

North Dakota

**State Water Commission  
and Office of the State Engineer**

*Strategic Plan*  
2013 - 2015



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(Total Full-Time Employees* .....		87)

\*Full-Time Employees (FTEs) have been provided to illustrate relative time and resources devoted to projects/programs.



A message from the State Engineer:

We are proud to present the North Dakota State Water Commission and Office of the State Engineer's latest Strategic Plan. This new plan was completed to incorporate and adjust for new expectations that have developed since our previous plan was published back in 2011.

As in the past, the primary purpose of our 2013-2015 Strategic Plan is to clearly document agency direction and expectations we have set for ourselves through our strategic planning timeframe. Through the planning process, we have reevaluated our agency's goals to ensure that we are achieving the standards expected by the people of North Dakota. In addition, we have laid out objectives for many of our key projects and programs, to help us more effectively meet our goals. More specifically, we have defined tasks and actions that our divisions and management need to take to achieve desired outcomes.

In having this plan at our disposal, the agency will be better equipped to document the progress it is making in the management of North Dakota's water resources. To measure our progress, we will continue to voluntarily publish agency biennial reports, which outline our activities for each biennium – providing an accurate measure of goal achievement. By publishing this plan, I believe we are continuing a tradition of setting a high standard for ourselves that can be monitored by all interests in the water management community.

Sincerely,

Todd Sando, P.E.  
North Dakota State Engineer

# VISION

Present and future generations of North Dakotans will enjoy an adequate supply of good quality water for people, agriculture, industry, and fish and wildlife; Missouri River water will be put to beneficial use through its distribution across the state in order to meet ever increasing water supply and quality needs; and successful management and development of North Dakota's water resources will ensure health, safety, and prosperity, and balance the needs of generations to come.



# 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.

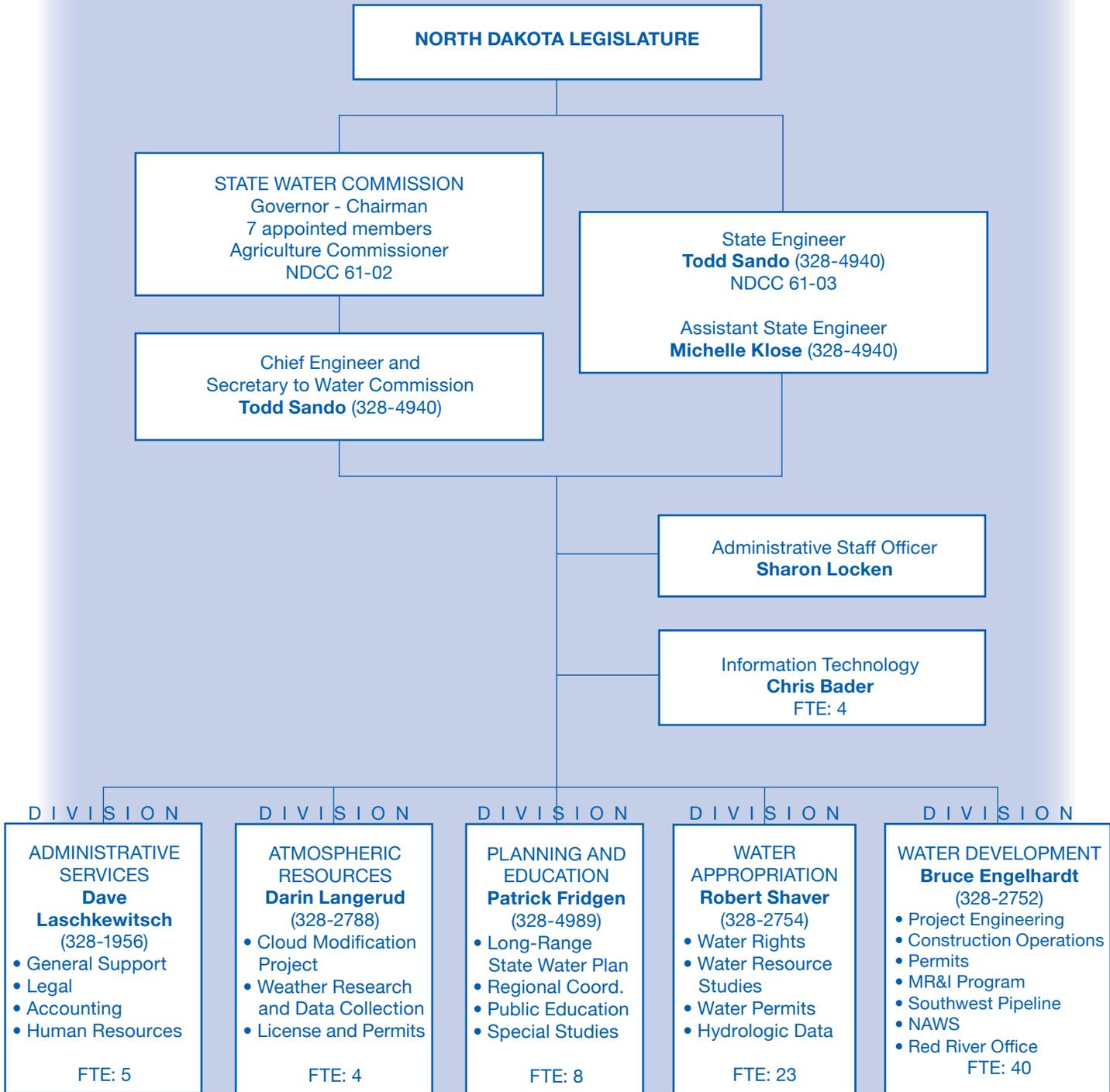
# PHILOSOPHY and VALUES

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

- Regulate the use of water resources for the future welfare and prosperity of the people of North Dakota
- Develop water resources for the future welfare and prosperity of the people of North Dakota
- Manage water resources for the future welfare and prosperity of the people of North Dakota
- Educate the public regarding the nature and occurrence of North Dakota's water resources
- Collect, manage, and distribute information to facilitate improved management of North Dakota's water resources
- Conduct research into the processes affecting the hydrologic cycle to improve the management of North Dakota's water resources

# Organizational Chart



TOTAL FULL TIME EQUIVALENTS OF 87 PERSONNEL

# Strategic Planning



While the State Water Commission (SWC) and the Office of the State Engineer (SE) are separate state agencies with different directives, many of their responsibilities are entwined and overlap at several levels. For that reason, the activities of these two agencies have been merged into one strategic plan.

Listed here are the projects and programs that were the focus of our strategic planning process. It should be noted that this is by no means a comprehensive list of all efforts pursued by the SWC and the SE, rather it is simply a collection of those efforts that were deemed appropriate to include in our strategic planning process.

Further, the projects and programs identified here have been separated by the divisions that are *primarily* responsible for their management. However, in several instances, many of our projects and programs require staff contributions from multiple divisions.

## Administration

*Dave Laschkewitsch, Director*

## Administration & Support Services

## Atmospheric Resources

*Darin Langerud, Director*

ARB Cooperative Observer Network



Atmospheric Research Program



North Dakota Cloud Modification Project

# Focus Projects & Programs



## Water Appropriations

*Robert Shaver, Director*

- Community Water Supply Studies
- 
- Water Resource Data Information Dissemination
- 
- Water Resource Monitoring
- 
- Water Resource-Related Economic Development
- 
- Water Resource Research
- 
- Water Rights Administration & Processing
- 
- Water Rights Evaluation & Adjudication

## Water Development

*Bruce Engelhardt, Director*

- Cost-Share Program
- 
- Dam Safety Program
- 
- Design and Construction
- 
- Devils Lake Flood Control
- 
- Floodplain Management
- 
- Investigations
- 
- Municipal, Rural & Industrial Water Supply
- 
- Northwest Area Water Supply
- 
- Regulatory Program
- 
- Silver Jackets Program
- 
- Southwest Pipeline Project

## Planning & Education

*Patrick Fridgen, Director*

- State Water Management Plan
- 
- Water Education
- 
- Watershed Planning & Coordination

## Project/Program Overview:

The Administrative Services Division provides the overall direction of agency powers and duties as described in the state's water laws. The activities include both the State Engineer and State Water Commission's operations, as well as accounting, information technology (I.T.), human resources, records management, legal support, and support services for all agency projects and programs.

# Administration & Support Services

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 adequate financial records, preparation of financial statements and

reports, project and program cost accounting, preparation of budgets, responding to audit requests and recommendations, and proper control of various funds appropriated by the Legislature.

Human Resources works as a business partner with, and for, the divisions of the State Water Commission in developing, implementing, and supporting workforce programs that seek to recruit, develop, and retain a qualified, diverse, and engaged workforce.

The division also works on contracts and agreements that are necessary to carry out investigations, planning, and cooperation with various other agencies in water resources management.

Information Technology supports general agency business operations in areas related to workflow management and office automation. Information Technology also supports and enhances agency data collection and management functions, and broader engineering and scientific functions.

