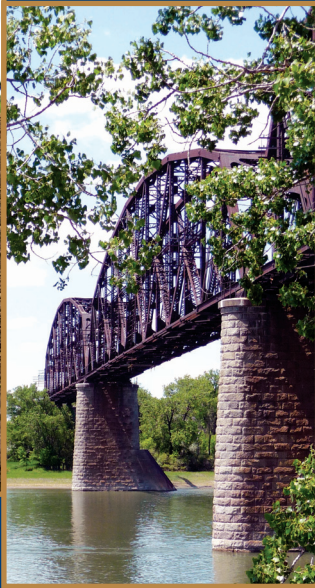
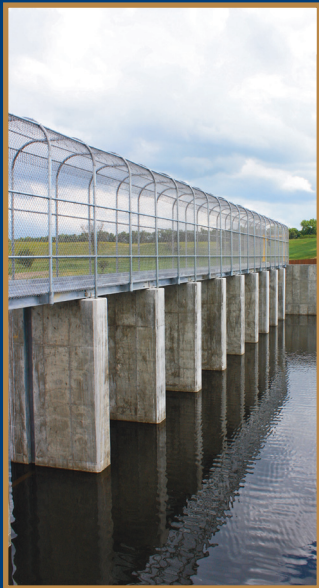


NORTH DAKOTA  
2013-2015 **PLAN**  
**Water Development**

*An Update To The 2009 State Water Management Plan*





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NORTH DAKOTA  
2013-2015 **PLAN**  
**Water Development**

*An Update To The 2009 State Water Management Plan*

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January 2013



### A MESSAGE FROM THE STATE ENGINEER:

*I am pleased to present you with the 2013-2015 North Dakota Water Development Plan, which is our second update of the 2009 State Water Management Plan (SWMP).*

*The State of North Dakota has made a tremendous amount of progress on many water development projects – all of which have positively impacted citizens and businesses all across the state. As I've said many times before, this success has only been accomplished because of the water community's dedication and cooperation to advance much-needed projects, and through the Governor and Legislature's continued support of water projects.*

*With the success of our state's business climate, increased demands to provide basic water services to our growing workforce, and in response to the unprecedented floods of 2009 and 2011, the financial needs of water projects is now greater than ever before. This most certainly provides challenges. However, because of increasing revenues available for water projects through the Resources Trust Fund (oil extraction tax), the state is positioned to help meet many of these difficult water development challenges facing North Dakota's citizenry.*

*With that, I hope that you will find this plan to be informative. And on behalf of North Dakota's Water Commission, I sincerely appreciate your interest and continued support of North Dakota's future water management and development efforts.*

*Sincerely,*

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



# Introduction

*It is the vision of the North Dakota State Water Commission that, “Present and future generations of North Dakotans will enjoy an adequate supply of good quality water for people, agriculture, industry, and fish and wildlife; Missouri River water will be put to beneficial use through its distribution across the state to meet ever increasing water supply and quality needs; and successful management and development of North Dakota’s water resources will ensure health, safety, and prosperity, and balance the needs of generations to come.” The elements outlined in this plan provide steps toward achieving that vision.*

## Background and Purpose

In biennia following the last two North Dakota State Water Management Plans in 1999 and 2009, the State Water Commission (SWC or Commission) has produced Water Development Plans as interim measures to:

- Serve as supplements to state water plans;
- Provide a progress report on the state’s priority water development efforts;
- Provide up-to-date information regarding North Dakota’s current and future water development project needs and priorities;
- Provide current information regarding North Dakota’s revenue sources for water development; and
- Serve as formal requests for funding from the Resources Trust Fund.

This 2013-2015 Water Development Plan will also serve those purposes.

## Authority

By virtue of North Dakota Century Code (NDCC), Section 61-02-14, Powers and Duties of the Commission; and Section 61-02-26, Duties of State Agencies Concerned with Intrastate Use or Disposition of Waters, the Commission is required to develop and maintain a comprehensive water management plan.





