

North Dakota



State Water Commission and Office of the State Engineer

Biennial Report
for the period July 1, 2013 to June 30, 2015

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



North Dakota State Water Commission

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April 1, 2016

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: 2013-2015 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, 2013, through June 30, 2015. 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 Sand, 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

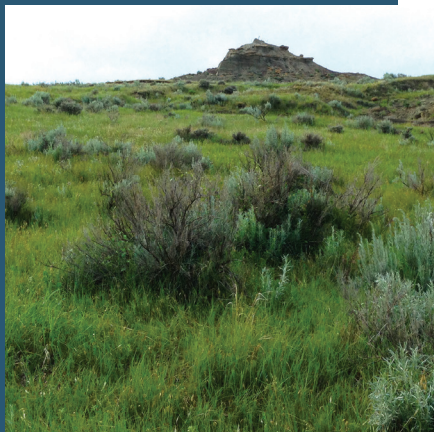


Todd Sando P.E.
Chief Engineer, Secretary
& State Engineer

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 field offices in Fargo, Minot, and near Minnewaukan.



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 of water resources.
- 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.
- Conduct Commissioner-hosted meetings in the Red River, James River, Mouse River, Upper Missouri River, Lower Missouri River, and Devils Lake drainage basins. At those meetings, Commissioners and staff may outline cost-share and project prioritization policy modifications or requirements, State Water Plan and budgeting requirements, and project inventory procedures as necessary. Commissioners may also request supplemental information or presentations from project sponsors who have submitted projects as part of the State Water Plan and budget development process.

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, Western Area Water Supply Project, Northwest Area Water Supply Project, and 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 defines 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 state water resources and sovereign lands within the framework of North Dakota's Century and Administrative Codes.



2015 WATER RESOURCES LEGISLATION

STATE WATER COMMISSION AND STATE ENGINEER

House Bill No. 1061 removed language pertaining to topics that have already been studied from the statutory duties of the Water Topics Overview Committee and clarified that the committee may meet with the State Water Commission.

House Bill No. 1095 allowed a person filing a complaint for a non-complying dam, dike, other device, or a drain to appeal to the State Engineer within 150 days of the submittal date of the original complaint if no decision has been made.

House Bill No. 1096 changed the definition of “domestic use” to include both single and multiple households, provided clarification of the language relating to conditional water permits, allowed for an inspection of the works of a conditional water permit to be done after the beneficial use date, and allowed the State Engineer to withdraw various waters of the state from additional appropriations until sufficient data or information is available and placed pending water permits from those sources into a deferred status.

House Bill No. 1097 required a request for hearing to appeal a decision of the State Engineer to be made within 30 days of the action or decision. The bill also provided that an unresolved administrative order or complaint must be resolved before the permit is issued unless the State Engineer resolves the issue in issuing the permit. In addition, the bill required an owner of a high-hazard or medium-hazard dam to periodically test and update an emergency action plan.

Senate Bill No. 2020 was the State Water Commission’s appropriation bill. In addition to allocating funding for several individual projects, the bill allocated blocks of funding for flood control, general water, rural water, and municipal water projects. The State Water Commission may transfer funding amounts among the allocated uses only after notifying the Water Topics Overview Committee and receiving approval from the Budget Section. The bill also directed the State Water Commission to obtain a loan from the Bank of North Dakota to pay off the outstanding bond issues. In addition to the funding provided by the Resources Trust Fund and the Water Development Trust Fund, the bill required the Bank of North Dakota to extend a line of credit of \$200 million at the rate of no more than 1.75 percent to the State Water Commission to provide funding for the projects authorized by the Legislative Assembly. The bill also provided \$34 million of funding from the State Disaster Relief Fund for the Fargo Flood Control project and the Missouri River Correctional Center and Fox Island levee projects. The bill included criteria to be incorporated into the State Water Commission’s cost-share policy and prohibited the State Water Commission from deducting North Dakota Outdoor Heritage Fund money from the cost of a project before determining the local cost-share.

ATMOSPHERIC RESOURCES

House Bill No. 1096 retained the provision that a weather modification permit may be issued if the applicant has registered with the Aeronautics

Commission any aircraft intended to be used, but eliminated the requirement for registration of the pilots.

Senate Bill No. 2056 allowed a weather modification authority to request, rather than certify, a levy for a tax for the weather modification fund.

Senate Bill No. 2144 consolidated property tax levy authority and allowed the weather modification authority to annually request the board of county commissioners to provide funding from revenues derived from its general fund levy for support of the authority.

Senate Bill No. 2217 required a weather modification authority to file a financial report with the county auditor if the authority is seeking approval of a property tax levy.

BOARD OF WATER WELL CONTRACTORS

Senate Bill No. 2189 revised the law relating to the regulation of water well contractors and the North Dakota Board of Water Well Contractors, including revising the board meeting dates, officers, and per diem rates; set the surety bond requirement at \$15,000 for water well contractors and \$2,000 for a monitoring well, pump and pitless unit, or geothermal system installation contractors; revised the criminal penalties for the violation of the law; and provided civil penalties for violation of the law.

LEGAL ACTIONS

Manitoba v. Norton/Salazar. - The Province of 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 (EIS) 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

EIS 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 halted 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

after some delay, has gotten its Supplemental EIS (SEIS) work underway. In 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 reconsider its opposition to allowing design work on the intake plant, but it refused to do so. In March 2013,



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 motion arguing that NEPA requires the Bureau to complete additional environmental analysis. The Bureau and the state appealed this decision to the Court of Appeals for the District of Columbia (Court), but dismissed their appeals after the Bureau decided to go ahead with additional environmental review. That work culminated in an

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 U.S. Army Corps of Engineers (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 2010, 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,

the court issued an injunction for all further pipeline construction until completion and approval of a full EIS. The Minot Water Treatment Plant upgrades were allowed to continue. The Bureau's work on the EIS continues. A draft SEIS was issued in June 2014. In April 2015, the Bureau issued the final SEIS and is preparing the Record of Decision.

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 (Supreme Court)

LEGAL ACTIONS

issued its opinion on Montana's first exception to the Special Master's Report. The Supreme 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.

Over the last biennium, Montana and Wyoming have completed extensive discovery. Several hearings have been held on partial summary judgment motions, and partial summary judgment has been granted for some years that will no longer be at issue in the trial. The case went to trial in October 2013. The second interim report of the Special Master (Liability Issues) was issued in December 2014. The Special Master recommended the Supreme Court order that: 1) Wyoming's motion for partial summary judgment on notice requirement for damages be granted for 1982, 1985, 1992, 1994, and 1998; 2) Wyoming is not liable for 1981, 1987, 1988, 1989, 2000, 2001, 2002, and 2003; 3) Wyoming is liable to Montana for reducing available water by 1,300 acre-feet in 2004; 4) Wyoming is liable to Montana for reducing available water by 56 acre-feet in 2006. The special master also recommended the Supreme Court remand for a determination of damages and other appropriate relief. The parties filed exceptions to the second interim report, replies, and sur-replies. The state is waiting for the Supreme Court to set a date for oral argument.

Third Party Claim in Pembina County Water Resource District, et al v. Government of Manitoba, et al. against State Water Commission, 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

damages 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, the Cavalier County Water Resource District, the 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 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 held February 2011, and the Third Party Claim against the State Water Commission was dismissed. Discovery is continuing in the main case and trial appears likely within the next biennium.

State Engineer v. Stacy L. Tschider/ Michael D. and Renae L. Odegaard.

- Administrative Orders 12-11 and 12-12 were sent to defendants ordering them to remove fill and other materials placed on sovereign lands. Both parties appealed. An indefinite continuance was granted while additional discovery is conducted. Additionally, the landowners have submitted an application with the Corps of Engineers for a dredging project that, if approved, would result in settlement of the case. The case remains on hold.

Administrative cases. The State Engineer and State Water Commission were also involved in several administrative cases regarding water appropriation permits and obtaining access upon property to be used for a hydrogeologic investigation.



**STATE WATER COMMISSION MEMBERS
AS OF JUNE 30, 2015**

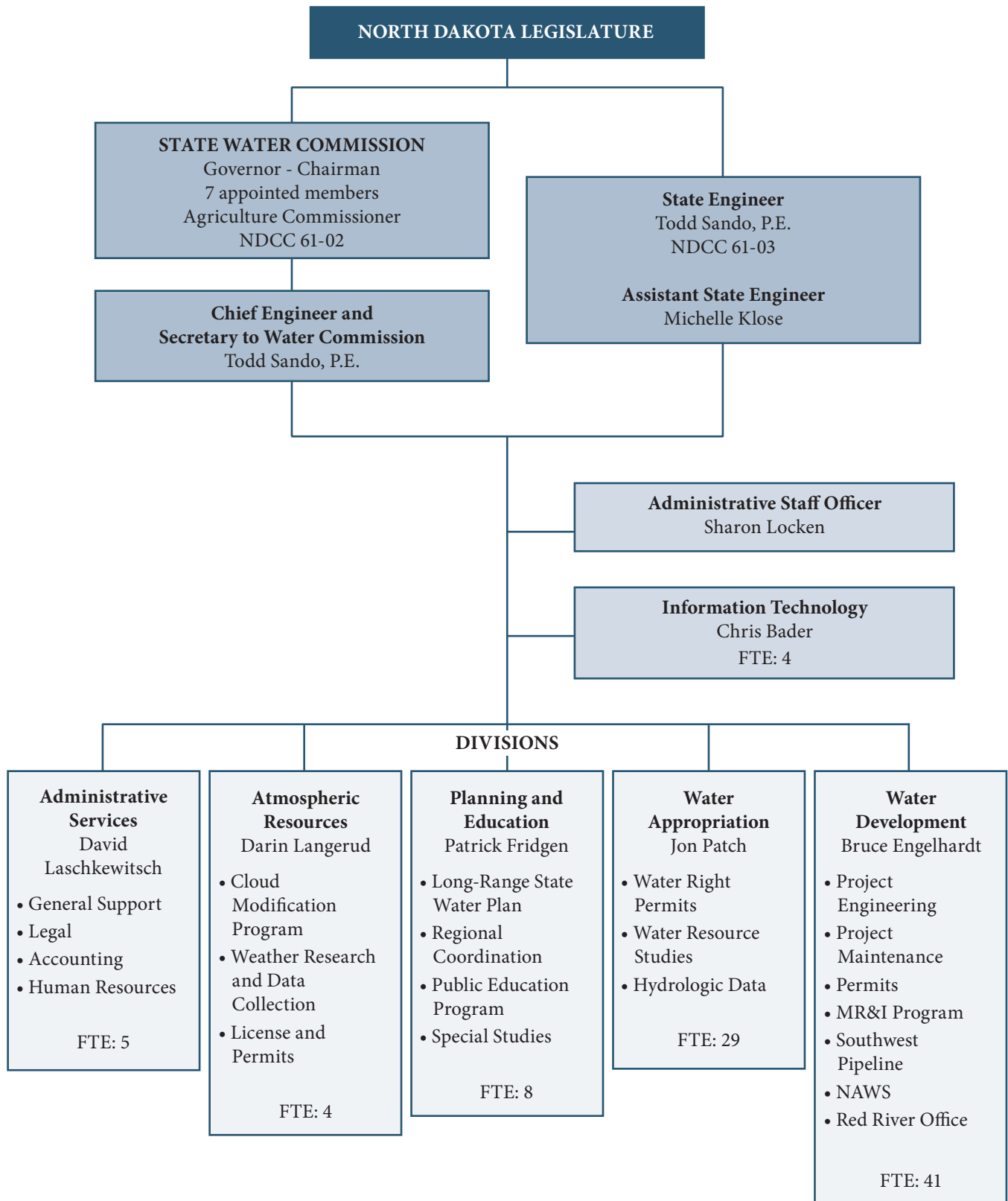
NAME	POSITION	APPOINTED	TERM ENDS
Jack Dalrymple	Governor-Chairman		
Doug Goehring	Department of Agriculture		
Robert Thompson	Member from Page	March 1, 1993	June 30, 2019
Douglas Vosper	Member from Neche	August 15, 2008	June 30, 2019
Larry Hanson	Member from Williston	July 1, 1999	June 30, 2017
Maurice Foley	Member from Minot	December 8, 2006	June 30, 2017
Arne Berg	Member from Starkweather	December 7, 2006	June 30, 2017
Harley Swenson	Member from Bismarck	March 1, 1993	June 30, 2015
George Nodland	Member from Dickinson	October 1, 2013	June 30, 2015

**STATE WATER COMMISSION MEETINGS
JULY 1, 2013 THROUGH JUNE 30, 2015**

DATE	LOCATION
July 23, 2013	Bismarck
August 20, 2013	(conference call) Bismarck
October 7, 2013	Bismarck
December 13, 2013	Bismarck
February 27, 2014	(conference call) Bismarck
March 17, 2014	Bismarck
May 29, 2014	Bismarck
September 15, 2014	Bismarck
December 5, 2014	Bismarck
January 7, 2015	(conference call) Bismarck
January 29, 2015	(conference call) Bismarck
March 11, 2015	Bismarck
May 20, 2015	Bismarck

NORTH DAKOTA STATE WATER COMMISSION ORGANIZATIONAL CHART

(Total Full Time Equivalentents of 94 personnel)



STATE WATER COMMISSION EMPLOYEES AS OF JUNE 30, 2015

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
Records Management Specialist: 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: Jon Patch
Administrative Assistant: Jackie Klusman
Hydrologist Managers: Dan Farrell, Rex Honeyman,
 Andrew Nygren, Scott Parkin, William Schuh,
 Jennifer Weier, Bob White
Hydrologists: Kimberly Fischer, Abigail Franklund,
 Michael Ginsbach, David Hisz, Braden Rambo,
 Eric Sikora, Chris Simmons
Water Resource Program Administrator: Mike Hove
Water Resource Engineer: Darin Schepp
Water Resource Senior Manager:
 James MacArthur
Water Resource Project Manager:
 Peter Gesellchen, Deidra Lies
Engineering Technicians: Kelvin Kunz,
 Albert Lachenmeier, Neil Martwick, Dan McDonald
Rotary Drill Operator: Terry Olson
Equipment Operator: Gerry Manderfeld

PLANNING AND EDUCATION DIVISION

Division Director: Patrick Fridgen
Administrative Assistant: Dawn Martin
Water Resource Education Program Manager:
 Tina Harding
Water Resource Planners: Steve Best,
 Linda Weispfenning
Natural Resource Economist: Michael Noone
Public Information Specialist: Jessie Wald
Graphic Artist: Sheila Fryer

WATER DEVELOPMENT DIVISION

Division Director: Bruce Engelhardt
Administrative Assistant: Patty Hess
Water Resource Engineer Managers:
 Laura Ackerman, Erwin Curry, J. Tim Fay,
 Timothy Freije, Randy Gjestvang, Karen Goff,
 Jonathan Kelsch, Jeffrey Mattern, David Nyhus,
 John Paczkowski, Sindhuja S. Pillai-Grinolds,
Water Resource Engineers: Aaron Carranza,
 Dwight Comfort, Damon Grabow, Joon Hee Lee,
 Chris Korkowski, Matthew Lindsay, Nangare Mandar,
 Mitchell Weier
Engineering Technicians: Daniel Bahm, Thomas Banse,
 Jeffrey Berger, Clint Cogdill, Tom Engberg,
 Terrence McCann, Chance Nolan, James Ternes
Water Resource Program Administrators:
 Dionne Haynes, Gerald Heiser, Laura Horner,
 Jared Huibregtse, Jeffrey Klein
Realty Officer: Roger Kolling
Water Resource Senior Managers:
 Dale Binstock, Perry Weiner
Maintenance Supervisor: Jeff Trana
Silver Jacket Liaison: Michael Hall
General Trades Worker: Del Nordrum
Water Resource Project Manager: Darron Nichols

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 State 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. 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.

INFORMATION TECHNOLOGY (IT) SECTION

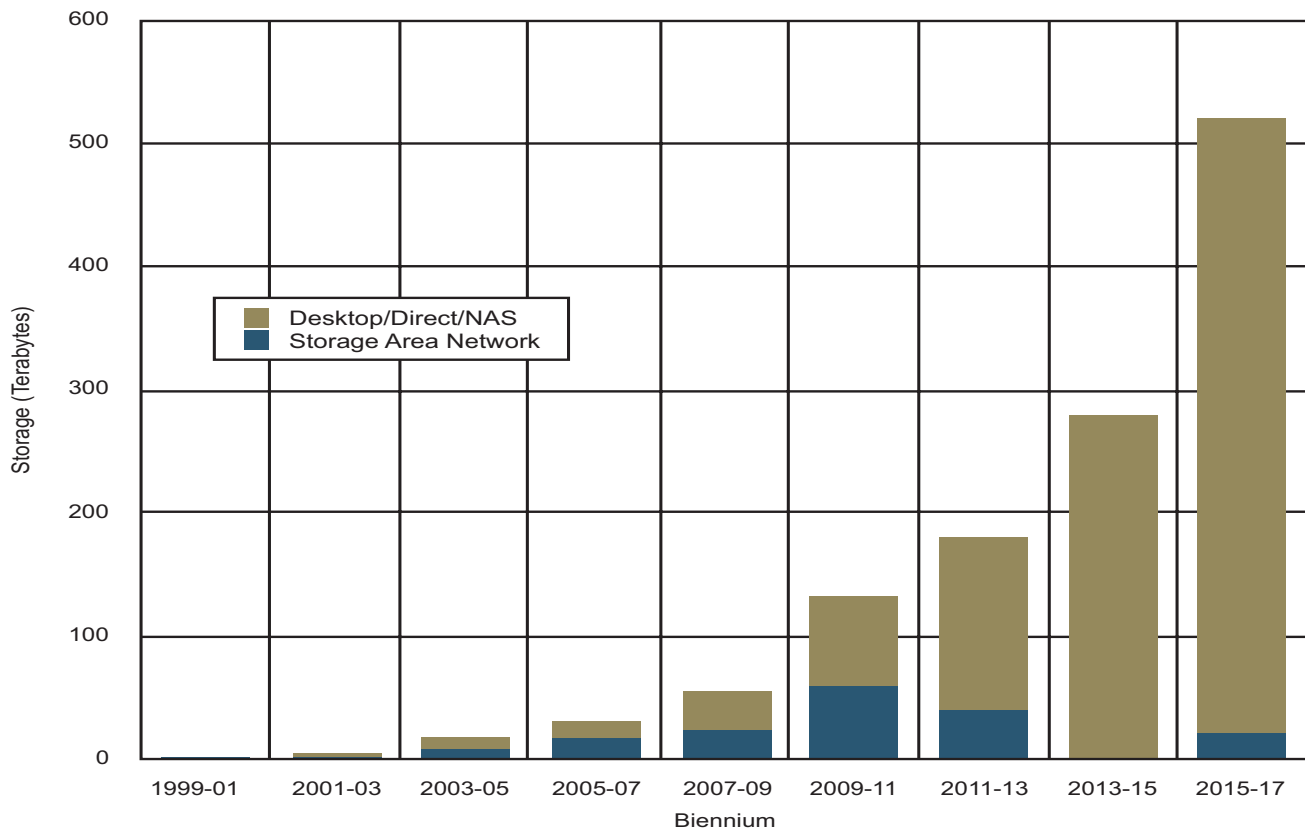
The State Water Commission utilizes IT in almost all aspects of water resource management. The primary responsibility of the IT Section, is to provide the technology infrastructure required to support the scientific and regulatory functions, as well as the routine office and back-office automation functions that the agency utilizes to meet its stated mission.