## Agency Goal(s) Satisfied:

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

## Action Plan:

TASKS	TARGET DATES
Prepare and submit the agency's budget	Sept. 2014
Coordinate the timing of agency bonding	As needed
Coordinate development of agency testimony for legislative appropriations hearings	Dec. 2014
Maintain accounting records, and provide information technology and records management services	Ongoing
Bill federal, state, and local entities for their share of project costs	Ongoing
Provide legal support, including research and contract development	Ongoing
Maintain an agency I.T. strategic plan, and coordinate agency I.T. efforts with external and statewide initiatives	Ongoing
Support, maintain, and evolve agency I.T. infrastructure	Ongoing

## Project Program Objective:

- Provide umbrella administrative and technology services that support the projects and programs of the agency.

## Project/Program Overview:

The Atmospheric Resource Board's (ARB) Cooperative Observer Network has collected growing season rainfall and hail data from volunteer observers statewide since 1977. Since that time, participation has ranged between 650 and 1,000 observers annually, making it one of the highest density precipitation observation networks in the U.S. In October of 2010, the ARB Cooperative Observer Network began conducting snowfall observations to address gaps in winter precipitations recording.

# ARB Cooperative Observer Network

## Action Plan:

### TASKS

### TARGET DATES

Manage the program for daily observation of rainfall, hail, and snow, including data entry, quality control, and GIS mapping	Ongoing
Produce growing-season map products and manage volunteer renewal for following years	Fall, annually
Recruit new volunteers	Spring, annually
Mail reporting instructions, reporting cards, and rain gauges to volunteer observers	March 2014 and 2015
Expand the online reporting program	Winter, annually
Expand snowfall measurements in critical areas	Winter, annually

## Agency Goal(s) Satisfied:

- 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.

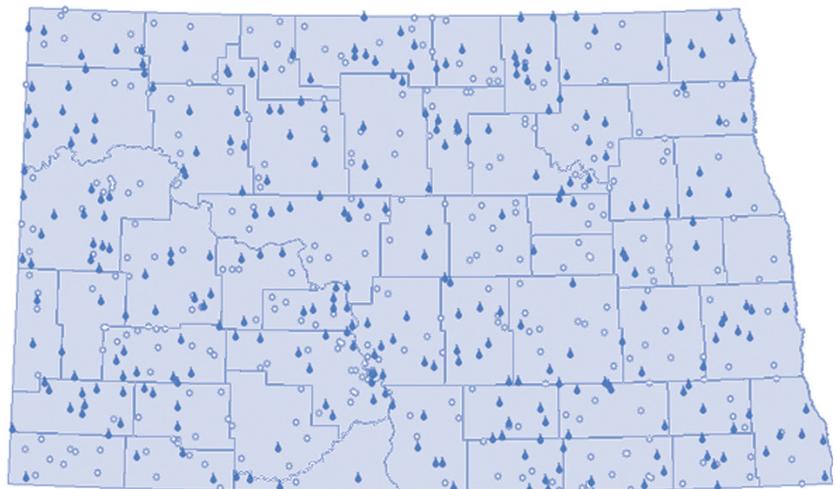
## Project Program Objectives:

- Make high-resolution precipitation and hail data available to county, state, and federal agencies, private organizations, and the public.
- Provide the entire database online for data download or review.
- Increase online reporting and produce value added products that will be useful to a larger audience.
- Expand snowfall measurements in critical areas to assist with spring flood forecasting.

## Assumptions and Obstacles

Continuation and expansion of existing statewide precipitation observations will require continued funding for agency operations and equipment.

## 2012 ARB WEATHER OBSERVERS



☔ Summer Only

○ Year-Round

## Project/Program Overview:

North Dakota has a long history of research in weather modification. Since the mid-1980s, eight field research programs have been conducted in the state, most recently through focused campaigns in 2008, 2010, and 2012. Historically, the Bureau of Reclamation and the National Oceanic and Atmospheric Administration have provided program funding. Current program funding is being provided by the state.

# Atmospheric Research Program

## Agency Goal(s) Satisfied:

- 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 processes affecting the hydrologic cycle to improve the management of North Dakota's water resources.

## Project Program Objectives:

- Better observe and quantify the physical processes of rainfall and hail formation.
- Improve operational application of cloud seeding technologies.
- Better quantify seeding effects through development and application of improved evaluation techniques.

## Assumptions and Obstacles

Funding is the primary obstacle for the Cooperative Research Program.

## Action Plan:

TASKS	TARGET DATES
Continue the Polarimetric Cloud Analysis and Seeding Test (POLCAST) hygroscopic seeding research program	Summer 2014
Collaborate with other states and organizations/institutions doing similar research to improve and enhance North Dakota's program	Ongoing
Operate Bowman weather radar on a year-round basis in collaboration with eight regional counties	Ongoing



## Project/Program Overview:

Rural water entities and municipalities in need of help with their water supply can access staff for interpretation of existing data. They can also apply for cost-share assistance from the SWC for water supply studies. Rural water entities and municipalities use the reports of the water resource studies to help with their decisions regarding water supply concerns and options.

## Agency Goal(s) Satisfied:

- To develop water resources for the future welfare and prosperity of the people of North Dakota.
- To conduct research into the processes affecting the hydrologic cycle in order to improve the management of North Dakota's water resources.

## Project Program Objectives:

- Provide interpretation of existing water resource data.
- Conduct studies of potential water resources.
- Publish reports on water resource studies.
- Provide guidance and/or recommendations with regard to water supply concerns.
- Process appropriate paperwork to establish or maintain water rights.

# Community Water Supply Studies

## Action Plan:

### TASKS

Conduct water supply studies

### TARGET DATES

As requested

## Assumptions and Obstacles

As more communities tie-in to expanding regional water supply systems, the need for individual community water supply studies have declined in recent bienniums.



## Project/Program Overview:

The SWC cost-share program identifies projects that are eligible for cost-share assistance per the agency policy. Currently, as determined by that policy, the SWC cost-shares on several types of projects, and has existing agreements to fund: drainage and diversion channels, ring dikes, flood acquisitions, water supply pipelines, engineering and other studies, miscellaneous education and research projects, emergency action plans, imagery acquisition, dam safety reconstructions, recreation-based lake facilities, dikes, levees, woody debris snagging and clearing, non-point source pollution, central irrigation system supply lines, rip-rap bank stabilizations, dam removals, and technical assistance projects.

# Cost-Share Program

Upon determining a proposed project's eligibility, and approval of funding, an agreement/contract is entered into with the project's sponsor describing the scope of work, how funds will be disbursed, and insurance

and indemnification requirements, and other terms as applicable. Request for payments are processed per the terms of the agreement. At the discretion of the SWC, projects are reviewed and/or inspected upon final payment.

## Agency Goal(s) Satisfied:

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

## Action Plan:

TASKS	TARGET DATES
Review approximately 130-150 cost-share inquiries/applications for cost-share eligibility and assistance. (By the end of 2015, this is expected to increase by 15%)	June 30, annually
Present 100-110 cost-share proposals for approval and authorization by the SWC and 30-40 cost-share proposals for approval and authorization by the State Engineer. (By the end of 2015, this is expected to increase by 15%)	June 30, annually
Develop agreements/contracts for 130-140 approved and authorized projects. (By the end of 2015, this is expected to increase by 15%)	June 30, annually
Process requests for payment, monitor agreement/contract compliance, and review and inspect work for approximately 150 active projects. (By the end of 2015, this is expected to increase by 10%)	June 30, annually

## Project Program Objectives:

- To financially assist federal and state agencies and political subdivisions with eligible projects categorized as rural flood control, water supply, flood control, flood acquisitions, dam safety, recreation, snagging and clearing, studies, irrigation, bank stabilization, dam removal/breach, and technical assistance.

## Assumptions and Obstacles

The amount of funds available for the cost-share program is dependent on state appropriations and agency budgeting from the contract fund.

## Project/Program Overview:

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 3,028 dams in North Dakota's dam inventory. Of these, 31 dams are classified as high hazard and 97 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 national dam inspection program took place in 1978-1982 under the direction of the U.S. Army Corps of Engineers following a series of dam failures across the country in the 1970s. The North Dakota Dam Safety Program was initiated to continue and build on that inspection program.

## Agency Goal(s) Satisfied:

- To regulate the use of 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.

# Dam Safety Program

## Project Program Objectives:

- Identify deficient dams in need of maintenance or repair.
- On a rotational basis, conduct full periodic inspections of all non-federally owned high hazard dams at least once every four years, and all non-federally owned medium hazard dams greater than 10 feet high, at least once every 10 years.
- Conduct annual partial inspections of non-federally owned high and medium hazard dams, and selected low hazard dams.
- Report inspection findings and recommendations to the dam owners.
- Maintain and update an inventory of all dams in North Dakota.
- Encourage the development of Emergency Action Plans (EAPs) for high and medium hazard dams, including the development of inundation maps for high hazard dams.
- Increase awareness of dam safety issues among dam owners and the public.