# Project Progress Summary

Two years ago, unprecedented revenues into the Resources Trust Fund enabled the SWC and the water community to plan for tremendous progress on several water development priorities across the state. At that time, some of the major priorities outlined in the 2011-2013 Water Development Plan included the following:

- Devils Lake Flood Control
- Devils Lake Downstream Impacts
- Fargo Flood Control

- General Water Management
- Irrigation
- Northwest Area Water Supply
- Red River Valley Water Supply
- Southwest Pipeline Project
- Water Supply Program
- Weather Modification
- Western Area Water Supply

But like anything involving water management and development, there is always an element of

unknown. And in the case of the 2011-2013 biennium, that unknown became the incredible, and unforeseen impacts that resulted from the historic flood events of 2011. In the wake of that event, state priorities were adjusted toward additional flood control measures, including floodplain property acquisition efforts; particularly in the Mouse, Sheyenne, and Missouri River basins – as directed by the Legislature during the 2011 special session.





The following section provides an overview of water development progress that occurred during the 2011-2013 biennium.

## Devils Lake Flood Control

- Continued to implement the state's three-pronged approach to solving the Devils Lake region's flooding problems, including: infrastructure protection, upper-basin water management, and operation of the state's emergency outlets.
- Completed a 350 cubic feet per second (cfs) emergency outlet from East Devils Lake in the summer of 2012. The maximum total discharge of the previously existing west, and new East Devils Lake outlets is now 600 cfs (See Map Appendix). Construction of the \$70 million East Devils Lake outlet was completed in only nine months.
- Completed a Tolna Coulee Control Structure in the summer of 2012 to reduce

the risk of a catastrophic natural overflow of Devils Lake. The control structure was developed in cooperation with the U.S. Army Corps of Engineers. That project is now owned and operated by the SWC.

## Devils Lake Downstream Impacts

- Provided \$15.4 million in funding to Valley City for a new water treatment plant, capable of handling increased sulfate concentrations in the Sheyenne River from Devils Lake outlet operations.
- Approved \$15 million in cost-share for the city of Fargo for water treatment improvements that are also needed to address increased sulfate concentrations in the Sheyenne River from Devils Lake outlet operations. An additional \$15 million from the state will likely be requested in the 2013-2015 biennium.

## Fargo Flood Control

- Provided technical and financial support to advance the Fargo-Moorhead Metro Area Flood Diversion Project.

- A Record of Decision was signed by the Assistant Secretary of the Army in April 2012.
- The city of Fargo has been moving forward with design efforts on upstream levees, in-town levees, bridges, and north-channel work. Land acquisitions for upstream and in-town levees are also underway, along with some additional construction on in-town levees.

## General Water Management

- Approved \$29.3 million in funding for general water management projects across the state.
- General water management projects include rural flood control, snagging and clearing, channel improvements, recreational projects, dam repairs, planning efforts, special studies, and mitigation for operation of the Devils Lake outlets.







## Irrigation

- Approved \$1 million for the McClusky Canal Mile Marker 7.5 Irrigation Project, which was developed in cooperation with the Garrison Diversion Conservancy District.
- Phase I of that project included 3,500 acres. Phase II could add an additional 3,500 acres in the future.

## Northwest Area Water Supply

- Provided water service to Sherwood, Mohall, All Seasons Water Users District near Antler, Upper Souris Water District near Sherwood, Minot's North Hill, Minot Air Force Base, Upper Souris Water District near Glenburn, and North Prairie Rural Water near Ruthville, from an interim supply from the Minot Water Treatment Facility (See Map Appendix).

- Upgraded filters and associated piping and controls at Minot Water Treatment Facility - increasing its capacity from 18 million gallons per day (MGD) to 26.5 MGD. Increases to softening capacity, which still remain at 18 MGD, are scheduled for the 2013-2015 biennium, pending court approval.
- Continued to work with the Bureau of Reclamation on a Supplemental Environmental Impact Statement (EIS) ordered by a federal court prerequisite to the lifting of an injunction.