As the demands on the state's water resources continue to grow and evolve, the State Water Commission is faced with additional challenges to provide greater quantities of 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 challenges, 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 in order to address these complexities within the data development and data management processes.

With increasing demands for water related to oil activity in western North Dakota, the State Water Commission faced additional challenges associated with monitoring water withdrawals from both surface and ground water sources. The State Water Commission has developed and deployed SOAP (Simple Object Access Protocol) services for real-time reporting, using available industry telemetry solutions to address oil-related industry reporting requirements. The service designed by the State Water Commission utilizes open standards protocols that can be adapted to any commercial



SWC AVAILABLE STORAGE



Changes in data storage volumes at the State Water Commission from 1999, and projected into 2017.

telemetry solution, which provides North Dakota water users with the ability to select a telemetry solution based upon their needs. The web services that were deployed by the State Water Commission provide a simple accessible solution that can now be scaled beyond the limited scope of the industrial applications related to recent oil activity in western North Dakota. As demands for water continue to grow, it is likely that these types of services will be extended to other resource monitoring areas to include other aspects of data collection. The State Water Commission is currently in the process of developing similar solutions that will accommodate remote data collection for many of the monitoring wells and staff gages located throughout North Dakota. These efforts are intended to improve real-time access to critical water resource data and to reduce costs associated with these data collection programs. By the end of 2016, the State Water Commission will have completed the early testing phases of installing remote telemetry solutions at selected data collection sites. If successful, this initiative could lead to installation of several hundred of these types of collection sites over the next few years.

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 stress upon the agency infrastructure for data storage, and for the associated tools to maintain and disseminate these data. The State Water Commission storage infrastructure has grown from just under one terabyte (TB) in 2002 to over 500 TB in 2015, and will likely exceed one petabyte by the end of 2017 (See Figure above).

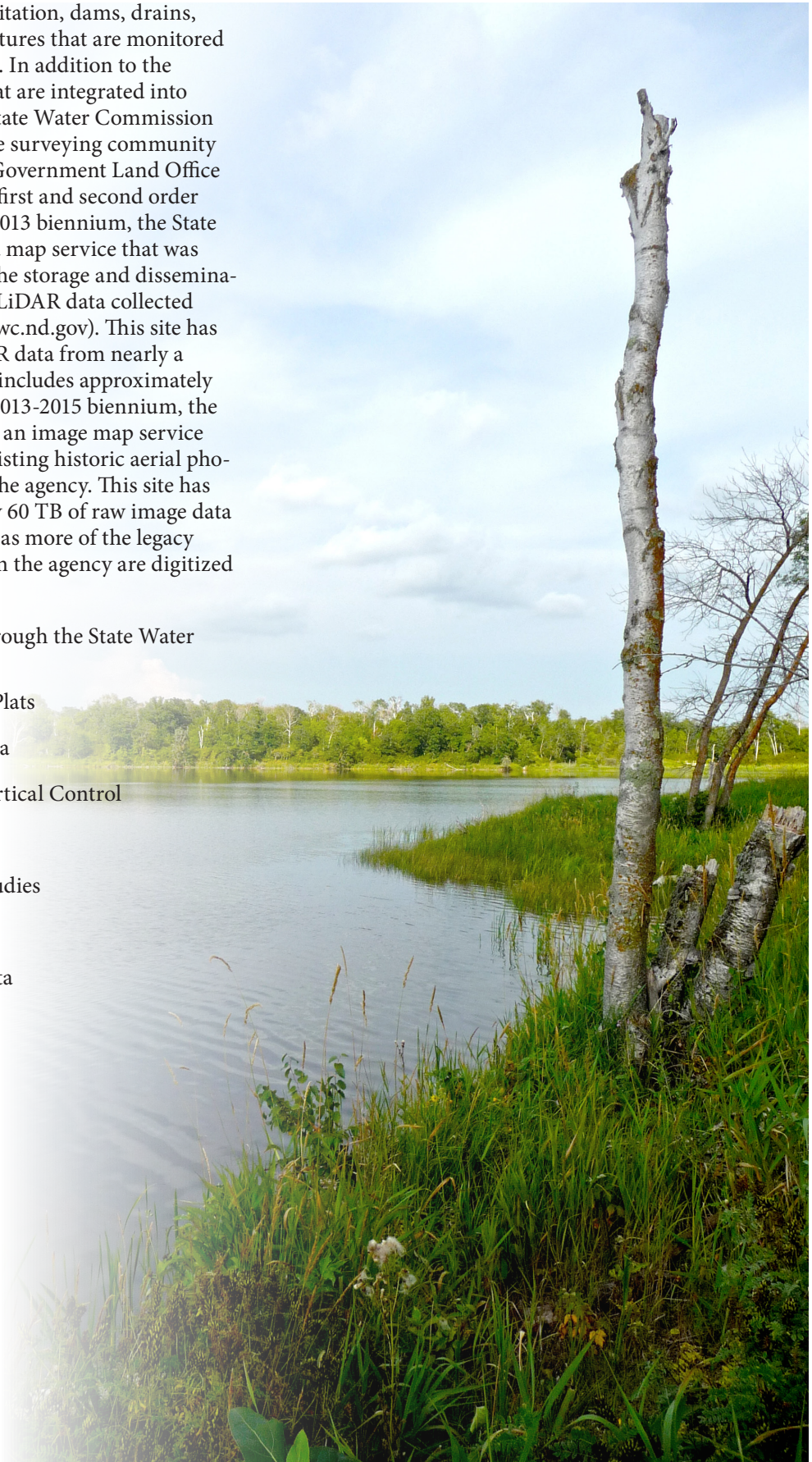
In addition to the tools and resources that are used internally, the State Water Commission has also leveraged the IT infrastructure to provide complete access to all of the agency-maintained data resources to the public, through an array of web services.

All of the water resource data for North Dakota are made available through the State Water Commission web site. This includes all of the site information that is used for monitoring ground water resources in the state, which includes sub-surface lithology, water levels, water chemistry, and associated site information. The agency web

site also includes data on precipitation, dams, drains, dikes, and other retention structures that are monitored by the State Water Commission. In addition to the wide range of data resources that are integrated into the agency's web services, the State Water Commission 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. During the 2011-2013 biennium, the State Water Commission developed a map service that was originally designed to address the storage and dissemination of the massive amounts of LiDAR data collected in North Dakota (<http://lidar.swc.nd.gov>). This site has grown, and now includes LiDAR data from nearly a dozen different projects, which includes approximately 30 TB of raw data. During the 2013-2015 biennium, the State Water Commission added an image map service designed to catalog all of the existing historic aerial photography that is available with the agency. This site has grown to include approximately 60 TB of raw image data and is expected to grow rapidly as more of the legacy image resources available within the agency are digitized and made available for use.

Data available for public use through the State Water Commission Website:

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



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 State Water Commission 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 from the Environmental Section of the Department of Health.

The primary functions of the ARB are to:

- Carry out the 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 precipitation and climate data.

NORTH DAKOTA CLOUD MODIFICATION PROJECT

The North Dakota Cloud Modification Project (NDCMP) served seven western counties during the 2013-2015 biennium. Those counties were Bowman, Burke, McKenzie, Mountrail, Ward, Williams, and a portion of Slope. At the conclusion of the biennium, the project target area covered 7.4 million acres in western North Dakota.

The NDCMP has two goals:

- 1) Suppression of damaging hail
- 2) Enhancement of rainfall

Suitable clouds over two multi-county operational districts were seeded during June, July, and August of each summer of the biennium. Eight, twin-engine aircrafts 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 the towns of 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 ten percent increase in rainfall.

Bangsund and Leistritz (2009) evaluated the direct economic impact of rainfall enhancement from cloud seeding at two intervals, five and ten percent. This range reflects the results of long-term evaluations of cloud seeding on rainfall in the target areas. Under the five percent scenario, the value of increased crop production is estimated to yield \$8.4 million annually, while under the ten 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 five percent rainfall scenario is \$12 million annually, while the total direct impact in the ten percent scenario is \$19.7 million. These results yield a benefit-to-cost ratio of 16 to 1 for the five percent scenario, and 26 to 1 under the ten percent scenario.

Under the five 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.

Under the ten 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

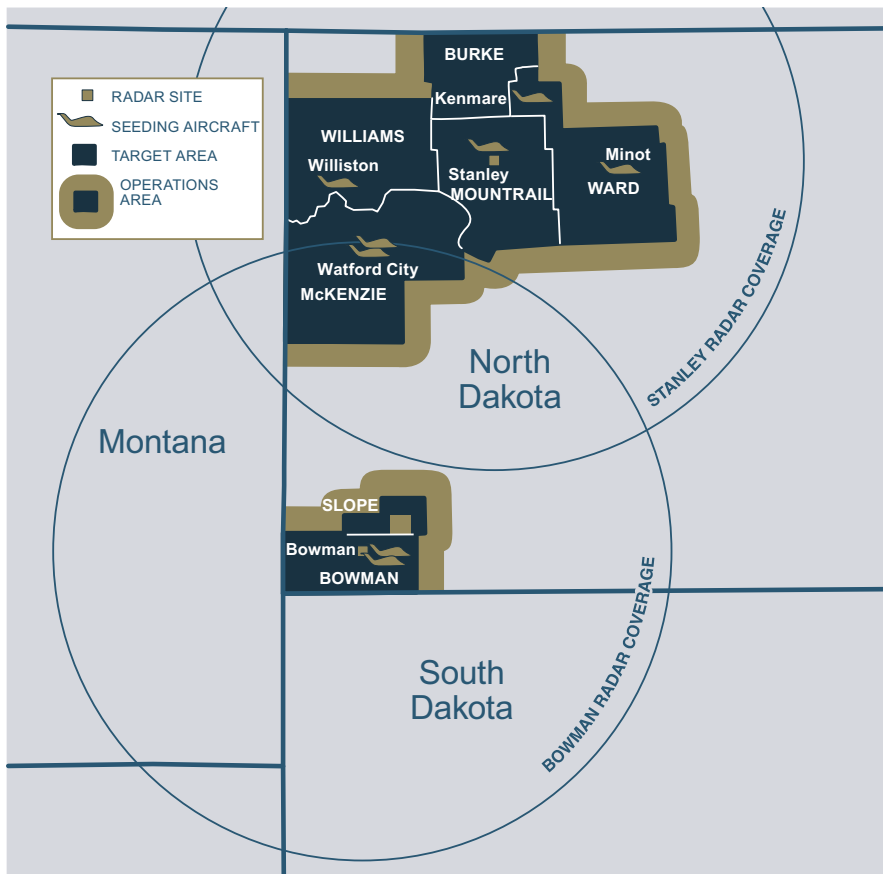
The ARB continued to operate two WSR-74C weather radars during the last biennium. Radars were located in facilities at the Bowman and Stanley airports, and continued to operate at approximately one-quarter the cost of previously leased systems. Images from both radars are available and updated every six minutes on the State Water Commission 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 and Rapid City, and thus provides lower atmosphere coverage of southwestern North Dakota, southeastern Montana, and northwestern South

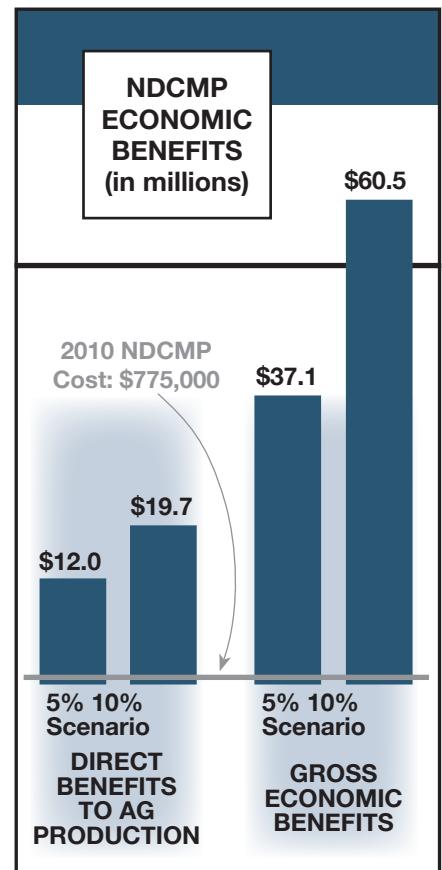
Dakota, not available from NWS radars. In order to alleviate this situation, in 2011, ARB partnered with eight counties in the area who pledged \$24,000 to operate the Bowman radar year-round. They are: Billings, Bowman, Dunn, Golden Valley, Slope, Stark, (North Dakota), Fallon, (Montana), and Harding, (South Dakota). Bowman radar continued to operate year-round throughout the biennium in partnership with these regional counties at the same \$24,000 annual cost. Real-time radar images and raw data were provided on the State Water Commission website.

STUDENT INTERN PROGRAMS

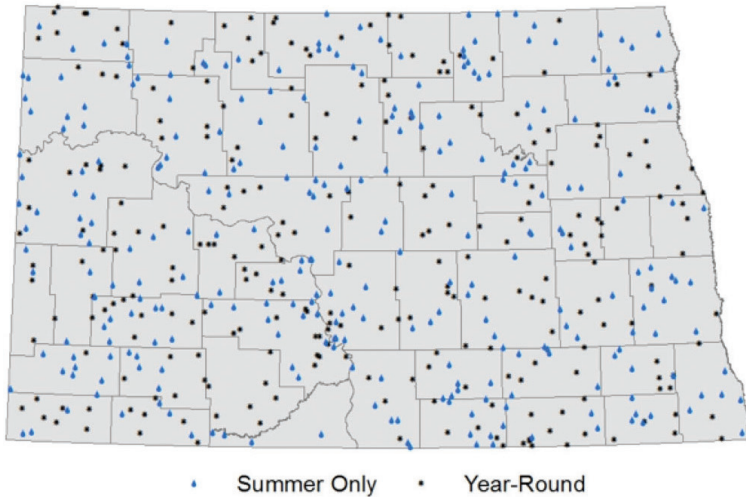
Eighteen intern copilots from the University of North Dakota (UND) John D. Odegaard School of Aerospace Sciences participated in the NDCMP during the last biennium.



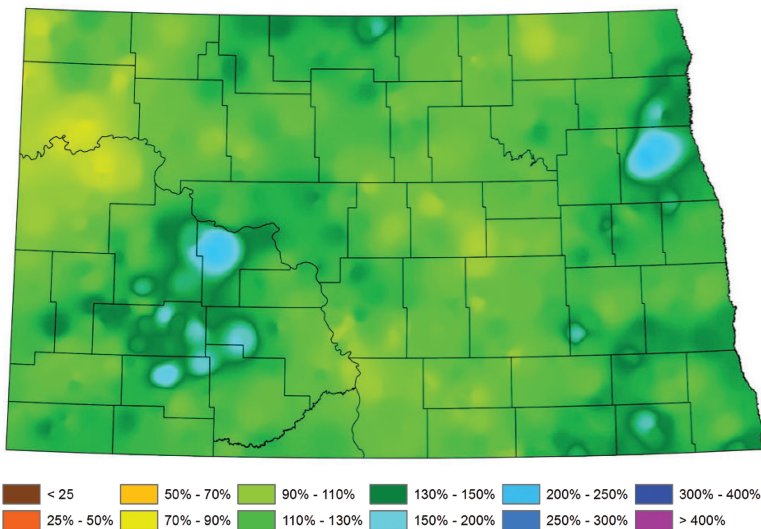
North Dakota Cloud Modification Project (NDCMP) target areas.



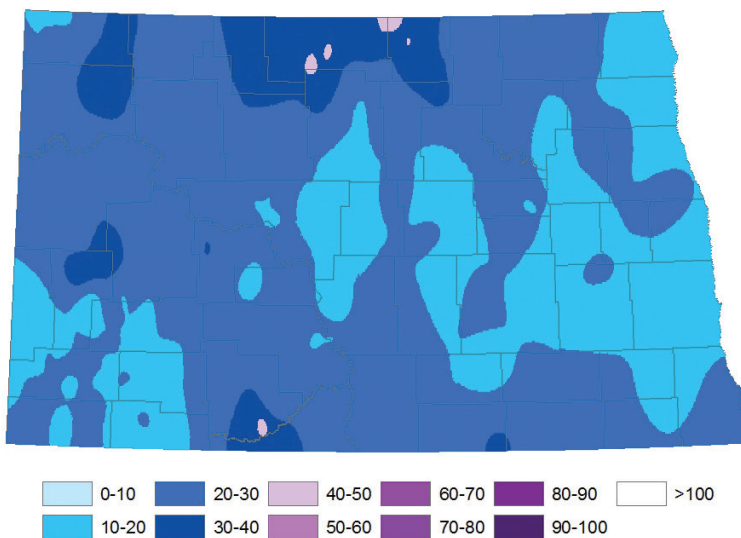
2014 ARBCON SITES



April - September 2014 Percent of Normal Rainfall



October 2014 - April 2015 Snowfall (in inches)



nium. Training at UND includes a 4-credit course on applied weather modification. Students must also meet flight certification requirements prior to participation. Since 1975, 352 intern pilots have logged well over 20,000 hours of flight time in cloud seeding operations in North Dakota's skies since the board's inception. 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 it provides a significant number of qualified cloud seeding pilots for projects elsewhere in the country and around the world.

ARB also retained undergraduate students majoring in atmospheric science as intern meteorologists during the 2013-2015 biennium. A total of six interns assisted NDCMP radar meteorologists at radar-equipped operations centers in Bowman and Stanley, and at the ARB office 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.

STATEWIDE PRECIPITATION OBSERVATIONS

The ARB Cooperative Observer Network (ARBCON) continued observing North Dakota precipitation during the biennium. ARBCON observers numbered about 531 volunteers statewide, building on a database dating back to 1977.

