

NORTH  
DAKOTA

2015  
2017

STATE WATER COMMISSION & OFFICE OF THE STATE ENGINEER

# STRATEGIC PLAN

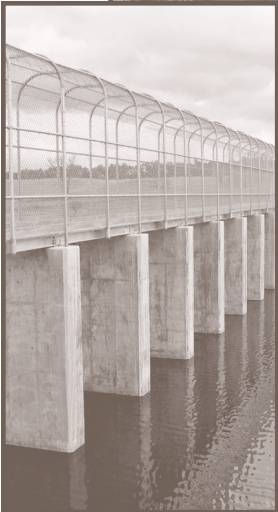
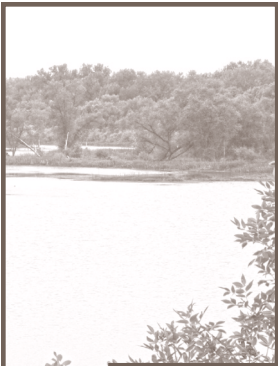






# Table of Contents

	PAGE
A Message From The State Engineer.....	1
Vision; Mission; Philosophy and Values; Agency Goals .....	2
Organizational Chart .....	3
Strategic Planning Focus Projects & Programs .....	4
Administration & Support Services .....	6
ARB Cooperative Observer Network.....	7
Atmospheric Research Program .....	8
Community Water Supply Studies .....	9
Cost-Share Program .....	10
Dam Safety Program.....	11
Design and Construction .....	12
Devils Lake Flood Control .....	13
Floodplain Management .....	14
Investigations.....	15
Municipal, Rural, & Industrial Water Supply Program.....	16
North Dakota Cloud Modification Project .....	17
Northwest Area Water Supply.....	18
Regulatory Program.....	19
Silver Jackets Program .....	20
Southwest Pipeline Project.....	21
State Water Management Plan.....	22
Water Education.....	23
Water Resource Data Information Dissemination.....	24
Water Resource Monitoring.....	25
Water Resource-Related Economic Development.....	26
Water Resource Research .....	27
Water Rights Administration & Processing .....	28
Water Rights Evaluation & Adjudication.....	29
Watershed Planning & Coordination.....	30
Map Appendix.....	31









### **A MESSAGE FROM THE STATE ENGINEER:**

*We are proud to present the North Dakota State Water Commission and Office of the State Engineer's 2015-2017 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 2013.*

*As in the past, the primary purpose of our 2015-2017 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.  
State Engineer  
Chief Engineer-Secretary

## 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.

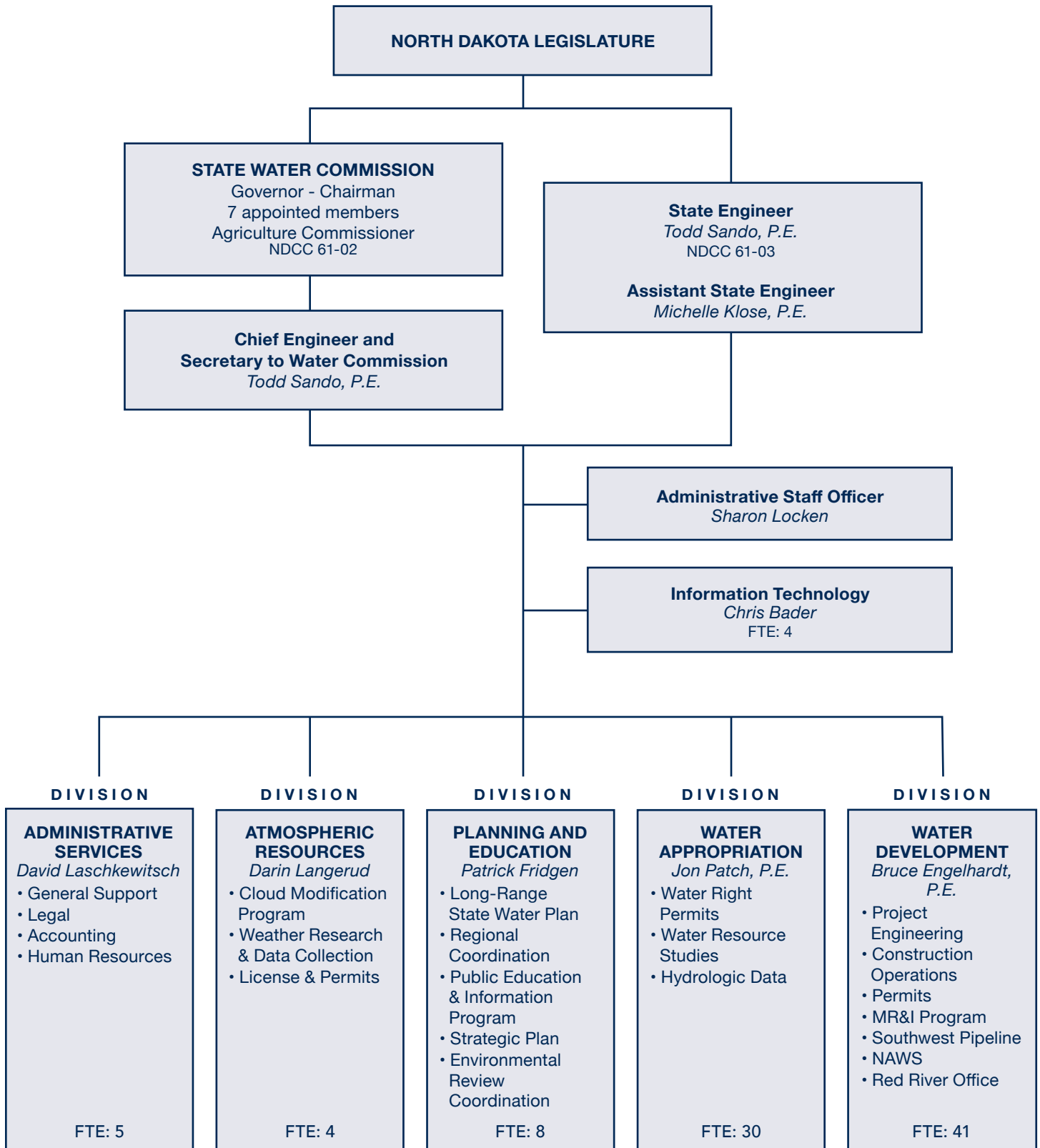
## Philosophy & Values

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.