## Action Plan:

TASKS	TARGET DATES
Conduct full periodic inspections of an average of 21 dams per year	Oct. 31, annually
Conduct partial inspections of 146 dams each spring	June 30, annually
Report inspection findings and recommendations to dam owners	Ongoing
Maintain and update North Dakota's dam inventory	Ongoing
Submit data to the National Inventory of Dams (NID)	As requested
Assist dam owners with developing EAPs, and review and approve EAPs as they are submitted	Ongoing

## Assumptions and Obstacles

Federal grants through Federal Emergency Management Agency (FEMA) and the National Dam Safety Program provide annual funding for training, equipment, salary for one part-time position, and other projects such as the development of EAPs and dam owner workshops. The availability of these grants is uncertain from year to year, making program planning a challenge.

## Project/Program Overview:

The Design and Construction Sections are involved with assisting dam owners throughout the state in designing repairs and modifications to existing water facilities. The section works with the North Dakota Game and Fish Department (Department) to maintain outlet structures and install low-level drawdowns used by the Department to manage fisheries. The section is also involved in directing emergency actions when needed.

# Design and Construction

## Agency Goal(s) Satisfied:

- To develop 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.

## Project Program Objectives:

- Maintain water resource facilities within the state to ensure public safety, and enhance quality of life by meeting multiple uses such as flood control, water supply, and recreation opportunities.
- Work with the United States Geological Survey (USGS) to maintain the network of stream gauges throughout the state, thereby ensuring reliable data necessary for managing North Dakota's water resources.

## Assumptions and Obstacles

Weather is the primary obstacle for timely completion of annual construction and repair efforts.

## Action Plan:

TASKS	TARGET DATES
Assist dam owners with design and repairs of existing water facilities	Ongoing
Repair and maintain North Dakota's stream gauge network through cooperative efforts with the United States Geological Survey (USGS)	Summer, annually
Conduct general construction projects	Summer, annually



## Project/Program Overview:

Since 1993, Devils Lake has risen over 30 feet. The lake reached a record elevation of 1454.4 in June 2011 and covers about 200,000 acres including Stump Lake, which is now part of Devils Lake. The state's approach to solving the flooding problems in the Devils Lake region has included a three-pronged approach: basin water management, infrastructure protection, and emergency outlets to the Sheyenne River.

Landowner payments for floodwater retention, which involves the upper-basin water management element of the three-pronged approach, have been ongoing for more than a decade. The state completed an emergency outlet from the west end of Devils Lake to the Sheyenne River in 2005 that was sized for a maximum discharge of 100 cubic feet per second (cfs). In the spring of 2010, its capacity was increased to 250 cfs. An East Devils Lake outlet was completed in June 2012. That outlet has a 350 cfs pumped capacity. The combined total of the two outlets is 600 cfs, and together they are capable of removing about one foot of water per pumping season (based on a lake elevation of 1454).

Regarding the infrastructure portion of the three-pronged approach, the city of Devils Lake continues to face a threat from the swelling lake. The city is working with the U.S. Army Corps, the SWC, and other state and federal agencies to raise the embankment protecting the city.

## Agency Goal(s) Satisfied:

- To manage water resources for the future welfare and prosperity of the people of North Dakota.

## Project Program Objectives:

- Reduce the risk of flooding around Devils Lake by implementing a three-pronged approach, which includes, upper-basin water management, infrastructure protection, and operation of emergency outlets.

# Devils Lake Flood Control



## Action Plan:

TASKS	TARGET DATES
Maintain and operate the Devils Lake emergency outlets	Ongoing
Develop discharge monitoring reports for outlet operation	As Needed
Work with local and federal entities to remove additional water from the lake.	Ongoing
Implement an Outlet Mitigation Plan and respond to damage claims	Ongoing

*(For a map of the state's emergency Devils Lake outlet projects, see the Appendix.)*

# Floodplain Management

## Project/Program Overview:

The National Flood Insurance Program (NFIP) works on a partnership formed of federal, state, and local governments. Local governments use state laws concerning planning, zoning and development as a basis to practice floodplain management. The NFIP trades availability of flood insurance for structures, in return for communities guiding development in identified flood hazard areas.

The North Dakota Floodplain Management Act of 1981 adopts the NFIP by reference in Chapter 61-16.2 of the North Dakota Century Code. This chapter was amended in 1999 and again in 2003 by the State Legislature, which broadened and refined the duties of the State Engineer.

FEMA provides partnership funding to states for their role in the Community Assistance Program (CAP), Map Modernization and its successor program, Risk Map.

## Agency Goal(s) Satisfied:

- 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.

## Project Program Objectives:

- Manage the state's floodplains to reduce flood damages throughout the state.
- Collect and distribute information relating to flooding and floodplain management.
- Coordinate local, state, and federal floodplain management activities.
- Assist communities in their floodplain management activities.
- Fulfill responsibilities under the annual Community Assistance Program of FEMA.
- Support the digital flood map conversion process as part of FEMA's Map Modernization and its successor program, Risk Map.

## Assumptions and Obstacles

Successful management of the state's floodplain and flood prone areas will continue to require active participation and involvement of cities, counties, and townships enrolled in the NFIP.

## Action Plan:

TASKS	TARGET DATES
Monitor community floodplain management compliance under the CAP and provide technical assistance regarding the NFIP	September 30, annually
Conduct floodplain management training workshops and participate in related training workshops under CAP	September 30, annually
Promote the availability of mapping products produced as part of Map Modernization and its successor program – Risk Map	September 30, annually
Conduct floodplain determinations for the Bank of North Dakota	Quarterly



## Project/Program Overview:

The Investigations Section is responsible for the preliminary engineering of surface water projects throughout the state. These projects include flood control, irrigation development, recreation dams, and bank stabilizations. The Investigations Section also conducts and reviews hydrologic and hydraulic models for floodplain management and dam design and repair. This includes reviewing proposed modifications to existing regulatory floodways that require State Engineer approval, and hydraulic and hydrologic analyses and review for dam safety and emergency planning and response.

In addition, the Investigations Section provides technical expertise in dealing with the management of the Missouri River, flood response, and other water issues, as well as providing government survey information to the public.

# Investigations

## Agency Goal(s) Satisfied:

- 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 collect, manage, and distribute information to facilitate improved management of North Dakota's water resources.

## Project Program Objectives:

- Conduct preliminary engineering, hydrologic, and hydraulic studies, and review studies done by others.
- Provide engineering services for surface water projects throughout the state.

## Action Plan:

TASKS	TARGET DATES
Provide technical reviews of Missouri River management issues, including federal policy changes	As needed
Continue to represent the State of North Dakota as part of the Missouri River Recovery Implementation Committee (MRRIC)	Ongoing
Manage government survey information	Ongoing
Conduct water resource investigations	As needed
Provide technical support in response to flooding and other disasters	As needed
Review proposals for modifications of regulatory floodways	As needed

## Assumptions and Obstacles

Severe flooding problems throughout the state, flood response and recovery activities, and concerns over changes to management of the Missouri River system have consumed much of the Investigations Section's time over the course



of the last decade. In addition, flooding along the Mouse River in 2011 prompted water management and flood protection in that basin to become a priority issue. Furthermore, the collection, analysis, and interpretation of data from these floods continues well beyond the events.

## Project/Program Overview:

The Municipal, Rural, and Industrial (MR&I) water supply program is one source of federal funding used for public water systems. North Dakota's MR&I program was originally established by the 1986 Garrison Diversion Reformulation Act. At that time, Congress authorized \$200 million in the form of a maximum grant of 75 percent. The state has since received the original \$200 million from the 1986 Act. Later, the Dakota Water Resources Act of 2000 added an additional \$200 million for the MR&I program, which is indexed, and the state has received \$122 million. Funding used for the MR&I program is provided through the U.S. Bureau of Reclamation (USBOR). The Garrison Diversion Conservancy District (GDCCD) signed a cooperative agreement with the USBOR to receive the federal funding. Further, the SWC and GDCCD signed a joint powers agreement to administer the program based on a memorandum of understanding.

Because of North Dakota's MR&I program, regional and rural water systems have continued to expand throughout the state. As a result of this added assistance, there are now 31 regional water systems in

# Municipal, Rural, & Industrial Water Supply Program

North Dakota, providing quality drinking water to over 200,000 people in 319 cities, 88 various water systems, and over 90,000 rural residents. Currently, all or part of North Dakota's 53 counties are served by regional water systems, with several having plans to expand.

## Agency Goal(s) Satisfied:

- To develop water resources for the future welfare and prosperity of the people of North Dakota.

## Project Program Objectives:

- Coordinate alternative funding solutions for water supply and water treatment projects to help water users in cities and rural water areas obtain an adequate supply of quality water for municipal, rural, and industrial purposes.
- Provide planning and technical assistance to water supply systems to promote wise use of water resources throughout the state.

