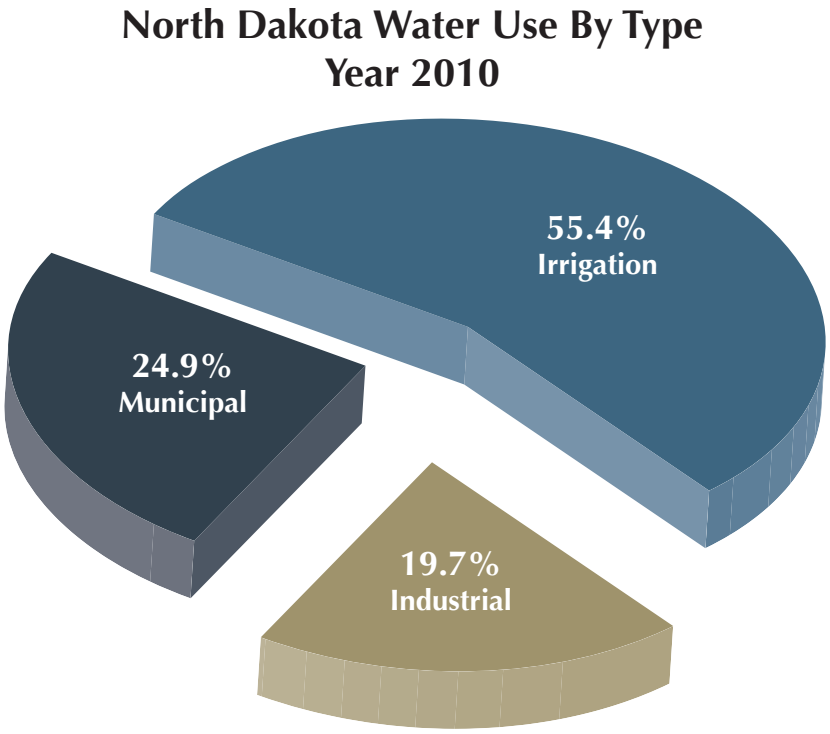
Due to a May 2010 decision by the U.S. Army Corps of Engineers preventing access to water in Lake Sakakawea, the State Engineer developed policies to temporarily allow for the conversion of irrigation water permits to industrial water permits and to issue temporary water permits for industrial use from surface water other than Lake Sakakawea. During 2011, under these two temporary water-permitting programs, the State Engineer approved 15,437.1 acre-feet of water for oil field industrial use.

There were 17 conditional water permits perfected during the biennium. These water permits had been approved earlier, and had been fully developed. After being inspected, reports on these inspections were written and the permits were perfected.

The North Dakota State Water Commission and the engineering firm, Kadrmas, Lee, and Jackson participated with the cities of Bismarck and Mandan in a groundwater monitoring investigation of the shallow water table along the Missouri River (see figure below). The investigation was initiated in response to announced unprecedented high flows in the Missouri River. It was known that high flows in the Missouri River cause the water table in the Bismarck (Bismarck Aquifer) and Mandan (Heart



A depth to water map of south Mandan and Bismarck during the summer flood of 2011.



River Aquifer) areas to rise. The extremely high flow would result in record high groundwater levels, and thus potentially widespread problems with seepage into basement and underground structures. The purpose of the investigation was to post weekly maps on the Water Commission web site of 1) depth to ground water below land surface and 2) water table contour maps illustrating direction of groundwater movement in the Bismarck and Heart River Aquifers. The investigation involved the installation of 52 shallow wells to provide additional information. North Dakota State Water Commission and privately owned wells were inventoried and selectively added to the observation well network. Groundwater levels were measured weekly in wells and gate valve boxes. Weekly elevations were taken along the Missouri River, as well as Cottonwood Lake, Cottonwood Lake Park Pond, South Bay, Wachter Drainage Ditch, Bridgeview Bay, Marina Bay, Borden Harbor and Lakewood Bay to compare to the groundwater levels. The investigation will be continued indefinitely.

SOURIS/MOUSE RIVER MANAGEMENT

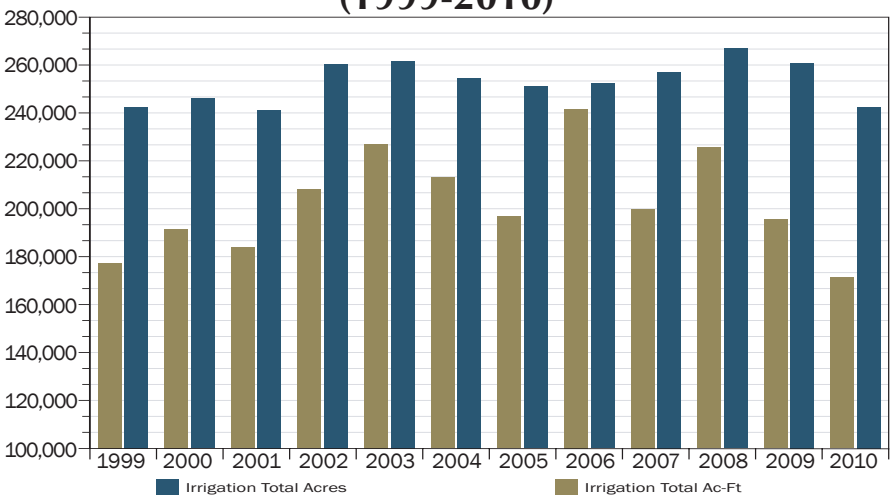
The 1989 International Agreement for Water Supply and Flood Control in the Souris River Basin, designates the Government of Saskatchewan and the U.S. Department of the Army as the responsible entities for the management of Rafferty, Alameda and Boundary Reservoirs in Canada and Lake Darling in North Dakota. In Saskatchewan this authority rests with the Saskatchewan Watershed Authority (SWA). In the United States this authority rests with the U.S Army Corps of Engineers (USACE).

As liaison for the North Dakota State Engineer, the Water Appropriations Division consulted daily with representatives of Saskatchewan, the USACE, and the US Fish and Wildlife Service.

The planning of flood operations was a coordinated effort. Agency representatives meet by conference call on a near daily basis from the start of spring runoff into July to review reservoir operations based on updated forecasts and the latest flow information. Flow and water level information was also exchanged between agencies by way of the Internet on a daily basis. Members of various other agencies were kept informed of forecasts and planned reservoir operations through normal communication channels. At various times between conference calls, operators and liaison personnel maintained contact by individual

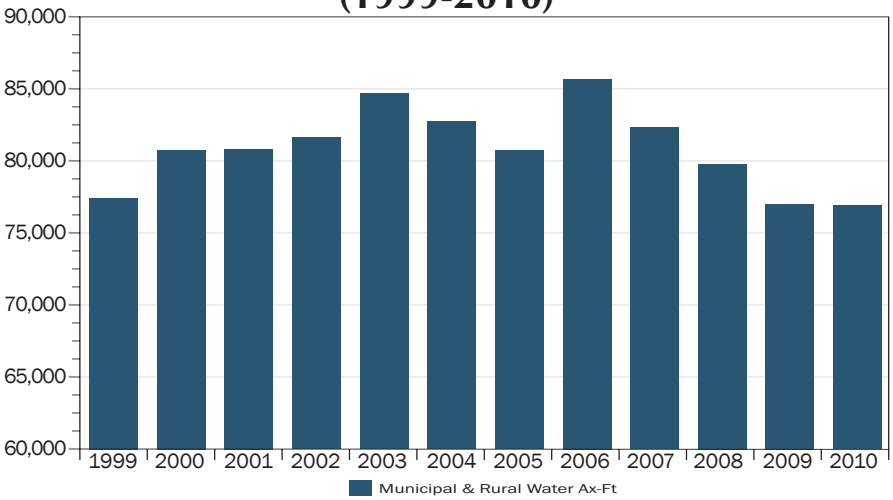
A monitoring well is drilled in south Bismarck.

Irrigated Acres and Associated Water Use* (1999-2010)



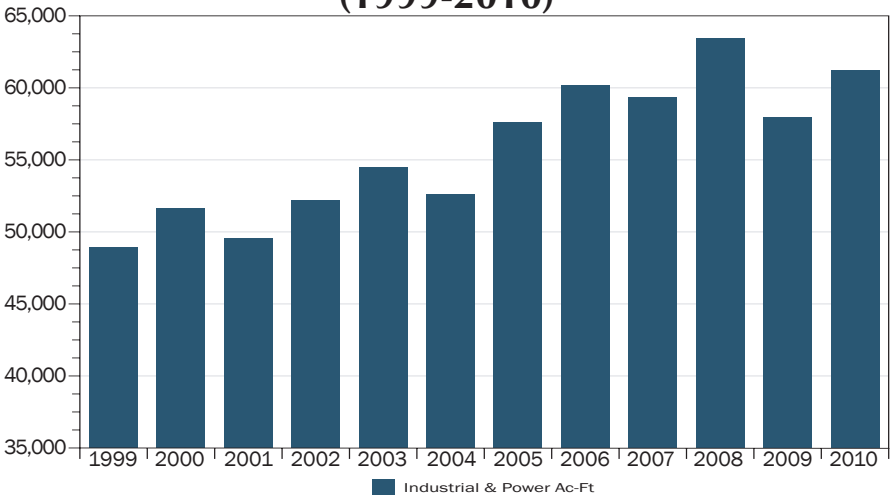
*Includes irrigated acres and associated water use from Montana points of diversion and Oaks irrigation test hole.

Reported Water Use* For Municipal Permits (1999-2010)



*Includes water use from Minnesota points of diversion, which supply water to Grand Forks.

Reported Water Use For Industrial Permits (1999-2010)



phone calls and the Internet as conditions required. Whenever precipitation events occurred and/or a change in flow conditions was warranted, reservoir operation plans were updated and a conference call was held to discuss reservoir operations, target flows and possible impacts to downstream interests. In all cases, every effort was made to minimize impacts of high flows, while operating the system within the intent of the 1989 Agreement.

LANDFILL AND MINE PERMIT REVIEWS

The Water Appropriation Division cooperates with the North Dakota Department of Health in reviewing ground water aspects of landfill applications and with the State Public Service Commission in reviewing ground water aspects of coal mining permits and revisions. Written responses are provided to the Department of Health regarding the suitability of locations for the proposed landfill uses and to the Public Service Commission regarding the accuracy and completeness of supporting information and ground water monitoring plans.

OTHER TECHNICAL ASSISTANCE

The Water Appropriation Division is also tasked with assisting and advising the public on the availability of water for all purposes of use. Considerable time and resources were expended to provide technical assistance for the development of water supplies for oil field development (brine dilution and hydro-fracturing). Study areas included the Little Muddy, Hofflund, Killdeer, Shell Creek, Tobacco Garden, Fox Hills, and Tongue River/Sentinel Butte Aquifers.

Water Permit Summary
July 1, 2009 - June 30, 2011

WATER USE	ACRE-FEET
Irrigation	
Applications filed: 50	
Acres Requested: 15,855	
Acres Granted*: 6,922	
Storage Granted*	13
Water Granted (454 permits)*	8,856
Ground Water*	6,367
(Ground Water Acres) 4,636	
Surface Water*	2,489
(Surface Water Acres) 2,286	
Flood Control	
Applications filed: 0	
Industrial	
Applications filed: 117	
Water Granted (117 permits)*	37,650
Livestock	
Applications filed: 1	
Water Granted*	4
Storage Granted*	19**
Municipal	
Applications filed: 3	
Water Granted*	110
Recreation, Fish & Wildlife	
Applications filed: 12	
Storage Granted (660 permits)*	3,195**
Annual Use Granted (130 permits)*	678
Rural-Domestic	
Applications filed: 2	
Water Granted (354 permits)*	1,754
Total Water Granted	49,052

* Includes backlog-permits applied for in previous bienniums.

** Stored water is not included in "Total Water Granted" because it is non-consumptive water use.

RESEARCH, STUDIES, AND REPORTS

During the 2009-2011 biennium, the division was involved in several studies that were completed and are in progress. Descriptions of these studies follow.