# Organizational Chart



**TOTAL FULL TIME EQUIVALENTS OF 95 PERSONNEL**



# Strategic Planning Focus Projects & Programs

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

## Water Appropriations - *Jon Patch, Director*

Community Water Supply Studies

Water Resource Data  
Information Dissemination

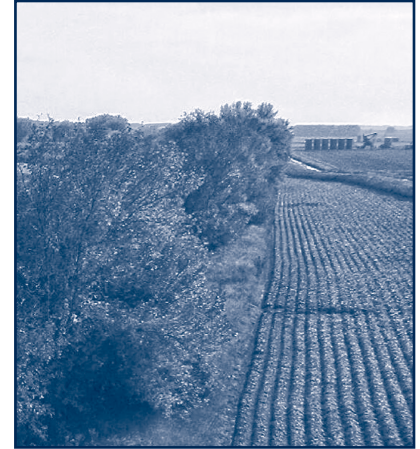
Water Resource-Related  
Economic Development

Water Resource Monitoring

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

# Administration & Support Services

## 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.

## Project/Program Objectives:

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

## 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.

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.



ACTION PLAN	TASKS	TARGET DATES
	Coordinate the timing of agency bonding .....	As needed
	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
	Prepare and submit the agency’s budget.....	Sept. 2016
	Coordinate development of agency testimony for legislative appropriations hearings.....	Dec. 2016



# ARB Cooperative Observer Network

## 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.

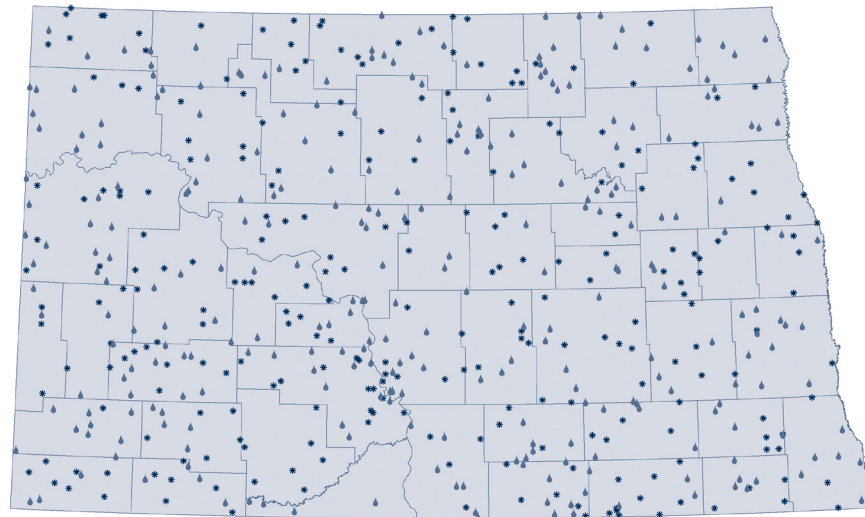
## Project/Program Overview:

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 550 and 1,000 observers annually, making it one of the highest density precipitation observation networks in the U.S. In all, more than three million daily precipitation observations, and over twelve thousand hail observations have been reported.

## Assumptions and Obstacles:

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

2014 ARBCON OBSERVERS



△ Summer Only     ★ Year-Round

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 gages to volunteer observers .....	March 2016 & 2017
	Expand the online reporting program .....	Winter, annually
Expand snowfall measurements in critical areas.....	Winter, annually	

# 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 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.

## 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.

## Assumptions and Obstacles:

Funding is the primary obstacle for the Atmospheric Research Program.



ACTION PLAN	TASKS	TARGET DATES
	Complete data analysis and assessment of the Polarimetric Cloud Analysis and Seeding Test (POLCAST) hygroscopic seeding research program.....	Summer 2016
Collaborate with other states and organizations/institutions doing similar research to improve and enhance North Dakota’s program.....	Ongoing	

# Community Water Supply Studies

## 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.

## 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.

## Assumptions and Obstacles:

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



ACTION PLAN	TASKS	TARGET DATES
	Conduct water supply studies .....	As requested



# Cost-Share Program

## 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.

## 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 protection, flood acquisitions, dam safety, recreation, snagging and clearing, studies, irrigation, bank stabilization, dam removal/breach, Federal Emergency Management Agency (FEMA) levee accreditation, water retention, engineering and technical assistance.

## Project/Program Overview:

Beginning in 1943, the North Dakota Legislative Assembly appropriated funds to the SWC for cost-share assistance on existing drain channels. Since then, the SWC cost-share program and policy have significantly evolved.

The State Water Commission has adopted a policy of supporting local sponsors in the development of sustainable water related projects in North Dakota. This policy reflects the agency’s cost-share priorities and provides basic requirements for all projects considered for prioritization during the budgeting process. Projects and studies that receive cost-share funding from the agency’s appropriated funds are consistent with the public interest. The State Water Commission values and relies on local sponsors and their participation to ensure on-the-ground support for projects and prudent expenditure of funding for evaluations and project construction. The Water Commission will provide grant or loan assistance for various types of projects related to water supplies, flood control, rural flood control, recreation, irrigation, bank stabilization, and pre-construction expenses.

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.

## 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.

ACTION PLAN	TASKS	TARGET DATES
	Review approximately 150-170 cost-share inquiries/applications for cost-share eligibility and assistance. (By the end of 2017, this is expected to increase by 20%).....	June 30, annually
	Present 110-120 cost-share proposals for approval and authorization by the SWC and 40-50 cost-share proposals for approval and authorization by the State Engineer. (By the end of 2017, this is expected to increase by 20%).....	June 30, annually
	Develop agreements/contracts for 150-170 approved and authorized projects. (By the end of 2017, this is expected to increase by 20%) .....	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 2017, this is expected to increase by 15%).....	June 30, annually

# Dam Safety 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.

## Project/Program Objectives:

- Conduct dam inspections in order to identify dams in need of maintenance or repair.
- 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.

## 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. A national dam inspection program took place in 1978-1981 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, administered by the SWC, was initiated to continue and build on that inspection program. There are currently 3,119 dams in North Dakota’s dam inventory. Of those, 44 dams are classified as high hazard and 88 are classified as medium hazard, meaning there is the potential for loss of life or significant property damage downstream if one of those dams were to fail.

## Assumptions and Obstacles:

Federal grants through FEMA and the National Dam Safety Program provide annual funding for training, equipment, and special projects. The availability of these grants is uncertain from year to year, making program planning a challenge.



ACTION PLAN	TASKS	TARGET DATES
	Conduct full periodic inspections of non-federally owned high hazard dams and medium hazard dams greater than 10 feet high on a rotational basis, approximately 20 dams per year .....	Oct. 31, annually
	Conduct partial inspections of approximately 140 dams each spring following spring runoff.....	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 inundation mapping, and review and approve EAPs as they are submitted .....	Ongoing
	Review and update the hazard classification of dams in North Dakota’s inventory.....	Ongoing

# Design & 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 gages throughout the state, thereby ensuring reliable data necessary for managing North Dakota’s water resources.