## Red River Valley Water Supply Project

- An EIS for the Red River Valley Water Supply Project (RRVWSP) was released back in 2007.
- Currently, the RRVWSP is awaiting a record of decision from the Secretary of the

Interior, and Congressional authorization to use federal works. Until these two issues are addressed, the project is delayed.

## Southwest Pipeline Project

- Completed construction of the Oliver, Mercer, North Dunn (OMND) Water Treatment Plant (WTP), and completed construction of two potable water reservoirs - one at the OMND WTP site and the other in Oliver County (See Map Appendix).
- Completed construction of a main transmission line (MTL) in Mercer and Oliver County.
- Southwest Pipeline water was delivered to the cities of Stanton, Hazen, Zap, and Center, along with rural customers around Zap and Beulah during the summer of 2012.
- Began construction of the Zap service area rural

distribution system, and began design of the MTL for the Dunn service area and supplemental raw water intake (See Map Appendix).

## Water Supply Programs

- Federal funding for water supply projects through the Municipal, Rural, and Industrial (MR&I) Water Supply Program has decreased dramatically in recent years. For that reason, the state has increased investments in rural and regional water supply system advancements across the state.
- Provided state funding assistance for Burke, Divide, Williams Water System; Crosby Water Supply; Grand Forks-Traill Water District expansion; the city of Fargo; McKenzie County Regional Water System (Phase II and Phase IV); the city of Parshall; North Central Rural Water Consortium (Anamoose-Benedict); North Central Rural Water Consortium (Berthold-Carpio); North Central Rural Water

Consortium (Mountrail Phase II); Northwest Area Water Supply; South Central Regional Water District (Emmons County); R&T Water Supply water treatment; Southwest Pipeline Project; Stutsman Rural Water District expansions; Traill Rural Water District Phase III; Valley City Water Treatment Plant; and Western Area Water Supply (See Map Appendix).

- MR&I funding assistance was provided for projects involving the Northwest Area Water Supply, South Central Regional Water District (Emmons County), and Southwest Pipeline Project (Oliver, Mercer, North Dunn).

## Weather Modification

- The Atmospheric Resource Board (ARB) successfully operated weather modification programs in six counties in western North Dakota.
- The ARB Cooperative Observer Network had 608 active precipitation observers in 2012 – its thirty-sixth year of operation. Of those

observers, 331 reported rainfall amounts, and 277 reported both rain and snow measurements. The snow data has helped fill gaps in existing snow data networks, assisting forecasters in predicting spring runoff and flooding risks.

## Western Area Water Supply

- Western Area Water Supply (WAWS) has service contracts with the communities and rural water systems that will be served by the system (See Map Appendix).
- The following water supply systems will have water provided to them through the WAWS transmission lines by the end of the biennium: Watford City, Ray, Tioga, Stanley, Wildrose, Crosby, Noonan, Columbus, and Fortuna, as well as McKenzie Rural Water, Burke-Divide-Williams Rural Water, and Williams Rural Water districts.
- Construction of the McKenzie County Phase IV rural distribution project was started this spring with a portion of western McKenzie





County being substantially completed in fall 2012, and final completion in August 2013. As of fall 2012, the system is serving over 80 residents.

- Construction contracts have been awarded for five system reservoirs, the pipeline from Williston to Ray, the pipeline from Williston to Watford City, and the pipeline from R&T Water to the city of Crosby and Burke-Divide-Williams Rural

Water. All contracts are to be substantially complete by the end of the 2012 construction season.

- WAWS currently has the following water depots operational and generating water for the project: McKenzie County's System II Keene Depot, McKenzie County's Indian Hills Depot, the city of Williston's 2nd Street Depot and the North Williston Depot. As of November 2012, the 13 Mile

Depot, Alexander Depot and the Indian Hills Expansion were complete. The Watford City and Ray Depots are scheduled for completion in early 2013.

- Direct water pipeline connections have also been made available by WAWS to oil companies interested in a direct supply line to drilling locations.



## Completed Projects, 2011-2013 Biennium

Table 1 lists the projects, programs, and studies that were completed by September 2012, or 63 percent of the way through the 2011-2013 biennium.