- During the spring of 2007 a ground water modeling study of the Oakes Aquifer was initiated to evaluate pending irrigation and industrial (ethanol production) water permit applications in the Oakes Aquifer. A report (North Dakota Water Resources Investigation No. 50) was completed in 2011. The ground water model is currently being used to evaluate pending water permit applications in the Oakes Aquifer.
- The Water Commission participated in a cooperative ground water study with Cass Rural Water Users to evaluate the potential for a large industrial (ethanol production) ground water withdrawal from the Sheyenne Delta Aquifer south of Leonard. Fieldwork was completed during the winter of 2006-2007. Preparation of the written report was deferred to deal with the backlog of water permit applications. The report (North Dakota Ground Water Studies No. 117) was completed in 2010.
- A comprehensive ground water investigation of the north Kidder Aquifer complex was initiated in 2006. The purpose of the study was to provide a basis for action on pending water permits for irrigation. The study was completed in 2011 (North Dakota Water Resources Investigation No. 52) and it has and will continue to provide the basis for evaluating pending irrigation water permits in the Kidder Aquifer complex.
- The North Dakota Water Commission completed a study and published the report "Water Appropriation Requirements, Current Water Use, and Water Availability for Energy Industries in North

Photo courtesy of Blue Flint Ethanol

Dakota: A 2010 Summary (North Dakota Water Resources Investigations No. 49 and 49a), which was mandated by the 2009 legislature. The report included a review of state water law and policy with respect to appropriation, and a review of ground water and surface water sources and supplies available for future appropriation.

- There is a large demand for water in western North Dakota for oil field development (hydro-fracing and brine dilution). A major source capable of producing large quantities of fresh ground water is the Fox Hills-lower Hell Creek (FH-HC) Aquifer. The FH-HC Aquifer is an important water source for domestic, stock and industrial users. In valleys along the Yellowstone, Little Missouri and Knife Rivers the potentiometric surface of the FH-HC Aquifer is above the land surface, creating flowing head wells. Flowing head wells are an important resource because they can be installed in remote pastures without the need for electricity. Most of the flowing wells installed in the Fox Hills Aquifer have a small diameter casing not compatible with a pump. When the aquifer pressure head at a Fox Hills well location declines below the land surface, the rancher will need to replace that well or find a new water source. The pressure head is currently declining at an average rate of approximately one to two feet per year in western North Dakota. A study was initiated in 2010 to gain a better understanding of the hydrogeology of the FH-HC Aquifer through the development of a ground water flow model using MODFLOW-2005. The model will provide a foundation for the development of a long-term management policy. A preliminary report of the modeling study is expected to be completed in fall of 2011 and the model will be used to assess future impacts on water levels at the current level of use and from additional allocations.

An oil drilling rig operates in western North Dakota.
Photo courtesy of ND Oil and Gas Division

- The State Water Commission entered into a cooperative agreement with the city of Enderlin in August 2009 to investigate alternative well field location(s) for the city. Objectives were to further define geometry of the Enderlin Aquifer, investigate mechanisms of recharge and discharge to the aquifer system, investigate chemical quality and variation of ground water in the Enderlin Aquifer, and perform an aquifer test at selected well field locations. A total of 26 test holes were drilled in September and October 2009, 17 of which were completed as observation wells. Three of the observation wells were subsequently plugged. Wells were surveyed and sampled for chemical analysis in fall of 2009. Aquifer water levels in wells have been periodically measured since installation. Automated aquifer water level recorders were installed in four wells from the fall of 2009 to the spring of 2010 to better understand variations of aquifer water levels in the aquifer and the mechanisms affecting aquifer water levels. A report describing the work completed by the SWC, hydrogeologic setting of the Enderlin Aquifer, and recommendation for the location of alternative well field location(s) has been drafted, and is expected to be published by the end of 2011.

- A computer model of the Page Aquifer was initiated to evaluate pending irrigation water permit applications for ground water. The model is still in the developmental stage and is targeted for completion during the winter of 2011-2012. A report will be prepared to document the results of the modeling study.

- Annual reviews of nitrogen occurrence in the Karlsrhue Aquifer were made in February 2010 and March 2011. Reports were submitted to the North Dakota Department of Health.

- The Water Appropriation Division entered into a

cooperatively funded stream flow statistics study with the USGS. The project will develop the North Dakota extension of a nationally developed application known as Stream Stats. The North Dakota application will be able to provide hydrologic information that can be accessed on-line to provide scientifically defensible stream data in a uniform and non-biased manner. The project will be completed by the USGS during the 2009-2011 biennium.

- The Water Appropriation Division entered into a cooperatively funded surface-water quality study with the USGS. The study will evaluate water-quality sampling programs and sulfate standards for stream classes and designated areas throughout North Dakota. The study will be completed by the USGS during the 2009-2011 biennium.

- The Water Commission allocated a one-year matching fund of up to $13,850 in 2009-2010 and 2010-2011, for North Dakota university research that is federally funded through the North Dakota Water Resource Research Institute. Matching funds were for research focused on water resource issues. They were to be used for funding graduate student stipends and for research supplies and equipment.

- The International Souris River Board (ISRB) assigned the Hydrology Committee (HC) to examine methods to determine the diversion of flow at Rafferty and Alameda Reservoirs, and to recommend a preferred method to the ISRB. The Water Appropriation Division is representing the State Engineer on the HC. This project is ongoing.

Trucks wait in line for water at a depot near Dodge, ND.

- The ISRB has appointed a hydrologist from the Water Appropriation Division to be the U.S. Co-Secretary to the ISRB and to prepare an annual report to the International Joint Commission.

- A focused sampling regime of the major public water supplies from ground water in Grand Forks County was continued during the 2009-2011 biennium. The four major public water supplies (Grand Forks-Traill Rural Water, Tri-county Rural Water, Agassiz Rural Water, and the city of Larimore) obtain their water from the Inkster and Elk Valley Aquifers. Twenty-seven wells were sampled two times per year for an in-depth monitoring program, which began several years ago. This was done to detect any seasonal or long-term trends with respect to water quality changes - specifically nitrate.

- Monitoring the Forest River Colony Artificial Recharge Project was continued during the 2009-2011 biennium. The project involves pumping water from the Forest River during high flow times in the spring into a basin overlying the Inkster Aquifer. Water is withdrawn from the aquifer later in the season for irrigation purposes. Without artificial recharge, the aquifer would not be able to support the number of acres being irrigated. Mandatory sampling and water level monitoring protocols are given to the permit holder each year before artificial recharge begins. In addition, the colony has filed a new water permit application to irrigate more acres and expand the artificial recharge facilities.

- Annual reports on groundwater movement in Tolna Coulee was prepared and provided to the Devils Lake Joint Board in December 2009 and 2010.

- The Water Commission allocated $68,306 to salary a post-doctoral fellow in the Agricultural Engineering Department of North Dakota State University for one year, beginning October 2010, to adapt the SEBAL/METRIC method for measuring pixel-scale actual evapotranspiration from soil and crop canopies using satellite images for use in North Dakota hydrology. SEBAL/METRIC is a new

technology for measuring one of the principle components of the hydrologic cycle. It is used by the state of Idaho for estimating annual water use, and is being developed for use in Montana. The North Dakota State Water Commission staff is working with NDSU to examine the potential of SEBAL/METRIC as a backup method for evaluating annual water use. NDSU conducted one training session for the Water Commission during the 2009-2011 biennium. SEBAL/METRIC may eventually provide a valuable tool for ground-water modeling and for other hydrologic studies.

DATA MANAGEMENT

With the large volume of water resource data collected by the agency, management of that data is essential for its efficient use. These management efforts involve processes related to the collection, storage, analysis, and dissemination of a wide range of data which include well inventory information, water levels, water chemistry analyses, water permits, water use, dams, drains, and precipitation. Because of the unique nature of much of the data, the Water Commission has developed the necessary data management tools internally.

AGENCY REPRESENTATION

The Water Appropriation Division represents the State Engineer and the State Water Commission on state, regional, and national natural resource organizations. Members of the division have provided soils, ground, or surface water assistance in meetings or reviews pertaining to the following: Section 319 Task Force; Working Committee of the State Pesticide in Ground Water Protection Plan; Technical Committee of the State Pesticide in Ground Water Protection Plan; Northern Great Plains Management Consortium; North Dakota Board of Water Well Contractors; Midwest Ground Water Conference; North Dakota Water Resources Research Institute; North Dakota Public Service Commission Mining Plans; North Dakota State University Extension Irrigation Workshops; Red River Valley Water Supply Project; and the International Red River Board (for discussion on water appropriations and naturalizing flow of the Red River).

ECONOMIC DEVELOPMENT

Economic development is a major state initiative. In most instances water is needed to serve new enterprises. Information is provided to the Department of Commerce and local economic development organizations regarding the availability and chemical quality of water to serve a proposed enterprise. The agency also provided information to Department of Commerce clients on immediate and long-term regulatory issues, which helps in defining capital requirements.

WATER DEVELOPMENT DIVISION

The Water Development Division provides technical review and guidance in water management project design, and in regulating project construction. The division staff has several responsibilities:

- Preparing engineering and feasibility reports and designs for the construction, maintenance, and major repair of water resource projects;
- Reviewing and making recommendations on permit applications for drains, dikes dams, and sovereign lands;
- Providing technical assistance to water resource district boards;
- Inspecting and reporting on the safety of dams;
- Assisting communities in practicing floodplain management through the National Flood Insurance Program;
- Administering FEMA's Map Modernization project;
- Management of Municipal, Rural, and Industrial Water Supply Programs;
- Management and development of the Devils Lake outlet projects;
- Managing the design, construction, and operation of the Southwest Pipeline Project; and
- Managing the design and construction of the Northwest Area Water Supply.

The Water Development Division is divided into six sections: 1) Regulatory; 2) Investigations; 3) Design and Construction; 4) Municipal, Rural and Industrial Water Supply; 4) Red River Office (located in West Fargo); and 6) Southwest Pipeline and Northwest Area Water Supply. The following is a summary of the biennial activities of each of these sections.

REGULATORY

During the 2009-2011 biennium, the Regulatory Section processed 137 applications for permits to construct or modify dams, dikes, diversion ditches, or other water control facilities. The section also processed 41 wetland creations, 6 wetland restorations, 240 sovereign land permit applications, and 445 applications for permits to drain, of which 367 were for tile drain systems. In addition, the engineering staff provided assistance with the environmental reviews coordinated by the Planning Division, addressed several appeals of water resource district decisions, and dealt with numerous water-related complaints from around the state.

Staff members also represented the agency at a variety of technical meetings held by such groups as the: U.S. Army Corps of Engineers, NRCS State Technical Committee, NRCS Interagency Watershed Committee, Association of Soil Conservation Districts, North Dakota Soil Conservation Committee, and the Natural Resources Trust.

Three staff members work with Federal Emergency Management Agency (FEMA) funded programs within the Regulatory Section. These programs include Map Modernization Management Support (MMMS), Risk MAP, and the Community Assistance Program (CAP). The Flood Mitigation Assistance (FMA) program was also under the Regulatory Section for some time, but in August 2008, the FMA program was transferred to North Dakota's Department of Emergency Services.

The MMMS Coordinator manages Risk MAP, a program which was initiated in federal fiscal year (FFY) 2009 for the purpose of identifying, assessing, communicating, and mitigating flood hazard risks, with the goals of delivering quality data that will increase public awareness

and lead to actions that will reduce the risk to life and property. Both the MMMS and Risk MAP programs are 100 percent FEMA funded.

The MMMS Coordinator oversees the selection of engineering consultants chosen annually to do the work tasks of FIRM digitization and subsequent contract management. In FFY 2010, $908,262 was secured in funding to perform projects in Morton and Pembina Counties. In FFY 2011, $895,762 was made available for projects in Ward and McKenzie Counties, as well as topography collection for future years' projects.

The Missouri River, south Bismarck-Mandan.

Two staff members work with the CAP, funded 75 percent by FEMA, concentrating on community floodplain management as practiced by the National Flood Insurance Program (NFIP). Through CAP, floodplain management staff assists over 300 NFIP enrolled state communities with administration of their floodplain management responsibilities. Each community designates a representative as their floodplain administrator to oversee floodplain development within flood prone or identified floodplains. State staff work closely with these community administrators to provide technical assistance through a variety of means. NDCC Chapter 61-16.2 outlines state floodplain standards above the NFIP minimum standards that communities are expected to follow.

Staff also completed over 900 floodplain determinations for home mortgages under a cooperative agreement with the Bank of North Dakota.

INVESTIGATIONS

The Investigations Section continued to devote a large share of its staff time and resources to Devils Lake flood-related issues.

Significant flooding has occurred throughout the Devils Lake Basin since 1993. The level of Devils Lake rose over 31.78 feet from an elevation of 1,422.62 feet above mean sea level (amsl) in June, 1993, to a new record elevation of 1,454.4 feet amsl on June 27, 2011. It is interesting to note that Devils Lake broke elevation records on the same exact day, June 27, three years in a row – in 2009, 2010, and 2011.