## 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 during major dam incidents.



## 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 gage network through cooperative efforts with the USGS .....	Summer, annually
	Conduct general construction projects .....	Summer, annually



# Devils Lake Flood Control

## 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.

## 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.

The state completed an emergency outlet from west Devils lake to the Sheyenne River in 2005 that was sized for a maximum discharge of 100 cubic feet per second (cfs), and in the spring of 2010, increased the capacity to 250 cfs. An east Devils Lake outlet was completed in June of 2012. That outlet has a 350 cfs pumped capacity. The combined total of the two outlets is 600 cfs, and together are capable of removing about one foot of water per pumping season (based on a lake elevation of 1454). To keep stakeholders involved in outlet operations, the Devils Lake Outlets Advisory Board meets on an annual basis.

Regarding the infrastructure portion of the three-pronged approach, the embankment protecting the city of Devils Lake is mostly complete but rural areas continue to face a threat from the swelling lake. Cities and counties continue to work with state and federal agencies to raise roads and protect public infrastructure.

Various efforts to store water and reduce runoff in the upper basin continue - mostly through a variety of conservation programs.

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



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 Outlet Mitigation Plan and respond to damage claims.....	Ongoing	



# Floodplain Management

## 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 (CAP) of FEMA.
- Support the Risk Mapping and Assessment Planning (MAP) program, which updates and revises identification of flood hazards.

## 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, Risk MAP and Map Modernization Management Support programs.



## 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 .....	Sept. 30, annually
	Conduct floodplain management training workshops and participate in related training workshops under CAP.....	Sept. 30, annually
	Manage the selection and study process of community candidates for initial flood hazard identification or flood hazard revision relative to the NFIP .....	Annually
	Promote the availability and use of mapping products produced as part of Risk MAP .....	Sept. 30, annually

# 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.

## 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 SE 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. The Section provides coordination for the Mouse River Enhanced Flood Protection Project and develops tools for GIS techniques in water resources engineering.

## 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, the collection, analysis, and interpretation of data from these floods continue well beyond the events. With those issues expected to be in the forefront in the coming years, that trend will likely continue.



ACTION PLAN	TASKS	TARGET DATES
	Provide technical reviews of Missouri River management issues, especially the Missouri River Authorized Purpose Study .....	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	



# Municipal, Rural, & Industrial Water Supply Program

## 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.

## 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 \$135 million. Funding used for the MR&I program is provided through the U.S. Bureau of Reclamation (USBOR). The Garrison Diversion Conservancy District (GD CD) signed a cooperative agreement with the USBOR to receive the federal funding. Further, the SWC and GD CD signed a joint powers agreement to administer the program based on a memorandum of understanding.

Because of North Dakota's MR&I program, cities, regional and rural water systems have received assistance throughout the state. As a result of this added assistance, there are now 32 regional water systems in North Dakota, providing quality drinking water to over 200 cities and over 40,000 rural users. Currently, all or parts of North Dakota's 53 counties are served by regional water systems.

## Assumptions and Obstacles:

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

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



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 the Garrison Diversion Conservancy District and the Congressional Delegation on federal appropriations .....	Ongoing	
Coordinate with the GD CD in the prioritization and allocation of MR&I funds.....	Ongoing	

# North Dakota Cloud Modification Project

## 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 North Dakota Cloud Modification Program (NDCMP) target area.
- Enhance summer rainfall from thunderstorms in NDCMP target area.

## Project/Program Overview:

The NDCMP is a long-running, operational cloud seeding program with the dual purposes of hail suppression and rainfall enhancement. The target area covers more than 11,500 square miles in seven western North Dakota counties during the months of June, July, and August. Counties partner with the state through the 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 million to \$19.7 million annually, producing a benefit to cost ratio of 12-20 to 1.

## 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 North Dakota Cloud Modification Project, see the Appendix.*



## ACTION PLAN

TASKS	TARGET DATES
Hire NDCMP field personnel .....	May, annually
Conduct pre-project ground school .....	May, annually
Conduct NDCMP operations .....	June-Aug., annually
Conduct data analysis and final reporting to participating counties.....	Winter, annually
Report cloud seeding activities to the National Oceanic and Atmospheric Administration .....	Spring & fall, annually



# Northwest Area Water Supply

## 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.

## 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.

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, All Seasons Water District, and Minot (also serves North Prairie Water District and Minot Air Force Base). NAWS is getting interim water supply through a 10-year contract with Minot, which expires in 2018.

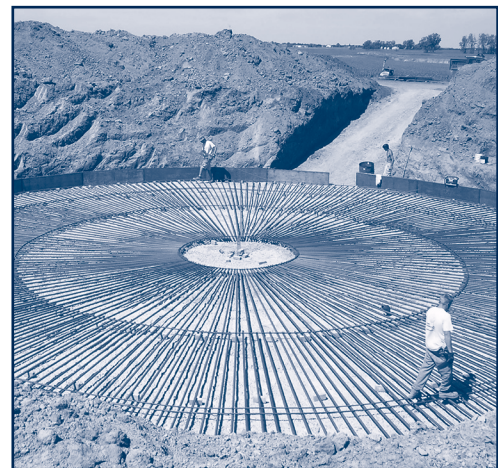
In 2002, a lawsuit was filed by Manitoba; primarily arguing that NAWS could increase the risk of transferring non-native biota between the Missouri River and Hudson Bay drainage basins. In 2009, the state of Missouri filed against the U.S. Bureau of Reclamation and the Corps of Engineers; primarily arguing NAWS would negatively affect depletions of the Missouri River. The Missouri filings were ultimately combined with Manitoba's. Various elements of project construction were 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. The draft Supplemental EIS was made available for public comment in June 2014. The public comment period ended September 10, 2014.

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

## Assumptions and Obstacles:

Adequate federal funding must be received in a manner that does not impede progress. Completion of the Supplemental EIS in 2015, 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 a necessary water supply, then the existing communities and rural water systems will need to return to their inadequate ground water supplies.

*For a map of the NAWS project, see the Appendix.*



ACTION PLAN	TASKS	TARGET DATES
	Assist the USBOR with preparation of a Supplemental EIS to address the court's May 2009 order .....	2015
	Complete court filings.....	2015-2016
	Develop plans and manuals as required by EIS commitments .....	Summer 2015

# 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.

## 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.

## Project/Program Overview:

As authorized by NDCC 61-03, 61-04, and 61-16.1, the SE 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 SE to regulate drainage. The SE also has been responsible for managing sovereign lands since 1989, as authorized by NDCC 61-33. The SE coordinates these regulatory activities with the county water resource districts (WRDs) across the state.

In addition to these permitting processes, the Regulatory Program provides technical assistance to local WRDs, 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 SE on various interagency committees, and provides agency review of Public Service Commission mining permits and U.S. Army Corps Section 404 permits.