Table 1: Completed Projects, 2011-2013 Biennium

PROJECT SPONSOR	PROJECT NAME
Barnes County Water Resource District (WRD)	Sheyenne River Snagging & Clearing Project
Barnes County WRD	Clausen Springs Dam Emergency Spillway Repair
Barnes County WRD	Clausen Springs Dam Emergency Action Plan
Bismarck State College	ND Water Quality Monitoring Conference
Burleigh County WRD	Fox Island 2010 Flood Hazard Mitigation Evaluation
Cass County WRD	Rush River Drain #69, Armenia Township
Cavalier County WRD	Mulberry Creek Drain Partial Improvement Phase III
City of Argusville	City of Argusville Flood Control Levee Project
City of Fort Ransom	City of Fort Ransom Riverbank Stabilization
City of Pembina	FEMA Levee Certification
Dickey County WRD	Pheasant Lake Dam Emergency Action Plan
Grand Forks County WRD	Kolding Dam Emergency Action Plan
McKenzie County Weed Control Board	McKenzie County Weed Control on Sovereign Lands
Missouri River Joint Board	Missouri River Recovery Implementation Committee - Terry Fleck
Missouri River Joint Board	Missouri River Joint Water Resource Board Goal Implementation
Morton County WRD	Square Butte Dam #5 Emergency Action Plan
Mountrail County WRD	White Earth Dam Emergency Action Plan
ND Game & Fish Department	Sovereign Land Rule Enforcement
ND Water Education Foundation	2012 Summer Water Tours
NDSU	NDSU Soil & Water Sampling
NDSU	NDSU Dept. of Soil Science - NDAWN Center
Nelson County WRD	Tolna Dam Emergency Action Plan
Nelson County WRD	Peterson Slough into Dry Run
Oak Creek WRD	Oak Creek Snagging & Clearing Project
Red River Basin Commission	Natural Resource Framework Plan Implementation

PROJECT SPONSOR	PROJECT NAME
Red River Basin Commission	Long-Term Red River Flood Control Solutions Study
Richland County WRD	Richland County Drain #7 Improvement Reconstruction
Richland County WRD	Richland County Drain #14 Improvement Reconstruction
Richland County WRD	Sheyenne River Snagging & Clearing Project
Richland County WRD	Wild Rice River Snagging & Clearing Project - Reach 2
Richland County WRD	Phase II Wild Rice River Snagging & Clearing
Rush River WRD	Cass County Drain #12 Improvement Reconstruction
Southeast Cass WRD	Cass County Drain #45 Extension Project
Southeast Cass WRD	Wild Rice River Snagging & Clearing
State Water Commission	Dale Frink Consultant Services
Traill & Steele County WRDs	Elm River Detention Dam #1 Emergency Action Plan
Traill County WRD	Elm River Detention Dam #2 Emergency Action Plan
Traill County WRD	Elm River Detention Dam #3 Emergency Action Plan
Traill County WRD	Buffalo Coulee Snagging & Clearing
Traill County WRD	Goose River Snagging & Clearing
U.S. Army Corps of Engineers	Bottineau County LiDAR Collect
U.S. Geological Survey	Mobile Stream Gages
Walsh County WRD	Digital Flood Insurance Rate Map Project
Walsh County WRD	Chyle Dam Emergency Action Plan
Walsh County WRD	Soukop Dam Emergency Action Plan
Walsh County WRD	Whitman Dam Emergency Action Plan
Walsh County WRD	Walsh County Drain #4a
Walsh County WRD	Walsh County Assessment Drain 10, 10-1, 10-2
Walsh County WRD	Walsh County Drain #73 Construction Project
Ward County WRD	Land Survey - Harriston Township Dike Complaint



## Currently Active Projects, 2011-2013 Biennium

The projects and project categories listed in Table 2 represent water development efforts that are being pursued in the 2011-2013 biennium. Several individual projects are listed in the table. However, a number of others fall under project categories, such as irrigation development or general water management, and therefore, are not individually identified in the table.