To start the 2009-2011 biennium, the elevation of Devils Lake was 1,450.63 feet amsl. During the 2005-2007 biennium, Devils Lake filled Stump Lake, so the two have essentially been at the same level since that time. By the end of the 2009-2011 biennium, the elevation of Devils Lake was 1,454.27 feet amsl, an increase of 3.64 feet. As a result of this elevation change, Devils Lake and Stump Lake (combined) increased in volume by 672,984 acre-feet, and in area by 38,954 acres.

Throughout the 2009-2011 biennium, the Water Commission continued to operate the west Devils Lake outlet within the constraints of required permits. During the 2009 operating season, the outlet ran for 167 days, removing 27,653 acre-feet of water. In 2010, the outlet ran for 169 days, and removed 62,477 acre-feet of water. And in 2011, the outlet ran for 173 days, and removed 48,228 acre-feet of water.

In 2009, operation of the Devils Lake outlet was changed significantly in two ways, and work began on a third change that took effect in 2010. All of the changes were requested with the intent of increasing outlet discharges. The first change was initiated by a court ruling in a Florida case that found that water to water transfers do not need a Section 402 Pollutant Discharge Elimination System permit. This led the Water Commission to request

The west Devils Lake outlet operating at 250 cfs in the summer of 2011.

that the North Dakota Department of Health terminate the permit and allow operation of the outlet based upon Sheyenne River water quality guidelines. The Health Department approved this request on June 25, 2009. The second change in operations was requested and later approved by the Health Department for a modification of Sheyenne River sulfate standards above Baldhill Dam,

from 450 mg/l, to 750 mg/l, while the Sheyenne River below Baldhill Dam continues to maintain a sulfate standard of 450 mg/l.

In addition to the west Devils Lake outlet, the state also began development of another outlet from East Devils Lake. The East Devils Lake outlet accomplishes the goal of moving additional floodwater from Devils Lake in a controlled fashion, while being the least problematic to implement quickly. With a new 750 mg/L (increased from 450 mg/L) sulfate concentration limit on the upper Sheyenne, it was possible for the state to develop additional outlet capacity from East Devils Lake, rather than the western portion of the lake – making it more cost effective to construct and operate.

Work began on the East Devils Lake outlet during the summer of 2011. When completed, the East Devils Lake outlet will be approximately 5.5 miles in length, from the southeast corner of East Devils Lake to Tolna Coulee. At the intake, one 50 cfs, and four 75 cfs pumps will move up to 350 cfs of Devils Lake floodwater.

State Engineer, Todd Sando (right) and Outlet Maintenance Supervisor Carl Duchscher (left) at the west Devils Lake outlet gravel filter.

The West and East Devils Lake outlets will have a combined operating capacity of 600 cfs. And together, the two outlet projects will be able to remove up to 200,000 acre-feet of water from Devils Lake over the course of a full seven-month operating season if they are operated at maximum capacity. That amount of water, in addition to evaporation, could keep up with average (1993-2010) lake inflows of 247,000 acre-feet.

In addition to the west and East Devils Lake outlets, an emergency water transfer channel that will flow via gravity from Stump Lake to Tolna Coulee, and ultimately into the Sheyenne River was also being explored. At the time this was written, specific details about the design of this project were still evolving.

It is important to note that while any combination of outlets will reduce the risk of a natural overflow and the resulting impacts, no combination of the planned outlets guarantee that a natural overflow can be prevented. For that reason, the State Water Commission and USACE were also cooperatively moving forward with a control structure at Tolna Coulee as an added level of protection.

The control structure will allow natural erosion of the divide between Stump Lake and Tolna Coulee, while protecting downstream areas from an uncontrolled release of Devils Lake floodwater.

The State Emergency Operations Center 2009.

The USACE will build the control structure, with construction scheduled to begin in late 2011, and completion slated prior to spring 2012 runoff. When completed, the Tolna Coulee control structure will be owned and operated by the State Water Commission.

The Investigation Section also worked in cooperation with several other state and federal agencies at the State Emergency Operations Center (SEOC) and in the field in response to the extensive spring floods of 2009, 2010, and 2011. During 2009, the SEOC was in operation for 59 days, and was at full activation, functioning 24 hours a day, seven days a week, for 37 days. In 2010, the SEOC was in operation for 101 days, and was at full activation for 7 days. And in 2011, the SEOC operated for 181 days, and was at full activation for 31 days.

In addition to providing staff to the SEOC, Investigations staff were also actively engaged in monitoring and response efforts during the 2009, 2010, and 2011 flood crises.

Under more normal circumstances, the Investigations Section, in addition to regular investigations, participates with other agencies in larger-scale studies and projects. The Corps of Engineers Planning Assistance to the states program is a good example. A multi-phase hydraulic study of the Red River mainstem and tributaries has been under way for several years. The floods of 2009 stimulated new activities in these efforts as well. A flood

risk reduction in Emmons County was under way, and several others in formulation at biennium's end. It is expected that a number of others will come from the 2011 flood event.

The section's survey crew conducted extensive surveys for projects, establishing elevations for observation wells, and conducting underwater topographic surveys during flood events.

DAM SAFETY PROGRAM

Dam safety staff conduct full inspections of 107 dams classified as high or medium hazard on a rotational basis. These dams include all non-federally owned high hazard dams and all non-federally owned medium hazard dams greater than 10 feet high. Every dam on the list is fully inspected at least once every ten years. High hazard dams are inspected at least once every four years.

During the 2009-2011 biennium, full periodic dam safety inspections were completed on 10 high hazard dams and 35 medium hazard dams. In addition, each spring, 142 dams are given a partial inspection to check on the status

Harmon Lake (Square Butte Dam 6)

of the dams after the spring runoff season. These dams include non-federally owned high and medium hazard dams, and selected low hazard dams.

Staff also made 67 other dam site visits during this biennium (14 high hazard dams, 19 medium hazard dams, and 34 low hazard dams). These site visits included inspections made at the request of the public, participation in inspections conducted by federal agencies, inspections made during flood events, and other site visits as needed.

Another focus of the dam safety program during the 2009-2011 biennium was the development of Emergency Action Plans (EAPs) for high and medium hazard dams.

Senator Kent Conrad, Governor John Hoeven, and Morton County Water Board Chairman Wade Bachmeier at the Harmon Lake Recreation Area dedication ceremony.

Dam safety staff worked to review and approve EAPs for 4 high hazard dams and 21 medium hazard dams over the course of the biennium.

DESIGN AND CONSTRUCTION SECTION 2009-2011 BIENNIAL SUMMARY

During this biennium, the State Water Commission's Design and Construction Section conducted repairs and modifications to water resource structures throughout the state, and contributed to statewide flood fights.

FLOOD FIGHT EFFORTS

In 2010, similar to 2009, Design and Construction Section personnel along with other Water Commission staff, spent the end of March at Cottonwood Creek Dam/Lake LaMoure in LaMoure County, working in cooperation with local, state, and federal agencies to stabilize the emergency spillway to prevent a dam breach during the spring runoff. Engineering personnel also participated in staffing the State Emergency Operations Center.

Then again, during the 2011 flood fight, Design and Construction Section personnel where involved in flood fighting activities. The construction crew and engineering staff mobilized to the Clausen Springs Dam to prepare for and implement erosion protection measures at the dam's emergency spillway to prevent head cutting erosion from progressing up the spillway to the reservoir. The spillway was in the midst of a project to repair damages from the 2009 flood and armor the channel to protect it from future events. However, the project was not complete, leaving the dam at risk.

The construction crew also assisted with the construction of levees in the Bismarck/Mandan area in preparation for the 2011 Missouri River flood; and participated in transporting pumps and hauling filled sandbags from Bismarck to Minot during the early phases of the Mouse River flooding 2011. Engineering personnel participated in staffing the State Emergency Operations Center.

GRAFTON RAILROAD DAM, WALSH COUNTY

The Grafton Railroad Dam is located in the city of Grafton and is a secondary water supply for the city. The dam was damaged by ice and debris during the 2009 spring runoff. The dam is a concrete low head dam with a steel stop log section. The steel stop log section was

Grafton Railroad Dam

bent, allowing several inches of water to flow over. This causes the reservoir to be drawn down during times of low flows. The concern was that if the damaged section failed, the city would not have been able to use the reservoir for a water supply. Grafton, the owner of the dam, requested Water Commission assistance with repairing the steel stop log section. The project took about two weeks to complete, and the costs of around $17,000 were split equally between the Water Commission and the city of Grafton.

WILDWOOD GOLF COURSE DAM, WARD COUNTY

The Wildwood Golf Course Dam is located along the Wildwood Golf Course north of Burlington on the Mouse River, just upstream from the confluence of the Des Lacs and Mouse Rivers. The dam is an old Works Progress Administration (WPA) project and is used for irrigation. The 2009 runoff left the top of the dam full of debris, raising the water level upstream of the structure. The golf course normally handles the debris removal but the Ward County Water Resource District asked for the Water Commission's help with the project because larger equipment was needed. The project was completed in just a couple of days for just under $4,000, which was split between the Commission and District.

NELSON-LANDERS PERCH POND, WARD COUNTY

The Nelson-Landers Perch Pond Dam is located in rural Ward County southwest of Kenmare. It is a privately owned dam, however an access easement is in place with the Ward County Water Resource District (WCWRD) to make the pond available to the public for recreational purposes. It is a low hazard dam holding 88 acre-feet of water at normal pool. During the 2009 spring runoff, a sinkhole developed around the inlet box. The Water Commission construction crew, under a cooperative agreement with the WCWRD and the North Dakota Game and Fish Department (NDGF) repaired the sinkhole in 2009 for a cost of $6,000.

Subsequently, Commission staff performed a more complete inspection of the 36-inch corrugated metal pipe conduit with a rover pipe camera to determine the level of deterioration to the pipe. The bottom of the conduit was found to have corrosion damage that was causing internal erosion, which led to the sinkhole.

Nelson-Landers Perch Pond embankment

The sinkhole formed again during the 2010 spring runoff indicating that more needed to be done. At this time, the WCWRD and the NDGF requested Water Commission assistance with development of repair options, including a three party cooperative agreement for costs. A project was then proposed and approved by the Secretary of the Water Commission, the WCWRD, and the NDGF to replace the failing conduit with a new reinforced concrete pipe. Due to timing issues, the project was not undertaken in 2010, but rescheduled for early 2011. However, during the 2011 spring runoff, the internal erosion continued, causing a breach of the dam and uncontrolled release of the reservoir. Due to the fact that the reservoir holds a relatively small amount of water and the dam's remote location, the breach had no impact on life or property.

The work to reconstruct the conduit with reinforced concrete pipe was completed in the fall of 2011. The project cost was about $60,000, and was shared equally amongst the three parties.

BLACKTAIL DAM, WILLIAMS COUNTY

Blacktail Dam is a recreational use earthen dam located on Blacktail Creek in rural Williams County northwest of Williston. At normal pool, the reservoir holds 2,668 acre-feet of water. It is a significant hazard dam due to its proximity to Williston. The NDGF owns the dam and participated as a cost-share partner in the project along with the Water Commission and the Williams County Water Resource District.

The Williams Water Resource District requested cost-share, construction, and technical assistance to replace the control valve on the low-level drawdown system. The valve had not been used for some time due to concerns it may not close again if opened, thus taking away the NDGF's means to manage the water quality of the reservoir. The original valve was a 12-inch butterfly valve installed in 1991. The Water Commission construction crew replaced the valve with a new 12-inch gate valve. The project cost totaled approximately $7,800, and was completed in two days.

BRADDOCK DAM, EMMONS COUNTY

Braddock Dam is a recreational use earthen dam located in Emmons County southwest of the town of Braddock. It is owned by Emmons County. The Emmons County Water Resource District requested Water Commission assistance with repair options, including cost-sharing and construction services. NDGF also participated as a cost-share partner.

The 2009 spring runoff caused significant erosion and scour of the soils around the sheet pile stilling basin weir downstream from the principal spillway. The erosion caused the leftmost 20 feet of the sheet piling to collapse. The erosion removed an estimated 600 cubic yards of material, including the rip-rap along the downstream face of the weir. It appears that the flow may have completely overtopped the stilling basin weir, starting the erosion around the ends of the weir. The scour removed the supporting soils from in front of the 6-foot lengths at the wings, causing the left side to fail by overturning.

Braddock Dam

The main concrete spillway of the dam also had areas where the concrete cracked and spalled, leaving holes in the face of the spillway. This damage was unrelated to the 2009 and 2010 runoff events, but more due to deterioration over time in harsh conditions.

The Water Commission construction crew repaired the erosion by placing and compacting new clay borrow, placing new sheet pile to replace the washed out piling (reusing the existing piling when able), placing additional sheet piles to extend the structure farther up the banks of the stream, and placing rip-rap around the structure. The construction crew also repaired the deteriorated/missing concrete with concrete repair mortar. The project cost was about $36,600 with each party paying a third.