## 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.



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

# Silver Jackets Program

## Agency Goal 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:

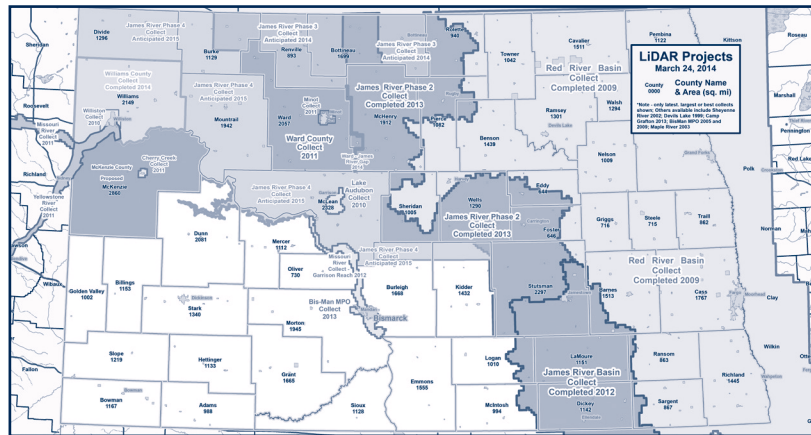
- Educate state agencies, county water boards, and communities on the Silver Jackets Program.
- Assist communities with FEMA's levee recertification requirement or Provisionally Accredited Levee (PAL) program.
- Assist communities with project requests in support of flood control or long term flood mitigation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

## 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 charter was then updated in 2014, with the addition of the National Weather Service, U.S. Geological Survey, ND Geological Survey, U.S. Fish and Wildlife Service, and the Natural Resources Conservation Service. 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.

## Assumptions and Obstacles:

The potential for flooding in North Dakota will continue annually due to both rain and spring snow melt events. 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 of this program is critical to its existence.



ACTION PLAN	TASKS	TARGET DATES
	Promote awareness of North Dakota's 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	

# Southwest Pipeline 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 water supply needs in southwest North Dakota.

## Project/Program Overview:

The Southwest Pipeline Project (SWPP) is a regional water supply system that draws water from Lake Sakakawea and serves over 58,000 people in southwest North Dakota, including 31 communities, and 5,350 rural hookups – with more served when the Oliver-Mercer-North Dunn Regional Service Area is complete.

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.

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

## 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.*

ACTION PLAN	TASKS	TARGET DATES
	Bid 6 million gallons per day Water Treatment Plant in Dickinson.....	Summer 2015
	Bid the Supplementary Intake Pump Station .....	Summer 2015
	Bid parallel piping between intake and Zap reservoir .....	Summer 2015
	Bid parallel piping between Richardton Pump Station to Dickinson Reservoir.....	Summer 2015
	Bid Dodge Pump Station upgrades .....	Summer 2015
	Bid Richardton Pump Station upgrades .....	Summer 2015
	Bid parallel piping between Dodge Pump Station and Richardton Reservoir (Phase I).....	Summer 2015
	Design of parallel piping between Dodge Pump Station and Richardton Reservoir (Phase II) .....	Summer 2015
	Bid parallel piping between Dodge Pump station and Richardton Reservoir (Phase II) .....	Summer 2016
	Design of parallel piping between Zap Reservoir and Dodge Pump Station.....	Summer 2016
	Design of parallel piping between Dickinson Reservoir and Dickinson.....	Fall 2016
	Bid Parallel piping between Zap Reservoir and Dodge Pump Station.....	Summer 2017
	Bid parallel piping between Dickinson Reservoir and Dickinson.....	Summer 2017
Bid raw water reservoirs .....	Summer 2017	



# 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 Water Development Report by January 2017 to serve as a supplement to the 2015 State Water Management Plan.

## Project/Program Overview:

By virtue of North Dakota Century Code (NDCC), 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 Commission is require to develop and maintain a comprehensive water development plan. The most recent comprehensive Water Management Plan was completed in 2015. 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.



## Assumptions and Obstacles:

Active participation and accurate input from local water managers and project sponsors regarding project funding needs will be critical for 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 2017-2019 biennium and beyond .....	Jan. 2016
	Coordinate project information collection efforts with the North Dakota Water Coalition and its membership.....	Spring 2016
	Develop a preliminary water resource project/program inventory for the 2017-2019 biennium and beyond .....	May 2016
	Review and update SWC water planning goals, objectives, and policies.....	Spring/Summer 2016
	Process project information for use in SWC budget development.....	Aug. 2016
	Conduct SWC-hosted basin meetings as required per NDCC 61-02-01.3.....	Fall 2016
	Develop a final 2017 WDR.....	Dec. 2016
	Present the 2017 WDR to the Legislative Assembly – outlining funding needs.....	Jan. 2017

# Water Education

## 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:
  - 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.

## Project/Program Overview:

Today, North Dakota Project WET is known as the North Dakota Water Education Program. This program encompasses Project WET curriculum materials and educational resources in conjunction with other water education resources as a means of enhancing public awareness, promoting action learning, and promoting knowledge through exploration and stewardship of North Dakota's water resources. North Dakota Water Education Program teaches water science, conservation, and best management practices by demonstrating how water interacts with both humans and natural environments within North Dakota's watersheds. Many of the programs are presented using indoor and outdoor educational experiences and the dissemination of classroom-ready teaching aids.

## Assumptions and Obstacles:

Continued funding through an Environmental Protection Agency Section 319 Grant is critical to the success and continuation of the Water Education program.



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 2016
	Provide funds for the Keep North Dakota Clean water education poster contest.....	March 2016 & 2017
	Complete all Section 319 EPA grant development and reporting requirements.....	Ongoing
Complete one Watershed Institute .....	Summer 2016	

# Water Resource Data Information Dissemination

## 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.

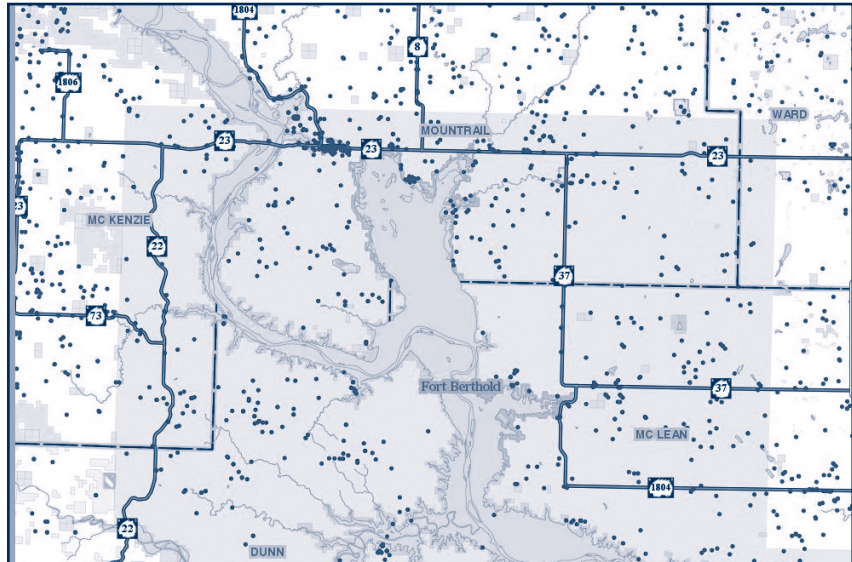
## Project/Program Overview:

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.