In response to the increased need for snow and snow water equivalent data in the state to assist in flood forecasting and water management, ARBCON began measuring and reporting snowfall in October 2010. About 200 observers participated in the first

year, more than doubling the number of local snow reporting stations previously in the state. Currently, year-round ARBCON observers now number 234.

Observers continued to transition to online reporting during the biennium. Internet reporters enter their daily reports directly through the State Water Commission website, after logging in with a unique username and password, making the data available sooner than those submitted on monthly reporting cards. About 32 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 State Water Commission 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 2013-2015 biennium focused on a cooperative program between ARB, the UND Atmospheric Science Department, National Center for Atmospheric Research, Fargo-based Weather Modification Incorporated, Ice Crystal Engineering in Kindred, North Dakota, and the Polarimetric Cloud

Analysis and Seeding Test, and is designed to evaluate the effectiveness of hygroscopic cloud seeding in North Dakota.

ARB also collaborated with the UND Department of Atmospheric Sciences to provide meso-scale numerical weather forecast modeling to the operational cloud seeding program. UND is developing the Weather Research and Forecasting model to improve convective weather precipitation forecasts supporting cloud seeding operations. The model is run twice daily at the university and data are provided to NDCMP forecasters through a website interface.



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.

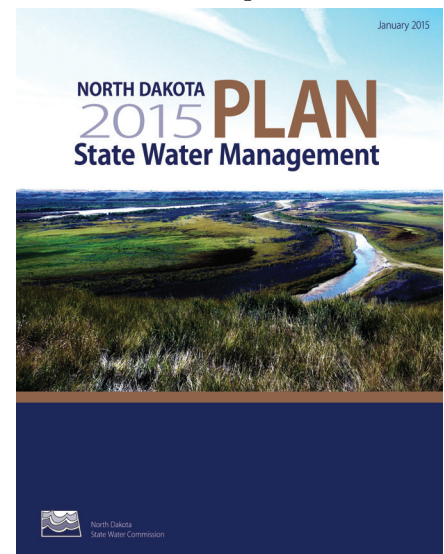
Specific staff responsibilities include:

- 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 Pembina River Basin Advisory Board, International Water Institute, Red River Basin Commission, and Assiniboine River Basin Initiative, to name a few;
- Prepare presentations, news releases, develop and maintain the agency's web presence, and foster public awareness of the agency and its activities;
- Assisting joint water resource management boards in the development of 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

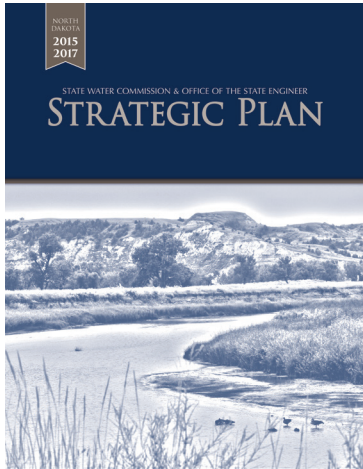
By virtue of North Dakota Century Code, Section 61-02-14, Powers and Duties of the Commission; Section 61-02-26, Duties of State Agencies Concerned with Intrastate Use or Disposition of Waters; and Section 61-02-01.3, Comprehensive Water Development Plan, the State Water Commission is required to develop 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 most recent North Dakota State Water Management Plan was completed in January 2015. The purpose of the 2015 State Water Management Plan is to outline the planning process; provide an overview of North Dakota's water resources – including characteristics and extent, and factors affecting availability for beneficial uses; provide an overview of water appropriation responsibilities and evolving challenges associated with increasing demand for water; provide a progress report on the state's priority water management and development efforts; provide information regarding North Dakota's current and future water development project funding needs

and priorities; provide information regarding North Dakota's revenue sources for water development; serve as a formal request for funding from the Resources Trust Fund; provide information regarding water management and development special topics; and identify goals and objectives to meet water management and development challenges

AGENCY STRATEGIC PLANNING AND BIENNIAL REPORTING



In advance of the 2015 Legislative Assembly, the Planning and Education Division coordinated the development of an agency strategic plan for the State Water Commission and Office of the State Engineer. The purpose of a Strategic Plan is to provide the agency with an opportunity to set the bar for itself, and to more effectively measure performance in the future. This process is expected to continue on a biennial basis.

To develop the 2015-2017 State 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, 2017. 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.

The primary purpose of the 2013-2015 Biennial Report, which was published in early 2014, is to highlight key events, accomplishments, and other pertinent activities of the State Water Commission and the Office of the State Engineer. The biennial report and strategic plans work in concert, setting out agency goals, and then evaluating the agency's progress on those goals.

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. Accomplishments have included a two-year study on water quality trends in the Sheyenne River. In 2013, 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.

RED RIVER BASIN PLANNING EFFORTS

Throughout the 2013-2015 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 various 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 State Water Commission supports efforts that promote basin-wide goals and objectives that result in cooperation and coordination among varied water management organizations and interests.

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, Hazard Mitigation Grant Program, Rural Development Loan Program, highway improvements, airport improvements, dike/levee projects, water storage impoundments, municipal and rural water supply development and treatment projects, municipal waste treatment projects, oil and gas well projects, oil and gas pipeline projects, electrical transmission line development/modification/maintenance projects, and various federal and state water, land, and wildlife management plans, studies, Environmental Assessments and EIS. On average, 37 interagency environmental reviews were conducted monthly during the 2013-2015 biennium for a total of 888.

Environmental review comments address compliance requirements involving State Engineer 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 water wells, stream gages, and well monitoring sites.

NORTH DAKOTA WATER EDUCATION

In 1984, the State Water Commission took the initiative to provide water education throughout the state with the primary goal of educating the public about the impor-

tance of water in North Dakota. When the program first started in the state it was called W.E.T. (Water Education for Teachers). W.E.T became known as Project WET, a supplemental and interdisciplinary water education program accepted around the world. North Dakota Project WET became the pattern for the program's growth and 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, an extension of Project WET. Today, it is called North Dakota Water Education and promotes the importance of water in all aspects of our lives, which include conservation, water quality, non-point source pollution, stewardship, protection, and best management practices. North Dakota Water Education delivers this information through partnerships and collaborations with schools, other agencies and water entities across the state.

Water Education is delivered to formal and non-formal educators through multi-credit watershed institutes, credited and non-credited workshops, in-service sessions, and pre-service teacher workshops, seminars, and special events. K-12 students receive water education programs directly through their own classroom and through a variety of educational events such as youth science events, water festivals, community water or environmental awareness events, technology and youth/adult water action projects. The general public receives water education through community water or natural resource education events, resource materials and general community events.

North Dakota Water Education program facilitates and promotes learning, awareness, knowledge, exploration, and stewardship of North Dakota water resources, with



Red River Water Institute participants and instructors.

a focus on how water interacts with both the human and natural environments within our own watersheds. Programs are based on well developed and time-tested Project WET Curriculum, through dissemination of indoor, outdoor, and classroom-ready experiences, teaching aids, printed materials and online resources that are hands-on, user friendly, non-biased, age appropriate, adaptable, and contemporary.

In recent years, the number of North Dakota's water festivals has grown by 100%, from six to twelve. Participation has increased by 50%, from 3,812 (3rd - 5th grade) students in 2012, to 5,755 students in 2014. An estimated 1 out of 4 North Dakota students in grades 3-5 attend a water festival each year. During the 2013-2015 biennium, the North Dakota Water Education program served 29,695 students and adults through water festivals and other educational events in the state.

OTHER GOVERNMENTAL AND NON-GOVERNMENTAL ORGANIZATION INVOLVEMENT

The Planning and Education Division also participated, to varying degrees, in numerous 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 with the International Water Institute; Little Missouri Scenic River Commission; Devils Lake Outlet Advisory Committee; Aquatic Nuisance Species Task Force; Friends of Lake Sakakawea; Missouri River Stakeholders Initiative; and Assiniboine River Basin Initiative.

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 2013-2015 biennium, average monthly distribution of the magazine was approximately 20,650. Readers include the general public, local, state, and federal agencies, and elected officials.

The Planning and Education Division develops the 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.

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.

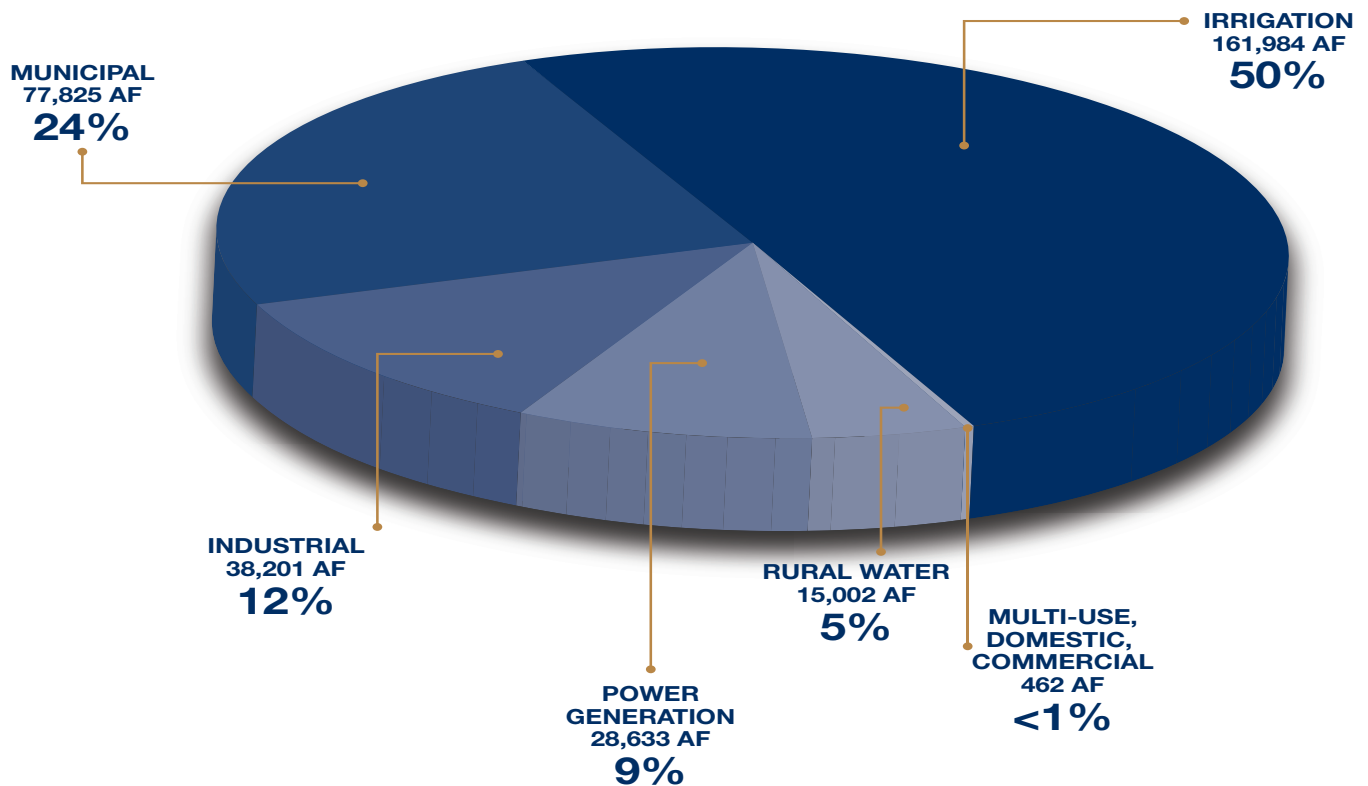


RESEARCH, STUDIES, AND REPORTS

During the 2013-2015 biennium, the Water Appropriations Division was involved in numerous studies that were completed or are in progress. Descriptions of these studies follow.

- A research report on glacial ice stagnation and water appropriation in the Central Dakota Aquifer System was published in 2014 by Water Appropriation Hydrologist Gordon Sturgeon. The report can be accessed as: "Wastin' Away in Central North Dakota: Glacial Ice Stagnation and the Central Dakota Aquifer System."
- A ground water supply investigation of the Spiritwood Aquifer in the Jamestown Area was initiated in 2013 and completed in 2015, as a result of industrial demand for ground water supply. The State Water Commission installed over 30 observation wells, conducted both short and long-term aquifer tests, monitoring of ground and surface waters, modeling to sustainable ground water supplies for potential industrial development. Recommend decisions were completed in 2015. Monitoring of the ground water system is ongoing.
- Numerical models of the Spiritwood and Jamestown aquifers were developed with consulting firm Leggette, Brashears & Graham Inc. for the proposed industrial demand in Spiritwood. The models were used to determine the affects of long-term pumping on the aquifer system considering senior water rights, climatic changes, recharge, and stream flows on the system.

North Dakota Water Use By Type - Year 2014



*27,163 acre-feet of water was used for fracking in 2014. This amount was not included in the above chart, because this water is permitted as temporary, conditional, or perfected.

- A pilot study on integrating tiltmeters to monitor aquifer responses to development and ambient stresses in the Spiritwood Aquifer was started in 2014. Tiltmeters are used to monitor the deformation related to hydraulic stresses (i.e. pumping, rainfall, barometric pressures etc.) to help aid in understanding the distribution of hydraulic properties used in predicting long-term aquifer to aquitard interactions related to storage, leakage, and recharge. Data collection is ongoing, with a report in preparation.
- The State Water Commission has initiated a plan to enhance surface water monitoring of small streams in the oil-field development areas of the state with up to six additional measurement sites. As a first step, a pilot study to develop high-resolution, low-cost, real time data acquisition was started in 2014. The State Water Commission has deployed a preliminary real-time stream gage station in western North Dakota to help monitor surface water appropriations. A similar design has also been tested for real-time ground water levels in remote areas. Testing and development is ongoing.
- An aquifer test was conducted in Wells County to determine area aquifer properties and development capability.
- Water Appropriation Division hydrologists served in the interview and selection of the contractor for the Missouri River corridor ground water exploration portion of the Red River Water Supply Project, and also participated in project design, guidance and review.
- Results of a cooperative project with the University of Leeds, UK (Dr. Simon Bottrell) for evaluation of sources of sulfate in the Elk Valley aquifer in Grand Forks County, ND was published in *Hydrogeology Journal. Function of a deltaic silt deposit as a repository and long-term source of sulfate and related weathering products in a glaciofluvial aquifer derived from organic-rich shale* (North Dakota, USA). *Hydrogeology Journal* (2014) 22:565-585.
- A cooperative study between the State Water Commission and the North Dakota National Guard was conducted on the Camp Grafton South Military Reservation. The study included a comprehensive water quality sampling for pesticides, munitions

and explosives, solvents, and petroleum hydrocarbon residues, general chemistry, and trace element concentrations in ground and surface water on the reserve. The final report included an analysis of historical trends.

- Ongoing laboratory and travel stipend support was provided for Dr. Xinhua Jia, Agricultural Engineering Dept., North Dakota State University, for monitoring of crop yield, salinization and sodicity monitoring, and water quality monitoring on an experimental project related to irrigating crops using ground water through tile drains.
- The Water Appropriations Division entered into a cooperatively funded streamflow statistics study with the United States Geological Survey. 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 online to provide scientifically defensible stream data in a uniform and non-biased manner. The Stream Stats study is still being refined, and Appropriations surface water hydrologists are working or adapting its application to surface water management, particularly on small un-gaged streams.

- A hydrologist manager of the Appropriations Division serves as the co-secretary of the International Souris River Board (ISRB), and also serves on the Hydrology Committee and the Flow Forecasting Liaison Committee of the ISRB. He also serves as the State Engineer’s representative on the Hydrology Committee for the International Red River Board. Both boards advise the International Joint Commission (IJC).
- A focused sampling regime of the major public water supplies from ground water in Grand Forks County was continued during the 2013-2015 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 at least once annually, with 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 2013-2015 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 in order to irrigate more acres and expand the artificial recharge facilities.
- The well network designed and constructed to monitor and estimate seepage from the West Devils Lake Outlet channel was monitored for both water levels and ground water quality changes during the 2013-2015 biennium.
- Appropriations Division hydrologists and technicians continued to monitor and analyze nitrate contamination and remediation of the Karlsruhe Aquifer, in cooperation with the North Dakota Health Department. The project consists of an annual evaluation of stratified nitrate concentrations at more than 70 sites, and an assessment of total nitrate loading.

Temporary Water Permits Issued July 1, 2013 - June 30, 2015

Type of Use	Number of Permits	Authorized Volume (Acre-Feet)
Construction	505	6,216
Fire Protection	3	0
Industrial	63	3,108
Industrial-Water Depot	1,122	211,358
Irrigation	75	22,754
Livestock	5	198
Resource Planning	46	2,738
Rural Water	2	517
Grand Total	1,821	246,889

Approved ac-ft totals are only for approved and expired permits. During the 2013 to 2015 biennium there were 210 permits denied.

Note: the count of permits acted upon include approved, expired and denied permit applications.

**Permitted Water
Use Summary
July 1, 2013 - June 30, 2015**

WATER USE	ACRE-FEET
Irrigation	
Applications Filed: 89	
Acre Feet Requested: 30,788	
Acre Feet Granted*: 16,171	
Storage Granted*	0
Water Granted*	19,113
Ground Water Granted*	17,146
(Ground Water Acres) 13,425	
Surface Water*	1,967
(Surface Water Acres) 2,746	
Flood Control	
Applications Filed: 1	
Storage Granted*	0
Water Granted*	0
Industrial	
Applications Filed: 126	
Water Granted*	56,457
Livestock	
Applications Filed: 0	
Water Granted*	7
Storage Granted*	0
Municipal	
Applications Filed: 7	
Water Granted*	5,924
Recreation, Fish & Wildlife	
Applications Filed: 2	
Storage Granted*	1,083
Annual Use Granted*	338
Rural-Domestic	
Applications Filed: 2	
Water Granted*	1,014
Total Applications Filed	227
Total Water Granted	80,656

*Includes backlog-permits applied for in previous bienniums.

DATA ACQUISITION

The Water Appropriations Division drilling program drilled 252 test holes during the 2013-2015 biennium, installing monitoring wells in 204 of the holes, including a 1,054-foot deep hole, in which a Fox Hills Aquifer monitoring well was installed. Division staff measured water levels periodically (mostly monthly) in 4,190 monitoring wells and 30 staff gages. Continuous recording devices are installed at over 70 locations, where water level data was stored in a data logger for subsequent onsite retrieval. Water samples were collected from 2,328 ground water and surface water locations for general chemical and selected trace element analysis. In addition, the State Water Commission partnered with the United States Geological Survey Water Science Center in Bismarck to collect real-time stream gage information from 46 river locations throughout the state.