## Action Plan:

TASKS	TARGET DATES
Implement a five-year plan for MR&I project funding requests	Ongoing
Participate in meetings with communities and rural water districts to provide technical and planning assistance	Ongoing
Provide MR&I budget estimates for project development	Ongoing
Coordinate meetings with various funding entities to discuss projects	Ongoing
Work with North Dakota's Congressional delegation to increase federal MR&I appropriations	Ongoing
Coordinate with the GDCCD in the prioritization and allocation of MR&I funds	Ongoing
Continue to represent the State of North Dakota as part of the Western Area Water Supply (WAWS) Authority	Ongoing

## Assumptions and Obstacles

Because federal funding has been greatly reduced in recent years, the state has taken on a much larger role in funding water supply projects.

*(For a map of North Dakota's rural and regional water systems, see the Appendix.)*

# North Dakota Cloud Modification Project

## Project/Program Overview:

The North Dakota Cloud Modification Project (NDCMP) is a long-running, operational cloud seeding program with the dual purposes of hail suppression and rainfall enhancement. The target area covers nearly 10,500 square miles in six western North Dakota counties during the months of June, July, and August. Counties partner with the state through ARB, employing contractors that provide the aircraft, pilots, seeding equipment, and radar maintenance services. The ARB owns and operates two radar systems, and employs the meteorologists to coordinate seeding operations. In addition, the program offers two intern programs; one for students studying meteorology, and another for pilots studying at the University of North Dakota's J.D. Odegaard School for Aerospace Sciences.

Evaluations of the NDCMP indicate that the program reduces hail damage to crops by 45 percent, increases wheat yields by 5.9 percent, and increases rainfall between 5 and 10 percent. A 2009 economic study estimates the NDCMP increases the value of agricultural production by \$12 to \$19.7 million annually, which equates to a benefit of \$16-\$26 return for every dollar spent.



## Action Plan:

TASKS	TARGET DATES
Hire NDCMP field personnel	May, annually
Conduct pre-project ground school	May, annually
Conduct NDCMP operations	June-August, annually
Conduct data analysis and final reporting to participating counties	Winter, annually
Complete peer evaluations and program reviews with pilots and meteorologists participating in internship programs	August, annually

## Agency Goal(s) Satisfied:

- To manage water resources for the future welfare and prosperity of the people of North Dakota.

## Project Program Objectives:

- Reduce hail damages in the NDCMP target area.
- Enhance summer rainfall from thunderstorms in NDCMP target area.

## Assumptions and Obstacles

The project assumes continued participation by western North Dakota counties and cost-sharing of one-third of project costs by the state.

*(For a map of the area covered by the North Dakota Cloud Modification Project, see the Appendix.)*

## Project/Program Overview:

North Dakota Century Code (NDCC), Section 61-24.6 declares necessary the pursuit of a project "...that would supply and distribute water to the people of northwestern North Dakota through a pipeline transmission and delivery system..." NDCC 61-24.6 authorizes the SWC to construct, operate, and manage a project to deliver water throughout northwestern North Dakota.

# Northwest Area Water Supply

The SWC began construction on the Northwest Area Water Supply (NAWS) project in April 2002. The first four contracts involving 45 miles of pipeline from the Missouri River to Minot were completed in the spring of 2009. The project is currently serving Berthold, Kenmare, Burlington, West River Water District, Upper Souris Water District, Mohall, Sherwood, the All Seasons Water District, and Minot (also serves North Prairie Water District). NAWS is getting interim water supply

through a 10-year contract with Minot, which expires in 2018.

In 2002, a lawsuit was filed by Manitoba; primarily arguing that NAWS could increase the risk of transferring non-native biota between the Missouri River and Hudson Bay drainage basins. In 2009, the state of Missouri filed against the U.S. Bureau of Reclamation and the Corps of Engineers; primarily arguing NAWS would negatively affect depletions of the Missouri River. The Missouri filings were ultimately combined with Manitoba's. Various elements of project construction have been allowed to proceed by court order, despite the pending lawsuit. The court found that the Environmental Impact Statement (EIS) completed in 2009 was not adequate and needed to address impacts to Canada and Missouri River depletions. Scoping for a Supplemental EIS to address the court's May 2009 order was started in July 2010 - evaluating all feasible options.

When complete, the project is designed to provide up to 26 million gallons of water per day to tens of thousands citizens in northwest North Dakota.

## Agency Goal(s) Satisfied:

- To develop water resources for the future welfare and prosperity of the people of North Dakota.

## Project Program Objectives:

- Finish construction of the pretreated water delivery system to Minot.

## Assumptions and Obstacles

Adequate federal funding must be received in a manner that does not impede progress. Completion of the Supplemental EIS in the

spring of 2013, and decisions on the level of treatment greatly affect funding needs, and design and construction schedules. If Minot's aquifers continue to decline, and progress is not made in getting the needed water supply from Sakakawea, then the existing communities and rural water systems will need to return to their inadequate ground water supplies.

## Action Plan:

TASKS	TARGET DATES
Complete construction of pipeline between Renville Corner and Westhope	2013-2014
Complete construction of pipeline between the Glenburn and Renville Corner	2014-2015
Assist the USBOR with preparation of a Supplemental EIS to address the court's May 2009 order	2010- Spring 2013
Complete court filings to lift the injunction	Summer 2013
Initiate design work on water supply infrastructure	Summer 2013
Develop plans and manuals as required by EIS commitments	Summer 2013

(For a map of the NAWS project, see the Appendix.)

## Project/Program Overview:

As authorized by NDCC 61-03, 61-04, and 61-16.1, the State Engineer has been responsible for regulating the construction of dams, dikes, and other water control facilities since approximately 1935. Since 1957, NDCC 61-32 and NDCC 61-15 have authorized the State Engineer to regulate drainage. The State Engineer also has been responsible for managing sovereign lands since 1989, as authorized by NDCC 61-33. The State Engineer coordinates these regulatory activities with the county water resource districts (WRD's) across the state.

In addition to these permitting processes, the Regulatory Program provides technical assistance to local water resource districts, makes flow determinations in accordance with NDCC 24-03-08, makes watercourse determinations in accordance with NDCC 61-01-06, provides appeal review of WRD decisions, serves as a source of information to the public, handles easement releases for abandoned dams, participates in training workshops, represents the State Engineer on various interagency committees, and provides agency review of Public Service Commission mining permits and U.S. Army Corps Section 404 permits.

# Regulatory Program

## Agency Goal(s) Satisfied:

- To regulate the use of 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 collect, manage, and distribute information to facilitate improved management of North Dakota's water resources.

## Action Plan:

TASKS	TARGET DATES
Process 100 percent of all incoming construction, drainage, and sovereign land permit applications	Annually
Provide technical assistance to WRDs as requested	Ongoing
Address 100 percent of all incoming WRD decision appeals	Annually
Digitally map 100 percent of all permitted assessment drains and dams that are currently in the agency's database	Annually
Provide 100 percent of flow determinations requested per NDCC 24-03-08	Annually
Review 100 percent of incoming Public Service Commission and U.S. Army Corps Section 404 permits	Annually
Implement Sovereign Land Management Plan recommendations	Ongoing

## Project Program Objectives:

- Regulate, where appropriate, the construction of dams, dikes, water control facilities, drainage works, and projects on sovereign lands, to ensure proper management of North Dakota's water resources and public safety.
- Interact with the public, continue involvement on interagency committees, and participate in training workshops, to facilitate education and information dissemination to other water resource managers, especially at the local level.

## Assumptions and Obstacles

Enforcement of various sovereign land-related regulations will require continued cooperative efforts with the Game and Fish Department and other law enforcement entities.

# Silver Jackets Program

## Project/Program Overview:

North Dakota's Silver Jackets Program was initiated in January 2010 (in response to the extensive flooding of 2009) with the intent to identify comprehensive, long-term flood solutions through a collaborative, interagency effort between state and federal authorities. A Silver Jackets charter was completed and signed between the SWC, North Dakota Division of Emergency Services,

FEMA Region VIII, and the U.S. Army Corps of Engineers (St Paul and Omaha districts) in May 2010. The Corps of Engineers initiated the Silver Jackets concept through a partnership with FEMA in 2005 with a goal of establishing Silver Jackets teams in at least one state in each Corps division, and ultimately one in each state.

## Action Plan:

TASKS	TARGET DATES
Promote awareness of North Dakota's new Silver Jackets Program	Ongoing/As Needed
Assist communities with FEMA's levee recertification requirement	Ongoing/As Needed
Assist communities with flood control and long-term flood mitigation project requests	Ongoing/As needed
Assist selected counties and communities with Flood Emergency Operation Plan development and maintenance	Ongoing/As needed
Coordinate with Silver Jackets Program charter agencies	Ongoing/As needed

## Agency Goal(s) Satisfied:

- To manage water resources for the future welfare and prosperity of the people of ND.
- To educate the public regarding the nature and occurrence of ND's water resources.