## 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.

Location	County	Purpose	Well Driller	Date Drilled
152-092-08 CCC	Mountrail	Domestic	Dennis Water Well Drilling	11/13/2005
152-092-10 DB	Mountrail	Monitoring	Water Well Solutions	11/18/2013
152-092-16 CAB	Mountrail	Domestic	Dennis Water Well Drilling	02/05/1998
152-092-16 CCC	Mountrail	Industrial	Dennis Water Well Drilling	06/10/2003
152-092-16 CDD	Mountrail	Domestic	Dennis Water Well Drilling	10/10/2007
152-092-16 CDC	Mountrail	Domestic	Tandesi Water Well	05/30/1980
152-092-16 CDD	Mountrail	Domestic	S & L Drilling	11/02/1982
152-092-16 CDD	Mountrail	Domestic	Dennis Water Well Drilling	06/12/1996
152-092-16 DA	Mountrail	Domestic	Sax Well Drilling	05/31/1980
152-092-16 DCB	Mountrail	Domestic	B. K. Water Well Drilling	06/04/1976
152-092-16 DCB	Mountrail	Domestic	S & L Drilling	05/21/1983
152-092-16 DCC	Mountrail	Domestic	Dennis Water Well Drilling	06/06/1996
152-092-16 DCC	Mountrail	Domestic	Dennis Water Well Drilling, Inc.	09/10/2010
152-092-17	Mountrail	Domestic	Mariner Drilling	10/25/1978
152-092-17	Mountrail	Domestic	LTP Enterprises	12/17/1985
152-092-17	Mountrail	Domestic	Mohi Drilling	11/01/1981
152-092-17	Mountrail	Domestic	S & L Drilling	06/07/1983
152-092-17	Mountrail	Domestic	LTP Enterprises	12/18/1985
152-092-17	Mountrail	Geothermal	Bergerson-Caswell Inc.	05/25/2010
152-092-17 ACD	Mountrail	Monitoring	Braun Intertec	10/07/2003
152-092-17 ACD	Mountrail	Monitoring	Braun Intertec	10/07/2003
152-092-17 CC	Mountrail	Monitoring	Braun Intertec	10/22/1992
152-092-17 CC	Mountrail	Monitoring	Braun Intertec	10/21/1992
152-092-17 CC	Mountrail	Monitoring	Braun Intertec	10/21/1992
152-092-17 CC	Mountrail	Monitoring	Braun Intertec	10/21/1992
152-092-17 CC	Mountrail	Monitoring	Braun Intertec	10/20/1992
152-092-17 CC	Mountrail	Monitoring	Braun Intertec	10/21/1992
152-092-17 CC	Mountrail	Monitoring	Braun Intertec	10/20/1992
152-092-17 CC	Mountrail	Monitoring	Braun Intertec	10/19/1992
152-092-17 CC	Mountrail	Monitoring	Braun Intertec	05/12/2009



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	



# Water Resource Monitoring

## 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.

## Project/Program Objectives:

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

## 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.

## Assumptions and Obstacles:

Due to federal budget constraints, SWC 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 gages, 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
	Upgrade 60-70 continuous monitoring locations with real-time telemetry.....	Dec. 2015
	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 to continue funding support for approximately 46 surface water gage sites, 84 observation wells monitored monthly, 22 observation wells monitored real-time, and 150 water quality analyses collected from co-op monitoring network.....	Ongoing, annually	
Conduct one or two aquifer tests per year .....	Summer, annually	



# Water Resource-Related Economic Development

## 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.

## 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, in conjunction with the Bank of North Dakota, provides cost-share for new irrigation under the auspices of the Agricultural Partnership in Assisting Community Expansion (AgPACE) program. The SWC also provides support for irrigation through its cost-share program.

## Assumptions and Obstacles:

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



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 North Dakota Irrigation Association's efforts to expand irrigation development.....	Ongoing

# Water Resource Research

## 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.

## 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 when the entire study is conducted by the SWC.

## Assumptions and Obstacles:

Continuing or reformulated research could result from the interpretations that come from these studies. Assist North Dakota State University tile drainage project with monitoring and placement. Complete the SEBAL/Metric actual evapotranspiration algorithm development and training which is being funded by the SWC.



ACTION PLAN	TASKS	TARGET DATES
	Annual review, decisions, and supplemental funding for graduate water resource investigations (ND Water Resources Institute) .....	Annually
	Conduct an evaluation of nitrate contamination and remediation in the Karlsruhe aquifer .....	Annually
	Assist and provide partial funding for study of irrigation through tile drains in Richland County .....	2015



# Water Rights Administration & Processing

## Agency Goal(s) Satisfied:

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

## Project/Program Objectives:

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

## 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 water use development, inspections are conducted to verify the ability of the applicant to put water to beneficial use. Based on the inspection report, a conditional water permit is perfected and filed with the county recorders office as a water right associated with the land. Annual, self-reported, water use forms are verified and recorded to document that water is being put to beneficial use and the water right is being maintained. Technicians in the Water Appropriations Division periodically inspect water meters at water depots serving the oil industry. Beginning July 1, 2014, all temporary permits required an application fee. An online permit application system has been developed, which includes an E-Commerce compliant system for the submission of water permit applications and their associated filing fees. Beginning Jan. 1, 2015, all water depots selling water to the oil industry will be required to have a telemetry system that can communicate with the SE Water Depot Database using the SOAP service. The SOAP data is periodically reviewed and compared with meter readings to help ensure data integrity.

## 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 50-75 inspections of “completed” conditional water permits .....	Annually
	Perfect 25-50 inspected, completed, and conditional water permits .....	Annually
	Send out requests for annual use reports to permit holders .....	Nov. & 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	
Monitor telemetry compliance for industrial water depots .....	Ongoing	
Processing of meter reports from industrial water depots.....	Ongoing	
Inspect all active water depot sites associated with conditional, perfected, and temporary permits .....	Annually	
Maintain & enhance the On-Line Temporary Water Permit Database system for the processing of 900 to 1,200 temporary water permit applications .....	Annually	



# Water Rights Evaluation & Adjudication

## 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.

## 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, in 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 SE on the basis of encouraging beneficial use while protecting prior rights.

## 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 ground water permit applications, the state’s ground water 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.



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 SE .....	Ongoing	

# Watershed Planning & Coordination

## 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.

## 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.

In recent years, the SWC has provided technical assistance to the Devils Lake, Upper Sheyenne, Red, Mouse, 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 Missouri River Association of State and Tribes, Missouri River Stakeholders, and the Assiniboine River Basin Initiative.