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 including: well inventory information, water levels, water chemistry analyses, water permits, water depots, water use, dams, drains, and precipitation. Because of the unique nature of much of the data, the State Water Commission IT staff has developed the necessary data management tools to access the data for internal and public use through web access through both database and MapService portals.

AGENCY REPRESENTATION

The Water Appropriations 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, and surface water assistance in meetings or reviews pertaining to: 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; the International Red River Board; and the International Souris River Board.

LANDFILL AND MINE PERMIT REVIEWS

The Water Appropriations Division cooperates with the North Dakota Department of Health (Health Department) in reviewing ground water aspects of landfill applications. From July 1, 2013 through June 30, 2015, 16 landfill pre-applications were reviewed for the Health Department, two of which involved a second review after revisions to the pre-applications were made. During late 2013 and 2014 there was an increased volume of pre-applications compared with previous years. The increased volume of pre-applications in late 2013 and 2014 can be attributed to development of the oil industry in northwestern North Dakota. Of 16 reviews, all but one was for special waste landfills in the northwest part of the state. The exception was an expansion to Williston's municipal waste landfill. As the recently reviewed special waste landfills become permitted and operational and the pace of oil industry development slows, the number of pre-applications to review is expected to decrease.



The Ground Water Section of the Water Appropriations Division reviews coal mining permits and revisions with regard to ground water and wells. From July 1, 2013 through June 30, 2015 13 mine permit applications and revisions were reviewed for the Public Service Commission.

ECONOMIC DEVELOPMENT

Economic development is a major state initiative. In most instances, water is needed to serve new enterprises. The Appropriations Division provides information to the Department of Commerce and local economic development organizations regarding the availability and chemical quality of water to serve a proposed enterprise.

During the 2013-2015 biennium, Appropriation Division hydrologists evaluated water supply options for a proposed fertilizer plant (CHS) in Jamestown. In connection with economic development efforts, division hydrologists, after extensive study of potential source options, recommended authorization of industrial water permits for 1,613 acre-feet per year from the Spiritwood aquifer to supply Great River Energy through the Stutsman Rural Water District, and 692 acre-feet per year from the Jamestown Aquifer to supply Dakota Spirit AgEnergy Ethanol Plant; and recommended decisions to provide a water supply to a proposed Cenex Harvest State fertilizer plant in Spiritwood with conjunctive use between the Jamestown and Spiritwood aquifers.

OTHER TECHNICAL ASSISTANCE

The Water Appropriations 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 oilfield development (brine dilution and hydro-fracturing). Study areas included the Little Muddy, Hofflund, Killdeer, Shell Creek, Tobacco Garden, Charbonneau Fox Hills, and Tongue River/ Sentinel Butte aquifers.

WATER USE MANAGEMENT

Water use by the oil industry in western North Dakota had increased to about 17,000 acre-feet annually by 2013. High water use was sustained through the 2013-2015 biennium, although water use began to decrease with the downturn in oil field development in the later part of the biennium. All water supply depots are now required to install and operate telemetry, and transmit pumping data to the State Water Commission in real-time using a state-determined protocol. Violations of water permit limitations and conditions are heavily fined to assure compliance.

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 water supply project grant programs;
- Management and development of the Devils Lake outlet projects;
- Managing the design, construction, and operation of the Southwest Pipeline Project;
- Managing the design and construction of the Northwest Area Water Supply Project; and
- Sovereign land management.

REGULATORY SECTION

During the 2013-2015 biennium, the Regulatory Section processed 68 applications for permits to construct or modify dams, dikes, diversion ditches, or other water control facilities. The section also processed 36 wetland creations, 12 wetland restorations, 36 sovereign land permit applications, and 387 applications for permits to drain, of which 329 were for tile drain systems. In addition, the 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 Corps of Engineers (CORPS), Natural Resource Conservation Service (NRCS) State Technical Committee, NRCS Interagency Watershed Committee, Association of Soil Conservation Districts, North Dakota Soil Conservation Committee, and the Natural Resources Trust.

COST-SHARE PROGRAM

The State Water Commission has been fortunate to have access to significant funding for project expenditures in recent years. However, that funding has come at a time of serious water resource challenges across the state, with major flood control, water supply, and other projects facing serious funding needs. During the 2013-2015 biennium, the Regulatory Section processed a record amount of cost-share requests, with 546 separate requests, totaling over \$646 million in approved funds for projects.

FLOODPLAIN MANAGEMENT

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 (Mapping Assessment and Planning) Risk MAP, and the Community Assistance Program (CAP).

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. FEMA completed Discovery projects in Stark and Williams County and issued \$348,358 in additional funding for the FFY11 Ward County Risk MAP project.

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 assist 327 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.

NORTH DAKOTA SILVER JACKETS PROGRAM

In collaboration with our other state and federal partners, the Silver Jackets have been collecting LiDAR, starting with the James River basin, and moving west since fall 2010.

The North Dakota Silver Jackets (Silver Jackets) program was active in several Flood Risk Reduction projects and studies in the state during the 2013-2015 biennium.

The James River Corps Feasibility Study was completed in fall 2014, and was presented to the James River Joint Water Resource District through town hall meetings in Carrington, Jamestown and LaMoure. The study included analysis for the James River using new bathymetry data from the Jamestown Reservoir south to the South Dakota border. The study also provided new James River floodplain maps from the James River Reservoir to the state border. This study also granted to a FEMA Region



VIII RISKMAP Project-leading to new FEMA floodplain maps for the James River upper basin counties. These maps were released to the counties for review, with final publication projected for fall 2016. Also the study led to a Section 205 Flood Risk Reduction Project request to the Corps for the City of LaMoure, which is currently under review.

Corps Section 22 Flood Risk Reduction studies are continuing for Mercer County (Beulah) and Emmons County (Linton) as a result of flooding in 2009 and 2010. The State Water Commission recently completed the analyses for both the Knife River and Beaver Creek, and submitted this data to the Corps for review.

As a result of the Mouse River Flood in 2011, Silver Jackets has been actively engaged with the Souris [Mouse] River Joint Board and City of Minot with several projects and studies. Since the flood there have been several projects but specifically for the 2013-2015 biennium, the following were both initiated and completed:

The Souris River Joint Board (SRJB) and City of Minot System Wide Improvement Framework (SWIF) project was completed, with updated data collected during and after the flood. This data was collected to specifically support Minot and the SRJB in the Souris River Enhanced Flood Protection Project and their requirement to submit a Corps SWIF proposal in support of their Corps 408 permitting requirement. Minot and SRJB will also use the Corps SWIF data in preparing Emergency Action Plans in order to improve their future flood fighting efforts.

The Corps supported requests for both a Non-Structural Flood Risk Reduction Measures Workshop and facilitation for an Emergency Action Plan (EAP) workshop for Minot and the SRJB. These were both single day separate events conducted for both entities during the spring and summer of 2015.

The Corps supported a request from the SRJB for conducting a Souris River Basin Rural Property Inventory to include extensive property descriptions, including location and elevation data. This project involved coordination and outreach with officials and property owners and collection of data in the spring and summer of 2015. This data will be used by the SRJB to further develop flood risk reduction measures in support of the rural reaches of the basin and was provided to the SRJB in the fall of 2015.

SOVEREIGN LANDS MANAGEMENT

North Dakota's Sovereign Lands are those areas, including beds and islands, lying within the ordinary high watermarks of navigable lakes and streams. The State of North Dakota plays an important role in the management of sovereign land through the State Engineer, who is responsible for administering the state's non-mineral interests on North Dakota's Sovereign Lands.

The goal of the State Engineer in managing this vital resource is to manage, operate, and supervise North Dakota's sovereign land, for multiple uses, that are consistent with the Public Trust Doctrine, and are in the best interest of present and future generations. Meeting these goals can be challenging, given the increasing popularity of water-based recreation, and the draw of waterfront property for housing developments. The uses and issues surrounding North Dakota's sovereign lands continue to increase, and this in turn has prompted the Office of the State Engineer to take a more active role in managing this popular resource.

Any projects that will occur partially or wholly upon Sovereign Lands require authorization from the State Engineer prior to construction. The State Engineer processes approximately 50 Sovereign Land permits annually.

In 2007, the Office of the State Engineer completed the North Dakota Sovereign Land Management Plan. This plan outlined the State Engineer's authority to manage



sovereign lands and it included recommendations and corresponding action strategies that are intended to improve management of this valuable resource. This management plan is still in use today to aid in the management of this resource.

The Office of the State Engineer continues to make ordinary high watermark delineations throughout the state, mostly along the Missouri River. Recently, delineations were completed for areas of the Missouri River north of Bismarck and Mandan. Delineations have also been completed near the confluence of the Missouri and Yellowstone Rivers.

During the summer of 2013 and the spring of 2014, the Office of the State Engineer launched an ongoing campaign of educating recreational users about the rules and regulations of sovereign lands. The campaign mainly focused on littering and the illegal use of glass bottles on sovereign lands. Educational signs have been installed in popular public use areas, and floating key chains with "Keep our Beaches Clean," messages were distributed to the public at popular areas such as convenience stores, water sports retailers, and boat ramps. State Water Commission staff have also taken part in public events and media interviews to explain the rules and regulations associated with the recreational use of sovereign lands. This campaign is expected to continue well into the future to encourage the public to keep sovereign lands clean and safe.

On land below the ordinary high watermark of navigable water bodies, motorized vehicle use is prohibited, except for a few exceptions that do provide for those types of opportunities. These exceptions can be found in N.D.A.C. 89-10-01-13. In 2014 and 2015 signs were installed in areas where off road vehicles are known to historically be accessing sovereign lands.

Because the Office of the State Engineer does not currently employ law enforcement staff, a contract agreement has been developed with the North Dakota Game and Fish Department to have them provide enforcement of state code on Sovereign Lands.

INVESTIGATIONS SECTION

FLOOD-RELATED EFFORTS

Although flooding during the biennium was minimal, the disastrous floods of the previous biennium left much to be done. Early in the biennium development of the Mouse River Enhanced flood Protection Project placed substantial demands upon the Section. As the project developed and the Souris River Joint Water Resources Board took on its management these demands diminished. Currently active, however, is the techni-

cal participation supporting the international effort to review the operating plan for the existing project, including Rafferty and Alameda dams.

Numerous studies grew from the aftermath of the 2009 and 2011 floods. These include a geomorphologic study of the Missouri River, tree ring and stochastic hydrology studies in the Mouse and Missouri River basins, and an effort to understand the dynamics of the numerous landlocked lakes throughout the state, which are rising and causing problems.

GENERAL PROJECTS

In addition to these high-profile activities, the section has completed a number of investigations for local counties and cities. These include: hydrologic and hydraulic studies for the Knife River Basin for McLean County; Similar studies for the Beaver Creek basin in Emmons County; hydrologic analysis and alternatives for Tolley Slough in Renville County; and a bank erosion analysis and alternatives for LaMoure County.

The section also supports the rest of the agency by providing technical advice on hydraulics, hydrology, and related matters. The section also explores and adopts new technologies in modeling and GIS, and makes them available to those who need them elsewhere in the agency.

DAM SAFETY PROGRAM

The purpose of North Dakota's dam safety program is to minimize the risk to life and property associated with the potential failure of dams in the state. There are currently 3,104 dams in North Dakota's dam inventory. Of these, 48 dams are currently classified as high hazard and 79 are classified as medium hazard, meaning that there is the potential for loss of life or significant property damage downstream if one of those dams were to fail.

A primary function of North Dakota's dam safety program is to conduct dam inspections in order to identify deficient dams in need of maintenance or repair. Dam safety program staff inspect non-federally owned high and medium hazard dams on a rotational basis. Each of these dams is scheduled for a full inspection at least once every ten years. High hazard dams are inspected at least once every four years. During the 2013-2015 biennium, full periodic dam safety inspections were completed on 13 high hazard dams and 18 medium hazard dams. In addition, each spring, 140 dams are given a partial inspection to check on the status 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 18 other dam site visits during this biennium (seven high hazard dams, seven



medium hazard dams, and four low hazard dams). These site visits included inspections made at the request of the public, participation in inspections conducted by federal agencies, and other site visits as needed.

During the 2013-2015 biennium, North Dakota's dam safety program undertook several projects in order to better identify existing issues and help prioritize dam safety efforts, and also to help allocate limited dam safety resources effectively and efficiently. Consultants using funding from National Dam Safety Program grants, through the Department of Homeland Security (DHS), and FEMA, completed the projects during the biennium.

An ongoing project to review and update the hazard classifications of many dams in the state was begun during the 2013-2015 biennium. This is an effort to identify those dams with the greatest potential downstream impacts. A total of 90 dams were reviewed during 2013-2015 biennium. As part of this project, simplified inundation mapping was produced for each dam in a digital format, showing the area that could potentially be affected by a dam failure.

A project was also completed during the 2013-2015 biennium to develop condition ratings for 25 non-federal dams, 21 of which were classified as high hazard dams and four of which were selected because of their potential to be reclassified as high hazard dams. During the 2013-2015 biennium, a hydrologic analysis of one high hazard dam was completed and a second analysis was begun. The purpose of these analyses is to determine compliance with hydrologic standards in order to obtain a more complete picture of the condition of the dams. The results of these hydrologic analyses will also be made available to the dam owner for use in preparing detailed inundation maps for their dams.

An ongoing focus of the dam safety program has been the development of Emergency Action Plans (EAPs) for high and medium hazard dams. During the 2013-2015 biennium, simplified inundation mapping suitable for use in an EAP was developed for 32 dams. This mapping was developed by a consultant, using results from the hazard classification project, and was completed using National Dam Safety Program grant funding through DHS, FEMA. During this biennium, dam owners for one high hazard dam and two medium hazard dams submitted new EAPs.

DEVILS LAKE OUTLETS

The State Water Commission devoted a large amount of time and resources to Devils Lake flood-related issues during the 2013-2015 biennium.

Lake levels throughout the Devils Lake basin fluctuated in 2013–2015. In July 2013, Devils Lake was near the record elevation of 1,454 feet above mean sea level amsl, and in June of 2015 was about 1451.5 feet amsl. The 2.5 foot decrease in lake elevation was the result of a decrease in volume of nearly 480,000 acre-feet during the biennium.

During the 2013-2015 biennium, the State Water Commission continued to operate the Devils Lake outlets within the constraints of the approved Devils Lake Outlets Management Advisory Committee Operating Plan.

The volume pumped during the 2013-2015 biennium was about 205,000 acre-feet, which corresponds to approximately 12 inches off of the lake.

The discharge capacity of the West Devils Lake Outlet is 250 cubic feet per second cfs. The discharge capacity of the East Devils Lake Outlet is 350 (cfs). Together, the outlets have a combined discharge capacity of 600 cfs. The pumps are operated at maximum capacity, while still meeting water quality and Upper Sheyenne River flow limits.

The sulfate levels on the Sheyenne River have been determined to meet beneficial use for aquatic life at a concentration of 750 mg/l. The upper Sheyenne River volume targets were between 800-1000 cfs maximum, while pumping in 2013 and 2014, lowered to a maximum of 800 cfs while pumping in 2015. The outlets were not operated at full discharge capacity until July of each year, due to high natural flows in the Sheyenne River.

DESIGN AND CONSTRUCTION SECTION 2013-2015 BIENNIAL SUMMARY

During the 2013-2015 biennium, the State Water Commission's Design and Construction Section conducted repairs and modifications to water resource structures throughout the state, as well as assisting in the operations of the Devils Lake outlets.

BOWMAN-HALEY DAM, BOWMAN COUNTY

In 1988, the Corps owned Bowman-Haley Dam had a low-level drawdown system installed to improve fish habitat by the State Water Commission, ND Game & Fish Department (NDGF), and the Bowman County Water Resource District. In the spring of 2013, it was found that the low-level conduit, an 18-inch high-density

polyethylene (HDPE) pipe, had become disconnected from the principal outlet structure. In 2014, the State Water Commission, with assistance from SCUBA divers with the NDGF, attempted to salvage the existing pipe by filling it with air to refloat it, so it could be repositioned and reconnected to the structure. This effort was unsuccessful and other alternatives are being examined to reconnect the pipe.

WHITE EARTH DAM, MOUNTRAIL COUNTY

White Earth Dam was constructed in 1970 with a low-level drawdown system with its control valve on the downstream side of the structure. In the intervening decades, it has been found that control valves on the downstream side of dams present an increased risk to the safety of the dam due to the full reservoir pressure being near the downstream face of the dam. In this configuration, if the pipe were to leak, it could quickly lead to erosion of the embankment material and loss of the dam. For many years, the State Water Commission has been working to eliminate this risk by pumping these low-level conduits full of concrete at dams across the state. In 2013 the State Water Commission construction crew accomplished this for White Earth Dam.

UNION DAM, CAVALIER COUNTY

Union Dam is a flood control dam owned by the Pembina County Water Resource District, but located just inside Cavalier County. A sinkhole was discovered in the downstream face above the principal outlet works. The State Water Commission Construction Crew excavated the pipe and found one of the joints in the precast concrete pipe had separated, allowing the earth embankment material to wash into the pipe. The crew constructed a concrete collar around the separated pipe joint to prevent further infiltration of the embankment material.

MELSTAD DAM, CAVALIER COUNTY

Melstad Dam is an earthen embankment flood control dam. Similar to Union Dam, a sinkhole was found, however at Melstad Dam, the sinkhole was on the upstream side near the outlet structure. The sinkhole was also due to a separated joint in the reinforced concrete pipe. In this case though, the joint was in the first stage intake conduit from the reservoir to the structure. Like the repair at Union Dam, the State Water Commission construction crew created a concrete collar around the separated joint to prevent further infiltration of embankment material.

MOUNT CARMEL DAM, CAVALIER COUNTY

Mount Carmel Dam, constructed in 1971, is an earth embankment dam with a concrete chute spillway and low-level drawdown system. The low-level drawdown system consists of a 12-inch intake pipe, that discharges through a butterfly valve in the chute spillway. The butterfly valve had become inoperable due to wear in the gearbox. The State Water Commission construction crew installed a new gearbox to restore the function of the valve.

SWEETBRIAR DAM, MORTON COUNTY

Sweetbriar Creek Dam is a recreational use dam that also serves as the embankment for Interstate 94. It is an earthen embankment dam, with a concrete drop structure and box culvert spillway. To inspect this spillway, State Water Commission dam safety staff must climb down a 20-foot high ladder to reach the floor of the spillway. The previous fall protection system on the ladder was difficult to use, and getting connected and disconnected from the system was probably just as hazardous as climbing the ladder without fall protection. The State Water Commission construction crew installed an overhead steel anchor bracket for attaching the fall arrestor and removed the previous fall protection system.