## Project Program Objectives:

- Educate state agencies, county water boards, and communities about the Silver Jackets Program.
- Educate communities on FEMA's levee recertification requirement or Provisionally Accredited Levee (PAL) program.
- Assist communities with project requests in support of flood control or long term flood mitigation projects through the SWC and other federal or state agencies as appropriate.
- Assist communities with flood-related Emergency Operation Plans.
- Assist in educating counties and communities on the importance of maintaining current Hazard Mitigation Plans.
- Coordinate with Silver Jacket charter agencies to discuss state flood-related priorities, recommendations, efforts and improve communication.

## Assumptions and Obstacles

The need for local, state, and federal coordination in support of comprehensive long-term flood control and mitigation efforts must continue throughout the state to ensure success. Continued funding support of the program is also critical.

# Southwest Pipeline Project

## Project/Program Overview:

The Southwest Pipeline Project (SWPP) is a regional water supply system that draws water from Lake Sakakawea and serves over 48,000 people in southwest North Dakota, including 31 communities, and 4,300 rural hookups – with plans to expand.

NDCC, Section 61-24.3 declares necessary that the SWPP “... be established and constructed, to provide for the supplementation of the water resources of a portion of the area of North Dakota south and west of the Missouri River with water supplies from the Missouri River for multiple purposes, including domestic, rural, and municipal uses.” The SWC has been working to develop the SWPP ever since – with construction beginning in 1986. NDCC 61-24.6 authorizes the SWC to construct, operate, and maintain the project.

## Action Plan:

TASKS	TARGET DATES
Bid the Center Service Area rural distribution pipeline	Summer 2013
Continue construction of transmission facilities and rural distribution in the Center and Dunn Service Areas	Summer 2013
Continue design and construction to upgrade the Dickinson Water Treatment Plant	Summer 2014
Begin design to expand the raw water transmission capacity to the Dickinson Water Treatment Plant	Summer 2014

Private contractors are constructing the project according to designs developed by the SWC’s engineering contractor. The SWC oversees the design and construction of the project.

## Agency Goal(s) Satisfied:

- To develop water resources for the future welfare and prosperity of the people of North Dakota.

## Project Program Objectives:

- Continue construction of the Oliver, Mercer, North Dunn Regional Service Area and expand the raw water transmission capacity and water treatment plant capacity at Dickinson to meet the growing needs in southwest North Dakota.

## Assumptions and Obstacles

Adequate state and federal funding must be received in a manner that does not impede progress.



(For a map of North Dakota’s Southwest Pipeline Project, see the Appendix.)

## Project/Program Overview:

By virtue of North Dakota Century Code, Section 61-02-14, Powers and Duties of the Water Commission; and Section 61-02-26, Duties of State Agencies Concerned with Intrastate Use or Disposition of Waters, the Commission is required to develop and maintain a comprehensive State Water Management Plan (SWMP) for the sound management of North Dakota's water resources. The most recent comprehensive SWMP was completed in 2009. Following major water plan revisions, Water Development Reports (WDR) are published on a biennial basis to assist with agency budgeting efforts, and to provide updated project and funding information during Legislative Assemblies.

# State Water Management Plan

## Agency Goal(s) Satisfied:

- To develop comprehensive plans in order to meet North Dakota's water resource needs.
- 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, and water development efforts.

## Project Program Objectives:

- Develop a new 2015 State Water Management Plan by January 2015.

## Assumptions and Obstacles

Active participation and accurate input from local water managers and project sponsors, including coordination with the North Dakota Water Coalition regarding project funding needs will be critical to more accurate budget development, and successful statewide water planning efforts.



## Action Plan:

TASKS	TARGET DATES
Contact local water managers to request updated water project/program information, including funding timeframes for the 2015-2017 biennium and beyond	Jan. 2014
Coordinate project information collection efforts with the North Dakota Water Coalition and its membership	Spring 2014
Develop a preliminary water resource project/program inventory for the 2015-2017 biennium and beyond	May 2014
Compile water use and other general water resource information	Spring/Summer 2014
Review and update SWC water planning goals, objectives, and policies.	Spring/Summer 2014
Process project information for use in SWC budget development	Aug. 2014
Assist with the advancement of proposed new legislation for the 2015 Legislative Assembly	Fall 2014
Develop a final 2015 SWMP	Dec. 2014
Present the 2015 SWMP to the Legislative Assembly – outlining funding needs	Jan. 2015

## Project/Program Overview:

Project WET (Water Education for Teachers) is a balanced, supplemental and interdisciplinary water science and education program for formal and non-formal K-12 educators and students. Project WET facilitates and promotes learning, awareness, appreciation, knowledge, and exploration to promote stewardship of North Dakota's water resources. Project WET programs are designed to help youth learn how to think, and not just what to think, while providing means for teachers and students to grasp fundamental concepts related to water resources, watersheds, and the environment. Through Project WET programs, educators, and students obtain skills for acquiring and applying knowledge, and to evaluate the results of their actions toward North Dakota's water resources.

## Agency Goal(s) Satisfied:

- To educate the public regarding the nature and occurrence of North Dakota's water resources and water development efforts.

## Project Program Objectives:

- Develop, promote, and provide opportunities statewide to K-12 formal and non-formal educators and students to expand their knowledge and understanding of water resources by:

# Water Education

## Action Plan:

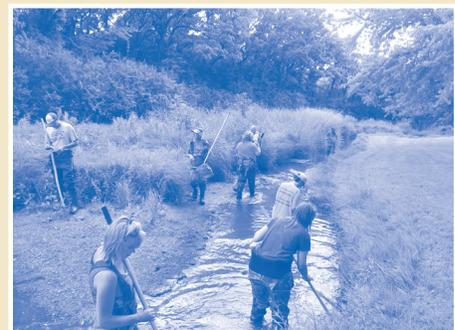
TASKS	TARGET DATES
Maintain Project WET classroom-ready teaching aids and service contracts in support of water resource education efforts	As needed
Provide in-service and pre-service credit and non-credit educational programs for K-12 educators and resource personnel	Ongoing
Provide varying educational programs/events for K-12 students, communities and general public statewide	Ongoing
Recruit and maintain a Project WET facilitator network by providing leadership training and development opportunities	March 2013
Provide funds for the Keep North Dakota Clean water education poster contest	March 2012 and 2013
Complete all Section 319 EPA grant development and reporting requirements	Ongoing
Complete two Project WET Watershed Institutes	Summer 2013-2014

- Maintaining supplies and availability of indoor and outdoor water science/ education programs and training resources.
- Acquiring and distributing a balanced inventory of water resource information, education tools, services, programs, and resource materials.
- Conducting institutes, workshops, in-service and pre-service educational opportunities.

- Conducting and supporting classroom events, youth camps, water festivals, community water awareness and youth service events.

## Assumptions and Obstacles

Continued funding through EPA's Section 319 Grant is critical to the success and continuation of the WET program.



# Water Resource Data Information Dissemination

## Project/Program Overview:

Significant volumes of data are contained in the SWC's Water Resources Information Management Systems (WRIMS). Private individuals and private enterprise, as well as local, county, state, federal,

and international entities routinely make use of various portions of these data sets. Staff facilitate the ability of interested parties to access data of interest to them. A web-based interactive interface is available to allow for direct access to the data on the part of the interested parties. Additionally, numerous interpretive reports are available for various water resources in the state.

## Agency Goal(s) Satisfied:

- 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.

## Project Program Objectives:

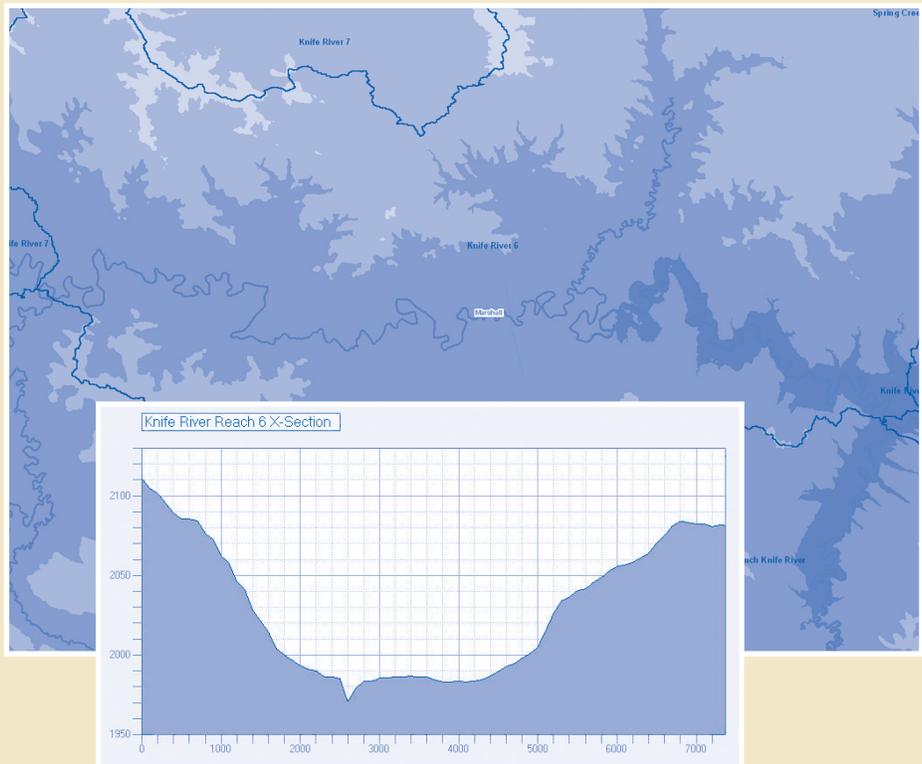
- Maintain quality water resource data.
- Develop and maintain databases for retrieval of data.
- Maintain trained staff to interpret data.
- Develop and maintain web-based integration for access to data.