This table also represents the total 2011-2013 SWC project budget as of October 31, 2012, and the project funding the SWC had approved as of that time. As the table suggests, the SWC had approved 95 percent of the project budget by October 31, 2012.

Table 2: Currently Active Projects, 2011-2013 Biennium

PROJECTS	SWC BUDGET	APPROVED
<b>CITY FLOOD CONTROL</b>		
FARGO/RIDGEWOOD	\$50,941	\$50,941
FARGO	\$66,473,088	\$66,473,088
GRAFTON	\$7,175,000	\$7,175,000
MINOT	\$4,476,750	\$4,476,750
WAHPETON	\$1,013,000	\$1,013,000
<b>FLOODWAY PROPERTY ACQUISITIONS</b>		
MINOT	\$17,750,000	\$17,750,000
BURLINGTON	\$1,071,345	\$1,071,345
WARD COUNTY	\$11,500,000	\$11,500,000
VALLEY CITY	\$3,000,000	\$3,000,000
BURLEIGH COUNTY	\$1,425,000	\$1,425,000
SAWYER	\$184,260	\$184,260
LISBON	\$645,000	\$645,000
UNOBLIGATED SB 2371	\$9,310,245	
<b>FLOOD CONTROL</b>		
BURLEIGH COUNTY	\$1,282,400	\$1,282,400
RICE LAKE RECREATION DISTRICT	\$2,842,200	\$2,842,200
RENWICK DAM	\$1,246,571	\$1,246,571
<b>WATER SUPPLY</b>		
REGIONAL & LOCAL WATER SYSTEMS	\$26,652,898	\$25,517,910
VALLEY CITY WATER TREATMENT PLANT	\$15,386,800	\$15,386,800
FARGO REVERSE OSMOSIS PILOT STUDY	\$15,000,000	\$15,000,000
RED RIVER WATER SUPPLY	\$62,224	\$62,224
WESTERN AREA WATER SUPPLY	\$25,000,000	\$25,000,000
SOUTHWEST PIPELINE PROJECT	\$24,019,199	\$24,019,199
NORTHWEST AREA WATER SUPPLY	\$19,432,008	\$19,432,008
<b>IRRIGATION DEVELOPMENT</b>		
IRRIGATION DEVELOPMENT	\$3,608,353	\$1,097,422
<b>GENERAL WATER MANAGEMENT</b>		
GENERAL WATER MANAGEMENT	\$30,172,009	\$29,278,600
<b>DEVILS LAKE</b>		
BASIN DEVELOPMENT	\$92,340	\$92,340
DIKE	\$15,534,603	\$15,534,603
OUTLET	\$2,420,212	\$2,420,212
OUTLET OPERATIONS	\$6,215,627	\$6,215,627
TOLNA COULEE DIVIDE	\$4,366,720	\$4,366,720
EAST END OUTLET	\$71,848,290	\$62,942,273
GRAVITY OUTFLOW CHANNEL	\$13,720,185	\$13,720,185
JOHNSON FARMS STORAGE	\$125,000	\$125,000
<b>WEATHER MODIFICATION</b>		
WEATHER MODIFICATION	\$894,314	\$894,314
<b>TOTALS</b>	<b>\$403,996,582</b>	<b>\$381,240,992</b>



# State Water Development Program: Working with Project Sponsors

*This section briefly describes the inventory process used by the SWC to identify future water project and program funding needs. A summary of those funding needs, as provided by project sponsors, is also presented.*

## **The Inventory Process**

As part of the SWC's water planning efforts, the Planning and Education Division once again solicited project and program information from potential project sponsors. The results provide the SWC with an updated inventory of water projects and programs that could come forward for SWC cost-share in the upcoming 2013-2015 biennium and beyond. As in the past, the product of this effort becomes the foundation that supports the State Water Commission's budget request to the Governor and Legislature.

To obtain updated and new project and program information from sponsors, the Planning and Education Division sent project information forms to water boards, joint water boards, the North Dakota Irrigation Association, communities, and government agencies with an interest in water development projects and programs. The managers of major water projects, including rural water systems, Northwest Area Water Supply Project, Southwest Pipeline Project, Red River Valley Water Supply Project, and the Western Area Water Supply were also surveyed. Information requested on the forms included

general project descriptions, location, permit information, and identification of potential obstacles, among other basic aspects of the projects.