FROELICH DAM, SIOUX COUNTY

Froelich Dam is an earth embankment recreational use dam, built in 1962. During the spring runoff in 2012, the reservoir rose nearly to its auxiliary spillway elevation, causing concerns for local emergency managers. Also observed during this event was very low flow from the dam's principal spillway, a 12 inch HDPE pipe. Subsequent investigation determined that the conduit was blocked approximately 40 feet from the downstream end. Initially, State Water Commission staff requested assistance from the Garrison Diversion Conservancy District for use of their jet/vacuum truck to attempt to clear the obstruction. This effort was unsuccessful, so it was decided to excavate and replace the clogged portion of the conduit. Once the conduit was excavated, it was found that the pipe was partially collapsed which led to it becoming clogged with debris. The State Water Commission construction crew replaced the collapsed portion of the pipe with a heavier walled pipe to prevent it from collapsing again in the future.

BLACKTAIL DAM, WILLIAMS COUNTY

Blacktail Dam is a recreation use earthen embankment owned by the North Dakota Game & Fish Department. It has a reinforced concrete pipe principal spillway terminating at a concrete head wall and stilling basin at the downstream toe of the dam. Over the course of

many years, a sinkhole formed just above the concrete head wall, with no obvious connection to the principal conduit. In spring 2014, when onsite for a routine inspection, water was observed surging in and out of the pipe through the joint where the concrete pipe meets the headwall. This provided an explanation for the sinkhole. The State Water Commission construction crew constructed a concrete collar around the joint to prevent further infiltration of the embankment material. At the same time, the construction crew also re-graded the downstream channel to lower the level of the stilling basin, to prevent it from freezing up with the conduit full. Freezing in the previous year led to high water in the reservoir when spring runoff entered the reservoir before the stilling basin had thawed.

BURLINGTON DAM NO. 1, WARD COUNTY

Burlington Dam No. 1 was in poor shape, and during the flood of 2011 on the Souris and Des Lacs Rivers, created concerns for downstream emergency managers and residents. The dam is an earth embankment dam with a gated control structure spillway and a stone masonry Winsor type auxiliary spillway constructed by the Public Works Administration in the 1930s. In order to reduce the risk to downstream residents, the State Water Commission construction crew removed the gated control structure from the dam, minimizing the impoundment of water behind the dam. The historic masonry Windsor bowl spillway was left untouched.

TOLNA DAM, NELSON COUNTY

Tolna Dam is an earth embankment recreation dam, located downstream of the East Devils Lake Outlet. In addition to the earth embankment, the dam also has a concrete low-head spillway chute and a low-level outlet system. During the spring of 2015, water was found flowing from under the downstream toe of the concrete spillway apron. This clearly indicated that there was internal erosion beneath the dam. The low-level system was opened to draw down the reservoir and efforts were made to plug the leak by placing sandbags in the sinkhole that was forming in the channel upstream of the concrete spillway. Eventually a cofferdam was constructed around the sinkhole to keep it from growing and reaching the main body of the reservoir. Once the flow through the sinkhole was cut off, a better assessment of the issues was made. It was decided to fill the sinkhole with a fine aggregate concrete, and pump grout under the apron slab and any remaining voids under the spillway. A sheet pile cutoff wall was installed from the left side of the spillway into the embankment to cut off the flow paths the water had been taking, and a new concrete wing wall was constructed on the left side of the dam.

USGS

The State Water Commission continued to cooperate with the USGS on the maintenance and improvement of the USGS's stream gaging sites throughout the state.

NEW EXCAVATOR

In the spring of 2015, the State Water Commission let bids for a new excavator to replace the construction crew's previous excavator that had been in service since 2001. The new excavator is a 2015 VOLVO EC250E. The crew looks forward to many years of use with this machine.

SOURIS/MOUSE RIVER ISSUES

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 during flood operations. In Saskatchewan, this authority rests with the Saskatchewan Watershed Authority. In the United States this authority rests with the Corps.

In the wake of the record-breaking 2011 flood, the Souris River Joint Water Resource District and the City of Minot requested the State Water Commission to develop a flood risk reduction project, which would address the entire Mouse River in North Dakota and offer protection from a flood of the magnitude of the 2011 event. The State Water Commission approved their request, hired an engineering team, and by the end of February, 2012 received a Preliminary Engineering Report for the urban reaches, followed by one dealing with the rural reaches in the summer of 2012.

The new biennium began with the preliminary engineering reports guiding the development of the project. The project was adopted as defined by both the City of Minot and the Souris River Joint Water Resources Board. With the project alignments thus defined, acquisition of properties within the footprint began and continues. Other properties were acquired with FEMA funding as well, however these programs require deed restrictions to prevent future construction on them, so state funds are used to acquire properties within the project area. The Souris River Joint Water Resources Board hired engineering design teams, and design began on the first three components of the project. Concurrently, coordination began with the Corps of Engineers on various permits and environmental documentation.

The International Joint Commission (IJC,) at the request of the International Souris River Board (Board), created

a Task Force to study the operating plan for the dams of the Souris River Flood Control Project, which includes works in Saskatchewan, thus making the Task Force an international affair. The Task Force produced a Plan of Study that was approved by the Board and the IJC and forwarded to the governments of the United States and Canada for approval. No action has been taken at this time. However, the Board has continued to move ahead with clarifying the language in the operating plan, and is now working to determine what can be done without international action to update the operating plan and improve its flexibility.

MISSOURI RIVER ISSUES

SURPLUS WATER AND REALLOCATION

In 2008 the Corps issued Real Estate Guidance Letter No. 26, in which it was stated that no easement could be issued across Corps land without a water storage agreement.

The water supply issue came to a head in North Dakota in May of 2010, when the Corps denied all access for the withdrawal of water out of the Missouri River system's reservoirs. At that time, a moratorium was placed on all water withdrawals out of the reservoirs. The Corps argued that because there was no allocation for Municipal and Industrial (M&I) water in the Missouri River system, water could not be withdrawn until that issue was resolved. According to the Corps, an allocation study would take at least seven years. Because there was pressure to access water immediately, the Corps determined they could use Section 6 of the 1944 Flood Control Act in order to enter into temporary contracts for water supply, or surplus water storage.



SURPLUS WATER AND ALLOCATION

- To determine if, and how much, surplus water exists in the Missouri River mainstem reservoirs. Once a Surplus Water determination is complete, the Corps asserts that Section 6 of the 1944 Flood Control Act will allow it to enter into temporary water storage agreements with water users.

CORPS DEFINITION OF SURPLUS WATER

- Water stored in a Department of Army reservoir, that is not required because the authorized need for the water never developed, or the need was reduced by changes that have occurred since authorization or construction.
- Water that would be more beneficially used as M&I water, than for the authorized purpose that, when withdrawn, would not significantly affect authorized purposes over some specified period.

PURPOSE OF THE REALLOCATION STUDY

- To examine whether some amount of storage originally included for all authorized project purposes may be permanently allocated to M&I water supply.
- To examine the effects of such reallocation on the authorized purposes and operations of the mainstem reservoirs. When the Reallocation Study is complete, the Corps affirms that the 1958 Water Supply Act allows it to enter into permanent water storage agreements with water users.

In January and February 2011, the Corps took public comment on the draft Surplus Water report for Lake Sakakawea. The State Engineer submitted comments in opposition to the study.

The final Surplus Water Report for Lake Sakakawea was released in March 2011, with a Finding of No Significant Impact (FONSI) released in July 2012. The final report states that 100,000 acre-feet/year of surplus water is available for M&I water supply needs.

In August 2012, the Corps took public comment on the draft Surplus Water Reports for the five other Missouri River mainstem reservoirs (Fort Peck, Oahe, Big Bend, Fort Randall, and Gavins Point). Also at this time, the Corps took public comment on the scoping of the Reallocation Study. Again, the State Engineer went on record in opposition to these efforts, asserting that the natural flow that existed prior to the construction of the dams is sufficient to meet the needs of North Dakota and that these actions by the Corps represent an effort to usurp North Dakota's ability to appropriate the water that rightfully belongs to its' people.

In 2014, the Water Resources Reform and Development Act (WRRDA) included legislation that prohibited the Corps from charging a fee for Surplus Water for a period of ten years. The WRRDA does not, however, prohibit the Corps from forcing water users into storage contracts.

Currently, the five remaining Surplus Water Reports have not been finalized. The Reallocation Study has been put on hold until the Surplus Water reports and associated rulemaking has been released to the public. A timeline of these events has not been released to the public, but North Dakota continues its effort to educate the Corps on the fact that storage contracts are inappropriate, because the natural flows of the Missouri River provide sufficient water for North Dakota and stored water is not necessary.

NORTH DAKOTA MISSOURI RIVER ADVISORY COUNCIL

The North Dakota Missouri River Advisory Council (NDMRAC) is the new name for a long awaited, grass roots, stakeholder group for the state. Over the last several years, public interest has increased to form some sort of stakeholder group with structure and leadership that would provide a platform for anyone in the state to discuss and address Missouri River issues.

In 2013, a group of stakeholders, with funding from the State Water Commission and Garrison Diversion Conservancy District, hired a Missouri River Coordinator to assess more thoroughly the statewide interest of forming a stakeholder group. Following more than a years worth of work, a representative in the North Dakota legislature introduced HB 1249 during the 2015 legislative session to create a Missouri River Advisory Council, which was later defeated by the Senate. Subsequently, the stakeholders resumed efforts in order to best determine how to proceed.

MISSOURI RIVER RECOVERY IMPLEMENTATION COMMITTEE

The Water Commission has been involved in the Missouri River Recovery Implementation Committee (MRRIC) since the end of 2011. MRRIC is a group comprised of nearly 70 members, representing a broad array of local, state, tribal, and federal interests through the Missouri River basin. The purpose of MRRIC is to provide guidance and recommendations to the Corps and the U.S. Fish and Wildlife Service (USFWS) on actions taken to recover the threatened least tern and endangered piping plover and pallid sturgeon.

MRRIC is providing support to the Corps and USFWS, in the development of the Missouri River Recovery Management Plan and Environmental Impact Statement

(MRRMP and EIS). The MRRMP and EIS is a study that will evaluate the effectiveness of actions taken by the Corps to recover the least tern, piping plover, and pallid sturgeon. The goal of this effort is to create a new recovery management plan that also incorporates adaptive management.

Currently, the Corps is looking at three alternatives to be evaluated in the draft EIS: (1) No Action, (2) the 2003 Amended Biological Opinion, and (3) Adaptive Management. If Adaptive Management is the preferred alternative adopted in the EIS, it could lead to operational changes in the Master Manual. This could be possible, because the Adaptive Management Alternative would be vetted through the NEPA process; and therefore, if the Adaptive Management process leads to an action that is outside the constraints of the Master Manual, the Corps has indicated it without any additional NEPA requirements, could implement it. In that situation where Adaptive Management requires an action outside the Master Manual, the Corps would decide how much public input is needed. It could be as simple as presenting the new action at the Annual Operating Plan meetings, or it could be a more involved public input process.

The draft EIS is scheduled to be released for public comment near the end of 2016. The State Water Commission will continue to be involved in MRRIC to protect the interests of the citizens of the state and to also collaborate with the MRRIC members and federal agencies on how best to recover the species.

MISSOURI RIVER POST-2011 FLOOD

United States Geological Survey Study

In 2011, record flows on the Missouri River resulted in significant geomorphic changes to the river channel. The USGS, in coordination with the State Water Commission, Corps, Department of Health, ND Department of Transportation, NDGF, Burleigh and Morton counties,



the Lower Heart River Water Resource District, and the cities of Bismarck and Mandan, initiated a geomorphic assessment of the Missouri River in North Dakota. The assessment will provide insight on how dam management has affected the river, determine impacts to the river channel from the 2011 flood, and will result in a numerical model that can be utilized to predict channel evolution and sediment transport under certain management strategies. The results of this study are due to be finalized during the 2015-2017 biennium.

MISSOURI-HEART RIVER CONFLUENCE

The 2011 flood enlarged the existing sandbar island that is located at the confluence of the Missouri and Heart rivers, blocking a previously existing backwater channel. This raised concerns about the obstruction of ice flows from the Heart River and consequently future ice jams. Due to these concerns, the State Water Commission and Lower Heart River Water Resource District constructed a pilot channel in 2012 through the sandbar, in an effort to restore the previous backwater channel and help divert Missouri River flows to erode sediment further downstream of the confluence.

Monitoring of the site revealed that the pilot channel has widened, and caused erosion of much of the sandbar left by the 2011 flood. Meanwhile, sedimentation has persisted downstream of the Heart River mouth. The State Water Commission will continue to monitor this site for further geomorphic change.

MUNICIPAL, RURAL & INDUSTRIAL WATER SUPPLY

In federal fiscal years 2014, and 2015, the Garrison Diversion Municipal, Rural, and Industrial (MR&I) water supply program received \$13.44 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 \$347.44 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 \$672 million in water system projects have been completed.

Projects that were allocated funds during federal fiscal years 2014 and 2015 included McLean-Sheridan Water District, Brush and Blue Lake Expansion Project; South Central Regional Water District Emmons, Logan, McIntosh, Kidder Phase 4 and Phase 5; and Southwest Pipeline Project, Supplemental Raw Water Intake.

The State Water Commission also allocated \$344 million from the State Water Program for the following projects:

All Seasons Water District System 1 Well Field Expansion, Bank of North Dakota Community Water Facility Fund, Barnes Rural Water District Water Treatment Plant Improvements, Barnes Rural Water District Rural Expansion, Cass Rural Water Users District Phase 2 Plant Improvements, Grand Forks Traill Rural Water District Rural Expansion, Grand Forks Traill Rural Water District Improvements, Greater Ramsey Water District SW Nelson County Expansion, Missouri West Water System South Mandan, North Central Rural Water Consortium Carpio Berthold Area Expansion, North Central Rural Water Consortium Plaza Area Expansion, North Central Rural Water Consortium Granville-Deering-Surrey Area Expansion, Northeast Regional Water District Langdon Service Area ABM Pipeline Phase 1, Northeast Regional Water District Langdon Service Area North Valley Nekoma, Northeast Regional Water District North Valley Service Area ABM Pipeline Phase 1, Northeast Regional Water District North Valley Service Area 93 Street, Northeast Regional Water District North Valley Service Area Rural Expansion, Stutsman Rural Water District Phase II, Stutsman Rural Water District Phase IIB, Phase III, Stutsman Rural Water District Kidder County and Carrington Area Expansion, Tri-County Rural Water District Improvements, Walsh Rural Water District Ground Storage, Northwest Area Water Supply, Red River Valley Water Supply Intake Study, Southwest Pipeline Project, Western Area Water Supply Phase 3, City of Dickinson Capital Infrastructure, City of Fargo Water Treatment Plant, City of Grafton Water Treatment Plant Phase 3, City of Grand Forks Water Treatment Plant Improvements, City of Mandan Water Treatment Plant Improvements, City of Mandan New Raw Water Intake, City of Park River Water Tower, City of Surrey Water Supply Improvements, City of Washburn New Raw Water Intake, City of Watford City Capital Infrastructure, City of Williston Capital Infrastructure.

NORTHWEST AREA WATER SUPPLY

The Northwest Area Water Supply (NAWS) 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 thorough 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. The most recent order, dated March 1, 2013, allowed then current construction contracts to be completed, however it does not allow any more pipeline construction until the environmental review is completed and approved by the court.



The United State Department of Interior, through the Bureau of Reclamation, began working in the summer of 2010 on a Supplemental Environmental Impact Statement (SEIS) for the NAWS project to address the federal court's order for additional environmental review. A cooperating agency team consisting of the State Water Commission, City of Minot, Garrison Diversion Conservancy District, Environmental Protection Agency, Corps, and Fish and Wildlife Service was also involved in the development of the SEIS. A Draft SEIS was available for public review in June of 2013. Federal law requires a 30-day public comment period on draft environmental impact statements, which in this case was extended. Numerous comment letters were received and their comments addressed in the Final SEIS, which was published on April 10th, 2015. The Bureau of Reclamation received additional comment letters upon publication of the Final SEIS, which they are working to address and will include as an appendix to the Record of Decision, which was issued in August 2015. Upon completion of the environmental review, the federal court will be updated on the findings and litigation will resume.

NAWS WATER DISTRIBUTION

In Minot, as part of the NAWS project, the State 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 public water 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.

SOUTHWEST PIPELINE PROJECT

The 2013-2015 biennium was extremely busy for the Southwest Pipeline Project (SWPP). Eleven new construction contracts were awarded. Construction of the Main Transmission Line in Dunn County was awarded in two phases and the construction was mostly complete. Construction of the 1.65 million gallon, second potable water reservoir at the Oliver Mercer North Dunn (OMND) water treatment plant (WTP) and the 250,000-gallon Killdeer Mountain elevated tank were completed. Construction of the one million-gallon Dunn Center elevated tank was mostly complete. The expansion of the OMND WTP from 3.5 million-gallons per day (MGD) to 5.25 MGD was mostly complete. Four rural distribution system contracts were awarded in Oliver County and Dunn County. The four different rural contracts when completed would add more than 850 miles of pipeline, and over 1,000 rural users to the Project.

Also during the biennium, a finished water pump station at Dickinson, a joint facility for the City of Dickinson and SWPP, was bid and the construction made good progress. A supplemental intake contract to meet the raw water needs of the SWPP was bid and the caisson (wet-well) portion was completed. The supplemental intake will also take water from Lake Sakakawea. Equipment for a new six MGD, WTP at Dickinson was procured, and the design was mostly completed. Preliminary design of the parallel piping from the supplemental intake to the Dickinson WTP and the two raw water reservoirs at Richardton and Dickinson were also completed.

Capital repayment collected from July 2013 through June 2015 was \$9,950,139. Of that amount, \$1,831,252 was paid to the pipeline's trustee, Wells Fargo Bank, NA, to pay bondholders. The remaining \$8,118,886 was deposited in the Resource Trust Fund.

SURVEY CREW

The State Water Commission has employed a survey crew and engineering technicians since the creation of the agency. The survey crew collects survey data state-wide for a variety of purposes: survey of water bodies for hydraulics and hydrology modeling, aquifer monitoring, high water marks, construction survey, drainage issues, geomorphic changes, and staff gages. The survey crew completes many surveys for the State Water Commission, water boards, cities, counties, other agencies, and the public.

The survey crew has completed bathymetric surveys of the Missouri River, with emphasis on the sandbar at the confluence of the Heart and Missouri rivers. Additional bathymetric surveys have also been completed at areas of

concern along the Mouse River, James River, at the Devils Lake outlet intakes, and many other smaller projects throughout the state.