## Assumptions and Obstacles

The continuation of the in-house and online retrieval system will depend on the ability of the SWC to maintain the 4-D Database.

## Action Plan:

TASKS	TARGET DATES
Anticipate uses for which the data would be needed	Ongoing
Educate staff on the use of WRIMS as improvements are implemented	As needed
Communicate with interested parties to determine their informational needs	As requested
Create unique programs in order to satisfy requests of an unanticipated nature	As requested
Image and store well drilling completion reports	Ongoing



## Project/Program Overview:

Water resource data pertaining to water levels, water quality, and well information is collected on a continuing basis. This data is stored in a web accessible database. The database currently contains about 1.5 million water-level measurements, 35,000 site locations, 68,000 water quality analyses, and 25,000 sites with lithological descriptions. Additional data acquisition sites are implemented as needed through time. Aquifer parameters and properties are evaluated through an aquifer-testing program.

## Agency Goal(s) Satisfied:

- 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, administer, 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.

# Water Resource Monitoring

## Project Program Objectives:

- Collect water resource data.
- Organize and store water resource data.
- Evaluate water-resource data and future data needs.

## Assumptions and Obstacles

Due to federal budget constraints, State Water Commission cost-share has increased to support the USGS Cooperative Program. This may continue in the future.

## Action Plan:

TASKS	TARGET DATES
Install test holes and plug obsolete observation wells	Apr.-Dec., annually
Install 125-175 monitoring wells	Apr.-Dec., annually
Install 20-30 staff gauges, and monitor water levels and flows	Apr.-May, annually
Measure 25,000-30,000 water levels in wells and surface water bodies	Apr.-Dec., annually
Collect data from 60-70 continuous water level recorders	Jan.-Dec., annually
Collect 1,500-2,000 samples from wells and surface-water bodies	Apr.-Dec., annually
Analyze samples for various chemical constituents	Apr.-Jan., annually
Repair and maintain 3,500-4,000 measurement and sampling locations	Apr.-Dec., annually
Enter data into database	Ongoing
Coordinate USGS cooperative water resource monitoring program	March-Dec., annually
Conduct aquifer tests	As requested/needed

# Water Resource-Related Economic Development

## Project/Program Overview:

Water utilization is a key ingredient to many potential opportunities for economic development. Numerous studies and reports have documented potential water supplies for economic development. Additionally, existing reports and/or water-

resource data are interpreted by staff in the form of short reports to aid industries in determining the viability of various water resources with respect to their water needs in their consideration of locating in North Dakota.

The SWC also provides cost-share support for several activities designed to strengthen the state's economy. The SWC, in conjunction with the Bank of North Dakota, provides cost-share for new irrigation under the auspices of the AgPACE program. The SWC also provides support to the North Dakota Irrigation Association (NDIA).

## Agency Goal(s) Satisfied:

- 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.

## Project Program Objectives:

- Identify and evaluate potential water supplies for economic development.
- Support programs to encourage water-using industries.
- Support programs to encourage irrigation.



## Assumptions and Obstacles

There is a limited amount of groundwater of a quality suitable for irrigation and industry. The one significant water resource in the state, the Missouri River, is not located where some potential water users want to locate.

In addition, recent U.S. Army Corps of Engineers actions blocking access to Missouri River water along mainstem reservoir boundaries is a major impediment.

## Action Plan:

TASKS	TARGET DATES
Produce 'synopsis' reports on water supplies for interested entities	As requested
Produce or provide water resource interpretive reports	Ongoing/As requested
Administer the AgPACE program	Ongoing
Support NDIA's efforts to expand irrigation development	Ongoing

## Project/Program Overview:

Water resource research involvement falls into three categories. The first is where the SWC provides monetary support for water resource-related research, which is generally conducted by the USGS or universities. The second category is where the SWC enters into a cooperative study, again generally with university researchers or the USGS. The third category is where the entire study is conducted by the SWC.

## Agency Goal(s) Satisfied:

- To conduct research into the processes affecting the hydrologic cycle in order to improve the management of North Dakota's water resources.

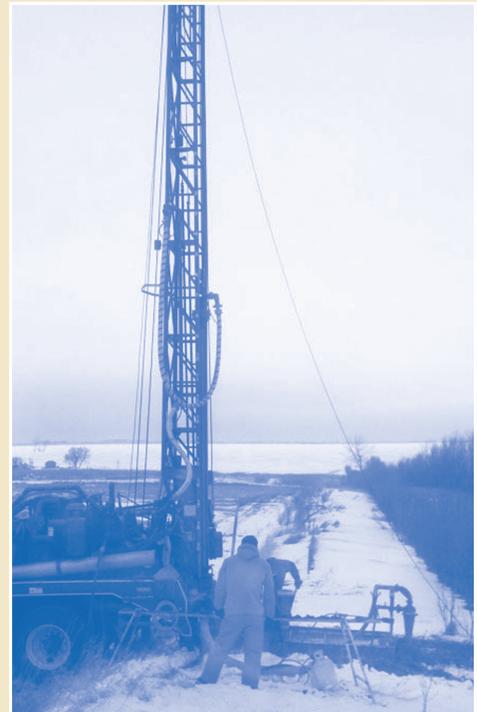
## Project Program Objectives:

- Support research into water resources of the state.
- Conduct studies of the nature and occurrence of water in order to optimize its conservation and development throughout the state.

## Assumptions and Obstacles

Continuing or reformulated research could result from the interpretations that result from these studies.

# Water Resource Research



## Action Plan:

TASKS	TARGET DATES
Annual review and decisions for graduate water resource investigations (ND Water Resources Institute)	Annually
Cooperate with the USGS to develop a "Stream Stats" website in North Dakota	2013
Cooperate with the USGS to develop a report entitled, "Evaluation of Water Quality Sampling Programs and Sulfate Standards for Stream Classes and Designated Uses, North Dakota"	2013
Conduct an evaluation of nitrate contamination and remediation in the Karlsruhe aquifer	Annually
Assist with study of irrigation through tile drains in Richland County	2013

# Water Rights Administration & Processing

## Project/Program Overview:

NDCC 61-04-02 requires that all water uses except for domestic, livestock, fish, wildlife, and other recreational uses (unless the aforementioned are greater than

12.5 acre-feet per year) apply for a water permit before putting water to beneficial use. Set procedures are mandated by NDCC and regulations. Staff guide applicants through this process. In addition, records, documents, and a relational database are meticulously maintained. Upon completion of a water use development, inspections are conducted to verify the ability of the applicant to put the water to beneficial use. Based upon the inspection report, a conditional permit is perfected and filed with the appropriator with the county as a water right associated with the land. Annual, self-reported, water use forms are recorded to document that the water is being put to beneficial use and the water right is being maintained. Beginning January 1, 2012, all industrial water use permits serving the oil industry and approved for annual appropriations greater than 15 acre-feet, are required to file monthly water use reports. Technicians in the Water Appropriations Division periodically inspect water meters at water depots serving the oil industry.

### Agency Goal(s) Satisfied:

- To regulate the use of water resources for the future welfare and prosperity of the people of North Dakota.

### Project Program Objectives:

- Process water permit applications.
- Maintain meticulous water right records.
- Perfect conditional water rights.
- Document permitted water use.

### Assumptions and Obstacles

Water use records are dependent upon self-reporting of annual water use, which is strongly encouraged. Some conditional water permits take long periods of time to resolve water and legal complications.



### Action Plan:

TASKS	TARGET DATES
Guide applicants through the water permit application process	Ongoing
Maintain records in each water permit application file	Ongoing
Enter appropriate data into water permit database	Ongoing
Conduct 65-85 inspections of 'completed' conditional water permits	Annually
Perfect 50-70 inspected, completed, and conditional water permits	Annually
Send out requests for annual use reports to permit holders	Nov. and Jan., annually
Complete the annual water use data collection process	May, annually
Develop a summary report on annual water use in North Dakota	Sept., annually
Measure pumping rates to help establish water rights	Ongoing
Maintain water use records to quantify water rights	Ongoing

## Project/Program Overview:

The allocation of water resources for beneficial use can result in competition for those resources. This competition may cross political boundaries. Efforts are continually underway to protect prior rights while maximizing benefits. These efforts are extended outside of the state, into other states and provinces, as well as internally with respect to other state agencies with various regulatory authorities. In the assessment of the degree to which the state's water resources can be utilized beneficially, the rights of prior appropriators need to be assessed and protected. Staff prepares recommendations for the State Engineer on the basis of encouraging beneficial use while protecting prior rights.