## 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.



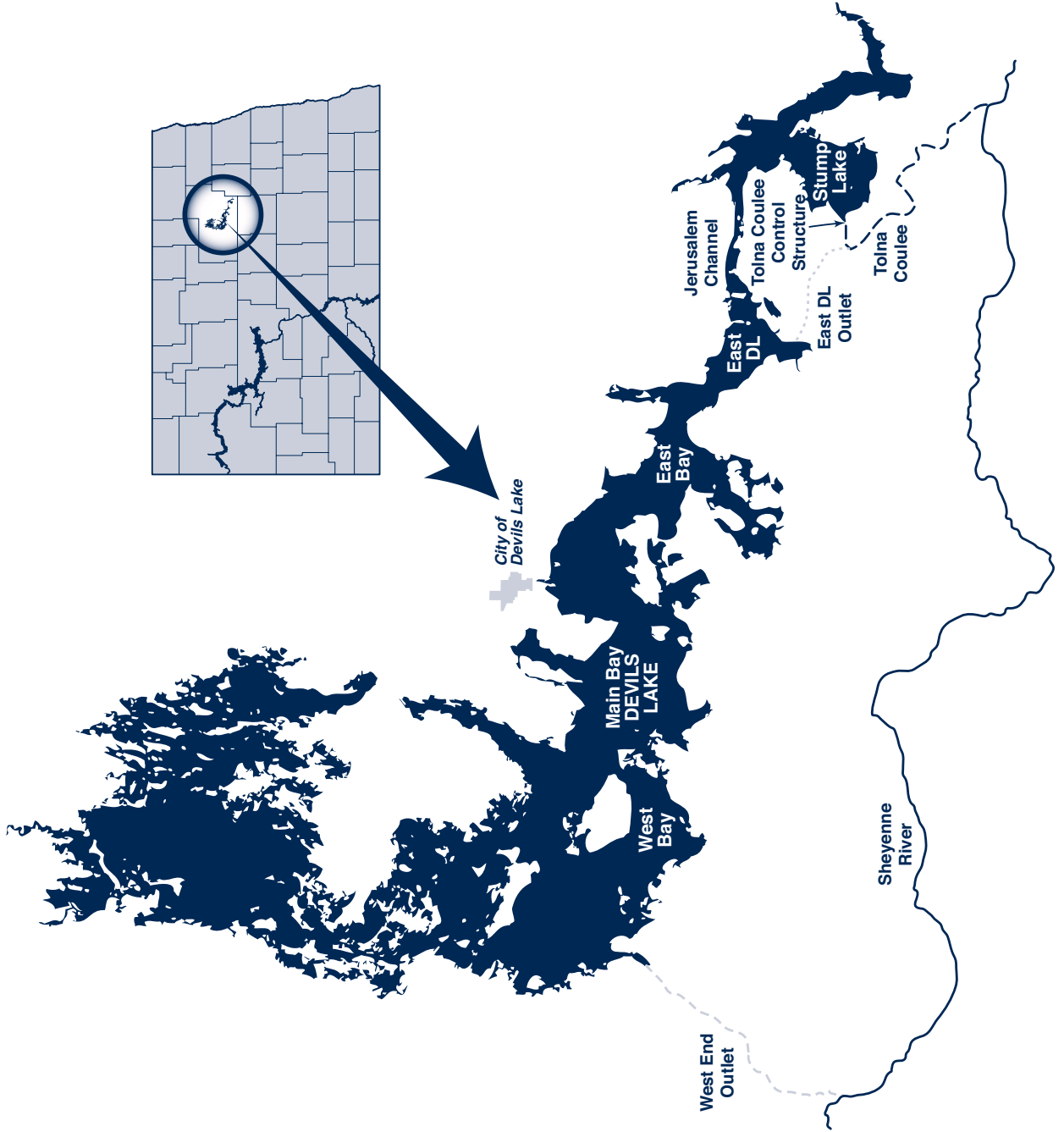
ACTION PLAN	TASKS	TARGET DATES
	Provide technical assistance toward the implementation of the Red River Basin Commission's Natural Resource Framework Plan.....	Ongoing
	Provide technical assistance toward the implementation of joint water board, water management plans.....	Ongoing
	Continue to participate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