State Water Commission staff from the Investigations Section, as well as the IT Division, recently created a database of all survey data at the end of the 2013-2015 biennium. This data, as well as Government Land Office (GLO) survey data is available to staff and the public. The GLO data is provided on our website and is maintained by IT staff. The Office of the State Engineer is the custodian for the GLO survey data. Many engineering and survey firms access GLO notes from the State Water Commission MapService on a daily basis.



SATELLITE WATER COMMISSION OFFICES/STAFF

RED RIVER OFFICE

Relocating from West Fargo to Fargo in 2014, the Red River office consists of one full-time position. During the 2013-2015 biennium, Red River office personnel took part in various State Water Commission activities in eastern North Dakota, including:

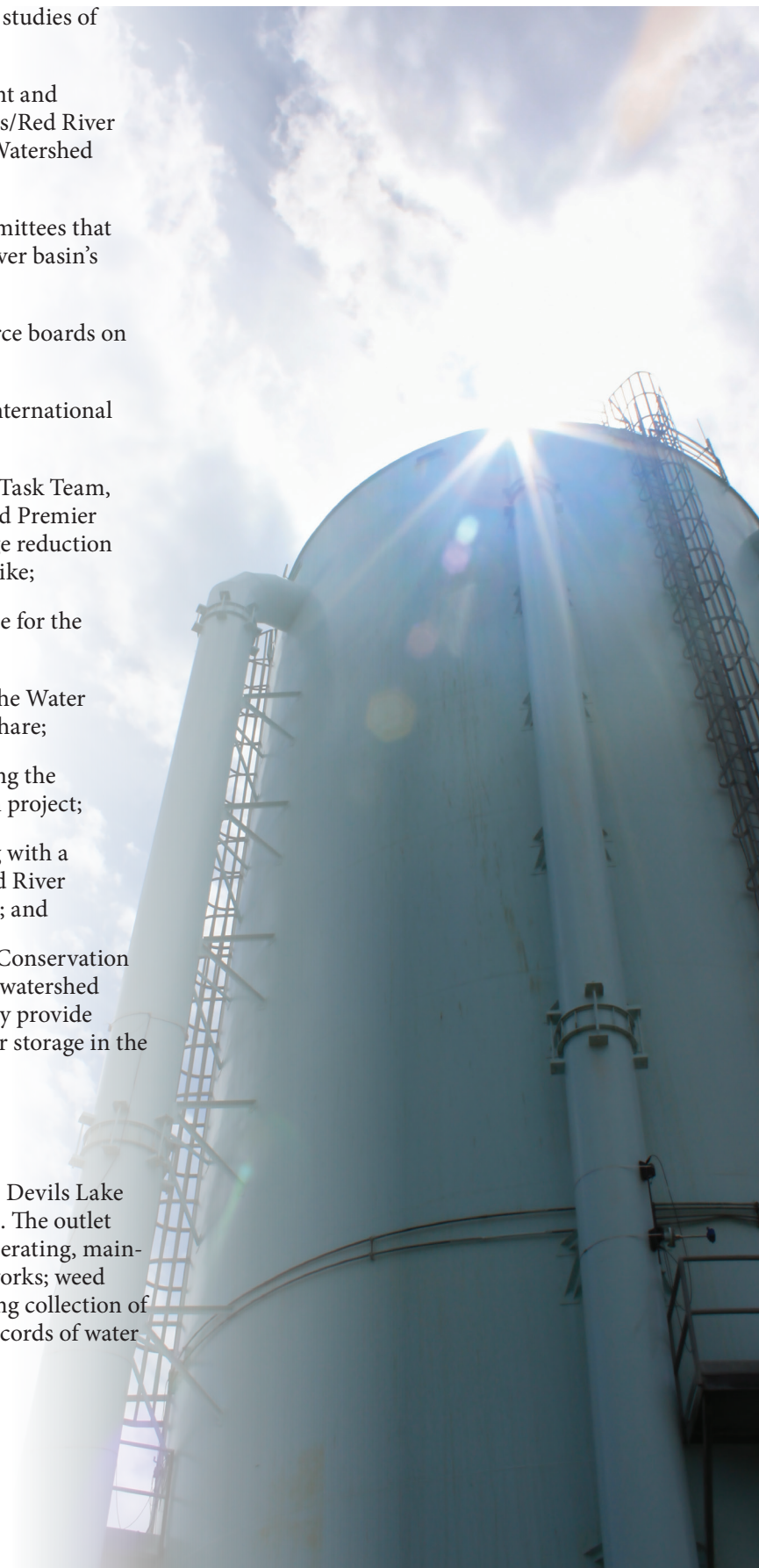
Technical assistance to the Red River Joint Water Resource District (RRJWRD) in pursuing flood control projects in the Red River watershed, including;

- Coordinated local review of HEC-HMS model development for the lower half of the Red River watershed in North Dakota;
- Coordinated development of detention studies (using the HEC-HMS models) for the lower half of the Red River watershed in North Dakota;
- Co-chair of the technical committee overseeing work for the Corps, Red River Watershed Feasibility Study;

- Assistance with reconnaissance level studies of potential dams;
- Serves on the Flood Risk Management and Hydrology Work Group for the Corps/Red River Basin Commission Comprehensive Watershed Management Plan development;
- Technical assistance on various committees that were formed as a result of the Red River basin's flooding problems;
- Assistance to individual water resource boards on several water-related issues;
- Serves as U.S. representative to the International Red River Board;
- Member of the Pembina River Basin Task Team, organized by the Governor of ND and Premier of Manitoba to pursue a flood damage reduction project for the area near the border dike;
- Member of the Hydrology Committee for the International Red River Board;
- Inspections on several projects that the Water Commission had approved for cost-share;
- Attended various meetings concerning the proposed Fargo-Moorhead Diversion project;
- Acting as Co-Interim Director, along with a Minnesota representative, for the Red River Retention Authority since April 2015; and
- Working with the Natural Resource Conservation Service and local sponsors to pursue watershed protection studies that may ultimately provide construction of temporary floodwater storage in the Red River basin.

DEVILS LAKE OUTLET OFFICE

The State Water Commission employs two Devils Lake Outlet operators in the Devils Lake region. The outlet operators are primarily responsible 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.

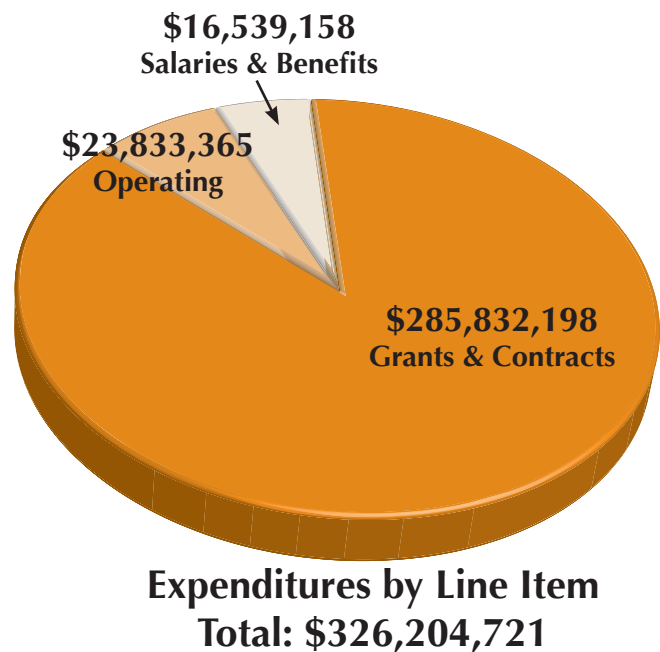
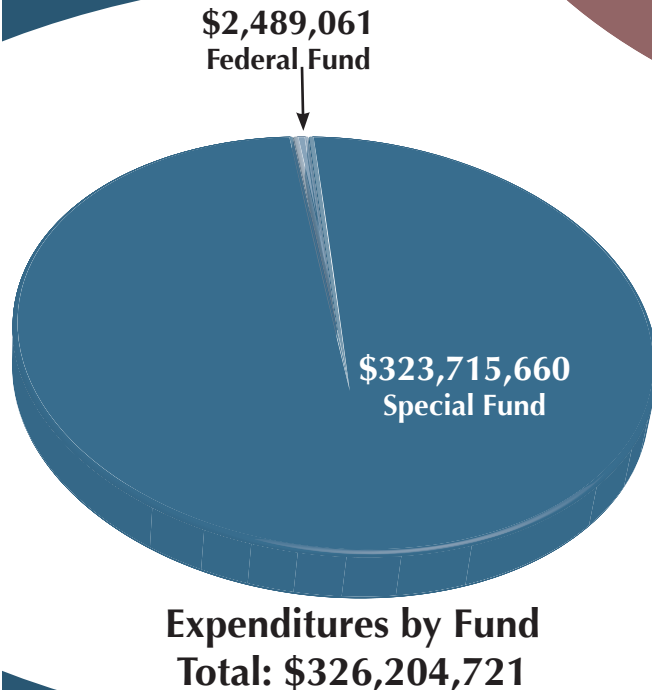
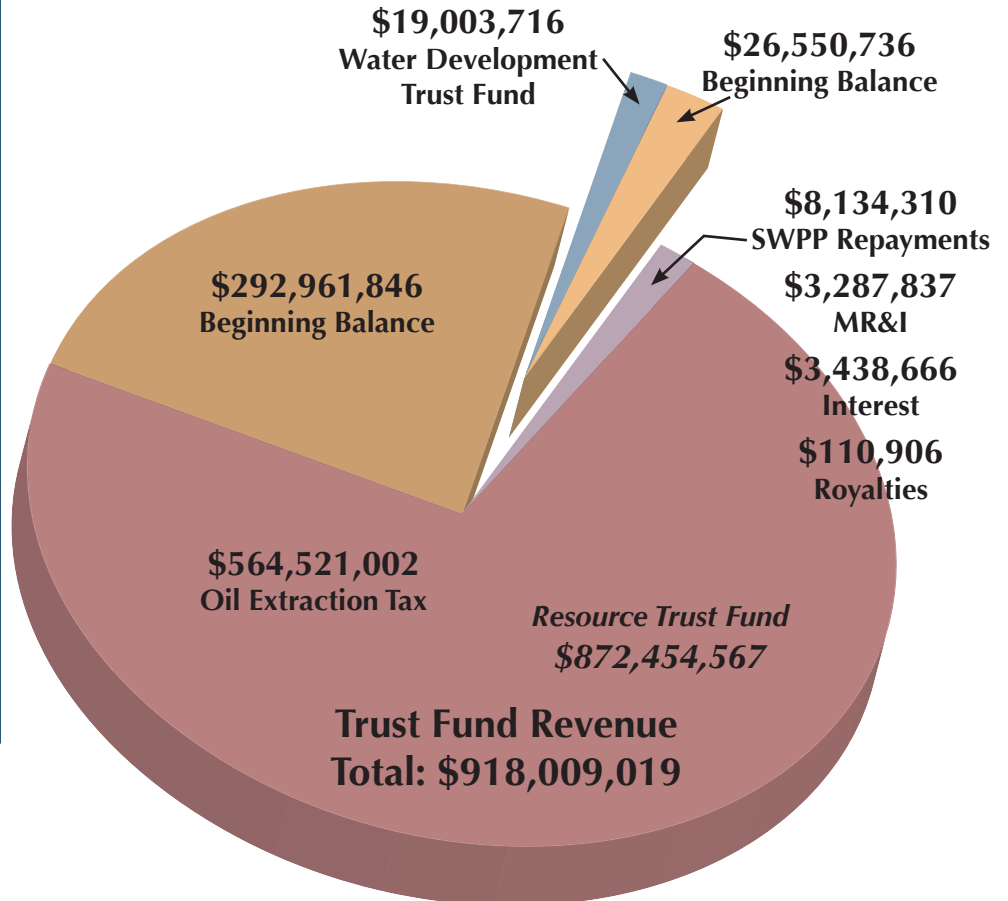


FINANCIAL INFORMATION

The following pages contain financial information summarized 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 2013-2015 BIENNIUM



**STATE WATER COMMISSION
PROGRAM BUDGET EXPENDITURES
FOR BIENNIAL PERIOD ENDING JUNE 30, 2015**

AGENCY PROGRAM	SALARIES/ BENEFITS	OPERATING EXPENSES	GRANTS & CONTRACTS	PROGRAM TOTALS
ADMINISTRATION				
Allocated	2,492,011	2,323,966		4,815,977
Expended	2,488,207	2,068,531		4,556,738
Percent	100%	89%		95%
PLANNING & EDUCATION				
Allocated	1,334,304	301,110	107,000	1,742,414
Expended	1,278,484	178,978	21,322	1,478,783
Percent	96%	59%	20%	85%
WATER APPROPRIATION				
Allocated	5,151,915	560,947	1,230,267	6,943,129
Expended	4,773,365	727,441	1,208,994	6,709,799
Percent	93%	130%	98%	97%
WATER DEVELOPMENT				
Allocated	6,258,796	14,555,905	3,313,200	24,127,901
Expended	5,892,322	8,634,637	459,823	14,986,782
Percent	94%	59%	14%	62%
ATMOSPHERIC RESOURCE				
Allocated	993,898	712,307	4,694,692	6,400,897
Expended	981,775	565,378	1,889,287	3,436,439
Percent	99%	79%	40%	54%
SOUTHWEST PIPELINE				
Allocated	468,291	12,927,500	101,616,741	115,012,532
Expended	588,558	9,441,095	49,179,458	59,209,111
Percent	126%	73%	48%	51%
NORTHWEST AREA WATER SUPPLY				
Allocated	650,021	16,498,500	53,800,540	70,949,061
Expended	536,448	2,217,306	850,797	3,604,550
Percent	83%	13%	2%	5%
STATEWIDE WATER PROJECTS				
Allocated			629,600,000	629,600,000
Expended			232,222,518	232,222,518
Percent			37%	37%
AGENCY TOTALS				
Allocated	17,349,236	47,880,235	794,362,440	859,591,911
Expended	16,539,158	23,833,365	285,832,198	326,204,721
Percent	95%	50%	36%	38%

**STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND - PROGRAM OBLIGATIONS
JULY 1, 2013 - JUNE 30, 2015**

SWC PROJ. NO.	NAME	INITIAL APPROVAL	AMOUNT APPROVED	PAYMENTS	BALANCE
CITY FLOOD CONTROL					
1928-01	Fargo Flood Control Project	6/23/09	\$136,740,340	\$37,234,140	\$99,506,200
1771	Grafton Flood Control Project	3/11/10	\$7,175,000	\$0	\$7,175,000
1771	Grafton Flood Risk Reduction Project	12/5/14	\$1,750,000	\$0	\$1,750,000
1974-06	Mouse River Enhanced Flood - PD To Souris River Joint WRB	11/24/14	\$216,257	\$216,257	\$0
1974-08	Mouse River Reconnaissance Study To Meet Federal Guidelines	2/15/13	\$10,603	\$9,793	\$809
1974-09	4th Ave NE & Napa Valley/Forest Road Flood Improvement	10/7/13	\$6,830,400	\$1,939,888	\$4,890,512
1758	International Joint Commission Study Board	5/29/14	\$302,500	\$0	\$302,500
1974-11	Funding Of 214 Agreement Between Souris River Joint WRB & USACE	12/5/14	\$375,000	\$268,500	\$106,500
1993-01	Downtown Infrastructure Improvements	9/15/14	\$1,256,426	\$0	\$1,256,426
1992-01	Burleigh County's Tavis Road Storm Water Pump Station Project	6/13/12	\$1,469,900	\$875,037	\$594,863
1344-01	Sheyenne River Valley Flood Control Project	12/5/15	\$507,875	\$350,579	\$157,296
1344	Sheyenne River Valley Flood Control Project (Phase II)	5/20/15	\$340,000	\$0	\$340,000
1504-01	Permanent Flood Protection Project	12/5/14	\$10,157,037	\$306,593	\$9,850,444
1504-02	Permanent Flood Protection Project (LOAN)	12/5/14	\$3,860,614	\$0	\$3,860,614
1344-02	Sheyenne River Valley Flood Control Project	6/19/13	\$842,850	\$750,040	\$92,810
1991-01	Permanent Flood Protection Project	5/29/14	\$1,918,698	\$1,356,996	\$561,702
1991-02	Permanent Flood Protection Project (LOAN)	5/29/14	\$706,302	\$706,302	\$0
1991-03	Permanent Flood Protection - Levee C Project	3/11/15	\$3,166,000	\$12,560	\$3,153,440
1991-04	Permanent Flood Protection - Levee C (LOAN)	3/11/15	\$886,500	\$0	\$886,500
1344-03	Sheyenne River Valley Flood Control Project	6/19/13	\$225,000	\$0	\$225,000
1997	Rice Lake Flood Control Project	6/13/12	\$2,842,200	\$0	\$2,842,200
849	Renwick Dam Rehabilitation	6/26/14	\$1,281,376	\$1,258,056	\$23,320

**STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND - PROGRAM OBLIGATIONS
JULY 1, 2013 - JUNE 30, 2015**

SWC PROJ. NO.	NAME	INITIAL APPROVAL	AMOUNT APPROVED	PAYMENTS	BALANCE
FLOODWAY PROPERTY ACQUISITIONS					
1993-05	Minot (Phase I) - Floodway Acquisitions	1/27/12	\$9,276,071	\$9,276,071	\$0
1993-05	Minot (Phase II) - Floodway Acquisitions	10/7/13	\$24,408,258	\$528,942	\$23,879,316
1523-05	Ward County (Phase I, II & III) - Floodway Acquisitions	1/27/12	\$9,525,664	\$3,479,074	\$6,046,590
1523-02	Chaparelle Highwater Berm Project	2/27/13	\$172,505	\$172,505	\$0
1504-05	Valley City (Phase I) - Floodway Acquisitions	7/23/13	\$1,822,598	\$1,555,195	\$267,403
1992-05	Burleigh Co. (Phase I) - Floodway Acquisitions	3/7/12	\$442,304	\$209,655	\$232,649
2000-05	Sawyer (Phase I) - Floodway Acquisitions	6/13/12	\$184,260	\$0	\$184,260
1991-05	Lisbon - Floodway Acquisition	3/11/15	\$999,000	\$953,515	\$45,485
WATER SUPPLY ADVANCES					
SB 2371	Traill Regional Rural Water (Phase III)	8/18/09	\$1,368,000	\$1,245,882	\$122,118
WATER SUPPLY GRANTS					
2373-32	NCRW (Berthold-Carpio)	6/21/11	\$2,807,902	\$2,807,902	\$0
2373-33	Stutsman Rural Water System - (Phase II)	3/17/14	\$3,795,692	\$3,795,692	\$0
2373-35	Grand Forks - Traill County WRD	6/13/12	\$2,725,415	\$2,421,699	\$303,715
2373-36	Stutsman Rural Water System - (Phase IIB, III)	2/27/13	\$12,155,000	\$8,761,828	\$3,393,172
2373-37	NCRW (Plaza)	2/27/13	\$299,300	\$271,744	\$27,556
1782-01	Blue & Brush Lakes Expansion Project	5/29/14	\$0	\$0	\$0
2373-38	Kidder Co. & Carrington Area Expansion	7/23/13	\$1,207,000	\$215,639	\$991,361
2373-39	Carpio Berthold (Phase II)	5/29/14	\$3,050,000	\$79,859	\$2,970,141
2373-40	Kidder County Expansion	5/29/14	\$0	\$0	\$0
2373-41	Granville-Deering Area	3/11/15	\$5,751,750	\$157,648	\$5,594,102
2050-01	South Mandan	3/17/14	\$776,000	\$721,189	\$54,811
2050-02	Improvements	3/11/15	\$3,752,000	\$361,542	\$3,390,458
2050-03	Langdon RWD - ABM Pipeline (Phase I)	10/7/13	\$1,040,000	\$811,894	\$228,106
2050-04	Langdon RWD - North Valley Nekoma	3/11/15	\$998,400	\$438,579	\$559,821
2050-05	North Valley WD - ABM Pipeline (Phase I)	3/11/15	\$663,800	\$569,982	\$93,818
2050-06	North Valley WD - 93 Street	3/11/15	\$1,369,600	\$842,610	\$526,990
2050-07	North Valley WD - Rural Expansion	5/29/14	\$1,800,000	\$318,283	\$1,481,717
2050-08	Walsh RWD Ground Storage	10/7/13	\$684,000	\$566,589	\$117,411
2050-09	Park River Water Tower	3/11/15	\$1,553,000	\$1,385,122	\$167,878
2050-10	Surrey Water Supply Improvements	10/7/13	\$1,500,000	\$832,350	\$667,650

**STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND - PROGRAM OBLIGATIONS
JULY 1, 2013 - JUNE 30, 2015**

SWC PROJ. NO.	NAME	INITIAL APPROVAL	AMOUNT APPROVED	PAYMENTS	BALANCE
2050-11	Cass RWD (Phase II) Plant Improvements	10/7/13	\$2,600,000	\$231,562	\$2,368,438
2050-12	Central Plains WD Improvements	10/7/13	\$1,450,000	\$5,438	\$1,444,563
2050-13	Mandan New Raw Water Intake	10/7/13	\$1,270,000	\$82,744	\$1,187,256
2050-14	Mandan Water Treatment Plant Improv	10/7/13	\$726,000	\$676,429	\$49,571
2050-15	Washburn New Raw Water Intake	10/7/13	\$1,795,000	\$0	\$1,795,000
2050-16	Tri Co. WRD Improvements	10/7/13	\$650,000	\$0	\$650,000
2050-17	Barnes Co. WRD Improvements	3/11/15	\$7,846,335	\$1,919,749	\$5,926,586
2050-18	Water Treatment Plant (Phase III)	10/7/13	\$2,600,000	\$0	\$2,600,000
2050-19	Grafton Improvements	10/7/13	\$4,990,000	\$1,140,849	\$3,849,151
2050-20	Dickinson Capital Infrastructure	2/27/14	\$15,924,185	\$6,230,697	\$9,693,488
2050-21	Watford City Capital Infrastructure	2/27/14	\$6,700,000	\$5,329,820	\$1,370,180
2050-22	Williston Capital Infrastructure	2/27/14	\$7,000,000	\$3,422,055	\$3,577,945
2050-23	SW Nelson County Expansion	3/17/14	\$4,500,000	\$1,200,453	\$3,299,547
2050-24	All Seasons System 1 Well Field Expansion	9/15/14	\$292,500	\$0	\$292,500
WATER SUPPLY					
1984-02	Fargo Water Treatment Plant	3/17/14	\$27,864,069	\$5,095,294	\$22,768,775
1736-05	Southwest Pipeline Project	7/1/13	\$106,947,836	\$58,470,599	\$48,477,237
2374	Northwest Area Water Supply	7/1/13	\$7,241,433	\$1,486,951	\$5,754,482
2044-01	Community Water Facility Fund	10/7/13	\$15,000,000	\$10,000,000	\$5,000,000
1973-02	WAWSA- (GRANT)	10/7/13	\$39,500,000	\$27,438,194	\$12,061,806
1973-03	WAWSA - (LOAN)	10/7/13	\$39,500,000	\$29,360,422	\$10,139,578
325-101	Red River Valley Water Supply - CH2MHill	2/27/14	\$721,000	\$721,000	\$0
325-102	Red River Valley Water Supply - Intake Design Study	5/29/14	\$2,500,000	\$2,337,672	\$162,328
325-103	Garrison Diversion - Easements	5/29/14	\$420,000	\$135,037	\$284,963
2051	Black & Veatch investigation	1/27/15	\$70,800	\$0	\$70,800
IRRIGATION DEVELOPMENT					
222	Buford Trenton Irrigation Transmission Line Reroute	7/23/13	\$350,000	\$350,000	\$0
1389	BND AgPace Program	10/23/01	\$25,966	\$25,966	\$0
1389	BND AgPace Program	12/13/13	\$200,000	\$19,684	\$180,316
AOC/IRA	ND Irrigation Association	7/1/13	\$100,000	\$100,000	\$0
1968	2009-11 McClusky Canal Mile Marker 7.5 Irrigation Project	6/1/10	\$17,582	\$0	\$17,582
1968	McClusky Canal Mile Marker 10 & 49 Irrigation Project	3/17/14	\$256,321	\$0	\$256,321

**STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND - PROGRAM OBLIGATIONS
JULY 1, 2013 - JUNE 30, 2015**

SWC PROJ. NO.	NAME	INITIAL APPROVAL	AMOUNT APPROVED	PAYMENTS	BALANCE
GENERAL WATER MANAGEMENT : HYDROLOGIC INVESTIGATIONS					
1400/13	Houston Engineering Water Permit Application Review	11/7/11	\$1,975	\$1,975	\$0
1400/14	Houston Engineering Water Permit Application Review	11/29/12	\$10,910	\$3,991	\$6,919
1400	Consultant Services	3/23/13	\$39,200	\$39,200	\$0
1400	Consultant Services	4/16/14	\$24,800	\$24,800	\$0
XXX	Manikowski Well Drilling Inc.	3/20/14	\$12,850	\$12,850	\$0
862/859	Arletta Herman- Well Monitor	3/15/15	\$3,411	\$3,411	\$0
862	Lori Bjorgen - Well Monitor	3/13/14	\$472	\$472	\$0
967	Holly Messmer - McDaniel - Well Monitor	4/19/12	\$0	\$0	\$0
1690	Holly Messmer - McDaniel - Well Monitor	4/19/12	\$936	\$936	\$0
1703	Thor Brown - Well Monitor	3/12/15	\$6,415	\$6,414	\$0
1707	Thor Brown - Well Monitor	3/12/15	\$4,502	\$4,501	\$0
1761	Gloria Roth - Well Monitor	4/19/13	\$1,152	\$1,152	\$0
1761	Fran Dobits - Well Monitor	6/1/11	\$1,965	\$1,965	\$0
2041	Conv. Of 17 Ground Water Recorder Wells To Real-Time Recorder Wells	7/16/13	\$34,000	\$34,000	\$0
1395	Investigations Of Water Resources In North Dakota	9/25/13	\$491,275	\$491,275	\$0
1395	Investigations Of Water Resources In North Dakota	12/5/15	\$505,895	\$505,895	\$0
1395D	Eaton Irrigation Project On The Souris River	7/13/12	\$15,300	\$0	\$15,300
DEVILS LAKE BASIN DEVELOPMENT					
416-05	Devils Lake Downstream Acceptance	7/1/13	\$8,085	\$7,107	\$978
416-07	Devils Lake Outlet	7/1/13	\$872,403	\$1,601	\$870,802
416-10	Devils Lake Outlet Operations	7/1/13	\$15,140,805	\$7,606,595	\$7,534,210
416-13	Devils Lake Tolna Coulee Divide	7/1/13	\$102,975	\$0	\$102,975
416-15	Devils Lake East End Outlet	7/1/13	\$2,774,011	\$0	\$2,774,011
416-17	Devils Lake Emergency Gravity Outflow Channel	9/21/13	\$13,686,839	\$0	\$13,686,839
416-19	Devils Lake Standpipe Repairs	12/13/13	\$1,300,000	\$342,595	\$957,405
WEATHER MODIFICATION					
7600	Weather Modification	7/1/13	\$805,202	\$805,125	\$77
TOTAL PROJECTS/GRANTS/CONTRACT FUND - PROGRAM OBLIGATIONS			\$611,892,799	\$253,742,207	\$358,150,593

**STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND - PROJECT OBLIGATIONS
JULY 1, 2013 - JUNE 30, 2015**

SWC PROJ. NO.	NAME	INITIAL APPROVAL	AMOUNT APPROVED	PAYMENTS	BALANCE
GENERAL PROJECT OBLIGATIONS					
228	Operation & Maint Of Gaging Station On The Missouri River Below Mandan	12/08/14	\$8,970	\$0	\$8,970
240	Warwick Dam Repair Project	12/07/12	\$110,150	\$0	\$110,150
274	FEMA Levee Certification Feasibility Study	10/17/14	\$37,500	\$0	\$37,500
281	Three Affiliated Tribes/Fort Berthold Irrigation Study	10/26/10	\$37,500	\$0	\$37,500
322	ND Water: A Century Of Challenge	02/22/10	\$36,800	\$0	\$36,800
346	Design Engineering For Epping Dam Safety Repair	03/30/15	\$21,333	\$0	\$21,333
346	Epping Dam Evaluation Project	02/27/13	\$66,200	\$0	\$66,200
347	City Of Velva's Flood Control Levee System Certification	03/28/11	\$102,000	\$0	\$102,000
391	Sargent Co. WRD, Silver Lake Dam Emergency Repairs	10/12/11	\$2,800	\$0	\$2,800
399	Kathryn Dam Feasibility Study	09/19/14	\$21,250	\$0	\$21,250
568	Sheyenne River Snagging & Clearing Project	04/17/15	\$49,500	\$0	\$49,500
568	Sheyenne River Reaches Snagging & Clearing Project	12/05/14	\$294,000	\$199,762	\$94,238
571	Oak Creek Snagging & Clearing Project	03/30/15	\$3,672	\$0	\$3,672
620	Mandan Flood Control Protective Works (Levee)	09/29/08	\$125,396	\$0	\$125,396
646	Christine Dam Recreation Retrofit Project	10/26/10	\$184,950	\$0	\$184,950
646	Hickson Dam Recreation Retrofit Project	10/26/10	\$44,280	\$0	\$44,280
829	Rush River WRD Berlin's Township Improvement District No. 70	10/19/11	\$163,695	\$62,378	\$101,317
841	Garsteig Dam Repair Project	01/26/15	\$40,163	\$0	\$40,163
980	Maple River Watershed Flood Water Retention Study/Maple River WRD	02/19/15	\$3,687	\$0	\$3,687
980	Rush River Watershed Detention Study	03/11/15	\$120,750	\$0	\$120,750
980	Swan Creek Watershed Detention Study (Phase II)	03/11/15	\$120,750	\$0	\$120,750
980	Upper Maple River Watershed Detention Study	03/11/15	\$120,750	\$0	\$120,750
1064	Cass County Drain No. 2 Channel Improvements Project	03/11/15	\$106,989	\$0	\$106,989
1082	Cass Co. Drain No. 30 Channel Improvement Project	03/17/14	\$142,818	\$136,842	\$5,976

**STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND - PROJECT OBLIGATIONS
JULY 1, 2013 - JUNE 30, 2015**

SWC PROJ. NO.	NAME	INITIAL APPROVAL	AMOUNT APPROVED	PAYMENTS	BALANCE
GENERAL PROJECT OBLIGATIONS					
1101	Yorktown-Maple Drainage Improvement Dist No. 3	09/21/11	\$354,500	\$0	\$354,500
1101	Riverdale Township Improvement District #2 - Dickey - Sargent Co. WRD	09/21/11	\$500,000	\$0	\$500,000
1135	Drain #4 Reconstruction Project	06/19/13	\$221,628	\$218,955	\$2,673
1161	Drain 55 Improvement Reconstruction	03/28/11	\$13,846	\$0	\$13,846
1179	Drain #5 (27) Reconstruction Project	03/30/15	\$13,543	\$0	\$13,543
1217	Tri-County Drain Reconstruction Project	03/11/15	\$911,881	\$0	\$911,881
1219	Drain No. 8 Channel Improvement Preliminary Engineering Project	05/07/15	\$6,650	\$0	\$6,650
1219	City Of Forman Floodwater Outlet	09/21/11	\$31,472	\$0	\$31,472
1224	Palace Drain Improvement District No. 80	05/20/15	\$118,933	\$0	\$118,933
1227	Mergenthal Drain No. 5 Reconstruction	09/15/14	\$155,780	\$137,278	\$18,502
1242	Rust Drain No. 24 Project	12/13/13	\$187,736	\$162,584	\$25,152
1264	Little Dam Repurposing Feasibility Study	06/17/15	\$16,100	\$0	\$16,100
1270	Apple Creek Industrial Park Levee Feasibility Study	10/07/13	\$65,180	\$0	\$65,180
1285	LaMoure Co. Memorial Park Streambank Restoration	09/15/14	\$91,042	\$0	\$91,042
1287	Souris River Snagging & Clearing Project	02/03/15	\$15,000	\$0	\$15,000
1289	Control Of Noxious Weeds On Sovereign Lands	06/11/13	\$24,810	\$12,296	\$12,514
1294	Stump Lake Park Bank Stabilization Project	03/11/15	\$115,436	\$0	\$115,436
1296	Bathgate-Hamilton & Carlisle Watershed Study	10/17/13	\$38,500	\$0	\$38,500
1301	City Of Lidgerwood Engineering & Feasibility Study For Flood Control	02/04/11	\$15,850	\$0	\$15,850
1301	City Of Wahpeton Water Reuse Feasibility Study/Richland Co.	09/08/11	\$2,500	\$0	\$2,500
1303	Gwinner Dam Improvement Feasibility Study Program	04/17/15	\$42,844	\$0	\$42,844
1303	Upper Wild Rice Watershed Study	06/24/15	\$73,500	\$0	\$73,500
1311	Buxton Township Improvement District No. 68	06/17/15	\$15,745	\$0	\$15,745

**STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND - PROJECT OBLIGATIONS
JULY 1, 2013 - JUNE 30, 2015**

SWC PROJ. NO.	NAME	INITIAL APPROVAL	AMOUNT APPROVED	PAYMENTS	BALANCE
GENERAL PROJECT OBLIGATIONS					
1312	Skyrud Dam 2011 EAP	12/15/11	\$10,000	\$0	\$10,000
1312	Union Dam 2011 EAP	12/15/11	\$10,000	\$0	\$10,000
1314	Hurdsfield Area Drain Preliminary Engineering Project	06/11/15	\$35,000	\$0	\$35,000
1314	Oak Creek Drain Lateral E Reconstruction Project	09/15/14	\$73,057	\$0	\$73,057
1396	(USGS) Missouri River Geomorphic Assessment	03/07/12	\$90,000	\$80,000	\$10,000
1401	International Boundary Roadway Dike Pembina	09/27/12	\$331,799	\$70,767	\$261,032
1418	Big Coulee Dam Feasibility Study	05/29/14	\$65,000	\$54,037	\$10,963
1418	Design & Repair of Big Coulee Dam	03/11/15	\$862,218	\$0	\$862,218
1438	Mulberry Creek (Phase IV) Reconstruction Project	06/19/13	\$324,010	\$221,991	\$102,019
1444	2014 Flood Protection System Modification Project	05/29/14	\$1,031,981	\$970,650	\$61,331
1577	Floodplain Mapping Project	05/29/14	\$55,000	\$0	\$55,000
1607	Flood Inundation Mapping Of Areas Along Souris & Des Lacs River	06/15/11	\$13,011	\$0	\$13,011
1613	Cass County Drain No. 55 Channel Improvements Project	09/15/14	\$99,923	\$0	\$99,923
1613	Drain No. 15 Reconstruction Project	09/15/14	\$60,300	\$0	\$60,300
1625	(OHWM) Ordinary High Water Mark Delineations	08/20/14	\$134,418	\$129,858	\$4,560
1638	Red River Basin Non-NRCS Rural/ Farmstead Ring Dike Program	06/23/09	\$226,364	\$48,500	\$177,864
1640	Maintenance Of Gaging Station On Missouri River Below Manan, ND	09/25/13	\$8,710	\$0	\$8,710
1705	Red River Joint WRD Watershed Feasibility Study - (Phase II)	09/21/11	\$60,000	\$0	\$60,000
1705	Red River Basin Distributed Plan Study	12/07/12	\$560,000	\$0	\$560,000
1758	Stochastic Model For The Mouse River Basin	12/13/13	\$200,000	\$160,000	\$40,000
1792	SE Cass Wild Rice River Dam Study (Phase II)	01/29/15	\$162,252	\$130,000	\$32,252
1814	Wild Rice River Snagging & Clearing - Bridge #121-2	05/28/15	\$16,000	\$0	\$16,000
1815	Sheyenne River Snagging & Clearing - Fort Ransom Reach	06/11/15	\$6,350	\$0	\$6,350

**STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND - PROJECT OBLIGATIONS
JULY 1, 2013 - JUNE 30, 2015**

SWC PROJ. NO.	NAME	INITIAL APPROVAL	AMOUNT APPROVED	PAYMENTS	BALANCE
GENERAL PROJECT OBLIGATIONS					
1842	Wild Rice River Snagging & Clearing - Bridge Location Sites	02/03/15	\$57,000	\$45,937	\$11,063
1921	Square Butte Dam No. 6/(Harmon Lake) Recreation Facility	03/23/09	\$821,058	\$90,056	\$731,002
1932	Michigan Spillway Rural Flood Assessment	08/15/14	\$2,588,924	\$1,756,717	\$832,207
1960	Puppy Dog Coulee Flood Control Diversion Ditch Construction	08/18/09	\$796,976	\$0	\$796,976
1963	Beaver Bay Embankment Feasibility Study	08/10/09	\$53,644	\$35,566	\$18,078
1967	Grand Forks County Legal Drain No. 55 2010 Construction	11/30/10	\$9,652	\$0	\$9,652
1970	Walsh Co. Construction Of Legal Assessment Drain # 72	03/28/11	\$39,115	\$0	\$39,115
1975	Walsh Co. Drain No. 31 Reconstruction Project	09/21/11	\$37,742	\$0	\$37,742
1977	Jackson Township Improvement Dist. #1	05/20/15	\$1,601,325	\$0	\$1,601,325
1978	Richland & Sargent WRD RS Legal Drain No. 1 Extension & Channel Improvement	07/23/15	\$245,250	\$0	\$245,250
1983	City Of Harwood Engineering Feasibility Study	12/09/11	\$62,500	\$0	\$62,500
1989	Hobart Lake Outlet Project	03/07/12	\$266,100	\$0	\$266,100
1990	Lake Shore Estates High Flow Diversion Project	03/07/12	\$43,821	\$0	\$43,821
1991	Sheyenne River Snagging & Clearing Project	02/12/13	\$5,000	\$0	\$5,000
1991	Sheyenne Riverbank Stabilization Project	09/15/14	\$163,720	\$0	\$163,720
1992	Burnt Creek Flood Restoration Project	06/19/13	\$87,805	\$0	\$87,805
1998	Upper Turtle River Dam #1 2012 EAP	06/28/12	\$10,000	\$0	\$10,000
2002	Turtle River Dam #4 2012 EAP	06/29/12	\$10,000	\$0	\$10,000
2004	Drain No. 57 Project	10/07/13	\$413,576	\$0	\$413,576
2005	Turtle River Dam #8 2012 EAP	06/29/12	\$10,000	\$0	\$10,000
2007	Pontiac Township Improvement District No. 73 Project	05/11/15	\$1,247,093	\$500,000	\$747,093
2008	Recertification Of Mapleton Flood Control Levee System Project	03/17/14	\$718,941	\$617,841	\$101,100
2013	Wild Rice River Watershed Retention Plan	06/08/15	\$135,905	\$90,000	\$45,905

**STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND - PROJECT OBLIGATIONS
JULY 1, 2013 - JUNE 30, 2015**

SWC PROJ. NO.	NAME	INITIAL APPROVAL	AMOUNT APPROVED	PAYMENTS	BALANCE
GENERAL PROJECT OBLIGATIONS					
2019	Sheyenne River Snagging & Clearing Project	12/07/12	\$75,000	\$0	\$75,000
2022	Drain #73 Project	06/19/13	\$350,400	\$0	\$350,400
2040	Drain #74 Project	10/07/13	\$317,852	\$120,248	\$197,604
2042	Haas Coulee Drain Project	09/15/14	\$500,000	\$0	\$500,000
2043	Pembina Co WRD Drain #78 Outlet Extension Project	12/13/13	\$287,778	\$0	\$287,778
2045	Stark County LiDAR Collection Project (FEMA)	07/17/15	\$33,584	\$0	\$33,584
2045	LiDAR Collection Project	05/29/14	\$117,000	\$106,575	\$10,425
2045	LiDAR Collection Project	09/15/14	\$262,308	\$0	\$262,308
2046	North Branch Park River Comprehensive Flood Damage Reduction Feasibility Study	12/13/13	\$134,400	\$0	\$134,400
2048	Marion Flood Mitigation & Lagoon Drainage Project	05/29/14	\$188,366	\$71,707	\$116,659
1554/ 2046?	City Of Underwood Floodwater Outlet Project	12/13/13	\$1,100,727	\$0	\$1,100,727
1753/ 1523?	County Road 18 Flood Control Project	05/29/14	\$325,208	\$0	\$325,208
1878-02	Upper Maple River Dam Construction Phase	12/13/13	\$4,702,936	\$0	\$4,702,936
2003-02	Re-Certification Of The West Fargo Diversion Levee System	09/17/12	\$91,400	\$91,400	\$0
2009-02	Recertification Of The Horace To West Fargo Diversion Levee System	09/17/12	\$72,600	\$72,600	\$0
AOC/ WUA	Dave Koland Term As WUA President	03/23/15	\$10,200	\$528	\$9,672
CON/ WIL/ CARL- SON	Will & Carlson Consulting Contract	12/13/13	\$70,000	\$43,549	\$26,451
PS/ WRD/ MRJ	Missouri River Coordinator	10/07/13	\$175,000	\$137,906	\$37,094
PS/ WRD/ ELM	Dam #3 Safety Improvements Project	09/15/14	\$65,208	\$57,911	\$7,297
TOTAL PROJECTS/GRANTS/CONTRACT FUND - PROJECT OBLIGATIONS			\$27,738,886	\$6,634,439	\$21,104,447

**STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND - COMPLETED PROJECTS
JULY 1, 2013 - JUNE 30, 2015**

SWC PROJ. NO.	NAME	INITIAL APPROVAL	AMOUNT APPROVED	PAYMENTS	BALANCE
COMPLETED GENERAL PROJECTS					
227	District's Mouse River Riverbank Stabilization Project	06/13/12	\$120,615	\$0	\$120,615
228	Additional USGS Gage Missouri River - (ANNUAL)	09/17/12	\$8,500	\$8,500	\$0
228	Operation & Maintenance Of Gaging Station On The Missouri River Below Mandan	10/02/14	\$8,970	\$8,710	\$260
507	Raleigh Dam Emergency Action Plan	07/01/14	\$12,000	\$11,870	\$130
568	Sheyenne River Snagging & Clearing Project Reaches 1 & 3	03/13/14	\$165,000	\$164,861	\$139
829	Rush River Watershed Retention Plan	02/19/15	\$3,220	\$3,220	\$0
871	Pembina Snagging & Clearing Project	06/14/13	\$7,500	\$7,500	\$0
1056	Scandia/Scotia Drain Project	12/13/13	\$140,634	\$140,634	\$0
1069	Cass County Drain No. 13 Improvement Reconstruction	08/18/09	\$122,224	\$0	\$122,224
1069	Drain #13 Channel Improvements	09/27/12	\$217,000	\$217,000	\$0
1088	Cass County Drain No. 37 Improvement Recon	08/18/09	\$92,668	\$0	\$92,668
1131	Flood Related Water Projects	06/01/11	\$55,455	\$55,455	\$0
1138	Drain No. 8 Reconstruction Project	03/07/12	\$12,215	\$5,157	\$7,058
1140	Drain No. 11 Outlet Extension Project	05/29/14	\$125,760	\$125,760	\$0
1174	Drain No. 31 Reconstruction Project	08/30/13	\$32,393	\$22,393	\$10,000
1207	Drain #65 Extension Project	06/19/13	\$123,200	\$101,048	\$22,152
1219	District Drain No. 4 Reconstruction Project	09/21/11	\$125,500	\$86,723	\$38,777
1224	Preston Floodway Reconstruction Project	10/19/11	\$208,570	\$0	\$208,570
1244	Traill Co. Drain No. 27 (Moen) Lateral Channel Improvement Project	09/27/13	\$29,914	\$23,723	\$6,191
1244	Traill Co. Drain No. 27 (Moen) Reconstruction & Extension	03/11/10	\$336,491	\$0	\$336,491
1245	Traill Co. Drain No. 28 Extension & Improvement Project	03/28/11	\$336,007	\$0	\$336,007
1252	Walsh Co. Reconstruction Drain No. 97	09/21/11	\$24,933	\$0	\$24,933
1289	Control Of Noxious Weeds On Sovereign Lands	09/20/13	\$10,496	\$9,779	\$717
1291	Antelope Creek Snagging & Clearing Project	03/27/14	\$21,714	\$21,714	\$0
1296	Bourbanis/Olson Dam Safety Project	10/29/14	\$132,680	\$99,833	\$32,847
1303	Frenier Dam Improvement Project	12/07/12	\$158,373	\$112,027	\$46,346
1303	Shortfoot Creek Preliminary Soils Analysis & Hydraulic Study	06/29/12	\$24,861	\$6,034	\$18,827
1311	Buffalo Coulee Snagging & Clearing Project	05/27/14	\$25,000	\$23,363	\$1,637

**STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND - COMPLETED PROJECTS
JULY 1, 2013 - JUNE 30, 2015**

SWC PROJ. NO.	NAME	INITIAL APPROVAL	AMOUNT APPROVED	PAYMENTS	BALANCE
COMPLETED GENERAL PROJECTS					
1312	Forest River Flood Control Feasibility Study	06/19/13	\$79,956	\$79,956	\$0
1344	Horace Diversion Channel Site A (Section 7 - Phase V) Improvement	06/13/12	\$1,812,822	\$1,810,744	\$2,078
1344	Sheyenne Diversion Exterior Pump Station	06/13/12	\$3,751	\$2,121	\$1,630
1344	Sheyenne Diversion (Phase VI) - Weir Improvements	06/13/12	\$225,050	\$224,192	\$858
1344	Southeast Cass Sheyenne River Diversion Low-Flow Channel Areas 3 & 4	06/14/11	\$716,609	\$33,535	\$683,074
1395	Operation & Maintenance Of Seven Water Level Monitoring Rapid Deployment Gaging Stations	07/16/13	\$17,500	\$17,500	\$0
1400	Kietu Engineers - Royce Cline	06/26/15	\$19,050	\$0	\$19,050
1403	Institute Fellowship Program 2014-15	03/20/14	\$13,850	\$13,850	\$0
1403	Institute Fellowship Program 2014-15	03/23/15	\$13,850	\$13,850	\$0
1444	US Army Corps Of Eng. Section 408 Review City Flood Control	09/19/13	\$73,200	\$62,833	\$10,367
1461	O'Hara Bridge Bank Stabilization	04/26/13	\$24,633	\$24,633	\$0
1517	Hazen Flood Control Levee & FEMA Accreditation	03/11/10	\$184,984	\$0	\$184,984
1523	Countryside Villas/Whispering Meadows Drainage Improvement Project	02/21/14	\$157,211	\$67,287	\$89,924
1523	Mouse River Snagging & Clearing Project	12/13/13	\$347,466	\$84,700	\$262,766
1523	Souris River Minot To Burlington Snagging & Clearing	12/07/12	\$109,000	\$109,000	\$0
1577	Fox Island 2012 Flood Hazard Mitigation Evaluation Study	05/22/12	\$23,900	\$23,900	\$0
1667	Goose River Snagging & Clearing Project	04/23/14	\$46,750	\$46,750	\$0
1667	Goose River Snagging & Clearing Project	01/23/15	\$50,000	\$44,173	\$5,827
1732	Beulah Dam Emergency Action Plan	07/26/12	\$20,440	\$10,440	\$10,000
1814	Wild Rice River Snagging & Clearing - Bridge Location Sites	10/16/14	\$34,500	\$34,500	\$0
1814	Wild Rice River Snagging & Clearing - Reach 2	10/17/13	\$49,500	\$49,375	\$125
1814	Wild Rice River Snagging & Clearing - Reach 3	10/17/13	\$49,500	\$48,493	\$1,007
1814	Wild Rice River Snagging & Clearing - Reach 4	12/13/13	\$20,000	\$20,000	\$0
1859	NonPoint Source Pollution, Section 319	08/20/13	\$200,000	\$200,000	\$0
1918	Normanna Township Improvement District No. 71	12/09/11	\$287,900	\$0	\$287,900
1934	Elm River Snagging & Clearing Project	01/20/15	\$50,000	\$42,211	\$7,789
1966	City Of Oxbow Emergency Flood Fighting Barrier System	06/01/10	\$188,400	\$188,400	\$0

**STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND - COMPLETED PROJECTS
JULY 1, 2013 - JUNE 30, 2015**

SWC PROJ. NO.	NAME	INITIAL APPROVAL	AMOUNT APPROVED	PAYMENTS	BALANCE
COMPLETED GENERAL PROJECTS					
1969	Walsh Co Construction Of Legal Assessment Drain # 71	03/28/11	\$38,154	\$0	\$38,154
1986	USDA Wildlife	08/20/13	\$250,000	\$250,000	\$0
1987	Interim Levee Project	11/22/13	\$49,000	\$49,000	\$0
1992	Burleigh Co. Flood Control Alternatives Assessment	01/30/13	\$25,175	\$16,168	\$9,007
1993	Minot 100yr Floodplain Map & Profiles	10/09/12	\$10,000	\$0	\$10,000
1996	Drain #62 - (Wold Drain Project)	09/17/12	\$112,400	\$108,717	\$3,683
2001	Elm River Diversion Project	10/31/12	\$10,423	\$6,076	\$4,347
2003	Re-Certification Of The Horace To West Fargo Diversion Levee System	06/29/12	\$42,835	\$42,775	\$60
2003	Re-Certification Of The West Fargo Diversion Levee System Geotechnical Analysis	07/26/12	\$45,879	\$45,879	\$0
2008	Mapleton Flood Control Levee Project	06/29/12	\$24,410	\$24,410	\$0
2010	Meadow Lake Outlet	06/13/12	\$500,000	\$0	\$500,000
2012	Lower Sheyenne River Watershed Retention Plan	02/19/15	\$104,492	\$104,492	\$0
2014	Elm River Watershed Retention Plan	09/17/12	\$75,000	\$62,371	\$12,629
2020	Souris Valley Golf Course Bank Stabilization	12/07/12	\$335,937	\$205,404	\$130,533
2045	Federal/State LiDAR Collection Project	09/15/14	\$75,000	\$75,000	\$0
2045	Joint LiDAR Collection	09/12/13	\$40,000	\$40,000	\$0
1806-02	Re-Certification Of The City Of Argusville Flood Control Levee	06/13/12	\$84,164	\$20,101	\$64,063
1878-02	Upper Maple River Dam Environmental Assessment - (Phase II)	01/29/15	\$128,147	\$128,132	\$15
1882-07	NDSU Development Of SEBAL	09/01/10	\$15,387	\$15,387	\$0
a2006/1135	Amenia Township Improvement District Drain No. 74 Project	06/13/12	\$459,350	\$380,789	\$78,561
416-18	Devils Lake - Johnson Farms Water Storage Site	06/10/11	\$125,000	\$4,316	\$120,685
867-01	NDSU - Water Sampling Dr. Xinhua Jia Dept Of Ag	04/22/14	\$5,000	\$5,000	\$0
928/988/1508	Wild Rice, Bois De Sioux, Antelope Creek Retention Study	07/21/08	\$60,000	\$30,415	\$29,585
AOC/RRBC	Red River Basin Commission Contractor	07/01/13	\$200,000	\$200,000	\$0
AOC/RRBC	Stream Gaging & Precipitation Network Study In The Red River	09/14/12	\$20,000	\$17,052	\$2,948

**STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND - COMPLETED PROJECTS
JULY 1, 2013 - JUNE 30, 2015**

SWC PROJ. NO.	NAME	INITIAL APPROVAL	AMOUNT APPROVED	PAYMENTS	BALANCE
COMPLETED GENERAL PROJECTS					
AOC/ WEF	2014 Summer Water Tours Sponsorship	03/05/14	\$2,500	\$2,500	\$0
AOC/ WEF	2015 Summer Water Tours Sponsorship	03/10/15	\$2,500	\$2,500	\$0
AOC/ WEF	ND Water Magazine	07/01/13	\$36,000	\$36,000	\$0
BSC	2014 ND Water Quality Monitoring Conference	02/24/14	\$1,000	\$1,000	\$0
CON/ WILL/ CARL	Will/Carlson Consultant	10/17/11	\$26,174	\$0	\$26,174
NDAWN	ND Agricultural Weather Network	05/07/15	\$1,500	\$1,500	\$0
NDAWN	ND Agricultural Weather Network	04/15/14	\$1,550	\$1,550	\$0
PS/ WRD/ DEV	Devils Lake Manager	07/01/13	\$60,000	\$60,000	\$0
PS/ WRD/ JAM	James River Engineering Feasibility Study (Phase 1)	03/07/12	\$29,570	\$29,490	\$80
PS/ WRD/ MRJ	Missouri River Joint Water Board (MRRIC) T. FLECK	07/01/13	\$40,000	\$38,657	\$1,343
PS/ WRD/ MRJ	Missouri River Joint Water Board, (MRJWB) Start up	07/01/13	\$20,000	\$10,996	\$9,004
PS/ WRD/ US/ JWRB	Upper Sheyenne River WRB Administration (USRJWRB)	07/01/13	\$12,000	\$7,503	\$4,497
TOTAL PROJECTS/GRANTS/CONTRACT FUND - COMPLETED PROJECTS			\$10,570,261	\$6,530,925	\$4,039,336

**STATE WATER COMMISSION
OBJECT EXPENDITURES
FOR BIENNIAL PERIOD ENDING JUNE 30, 2015**

Permanent Salaries	\$11,509,936.93
Temporary Salaries	\$397,275.49
Overtime Salaries	\$215,422.21
Fringe Benefits	\$4,416,523.37
Travel	\$1,141,897.92
Supplies - IT Software	\$119,531.05
Supplies/Materials - Professional	\$430,881.67
Food & Clothing	\$2,908.35
Building, Grounds, Vehicle Supply	\$251,533.49
Misc. Supplies	\$50,156.83
Office Supplies	\$29,189.61
Postage	\$46,682.62
Printing	\$28,875.88
IT Equipment Under \$5,000	\$225,783.09
Other Equipment Under \$5,000	\$58,866.75
Office Equipment & Furniture Under \$5,000	\$34,918.93
Utilities	\$7,461,061.30
Insurance	\$21,711.68
Rentals/Leases - Equipment & Other	\$99,114.95
Rentals/Leases - Building & Land	\$538,640.04
Repairs	\$1,123,634.04
IT - Data Processing	\$242,477.15
IT - Communications	\$146,289.23
Professional Development	\$192,145.24
Operating Fees & Services	\$402,046.64
Professional Fees & Services	\$14,579,326.21
Land & Buildings	\$472,920.40
Other Capital Payments	\$84,330,850.82
Extra Repairs/Deffered Maintenance	\$29,100.00
Equipment Over \$5,000	\$298,663.25
IT Equipment/Software Over \$5,000	\$114,791.19
Grants, Benefits, & Claims	\$156,548,704.77
Transfers Out	\$40,642,859.79
Transfers Out	1,134,395.78
TOTAL	\$326,204,720.89

STATE WATER COMMISSION

OUTSTANDING BONDS

The State Water Commission has issued bonds for statewide water development projects. The following table shows the State Water Commission’s long-term debt as of June 30, 2015:

WATER DEVELOPMENT BONDS

PROJECT	SERIES	AMOUNT
Statewide Water Development Projects	2005 Series A.....	13,540,000
Statewide Water Development Projects	2005 Series B.....	38,985,000

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:

- | | |
|---|---|
| <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 website at <http://www.swc.nd.gov>