DOLL DAM (ZEITLOW DAM), MORTON COUNTY

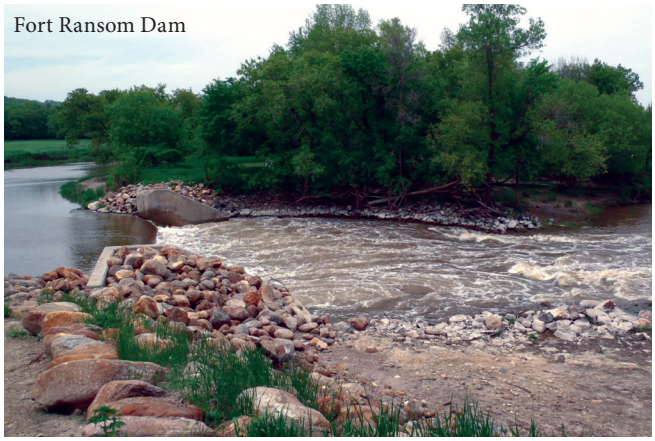
Doll Dam is a medium hazard earth embankment livestock dam that also serves as the embankment for Morton County Highway 140 in rural Morton County northwest of New Salem. Originally called Zeitlow Dam, Doll Dam is a WPA dam that was built in the 1930s. At normal pool level it holds 29 acre-feet of water.

On April 21, 2010, the Morton County Engineer notified the Water Commission of a seepage at Doll Dam. The seepage may have been the result of connecting rodent holes/tunnels within the embankment. A hole about the size of a gopher hole was draining water into the downstream ditch about 60 feet from the spillway pipe. This hole was measured running at approximately 31 gallons per minute.

The Morton County Water Resource District requested Water Commission assistance to repair the embankment. The Water Commission construction crew repaired the embankment by excavating and recompacting the embankment material to close off the hole. The project cost was approximately $10,000, and took one week to complete.

FORT RANSOM DAM, RANSOM COUNTY

Fort Ransom Dam is a low hazard concrete low head dam on the Sheyenne River within the city limits of Fort Ransom in Ransom County. It was originally built in 1881 and reconstructed in 1954. At normal pool level it holds 92 acre-feet of water. It is currently used for recreational purposes.


Fort Ransom Dam

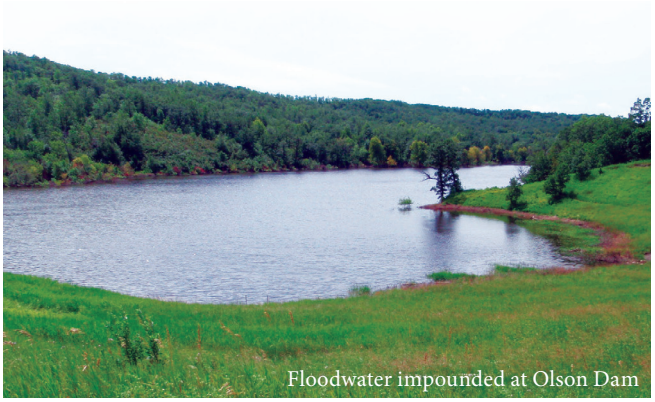
During 2009 and 2010 inspections, Water Commission personnel observed erosion around the right abutment. The erosion appeared to be the result of water overtopping the dam during the last two spring runoffs. The erosion consisted of both loss of riprap and head cutting of the earth fill around the end of the abutment.

The Ransom County Water Resource District requested the Commission's construction and technical assistance in addition to cost-sharing to repair the erosion. The Water Commission construction crew repaired the embankment by excavating and recompacting the existing material, adding new material as necessary, and placing new riprap over the fill. The project cost was approximately $22,400.

OLSON DAM/TONGUE RIVER WS DAM T7-1, PEMBINA COUNTY

Olson Dam is a high hazard earth embankment flood control dam located on a tributary to the Tongue River in rural Pembina County southwest of Cavalier. It was built in 1957 and at maximum pool holds 1,077 acre-feet of water.

In the spring of 2010, outlet structure intake became plugged with debris - preventing it from passing floodwaters as intended, creating the concern that it would not be drawn down before freeze-up and the following spring runoff. The intake is a reinforced concrete riser with an orifice to meter the outflow to attenuate the downstream effects. The trash rack protecting the orifice from debris itself became inundated with debris, blocking flow through the outlet. Water Commission personnel worked with members of the Water Resource District and the US Natural Resource Conservation


Floodwater impounded at Olson Dam

Service to clear the debris from the trash rack. The initial attempts at clearing it with hooks and rakes were ineffective. Ultimately, compressed air was used to blow the debris loose. The Pembina County Water Resource District then started daily monitoring to catch any further plugs as soon as possible.

SARNIA DAM, NELSON COUNTY

Sarnia Dam is a low hazard earth embankment flood control dam located on a tributary of the Middle Branch Forest River in rural Nelson County north of Michigan, North Dakota. It was originally built in 1936 and reconstructed in 1981. At maximum pool it holds 1,610 acre-feet of water.

During the 2009 and 2010 inspections, Water Commission personnel observed erosion around the inlet of the principal spillway structure. The principal spillway conduit is a 42-inch diameter by 102-feet long corrugated metal pipe with a flared end section at the upstream end. The erosion appeared to be the result of soil entering the conduit through a rusted out hole in the bottom of the flared-end section. The erosion progressed outwards toward the sides of the flared-end section and ultimately to the surface of the embankment. It then progressed up the slope of the embankment along each side of the spillway conduit.

The Nelson County Water Resource District requested Water Commission assistance to repair the embankment and replace the flared-end section. The Water Commission construction crew repaired the embankment by excavating and recompacting the material where the erosion occurred, and replaced the flared-end section. The work took one week at a cost of about $10,000.

UNION DAM, WALSH & CAVALIER COUNTIES

Union Dam is a medium hazard earth embankment flood control dam in rural Cavalier County northwest of Grafton. It was built in 1970. At maximum pool it holds 2,467 acre-feet of water. The Walsh and Cavalier County Water Resource Districts jointly own the dam.

During previous inspections, a sinkhole over the outlet end of the principal spillway conduit was observed. The size of the sinkhole continued to increase over time.


The Water Commission's Dan Bahm at a dam inspection.

Video inspection of the pipe in July 2008 showed separation at a couple of joints. It appeared that embankment material was entering the pipe at these joints and causing the sinkhole.

The Walsh County Water Resource District requested Water Commission cost-sharing and construction assistance to repair the conduit and sinkhole. The Water Commission construction crew repaired the conduit by excavating around the conduit at the failing joints and installed sheet pile anchors along each side of the conduit to prevent further separation of the joints. Then joints were filled with a concrete repair mortar, and covered with a geo-textile fabric before backfilling to prevent soil material from entering the conduit in the event the joint does open again. This project cost was approximately $15,000, with a 65/35 cost-share split between the Commission and districts, respectively.

DISCOVERY FARMS PROJECT

The Discovery Farms Project involves local, state, and federal natural resource agencies cooperating with working farm and ranch operations to implement best management practices to reduce environmental impacts – while maintaining farm profitability. North Dakota's Discovery Farms Project involves two cattle and grain operations near Underwood and Dazey, and a cropping operation with drain-tile fields near Embden.

The Water Commission construction crew's role in the project was to assist with the construction of detention ponds at the Embden site in June 2011. The project is a cooperative effort between the U.S. Geological Survey, North Dakota State University, the Department of Health, the U.S. Environmental Protection Agency, and the Water Commission.

USGS GAGING STATIONS, STATEWIDE

The construction crew constructed, modified and repaired several U.S. Geological Survey gaging stations/ collection sites throughout North Dakota. The work involved installation of orifice lines, installation of staff gages, removal of gage houses, installation of gage houses, and repairs to sheet pile control sections.

ABSARAKA DAM /SWAN BUFFALO DETENTION NO. 12, CASS COUNTY

AND CLAUSEN SPRINGS DAM, BARNES COUNTY

AND COTTONWOOD CREEK DAM /LAKE LAMOURE, LAMOURE COUNTY

The State Water Commission was also involved in these three projects in 2010, but not with the agency's construction crew. The Commission provided funding for these projects through our cost-share program in addition to regulatory review and permitting. The NRCS and local entities also cost-shared on these projects.

All three projects suffered severe erosion in their emergency spillways during the 2009 and 2010 spring runoff events. The emergency spillways at these projects were grass-lined channels that experienced high flows for long periods of time, resulting in erosion and head cutting

of their channel bottoms. The emergency spillways at Absaraka and Cottonwood Creek Dams were repaired during 2009 and then subsequently severely damaged by flooding in 2010. Following the second round of damage, it was decided that rather than simply repairing the spillways to their pre-damage conditions, they would be reconstructed by armoring with articulated concrete block mats to prevent them from being damaged again. Clausen Springs Dam was not repaired in 2009 pending a decision on whether or not it should have a structural spillway in lieu of an earthen spillway. It was ultimately decided to repair the spillway with an armored earthen spillway similar to Absaraka and Cottonwood Creek Dams. Both the Absaraka and Cottonwood Creek projects were completed in 2010. Clausen Springs was completed as a two-phase project, with Phase 1 being completed in late 2010, and Phase 2 being completed in 2011.

SWEETBRIAR CREEK DAM, MORTON COUNTY

Sweetbriar Creek Dam is a high hazard earth embankment recreational use dam on Sweetbriar Creek in rural Morton County west of Mandan. The dam was built in the 1960s as part of the construction of Interstate 94 and serves as the embankment of the Interstate across Sweetbriar Creek. At normal pool the reservoir holds 3,640 acre-feet of water.

Since its first inspection as part of the Phase I of the U.S. Army Corps of Engineers dam inspection program, there has been concern about uncontrolled seepage around the spillway structure and the potential for internal erosion piping of the embankment material. This project was designed to address these concerns. It involves the construction of a filter collar around the spillway structure along with the installation of toe drains and filters along the toe of the dam. Also, the stilling basin's reinforced concrete wing walls were reconstructed due to extensive cracking, and the access ladder that had become dilapidated was replaced with a new design that incorporates fall protection. The project was started in 2010 and completed in 2011 at a cost of approximately $1.2 million.

DEVILS LAKE EAST END OUTLET

In early 2010, SWC staff began the process to select a consultant for the design of an outlet from east Devils Lake to help mitigate the ongoing flood impacts in the region. The joint venture of Bartlett and West/AECOM was selected and work began on identifying and analyzing various routes and means of conveyance. Originally it was the Commission's goal to have the project operate as a gravity flow system. However, this turned out to be infeasible due to the costs associated with types of construction and distances necessary. Ultimately it was decided to proceed with a 350 cfs pumped pipeline option. The intake for the project will be located on the southeast corner of East Devils Lake, and the outfall will

Concrete pipe along the East Devils Lake Outlet alignment.

be located in the Tolna Coulee above the Town of Tolna. The project includes 5.5 miles of 96-inch pipe, five pumps at the intake structure, and a rock filter and stilling basin at the outfall structure. Completion is scheduled for June 2012.

TOLNA COULEE CONTROL STRUCTURE

In early 2011, the Water Commission began design of a stoplog control structure across Tolna Coulee upstream of the highpoint that separated it from Stump Lake. Simultaneously, the U.S. Army Corps of Engineers was looking at other options for erosion control at the coulee highpoint. The purpose of both these efforts was to protect downstream communities from a catastrophic flood should Devils Lake (including Stump Lake) rise to the elevation where it would flow through the coulee and potentially erode the highpoint to where the water of Stump Lake would be released in an uncontrolled manner.

However, the state's proposed project also included a stoplog structure that would allow the level of Stump and Devils Lake to be lowered in a controlled manner as the coulee elevation eroded. At the request of the Governor, the U.S. Army Corps, with the State of North Dakota as the local sponsor, proceeded with the design of the project.

At the time this publication was written, construction of the control structure was well underway, with completion expected during the summer of 2012.

MUNICIPAL, RURAL & INDUSTRIAL WATER SUPPLY

In federal fiscal years 2010, and 2011, the Garrison Diversion Municipal, Rural, and Industrial (MR&I) water supply program received $35 million in federal grant funds for the development of water supply facilities in the state. This brought the total received from the federal government to $320 million since the program was authorized in 1986.

The State Water Commission and the Garrison Diversion Conservancy District also provided funding toward project development. Since the program began, over $530 million in water system projects have been completed. In addition, the proposed Red River Valley Water Supply Project has an estimated cost of $700 million.