# Map Appendix

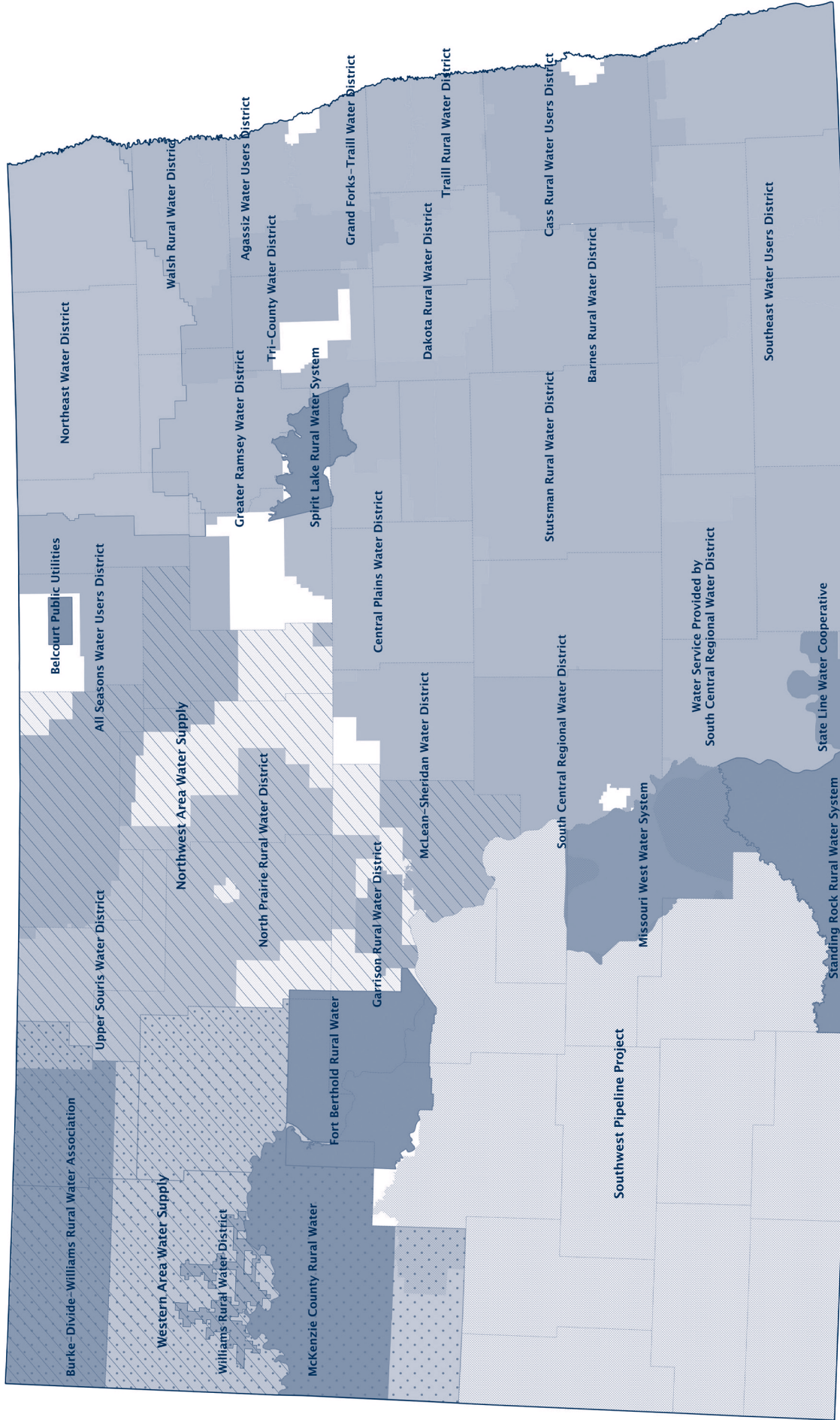




# Devils Lake Outlet Project

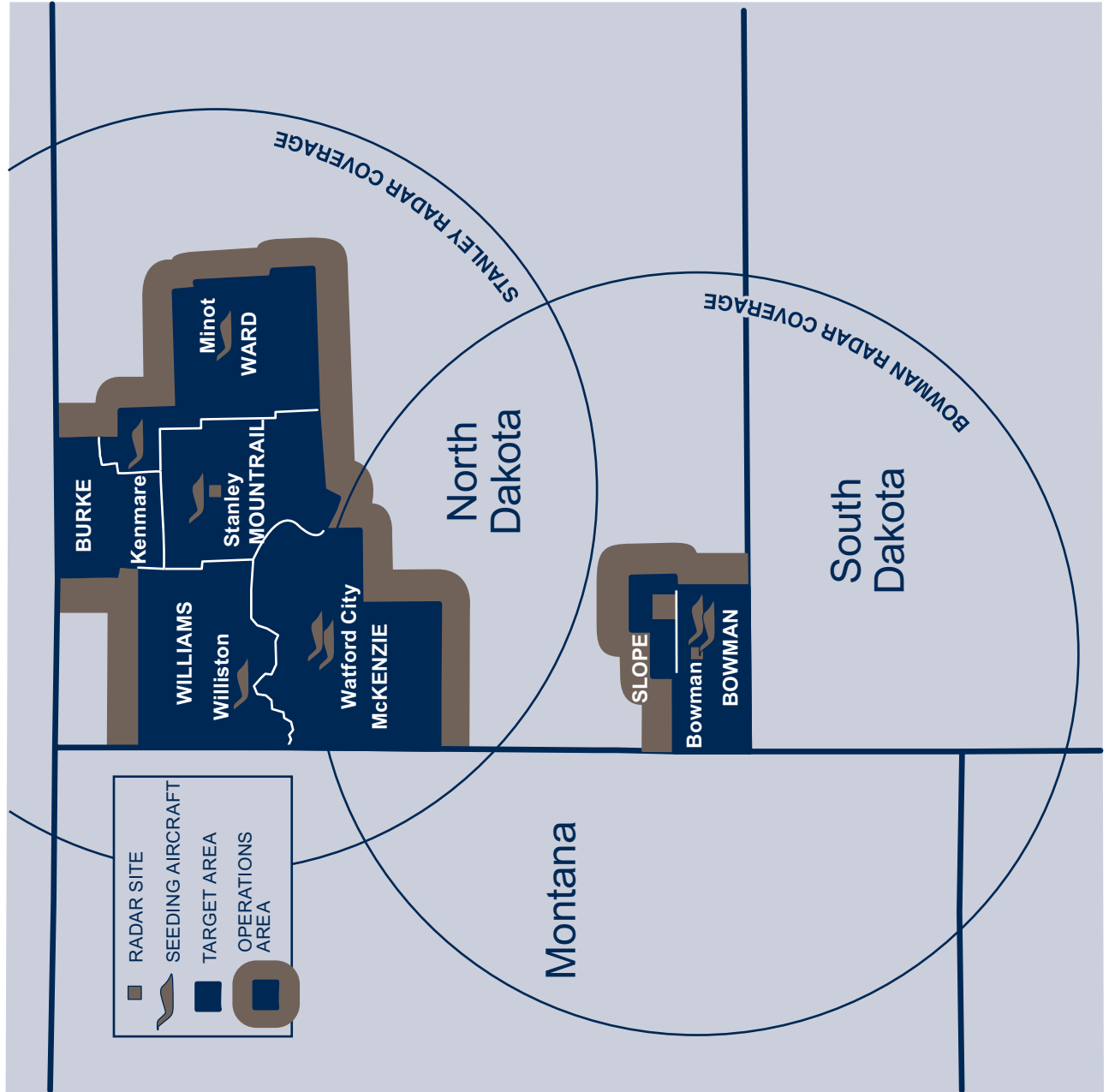


# Rural & Regional Water Supply Systems

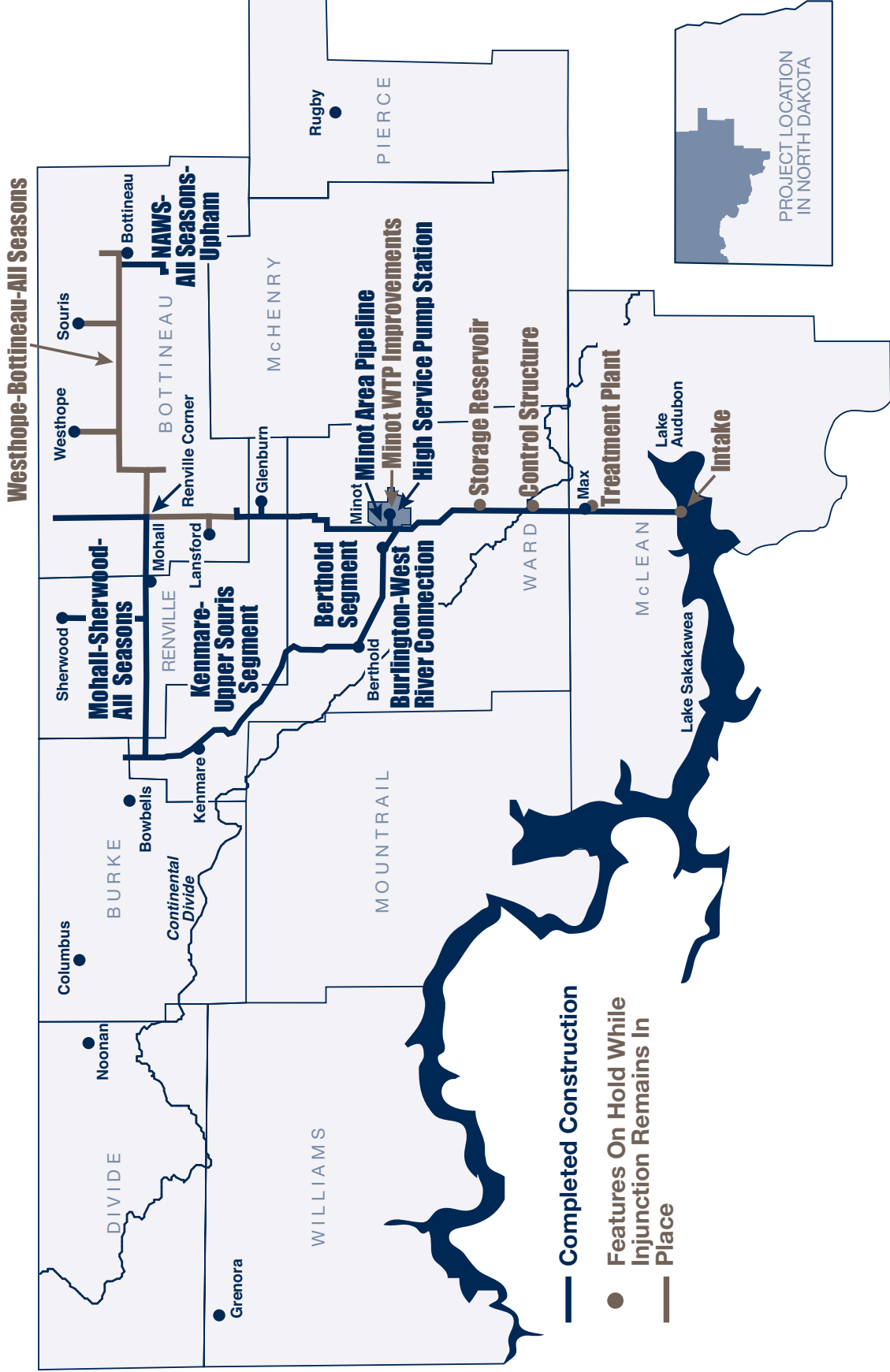




# North Dakota Cloud Modification Project



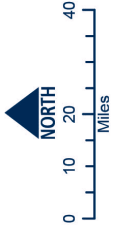
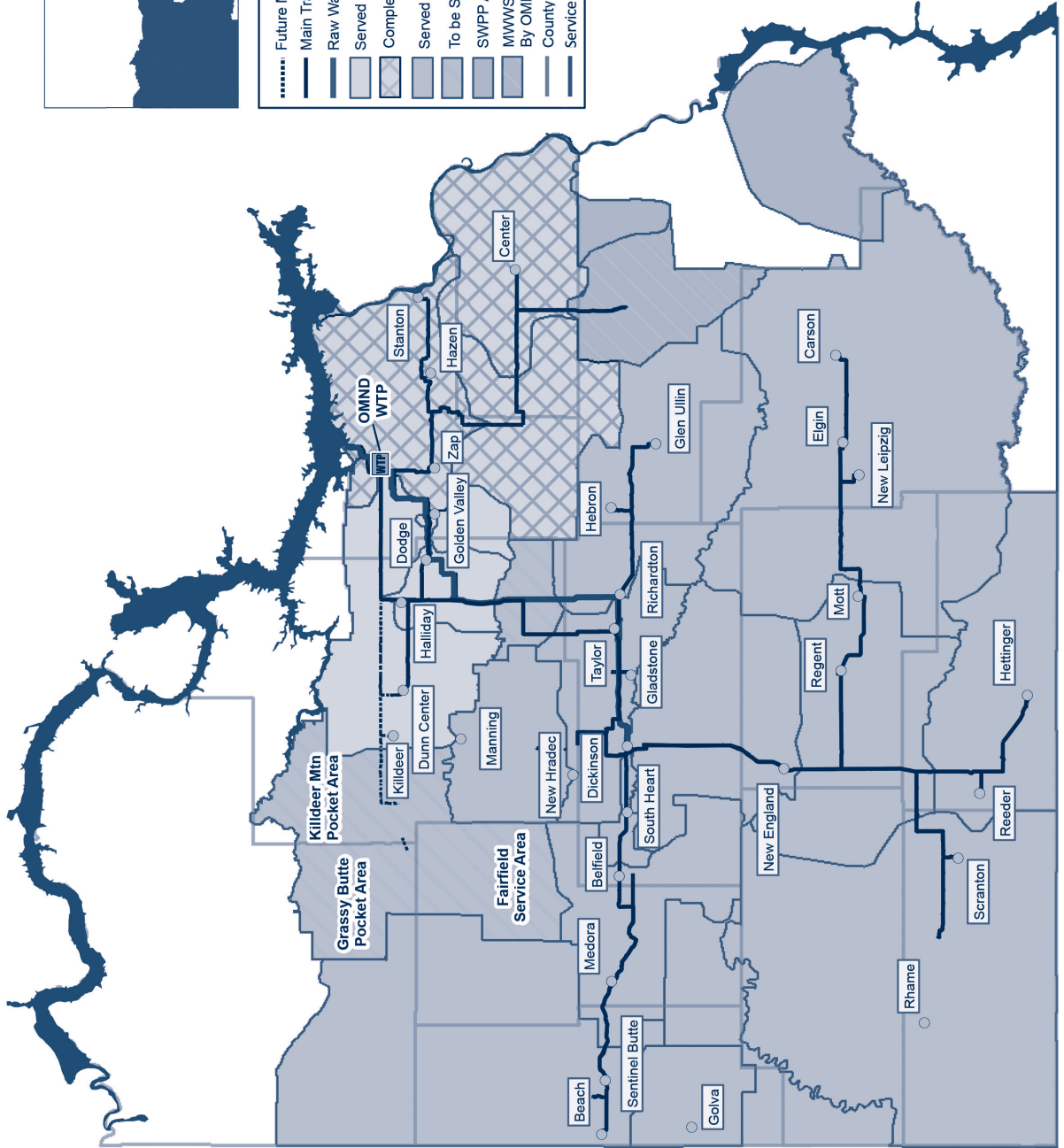
# Northwest Area Water Supply Project



# Southwest Pipeline Project



- ..... Future Main Transmission Pipeline
- Main Transmission Pipeline
- Raw Water Line
- ▨ Served by OMND WTP
- ▩ Completed or Under Construction
- ▧ Served by Dickinson WTP
- ▦ To be Served by OMND WTP in Future
- ▥ SWPP Area Served by MMWS
- ▤ MMWS Supplemental Service By OMND WTP
- ▣ County Boundaries
- ▢ Service Area Boundaries







North Dakota State Water Commission  
900 East Boulevard Ave. Dept. 770  
Bismarck, ND 58505-0850  
[www.swc.nd.gov](http://www.swc.nd.gov)