# Water Rights Evaluation & Adjudication

## Action Plan:

TASKS	TARGET DATES
Gather data on shared resources	As needed
Discuss possible actions regarding water resources	As needed
Negotiate management decisions	Ongoing
Conduct water resource investigations	As needed
Prepare recommendations for the State Engineer	Ongoing

## Agency Goal(s) Satisfied:

- To regulate the use of 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.

## Project Program Objectives:

- 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 water to protect and enhance the quality and quantity of North Dakota's water resources.
- Evaluate water permit applications and recommend decisions to the State Engineer.

## Assumptions and Obstacles

Different organizations and different states and provinces have different perspectives and laws pertaining to the best way to manage water resources. In the evaluation of groundwater permit applications, the state's groundwater resources are becoming more fully appropriated. Thus, the process of allocating additional water while protecting prior water rights is becoming more difficult and time consuming.



## Project/Program Overview:

In addition to water management planning efforts at the state level, the SWC believes that it is also beneficial for stakeholders that live and work within key watersheds of the state, to guide the management of water resources in their region through the development of regional water plans. In order for regional planning efforts and studies to proceed and evolve in a productive manner, it is often required that local, state, and federal government officials participate in those planning processes as technical advisors.

# Watershed Planning & Coordination

In recent years, the SWC has provided technical assistance to the Devils Lake, Upper Sheyenne, Red, and Missouri River joint water boards toward the development of water management plans and other watershed planning efforts. In addition, in the Red River basin, which is the focus of many projects and planning efforts, the SWC has an office with a full-time engineer, in West Fargo.

Beyond participating in regional planning and coordination efforts within the state, SWC staff members are also involved with international and national organizations involved with interjurisdictional water management. Examples include the International Joint Commission, the Red River Basin Commission, the Red River Water Resources Council, the International Red River Board, the International Souris River Board, the International Water Institute, the Red River Retention Authority, the Western States Water Council, Association of Western State Engineers, and the Missouri River Association of State and Tribes.

## Agency Goal(s) Satisfied:

- To manage water resources for the future welfare and prosperity of the people of North Dakota.

## Project Program Objectives:

- Provide technical expertise and assistance toward the development and implementation of regional watershed management planning efforts, and studies.

## Assumptions and Obstacles

In order for all of the above organizations and planning/coordination efforts to succeed in the future, they will require continued commitment and dedication from all stakeholders involved in those processes.



## Action Plan:

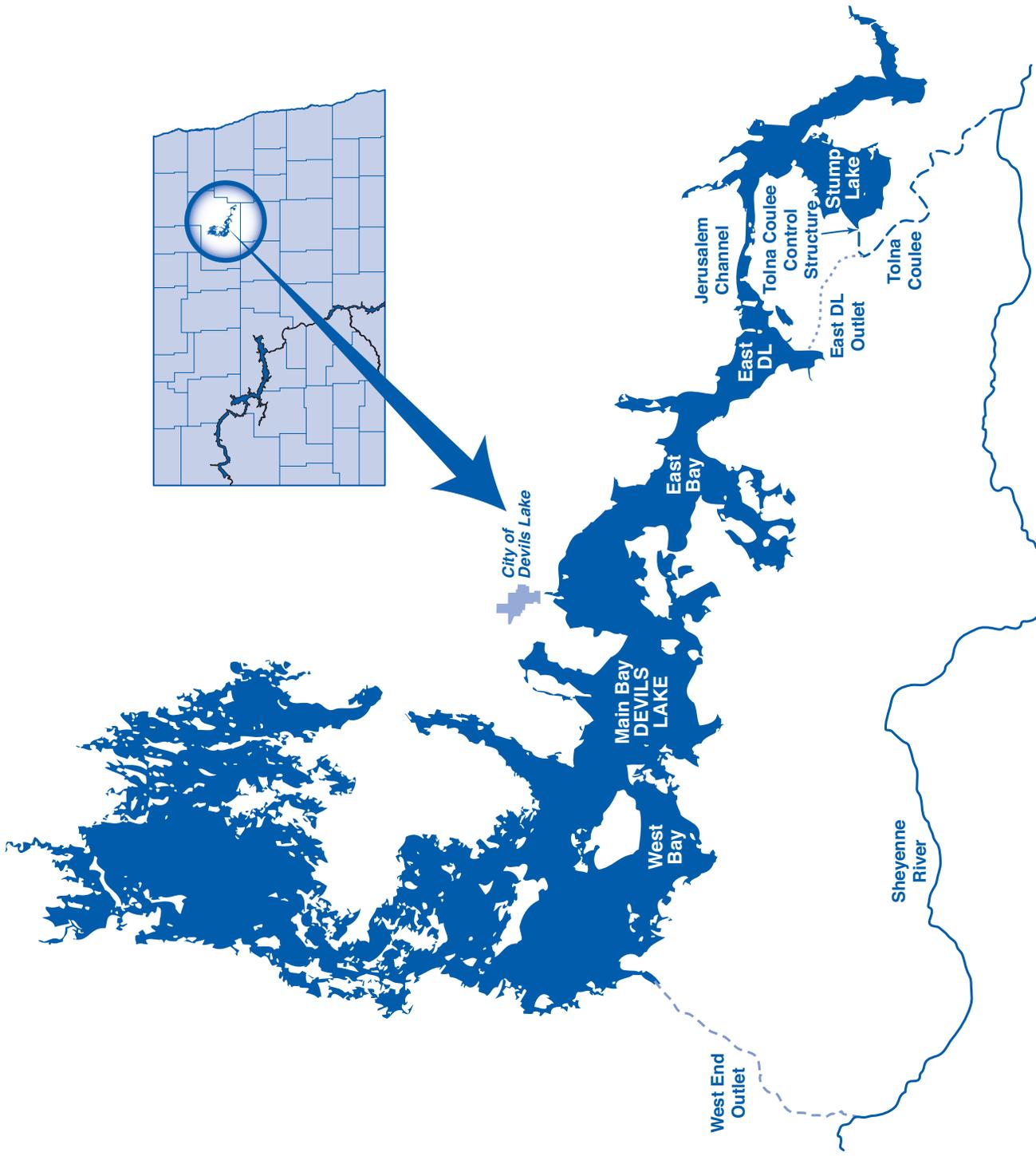
### TASKS

### TARGET DATES

Provide technical assistance toward the implementation of the Red River Basin Commission's Natural Resource Framework Plan	Ongoing
Provide technical assistance toward the implementation of joint water board, water management plans	Ongoing
Continue to participate as board members and technical advisors for regional, international, and national watershed planning and coordination efforts	Ongoing