Projects that were allocated funds during federal fiscal years 2010 and 2011 included Northwest Area Water Supply; South Central Regional Water District, Emmons; and Southwest Pipeline Project.

The State Water Commission also allocated $43 million from the state contract fund for the following projects: Northwest Area Water Supply, Southwest Pipeline Project, Traill County Water District Phase 3, Valley City Water Treatment Plant, and city of Wildrose (Crosby).

NORTHWEST AREA WATER SUPPLY

At the start of the biennium, the Northwest Area Water Supply (NAWS) project was in its eighth year of construction, with a focus on the northern tier of the project serving Berthold, Burlington, Kenmare, Sherwood, Mohall, North Prairie Rural Water, All Seasons Water Users District, and Upper Souris Rural Water.

The project has been under a federal court injunction since April 15, 2005, but the court had allowed work to continue on the High Service Pump Station in Minot and the pipeline projects north of Minot. The federal court issued an order on March 5, 2010, requiring the US Bureau of Reclamation to take a hard look at: 1) the cumulative impacts of water withdrawal on the water levels of Lake Sakakawea and the Missouri River, and 2) the consequences of biota transfer into the Hudson Bay Basin, including Canada. A Supplemental Environmental Impact Statement had been started to address the federal court's order for this additional environmental review. The most recent order dated October 25, 2010, allowed construction on improvements in the Minot Water Treatment Plant to proceed, however it did not allow design work to continue on the intake.

NAWS water rates for 2010 and 2011 were established. A celebration was held for the startup of the NAWS system providing water service to Berthold, Minot's South Hill Region, and North Prairie Rural Water District.

By the end of the biennium, $21.9 million in additional work had been completed, bringing the total to $89.8 million invested in the NAWS project. The 52 miles of pipeline, pump station, and million gallon reservoir for water service to Kenmare and the Upper Souris Water District were installed and service was provided. The 18 million gallon per day High Service Pump Station with 2 million gallon underground storage, and the joint project for the 13-mile pipeline between the All Seasons water treatment plant near Bottineau to Gardena were completed.

Construction began on the 62 miles of pipeline for the Mohall, Sherwood, and All Seasons area and was near completion, and the 29 miles of pipeline to the Minot Air Force Base and Upper Souris system along highway 83 were bid and under contract. Also, the Burlington-West River connection along the Berthold line was installed.

At the beginning of the biennium, NAWS was providing service to Minot, North Prairie Rural Water, and the City of Berthold. By the end of the biennium, NAWS was also providing water to Kenmare, Donnybrook, Des Lacs, West River Rural Water, and Upper Souris Rural Water - with service to All Season Rural Water, Mohall and Sherwood following within a year.

SOUTHWEST PIPELINE PROJECT

Construction of Oliver Mercer North Dunn Regional (OMND) service area, which encompasses the last remaining service areas of the Southwest Pipeline Project (SWPP) commenced in the beginning of the 2009-2011 biennium. The OMND project consists of construction of a new 5 million gallon per day water treatment plant (WTP) near Zap, five new storage tanks, four booster pump stations, and over 1,000 miles of pipe. When completed, the OMND project will provide water to more than 1,000 rural residents; the cities of Hazen, Stanton, Center and Zap; seven energy sector users, which include Dakota Gasification Company, Coteau Properties Freedom Mine, Antelope Valley Station, Leland Olds, Coyote, Minnkota, and Great River Energy power plants; and five bulk users including Lakeshore Estates, Ole Johnson Dairy, Sakakawea Casino, Beulah Park, and the Missouri West Water System.

In addition to serving the new users listed above, cities of Golden Valley, Dunn Center, Halliday, and Dodge, and over 400 rural customers located in the Killdeer Moun-

tain, Grassy Butte, and Fairfield Service Areas, who are currently receiving water from the Dickinson Water Treatment Plant, will be switched over to the OMND project.

During the 2009-2011 biennium, the construction of the WTP, main transmission line from the WTP to Zap, Hazen, Stanton, Center, potable water tank at the WTP, and near Center was in progress. The design of rural water distribution lines was also under progress. Rural user memberships increased from 3,100 to 3,500, and contract users increased from 48 to 55.

Capital repayment collected from July 2009 through June 2011 was $5,530,014. Of that amount, $2,986,837 was paid to the pipeline's trustee, Wells Fargo Bank, NA, to pay bondholders. The remaining $2,543,178 was deposited in the Resources Trust Fund.

SATELLITE WATER COMMISSION OFFICES/STAFF

DEVILS LAKE OUTLET OPERATIONS

The Water Commission employs a Devils Lake Operations Manager in the Devils Lake region. During the 2009-2011 biennium, and since outlet operations began back in 2005, the Operations Manager has been responsible primarily for: operating, maintaining, and monitoring all of the outlet works; weed control; planning, organizing, and directing collection of water quality samples; and maintaining records of water quality parameters.

NAWS WATER DISTRIBUTION

In Minot, as part of the NAWS project, the Water Commission employs a Water Distribution Operator. The primary duty of the Water Distribution Operator, as a certified level II distribution system operator, is testing and compliance for Safe Drinking Water Act regulations pertaining to a municipal water supply system. This includes water quality sampling and testing procedures, addressing water quality concerns within the NAWS system, as well as assisting in troubleshooting water quality concerns of subsequent water users, flushing, or adjustments in operation of pump stations and reservoir levels. The position is also responsible for the routine maintenance on the project works. They must also perform locates of system facilities for One-Call requests, and observe contractors working near the NAWS facilities to limit/prevent damage during such activities, reading meters monthly, and maintaining the properties.

RED RIVER OFFICE

Located in West Fargo, the Red River office consists of one full-time position. During the 2009-2011 biennium, Red River office personnel took part in various State Water Commission activities in eastern North Dakota, including:

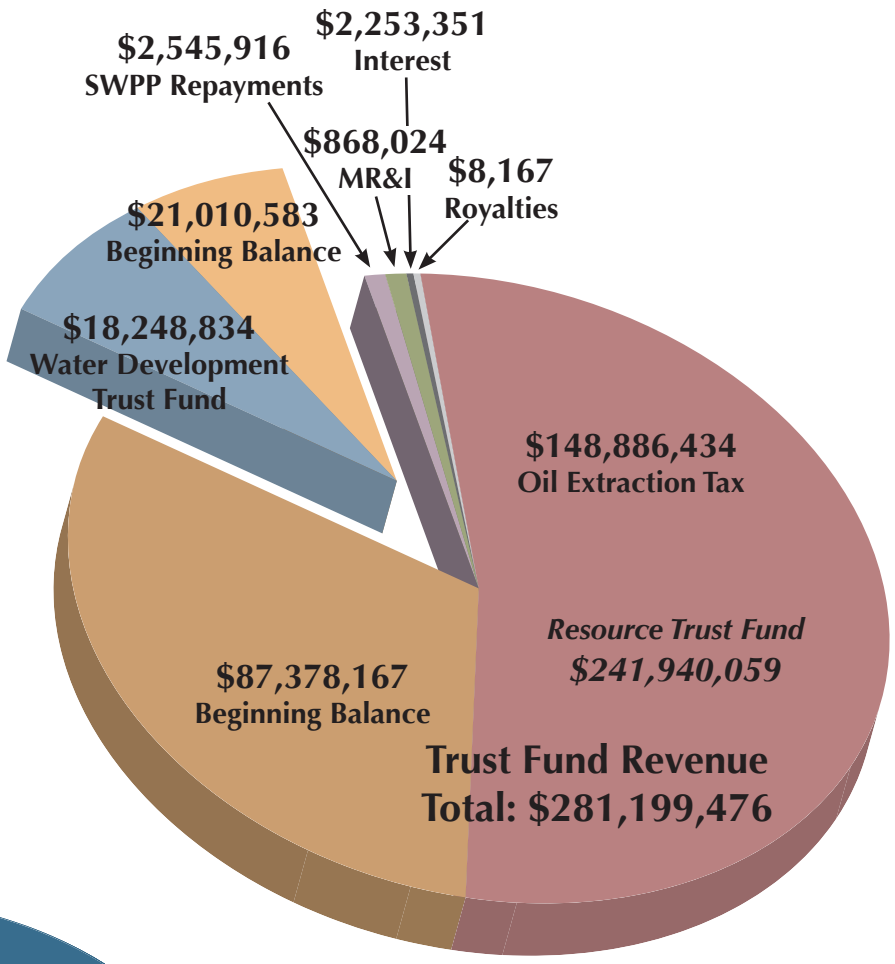
- Technical assistance to the Red River Joint Water Resource District (RRJWRD) in pursuing flood control projects in the Red River watershed;
- Technical assistance to the Red River Retention Authority that was organized to provide uniform effort to obtain temporary flood water storage in the Red River watershed;
- Technical assistance to the Red River Retention Committee, which was organized to pursue programs to assist in construction of temporary flood water storage;
- Co-chair of the technical committee overseeing work for the U.S. Army Corps of Engineers Red River Watershed Feasibility Study;
- Assistance with reconnaissance level studies of potential dams;
- Service as U.S. representative to the International Red River Board;
- Assistance to individual water resource boards on 17 water-related issues;
- Inspections on 23 projects that the State Water Commission had approved for cost-sharing;
- Provided information/assistance to various government entities and private individuals before, during, and after the 2009, 2010, and 2011 floods; and
- Technical assistance on various committees that were formed as a result of the Red River basin's flooding problems.

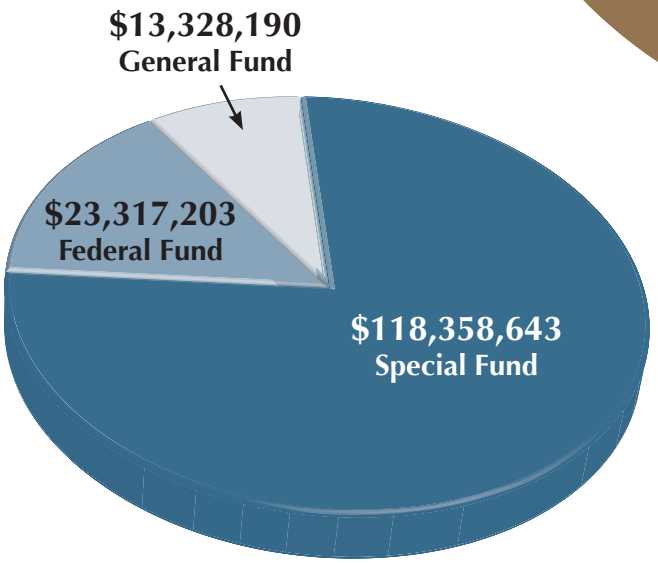
FINANCIAL INFORMATION

The following pages contain financial information summmarized in various formats. There are pie charts classifying the agency's expenditures by fund and by line item. There is a chart identifying expenditures by division and line item, and there is a detailed listing by object code.

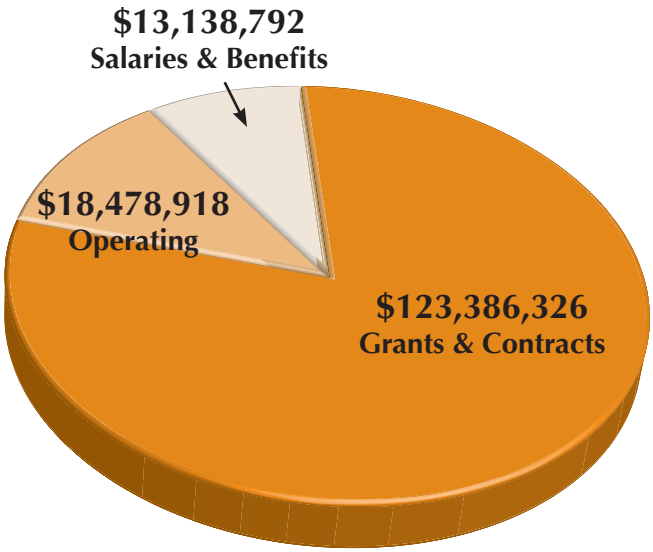
The trust fund revenue pie chart on this page includes both the Resources Trust Fund and Water Development Trust Fund revenue. The remainder of the report addresses project and program obligations, completed projects, object expenditures, long-term debt, and resources available from the agency.