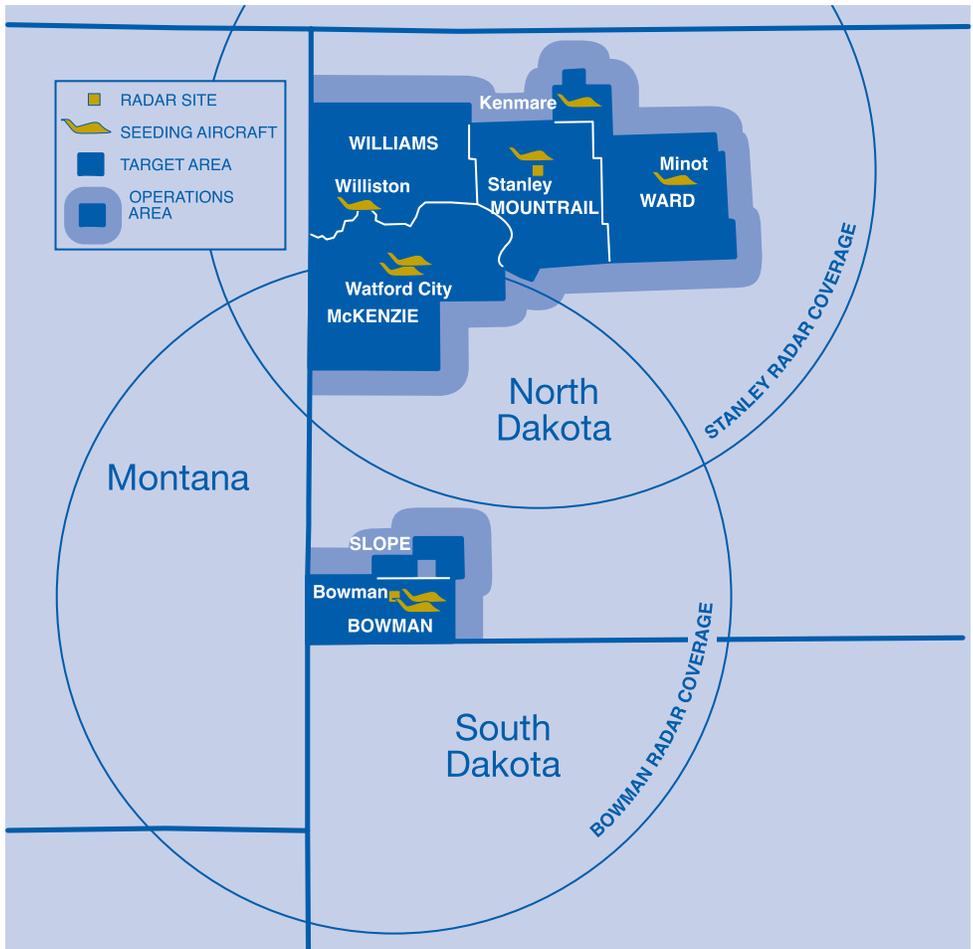
# Map Appendix



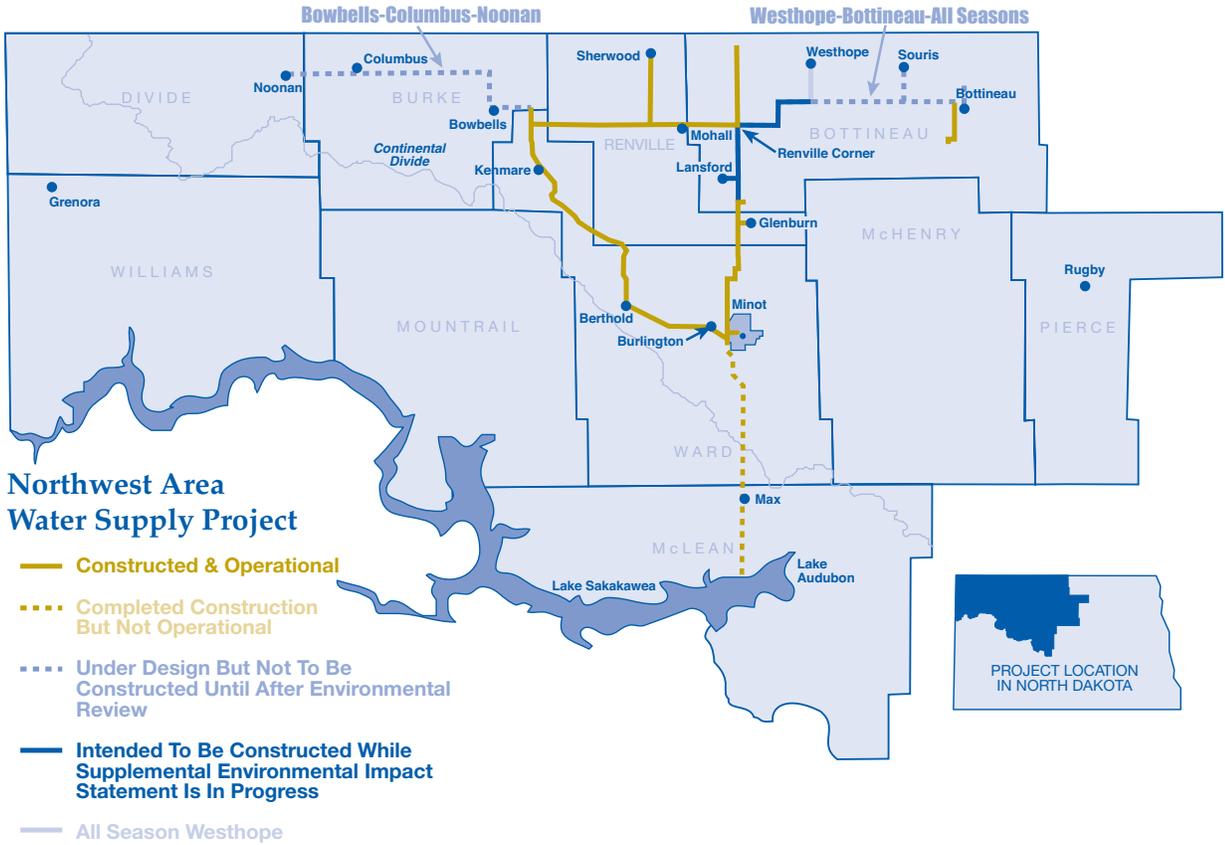


# Devils Lake Outlet Projects

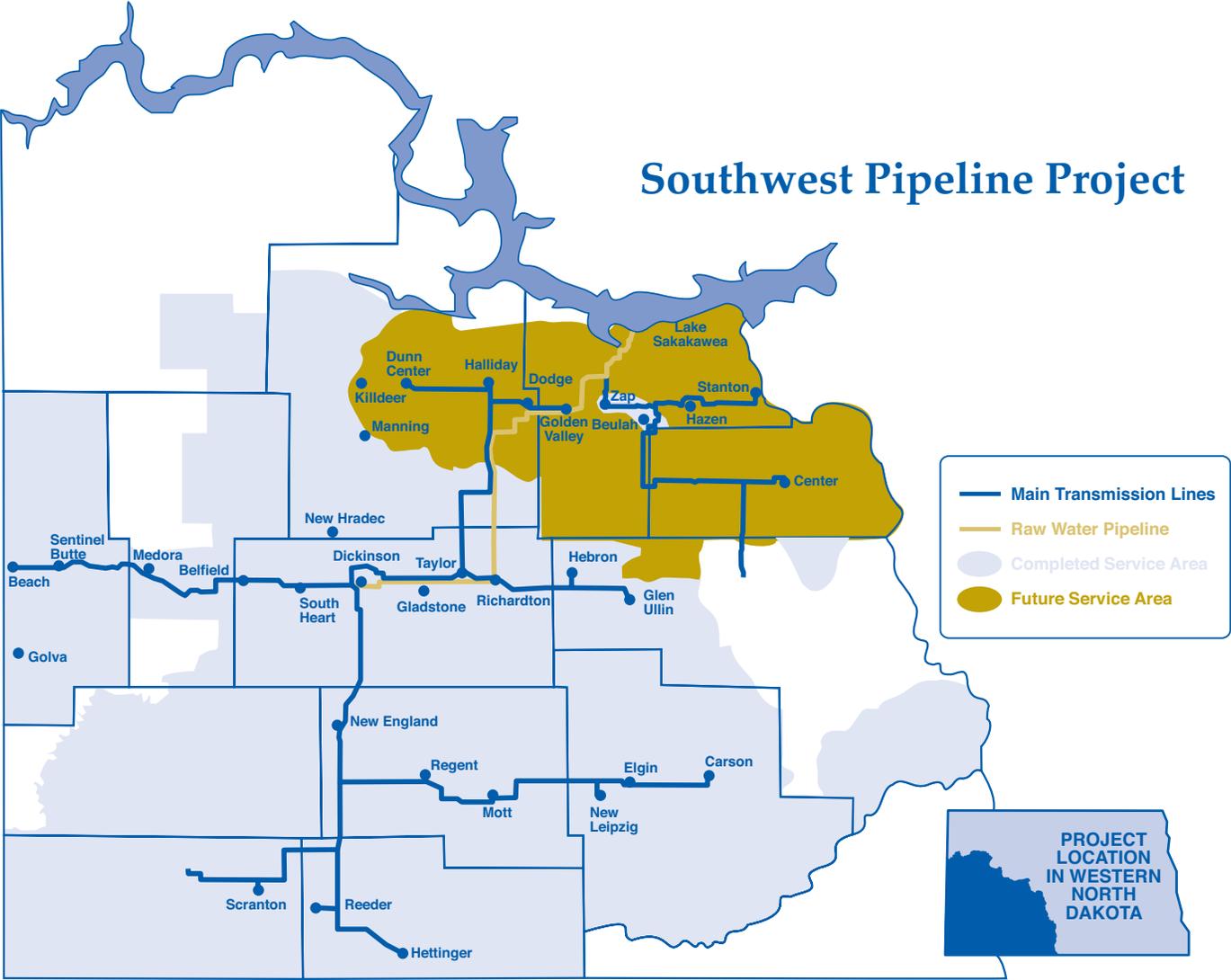




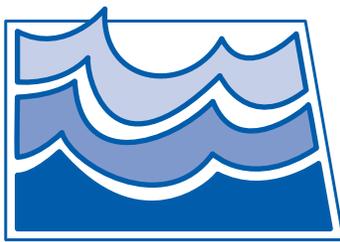
# North Dakota Cloud Modification Project



# Southwest Pipeline Project







North Dakota State Water Commission  
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Bismarck, ND 58505-0850  
[www.swc.nd.gov](http://www.swc.nd.gov)