STATE WATER COMMISSION APPROPRIATIONS 2009-2011 BIENNIUM





Expenditures by Fund
Total: $155,004,036



Expenditures by Line Item
Total: $155,004,036

STATE WATER COMMISSION
PROGRAM BUDGET EXPENDITURES
FOR BIENNIAL PERIOD ENDING JUNE 30, 2011

AGENCY PROGRAM	SALARIES/ BENEFITS	OPERATING EXPENSES	GRANTS & CONTRACTS	PROGRAM TOTALS
ADMINISTRATION				
Allocated	1,812,056	1,212,732		3,024,788
Expended	1,791,292	994,118		2,785,410
Percent	99%	82%		92%
PLANNING & EDUCATION				
Allocated	1,192,175	208,511	99,000	1,499,686
Expended	1,170,675	164,986	93,491	1,429,152
Percent	98%	79%	94%	95%
WATER APPROPRIATION				
Allocated	3,633,879	483,162	1,078,935	5,195,976
Expended	3,543,930	462,270	1,043,295	5,049,495
Percent	98%	96%	97%	97%
WATER DEVELOPMENT				
Allocated	5,041,486	4,837,457	225,000	10,103,943
Expended	4,799,886	5,549,962	380,506	10,730,354
Percent	95%	115%	169%	106%
ATMOSPHERIC RESOURCE				
Allocated	854,950	712,830	4,694,692	6,262,472
Expended	838,651	542,148	1,432,416	2,813,216
Percent	98%	76%	31%	45%
SOUTHWEST PIPELINE				
Allocated	400,498	1,665,314	37,556,958	39,622,770
Expended	407,002	2,981,296	11,993,239	15,381,537
Percent	102%	179%	32%	39%
NORTHWEST AREA WATER SUPPLY				
Allocated	530,958	6,229,700	50,289,114	57,049,772
Expended	471,045	4,819,851	16,364,140	21,655,035
Percent	89%	77%	33%	38%
STATEWIDE WATER PROJECTS				
Allocated			203,185,070	203,185,070
Expended			95,159,838	95,159,838
Percent			47%	47%
AGENCY TOTALS				
Allocated	**13,466,002**	**15,349,706**	**297,128,769**	**325,944,477**
Expended	**13,022,481**	**15,514,631**	**126,466,924**	**155,004,036**
Percent	**97%**	**101%**	**43%**	**48%**

STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND - PROGRAM OBLIGATIONS
JULY 1, 2009 - JUNE 30, 2011

SWC PROJ. NO.	NAME	INITIAL APPROVAL	AMOUNT APPROVED	PAYMENTS	BALANCE
CITY FLOOD CONTROL					
1927	Fargo/Ridgewood Flood Control Project	6/22/05	2,084,750	2,033,809	50,941
1928	Fargo Flood Control Project	6/23/09	45,000,000	8,526,912	36,473,088
1771	Grafton Flood Control Project	3/11/10	7,175,000	0	7,175,000
WATER SUPPLY ADVANCES					
2373-04	Lakota WS (Tri-Co WD)	7/17/07	212,065	212,044	21
2373-09	South Central RWD (Phase II)	6/23/08	2,350,000	1,054,944	1,295,056
2373-15	North Central Rural Water Consortium (S. Benson County)	12/7/07	916,000	893,064	22,936
2373-27	Traill Regional Rural Water (Phase I)	1/25/08	3,199,000	3,193,272	5,728
2373-16	Traill Regional Rural Water (Phase II)	6/23/08	2,305,748	2,281,313	24,435
2373-31	North Central Rural Water Consortium (Anamoose/Benedict)	6/23/08	3,295,000	0	3,295,000
2373-24	Traill Regional Rural Water (Phase III)	8/18/09	2,750,000	394,330	2,355,670
WATER SUPPLY GRANTS					
2373-19	City of Washburn Water Supply	4/28/09	1,500,000	1,408,188	91,812
2373-17	City of Parshall	6/23/08	1,920,274	1,429,822	490,452
2373-18	Ray & Tioga Water Supply Association	12/17/08	4,200,000	2,331,847	1,868,153
2373-25	McKenzie Phase II	6/23/09	1,500,000	631,673	868,327
2373-28	McKenzie Phase IV	3/11/10	3,500,000	1,147,756	2,352,244
2373-26	Valley City Water Treatment Plant	8/18/09	15,386,800	0	15,386,800
2373-29	City of Wilrose - Crosby Water Supply	7/28/10	1,270,000	1,172,782	97,218
HB NO. 1305 PERMANENT OIL TRUST FUND					
2373-21	Burke, Divide, Williams Water District	6/23/09	985,000	795,585	189,415
2373-22	Ray & Tioga Water Supply Association	6/23/09	864,000	672,638	191,362
2373-23	City of Wildrose	6/23/09	593,000	593,000	0
IRRIGATION DEVELOPMENT					
1389	BND AgPace Program	10/23/01	194,439	95,532	98,907
AOC/ IRA	ND Irrigation Association	7/20/09	100,000	100,000	0
1968	2009-11 McClusky Canal Mile Marker 7.5 Irrigation Project	6/1/10	1,310,931	901,485	409,446

STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND - PROGRAM OBLIGATIONS
JULY 1, 2009 - JUNE 30, 2011

SWC PROJ. NO.	NAME	INITIAL APPROVAL	AMOUNT APPROVED	PAYMENTS	BALANCE
GENERAL WATER MANAGEMENT HYDROLOGIC INVESTIGATIONS					
1400/12	Houston Engineering Water Permit Application Review	10/10/10	8,500	0	8,500
1400/11	Houston Engineering Water Permit Application Review	10/10/10	8,052	8,052	1
1400/10	Houston Engineering Water Permit Application Review	1/0/00	5,870	5,870	1
1400/7	Houston Engineering Water Permit Application Review	4/2/09	1,325	800	525
1400/8	Houston Engineering Water Permit Application Review	6/2/09	7,500	7,473	27
1400/9	Houston Engineering Water Permit Application Review	1/1/10	6,759	6,759	0
862	Arletta Herman	4/7/08	3,260	3,260	0
1690	Mary Lou McDaniel	5/6/09	4,301	4,301	0
1703	Neil Flaten	4/7/08	5,467	5,467	0
1707	Neil Flaten	4/26/11	4,083	4,083	0
1714	David Robbins	5/7/09	1,143	1,143	0
1761	Gloria Roth	5/6/09	1,208	1,208	0
1761	Fran Dobits	4/7/08	2,001	2,001	0
1395A	US Geological Survey, US Dept. Of Interior Stream Gaging	11/12/09	381,980	381,980	0
1395D	US Geological Survey, US Dept. Of Interior Eaton Irrigation Project	10/1/09	15,300	15,300	0
1393	US Geological Survey, US Dept. Of Interior StreamStats website	7/16/09	39,008	39,008	0
1395	US Geological Survey, US Dept. Of Interior Investigation of Water Resources	10/1/10	410,907	410,907	0
MISSOURI RIVER MANAGEMENT					
1963	Beaver Bay Embankment Feasibilitly Study	8/10/09	342,000	83,594	258,406
FLOOD CONTROL					
849	Renwick Dam Rehabilitation	5/17/10	1,478,190	231,619	1,246,571
RED RIVER WATER SUPPLY					
1912	2007-09 (GDCD'S) Red River Valley Water Supply Project	3/17/08	3,200,000	3,138,595	61,405

STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND - PROGRAM OBLIGATIONS
JULY 1, 2009 - JUNE 30, 2011

SWC PROJ. NO.	NAME	INITIAL APPROVAL	AMOUNT APPROVED	PAYMENTS	BALANCE
DEVILS LAKE BASIN DEVELOPMENT					
416-01	2009-11 Devils Lake Basin Joint Water Resource Manager	6/23/09	60,000	60,000	0
416-02	City of Devils Lake Levee System Extension & Raise	12/6/02	25,350,000	23,595,212	1,754,788
416-05	2009-11 Devils Lake Outlet Awareness Manager	6/23/09	31,152	31,152	0
416-07	Devils Lake Outlet	2/20/02	15,961,325	13,541,113	2,420,212
416-10	Devils Lake Outlet Operations	8/18/09	4,900,000	3,435,482	1,464,518
416-13	DL Tolna Coulee Divide	10/26/10	500,000	133,280	366,720
416-15	DL East End Outlet	10/26/10	2,200,000	851,710	1,348,290
1932**	Nelson Co. Emergency Pumping Peterson to Dry Run	5/23/10	112,219	0	112,219
WEATHER MODIFICATION					
	Weather Modification	7/1/09	225,000	0	225,000
SOUTHWEST PIPELINE PROJECT					
1736	Southwest Pipeline Project	7/1/09	12,782,474	5,459,195	7,323,279
NORTHWEST AREA WATER SUPPLY					
2374	Northwest Area Water Supply	7/1/09	10,832,918	3,414,307	7,418,611
TOTAL PROJECTS/GRANTS/CONTRACT FUND - PROGRAM OBLIGATIONS			**202,924,314**	**93,627,147**	**109,297,167**

STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND - PROJECT OBLIGATIONS
JULY 1, 2009 - JUNE 30, 2011

SWC PROJ. NO.	NAME	INITIAL APPROVAL	AMOUNT APPROVED	PAYMENTS	BALANCE
GENERAL PROJECT OBLIGATIONS					
269	2010 Fordville Dam Emergency Action Plan	3/3/10	9,600	0	9,600
281	2009-11 Three Affiliated Tribes/Fort Berthold Irrigation Study	10/26/10	37,500	0	37,500
322	2009-11 Long-Term Red River Flood Control Solutions Study	6/23/09	500,000	492,280	7,720
322	ND Water: A Century of Challenge	2/22/10	34,300	0	34,300
327	2009-11 White Earth Dam EAP	8/18/09	25,000	0	25,000
347	2009-11 City of Velva's Flood Control Levee System Certification	3/28/11	102,000	0	102,000
501	2009-11 Pheasant Lake Dam Emergency Action Plan	4/20/11	9,600	0	9,600
528	2009 McGregor Dam Emergency Action Plan	6/23/09	25,000	0	25,000
568	2008 Sheyenne River Snagging & Clearing Project	4/11/08	5,000	0	5,000
568	2009-11 SCWRD Sheyenne River Snagging & Clearing Project	12/10/10	362,250	0	362,250
571	2009-11 Oak Creek Snagging & Clearing Project	1/28/11	5,000	0	5,000
620	2008 Mandan Flood Control Protective Works (Levee)	9/29/08	125,396	0	125,396
642	2009-11 Morton Co/Sweetbriar Dam Emergency Action Plan	5/17/10	15,200	0	15,200
642-05	2007-09 Sweetbriair Creek Dam Project	3/6/09	683,400	657,044	26,356
646	2009-11 Christine Dam Recreation Retrofit Project	10/26/10	184,950	0	184,950
646	2009-11 Hickson Dam Recreation Retrofit Project	10/26/10	44,280	0	44,280
839	2009-11 Elm River Detention Dam No. 1 EAP	1/10/11	12,160	0	12,160
839	2009-11 Elm River Detention Dam No. 3 EAP	12/6/10	12,160	0	12,160
846	2009-11 Morton Co. Square Butte Dam No. 5 EAP	12/10/10	24,000	0	24,000
847	2009-11 Swan-Buffalo Detention Dam No. 12 Flood Control Dam Safety Project	7/28/10	114,783	0	114,783
847	2009-11 Absaraka Dam Safety Analysis	8/31/09	5,719	0	5,719

STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND - PROJECT OBLIGATIONS
JULY 1, 2009 - JUNE 30, 2011

SWC PROJ. NO.	NAME	INITIAL APPROVAL	AMOUNT APPROVED	PAYMENTS	BALANCE
GENERAL PROJECT OBLIGATIONS					
847	2009-11 Swan Creek Diversion Channel Improvement Reconstruction	12/11/09	76,528	0	76,528
928/ 988/ 1508	2007-09 Southeast Cass WRD Bois, Wild Rice, & Antelope	6/23/08	60,000	0	60,000
929	2007-09 Walsch Co. -Soukop Dam EAP	3/2/11	10,000	0	10,000
929	2009-11 Walsch Co. -Chyle Dam EAP	5/6/11	10,000	0	10,000
985	2009-11 Kolding Dam Emergency Action Plan	5/29/09	9,600	0	9,600
1068	2009-11 Cass County Drain No. 12 Improvement Reconstruction	8/18/09	500,000	0	500,000
1069	2009-11 Cass County Drain No. 13 Improvement Reconstruction	8/18/09	145,472	23,248	122,224
1070	2009-11 Cass County Drain No. 14 Improvement Reconstruction	8/18/09	500,000	78,547	421,453
1088	2009-11 Cass County Drain No. 37 Improvement Reconstruction	8/18/09	158,535	74,112	84,423
1093	2007-09 Cass Co. Drain No. 45 Extension Project	3/17/08	150,800	26,043	124,757
1161	2007-09 Pembina Co. Drain 55 Improvement Reconstruction	3/28/11	88,868	0	88,868
1164	2009-11 Pembina County Drain No. 64 Outlet Area Improvement	12/10/10	41,480	0	41,480
1180	2009-11 Richland Co. Drain No. 7 Improvement Reconstruction	3/11/10	130,681	58,748	71,933
1232	2009-11 Traill Co. Drain No. 13 Channel Extension Project	8/18/09	23,575	0	23,575
1244	2009-11 Traill Co. Drain No. 27 (Moen) Reconstruction & Extension	3/11/10	500,000	321,515	178,485
1245	2009-11 Traill Co. Drain No. 28 Extenstion & Improvement Project	3/28/11	336,007	0	336,007
1289	2009-11 McKenzie Co. Weed Control on Sovereign Lands	3/4/11	11,705	0	11,705
1291	2009-11 Mercer County WRD Knife River Snagging & Clearing	11/1/10	20,000	0	20,000
1299	2009-11 City of Fort Ransom Riverbank Stabilization	9/1/10	60,803	0	60,803
1131	2009-11 Elm River Detention Dam No. 2 Emergency Action Plan	12/6/10	12,160	0	12,160

STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND - PROJECT OBLIGATIONS
JULY 1, 2009 - JUNE 30, 2011

SWC PROJ. NO.	NAME	INITIAL APPROVAL	AMOUNT APPROVED	PAYMENTS	BALANCE
GENERAL PROJECT OBLIGATIONS					
1301	2009-11 City of Lidgerwood Engineering & Feasibility Study for Flood Control	2/4/11	15,850	0	15,850
1313	2009-11 City of Minot/Ward Co. Aerial Photo & LiDAR	3/11/10	186,780	0	186,780
1331	2009-11 Richland Co. Drain No. 14 Improvement Reconstruction	3/11/10	183,364	66,376	116,988
1344	2009-11 Southeast Cass Sheyenne River Diversion Low Flow Channel Improvement	3/11/10	1,762,380	0	1,762,380
1344	2009-11 Southeast Cass Sheyenne Sheyenne Pump Station	3/28/11	60,750	0	60,750
1378	2009-11 Clausen Springs Dam Emergency Spillway Repair	10/26/10	790,975	43,983	746,992
1396	2009-11 Dale Frink Consultant Services Agreement	10/26/10	20,000	1,400	18,600
1401	2009-11 International Boundary Roadway Dike Pembina	9/21/09	260,238	32,807	227,431
1413	2009-11 Traill Co/Buffalo Coulee Snagging & Clearing	9/1/10	26,000	0	26,000
1431	2009-11 NDDOT Aerial Photography - Missouri River	11/19/10	36,289	36,289	0
1433	2009-11 Whitman Dam Emergency Action Plan	4/14/11	10,000	0	10,000
1438	2007-09 Mulberry Creek Drain Partial Imp. Phase III	3/28/11	226,118	0	226,118
1444	2009-11 City of Pembina Flood Control FEMA Levee Certification	3/11/10	27,156	27,156	0
1577	2009-11 Burleigh Co - Fox Island 2010 Flood Hazard Mitigation Evaluation	8/9/10	11,175	0	11,175
1577	2009-11 Hazen Flood Control Levee (1517) & FEMA Accreditation	3/11/10	567,700	118,200	449,500
1625	2009-11 Sovereign Lands Rules - ND Game & Fish	2/23/10	10,000	3,213	6,788
1638	2009-11 Red River Basin Non-NRCS Rural/Farmstead Ring Dike Program	6/23/09	800,000	375,738	424,262
1667	2009-11 Traill Co/Goose River Snagging & Clearing	9/1/10	48,000	35,110	12,890
1785	2009-11 Maple River Dam EAP	8/18/09	25,000	0	25,000
1785	2009-11 Sweetbriar Dam EAP	2/17/10	15,200	0	15,200

STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND - PROJECT OBLIGATIONS
JULY 1, 2009 - JUNE 30, 2011

SWC PROJ. NO.	NAME	INITIAL APPROVAL	AMOUNT APPROVED	PAYMENTS	BALANCE
GENERAL PROJECT OBLIGATIONS					
1792	2009-11 SE Cass Wild Rice River Dam Study Phase II	12/11/09	130,000	0	130,000
1842	2009-11 SCWRD Wild Rice River Snagging & Clearing	5/28/09	20,000	15,669	4,331
1842	2009-11 SCWRD Wild Rice River Snagging & Clearing	12/10/10	100,625	0	100,625
1842	2009-11 Richland Co. - Ph 2- Wild Rice River Snagging & Clearing	2/1/11	15,000	0	15,000
1842	2009-11 Richland Co. Wild Rice River Snagging & Clearing Project - Reach 2	3/28/11	47,500	0	47,500
1878-02	2009-11 Maple-Steele Upper Maple River Dam PE & PD	12/10/10	187,710	0	187,710
1882-01	2009-11 (ESAP) Extended Storeage Acreage Program	8/18/09	142,250	78,696	63,554
1882-07	2009-11 NDSU Development of SEBAL	9/1/10	61,404	46,160	15,244
1921	2007-09 Square Butte Dam No. 6/Recreational Facility	3/23/09	882,030	29,779	852,251
1942	2007-09 Walsh County Assessment Drain 10, 10-1, 10-2	9/21/09	273,056	235,789	37,267
1953	2009-11 Walsh County Drain No. 73 Construction Project	8/18/09	96,990	0	96,990
1960	2009-11 Puppy Dog Flood Control Drain Construction	8/18/09	796,976	0	796,976
1964	2009-11 Hydraulic Effects of Rock Wedges Study- UND	11/12/09	50,000	38,349	11,651
1965	2009-11 ND Silver Jackets Team Charter & Action Plan	11/12/09	75,000	52,416	22,584
1966	2009-11 City of Oxbow Emergency Flood Fighting Barrier System	6/1/10	188,400	0	188,400
1967	2009-11 Grand Forks County Legal Drain No. 55 2010 Contruction	11/30/10	9,652	0	9,652
1969	2009-11 Construction of Walsh Co. Legal Assessment Drain #71	3/28/11	304,141	0	304,141
1970	2009-11 Construction of Walsh Co. Legal Assessment Drain #72	3/28/11	144,807	0	144,807
1971	2009-11 DES Purchase of Mobile Stream Gages	3/28/11	9,875	0	9,875
1932	2009-11 Peterson Slough into Dry Run Emergency	5/28/10	112,219	80,069	32,150

STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND - PROJECT OBLIGATIONS
JULY 1, 2009 - JUNE 30, 2011

SWC PROJ. NO.	NAME	INITIAL APPROVAL	AMOUNT APPROVED	PAYMENTS	BALANCE
GENERAL PROJECT OBLIGATIONS					
1932**	Michigan Spillway Rural Flood Assessment	8/30/05	1,012,219	0	1,012,219
1932**	Michigan Spillway Rural Flood Assessment Drain	8/30/05	500,000	0	500,000
PBS	2009-11 PBS Documentary on Soil Salinity/Lake Agassiz RC & D	1/29/10	1,000	0	1,000
AOC/ ARB/ NDSU	2009-11 NDSU Dept of Soil Science - NDAWN Center	3/8/10	6,000	3,000	3,000
AOC/ RRBC	2009-11 Red River Basin "A River Runs North"	6/30/10	5,000	0	5,000
AOC/ RRBC	2009-11 Red River Basin Commission Contractor	7/1/09	200,000	150,000	50,000
CON/ WILL-CAR	2009-11 Will & Carlson Consulting Contract	8/24/09	70,000	43,662	26,338
PS/ IRR/ NES	2009-11 NDSU Williston Research Extension Center - purchase of irrigation equip	3/28/11	60,050	0	60,050
PS/ WRD/ MRJ	Missouri River Joint Water Board, Start up	12/5/08	14,829	0	14,829
PS/ WRD/ MRJ	Missouri River Joint Water Board (MRRIC) T. FLECK	6/30/09	27,500	21,030	6,470
PS/ WRD/ USRJ WRB	2009-11 Upper Sheyenne River WRB Administration	7/10/09	12,000	3,545	8,455
TOTAL PROJECTS/GRANTS/CONTRACT FUND - PROJECT OBLIGATIONS			**15,822,719**	**3,269,973**	**12,552,747**

STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND - COMPLETED PROJECTS
JULY 1, 2009 - JUNE 30, 2011

SWC PROJ. NO.	NAME	INITIAL APPROVAL	AMOUNT APPROVED	PAYMENTS	BALANCE
COMPLETED GENERAL PROJECTS					
249	2009 Mott Dam Emergency Action Plan	6/23/09	25,000	12,757	12,243
281	2007-09 Three Affiliated Tribes/Fort Berthold Irrigation Study	3/23/09	80,000	80,000	0
300	Baldhill Dam Flood Pool Raise	4/30/98	92,832	6,138	86,694
322	2009-11 Red River Basin Mapping Initiative/Tri-College LiDAR	6/23/09	300,000	300,000	0
353	2009-11 Cedar Lake Dam, Emergengy Action Plan	7/15/09	9,600	9,600	0
420	2009 Mirror Lake Dam Safety Repair	10/14/09	12,220	11,887	333
420	Mirror Lake One-Foot Pool Raise	9/17/09	18,281	18,281	0
450	2007-09 Sykeston Dam 2008 Emergency Action Plan	11/25/08	7,839	7,839	0
560	2009 Blacktail Dam Emergency Action Plan	5/28/09	9,600	6,733	2,867
568	2009 Sheyenne River Snagging & Clearing Project	12/5/08	135,000	75,085	59,915
568	2009-11 Richland Co. Sheyenne River Snagging & Clearing Project	12/11/09	47,500	35,449	12,051
568	2009-11 Richland Co. Sheyenne River Snagging & Clearing Project	3/11/10	47,500	47,409	91
568	2009 Richland Co. Sheyenne River & Wild Rice River Snagging & Clearing	12/11/09	39,500	28,488	11,012
568	2009-11 SE Cass Sheyenne River Snagging & Clearing	3/11/10	175,473	173,350	2,123
568	2009-11 Southeast Cass WRD Sheyenne River Snagging & Clearing Project	12/11/09	165,000	137,888	27,112
571	2009-11 Oak Creek Bank Stabilization Project	8/18/09	33,250	25,365	7,885
576	2009-11 City of Mandan - Missouri River Emergency Bank Stabilization	12/11/09	33,429	33,370	59
576	2009-11 Mandan City Flood Controls Works	6/18/10	2,000	2,000	0
583	Fargo/Moorhead Study	3/29/10	300,000	300,000	0
586	2009 Short Creek Dam Emergency Action Plan	5/28/09	9,600	9,600	0
620	2009-11 City of Mandan - Lower Heart River Bank Stabilization	12/11/09	63,808	63,808	0

STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND - COMPLETED PROJECTS
JULY 1, 2009 - JUNE 30, 2011

SWC PROJ. NO.	NAME	INITIAL APPROVAL	AMOUNT APPROVED	PAYMENTS	BALANCE
COMPLETED GENERAL PROJECTS					
662	2009 WCWRD'S Park River Snagging & Clearing Project	6/30/09	1,948	0	1,948
671	2007-09 Harvey Dam 2008 Emergency Action Plan	11/25/08	7,840	7,837	3
829	2009-11 Rush River Watershed Detention Site Engineering Feasibility Study	8/10/10	11,990	10,351	1,640
847	2007-09 Swan Ceek FC Diversion Ditch	6/23/08	1,640,992	1,640,992	0
847	2009-11 Swan-Buffalo Detention Dam No. 12 Emergency Action Plan	10/18/09	20,000	13,908	6,092
847	Maple River - Retention Study Rush River Joint WRD	8/15/02	25,000	24,927	73
847	2009-11 Swan Buffalo Detention Dam No. 5 Emergency Action Plan	7/20/09	20,000	11,397	8,603
847	2009-11 Swan Buffalo Detention Dam No. 8 Emergency Action Plan	8/7/09	20,000	10,496	9,504
870	2009-11 Crown Butte Dam Emergency Action Plan	7/10/09	9,600	9,600	0
988	Southeast Cass WRD Antelope Creek Engineering Feasibility	10/12/06	40,000	40,000	0
1080	2007-09 Cass County Drain No. 27 Improvement Reconstruction	10/24/07	94,197	0	94,197
1084	2008 Cass Co. Drain No. 32 Partial Improvement Reconstruction	3/17/08	68,538	13,150	55,388
1131	Nelson County Channel Maintenance & Misc.	9/17/09	6,413	6,413	0
1140	Pembina County Drain No. 11 Outlet Improvement	9/21/09	70,846	70,846	0
1155	2008 Pembina Co. Drain No. 42 Partial Improvement Reconstruction	3/17/08	11,386	11,386	0
1176	2008 Richland Co. Drain No. 2 Partial Improvement Reconstruction	3/17/08	5,791	2,964	2,827
1238	2009-11 Traill County Drain No. 19 Legal/Ext Outlet	8/18/09	46,187	46,187	0
1249	2008 Traill Co. Drain No. 34 Partial Improvement Recon	3/17/08	255,629	192,250	63,379
1289	2007-09 Noxious Weed McKenzie County -Sovereign	10/24/07	7,247	0	7,247
1299	2009-11 City of Lisbon's Mapping & Survey for FEMA Buyouts	3/29/10	30,000	29,500	500

STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND - COMPLETED PROJECTS
JULY 1, 2009 - JUNE 30, 2011

SWC PROJ. NO.	NAME	INITIAL APPROVAL	AMOUNT APPROVED	PAYMENTS	BALANCE
COMPLETED GENERAL PROJECTS					
1328	2007-09 Cass Co. Drain No. 23 Area Improvement	7/17/07	35,980	0	35,980
1334	Traill County Drain No. 38 Reconstruction	6/30/09	57,631	0	57,631
1346	2009-11 Mt. Carmel Dam Emergency Action Plan	5/5/10	9,600	9,600	0
1358	2009-11 Sheep Creek Dam Auxiliary Spillway Restoration	1/10/11	3,459	3,459	0
1378	2009-11 Clausen Springs Dam Incremental Risk Assessment Report	12/22/09	9,179	9,179	0
1378	2009-11 Clausen Springs Dam Feasibility Study of Improvement Options	12/10/09	7,921	7,921	0
1378	2009-11 Clausen Springs Dam Emergency Watershed & Dam Hydraulics Report	8/31/09	9,418	9,418	0
1378	2009-11 Barnes Co. Clausen Springs Dam Construction Repair	12/11/09	1,300,000	0	1,300,000
1382	2009-11 Camel Butte Dam Emergency Action Plan	7/24/09	9,600	9,600	0
1401	2009-11 International Boundary Roadway Dike Pembina	9/1/10	43,000	37,464	5,536
1403	2009-11 ND Water Resources Research Institute 2011-12 Fellowship Program	12/10/10	13,850	13,850	0
1403	2009-11 ND Water Resources Research Institute Fellowship Program	12/11/09	13,850	13,850	0
1413	2009 TCWRD Buffallo Coulee Snagging & Clearing Project	6/23/09	49,000	28,874	20,126
1431	2007-09 (S.B. 2020) 2009 Emergency Flood Control	4/28/09	100,000	40,390	59,610
1431	2009-11 US Geological Survey - Supplemental Flood Info	3/11/10	11,000	11,000	0
1431	2009-11 US Geologoical Survey, DOI Report Describing Peak Discharge Periods	8/5/09	20,000	20,000	0
1438	2007-09 Mulberry Creek Drain Partial Improvment Phase II	3/17/08	46,816	24,866	21,950
1461	2008 Pembina River Area Bank Stabilization Project	12/5/08	24,307	0	24,307

STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND - COMPLETED PROJECTS
JULY 1, 2009 - JUNE 30, 2011

SWC PROJ. NO.	NAME	INITIAL APPROVAL	AMOUNT APPROVED	PAYMENTS	BALANCE
COMPLETED GENERAL PROJECTS					
1461	2009-11 Pembina River Bank Stabilization Project	3/11/10	64,383	56,338	8,045
1471	2009-11 Erie Dam Emergency Action Plan	7/24/09	20,000	7,093	12,907
1509	2009-11 Sheyenne River Watershed Flood Water Detention Study	7/20/09	75,000	75,000	0
1515	2009-11 US Geological Survey - Monitoring Gages Cottonwood Creek Dam	10/18/09	8,260	8,260	0
1515	2009-11 Cottonwood Creek Dam	7/28/10	373,440	188,702	184,738
1523	2008 Souris River Golf Course Area Bank Stabilization	9/29/08	31,612	31,612	0
1527	2009-11 Daub Dam Emergency Action Plan	8/16/10	9,600	7,680	1,920
1535	2009-11 Lake Agassiz Resource Conservation & Development Council - Soil Salinity PBS Documentary	2/22/10	1,000	1,000	0
1556	2009 Indian Creek Dam Emergency Action Plan	5/28/09	9,600	9,600	0
1572	Burnt Creek Floodway Diversion Channel	4/30/08	121,091	112,637	8,454
1591	Revision of Handbook ND Water Managers	4/12/07	14,750	0	14,750
1625	High Water Mark Delineation Methods & Guidelines	10/24/07	54,048	0	54,048
1625	2009-11 Missouri River Contract - Environmental Service Bartlett & West	9/21/09	5,900	5,900	0
1625	OHWM Delineations MT/ND Border Yellowstone & Missouri	10/29/08	75,000	62,250	12,750
1657	2009-11 City of Enderlin's Flood Control FEMA Levee Certification	3/11/10	100,578	66,583	33,995
1667	2009-11 Traill County Goose River Snagging & Clearing Project	12/11/09	46,500	30,873	15,627
1705	2009-11 Red River Basin Flood Control Coordinator Position	7/24/09	36,000	27,177	8,823
1705	2007-09 Red River Basin Flood Control Coordinator	10/24/07	27,327	19,445	7,882
1808	2009-11 Beaver Creek Dam Emergency Action Plan	7/14/09	20,000	20,000	0

STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND - COMPLETED PROJECTS
JULY 1, 2009 - JUNE 30, 2011

SWC PROJ. NO.	NAME	INITIAL APPROVAL	AMOUNT APPROVED	PAYMENTS	BALANCE
COMPLETED GENERAL PROJECTS					
1808	2009-11 U.S. Dept of Interior - Beaver Creek Gaging Stations	9/7/10	11,710	11,710	0
1842	2009-11 Richland Co. Wild Rice River Snagging & Clearing	12/10/10	33,500	32,953	548
1842	2009-10 SCWRD Wild Rice River Snagging & Clearing	12/11/09	115,000	72,676	42,324
1849	2008 Tongue River Diversion Channel Rock Project	11/25/08	19,087	17,994	1,093
1859	2009-11 Section NPS 319 ND Health Dept	8/18/09	200,000	200,000	0
1869	2008 McDowell Dam Emergency Action Plan	9/29/08	25,000	25,000	0
1921	2009 Square Butte Dam No. 6 Emergency Action Plan	3/9/09	16,000	11,040	4,960
1934	2007-09 Elm River Snagging & Clearing Project Trial	12/5/08	3,266	0	3,266
1934	2007-09 Traill County WRD Elm River Snagging	12/7/07	290	0	290
1936	Nash Drain Extension Construction Project	10/12/06	19,913	14,399	5,514
1941	2007-09 Walsh County Assessment Drain 4A Construction	9/21/09	81,594	81,594	0
1943	2009-11 Missouri River/Oahe Delta Flood Hazard Mitigation Evaluation Project	8/10/09	12,000	12,000	0
1943	Missouri River Siltation Assessment Study	10/12/06	30,000	0	30,000
1947	Cass County Drain No. 62, Maple River WRD	4/30/08	39,787	3,687	36,100
1948	2008 Cass Co. Drain No. 67 Construction Project	3/25/08	334,250	199,888	134,362
1950	2008 Cypress Creek Drain No. 2 Construction	6/23/08	22,400	22,400	0
1951	2007-09 Lynchburg-Buffalo Drain Improvement	8/31/09	1,000,000	0	1,000,000
1961	2009-11 Pembina County Drain No. 69 Extenstion Construction Project	8/10/09	7,793	7,793	0
18502	(2008) Drought Disaster Livestock Water Supply	5/14/08	571,747	157,134	414,613

STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND - COMPLETED PROJECTS
JULY 1, 2009 - JUNE 30, 2011

SWC PROJ. NO.	NAME	INITIAL APPROVAL	AMOUNT APPROVED	PAYMENTS	BALANCE
COMPLETED GENERAL PROJECTS					
1131*	Nelson County Central Hamlin Rural Flood Control	9/17/09	8,940	8,940	0
1131*	Nelson County Central-Hamlin Rural Flood	9/17/09	43,381	43,381	0
1751-06	2009-11 Southeast Cass WRD - Flood Imagery Project	1/18/10	30,014	30,014	0
2373-13	All Seasons Rural Water - (Upham)	7/17/07	76,734	76,734	0
2373-30	McKenzie WAWS	10/26/10	0	0	0
416-11	USGS/US Dept of Interior UnTRIM Model On Water Quality in Devils Lake	8/13/10	16,000	16,000	0
416-14	City of Minnewaukan Flood Risk Reduction Analysis Study	6/3/10	15,000	15,000	0
AOC/ WRD	2009-11 Water Managers Handbook	3/22/10	16,500	16,100	400
AOC/ WEF	2009-11 North Dakota Water Magazine	7/20/09	36,000	36,000	0
AOC/ WEF/ TOURS	2010 Summer Water Tours Sponsorship	3/1/10	2,500	2,500	0
AOC/ WEF/ TOURS	2009-11 NDWEF Summer Water Tours	4/20/11	2,500	2,500	0
TOTAL PROJECTS/GRANTS/CONTRACT FUND - COMPLETED PROJECTS			**9,650,643**	**5,614,310**	**4,036,333**

STATE WATER COMMISSION
OBJECT EXPENDITURES
FOR BIENNIAL PERIOD ENDING JUNE 30, 2011

Permanent Salaries	$9,354,375.03
Temporary Salaries	311,179.65
Overtime Salaries	178,519.22
Fringe Benefits	3,294,717.62
Travel	862,880.10
Supplies - IT Sotware	91,799.81
Supplies/Materials - Professional	365,620.05
Food and Clothing	2,748.79
Building, Grounds, Vehicle Supply	195,997.65
Misc. Supplies	132,378.60
Office Supplies	38,443.11
Postage	38,405.44
Printing	24,669.49
IT Equipment Under $5,000	126,064.24
Other Equipment Under $5,000	49,962.78
Office Equipment and Furniture Under $5,000	37,431.18
Utilities	2,808,814.92
Insurance	29,813.90
Rentals/Leases - Equipment and Other	8,940.42
Rentals/Leases - Building and Land	52,457.87
Repairs	775,038.67
IT - Data Processing	187,686.49
IT - Communications	101,946.16
IT - Contractual Services and Repairs	11,031.80
Professional Development	157,261.12
Operating Fees and Services	301,801.50
Professional Fees and Services	12,077,723.76
Land and Buildings	1,346,685.78
Other Capital Payments	53,811,874.99
Extra Repairs/Defferred Main	34,215.32
Equipment Over $5,000	139,353.00
IT Equipment/Software Over $5,000	32,397.94
Grants, Benefits, and Claims	67,627,490.95
Transfers Out	394,308.39
TOTAL	**$155,004,035.74**

STATE WATER COMMISSION

OUTSTANDING BONDS

The State Water Commission has issued revenue bonds for the Southwest Pipeline Project. The Commission has also issued bonds for statewide water development projects. The following table shows the State Water Commission's long-term debt as of June 30, 2011:

WATER DEVELOPMENT BONDS

PROJECT	SERIES	AMOUNT
Southwest Pipeline Project	2000 Series A	$825,000
Southwest Pipeline Project	2005 Series A	1,928,500
Southwest Pipeline Project	2005 Series B	552,000
Southwest Pipeline Project	2007 Series A	1,409,858
Southwest Pipeline Project	2007 Series B	12,655,000
Southwest Pipeline Project	2009 Series A	3,005,000
Statewide Water Development Projects	2005 Series A	20,800,000
Statewide Water Development Projects	2005 Series B	53,095,000

RESOURCES AVAILABLE FROM THE AGENCY

Meeting minutes may be obtained by writing to:

ND State Water Commission
State Office Building Dept 770
900 East Boulevard Avenue
Bismarck, ND 58505-0850

Or, via the Internet:
http://www.swc.nd.gov

Data available for public use:

- Government Land Office Plats
- Survey Horizontal and Vertical Control
- Various Ground-Water Studies
- Well and Site Location Data
- Lithologic Data
- Water Chemistry Data
- Water Level Data
- Lidar
- Precipitation and Hail Data
- Water Permit Data
- Drainage Permit Data
- Stream Flow Data
- Construction Permit Data
- Retention Structure Data
- Digital Map Data
- Well Drillers Reports

Additional information about the State Water Commission is available on our web site at http://www.swc.nd.gov