More importantly, sponsors were asked to assign the most realistic start dates possible to projects they expected to present to the SWC for cost-share consideration - particularly during the 2013-2015 and later biennia. As part of that effort, project sponsors needed to take into consideration when a funding commitment from the SWC will be needed, and to identify when state dollars will be necessary for projects or programs to proceed.

As the project information forms were received by the SWC, each project was reviewed to determine if portions of the project were eligible for cost-share, and if the proposed timeframes for project advancement were reasonable and justified by supporting information. After project reviews were completed, the information was transferred into a water project database. This provides the SWC with updated project information for older projects and an accounting of new projects that have developed since the last inventory process, during the 2011-2013 biennium. Of course, circumstances change, and so do project costs over time. Therefore, the database is updated regularly leading up to the Legislative Assembly.

In addition, SWC staff work closely with the North Dakota Water Coalition (which is made up of project sponsors from across the state), and the project sponsors themselves to maintain the most up-to-date project information possible. The result of this inventory process is a comprehensive list of water projects throughout North Dakota that could come

forward for new or additional cost-share in future biennia. As stated earlier, this is an important tool for budget planning purposes for the SWC, the Office of Management and Budget, the Governor's Office, and the Legislature.

### **Water Development Funding Needs, 2013-2015 Biennium**

Table 3 contains projects that could move forward and request SWC cost-share in the 2013-2015 biennium. This accounting of projects simply represents a non-prioritized list of needs as submitted by project sponsors. It does not guarantee, in any way, that all of the projects listed will receive funding. In addition, upon further review of the projects listed, the state's potential cost-share contribution may change based on the SWC's cost-share policy and requirements for eligible items.

The list is organized into nine categories including: flood control; studies and planning; dam repairs and reconstructions; irrigation; rural flood control; multi-purpose; municipal, rural,

and regional water supply; and snagging and clearing. The total financial need to implement all of the projects in the 2013-2015 inventory is about \$886 million. The state's share of that total could be about \$527 million. However, that number will evolve pending closer analyses of cost-share requirements once a request for funding has been made to the SWC. The federal government and local project sponsors would be responsible to make up the balance.

The 2013-2015 totals do not account for projects that may receive additional funding in the current 2011-2013 biennium. It should also be noted that water development projects can be delayed as a result of local or federal funding problems, permits, or environmental issues, which can substantially influence the actual need for any given biennium. Furthermore, the unpredictability of floods, droughts, and other unforeseen events can result in new funding needs that were not documented at the time this report was developed. As a result, the actual need for the upcoming biennium has the potential to change from what is portrayed here.

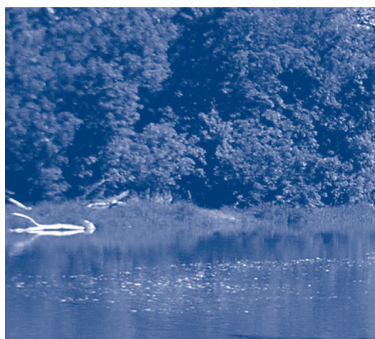




Table 3: Water Development Needs, 2013-2015 Biennium

FLOOD CONTROL					
LOCAL SPONSOR	PROJECT NAME	FEDERAL 2013-2015	STATE 2013-2015	LOCAL 2013-2015	TOTAL 2013-2015
Barnes County WRD	Ten Mile Lake Control Outlet	\$0	\$600,000	\$400,000	\$1,000,000
Burleigh County	Fox Island Flood Control	\$0	\$1,115,500	\$1,184,500	\$2,300,000
Burleigh County	Sibley Area Flood Control	\$0	\$592,370	\$611,630	\$1,204,000
Burleigh County	Harbor Drive Flood Control	\$0	\$129,878	\$762,757	\$892,635
Burleigh County	Hogue Island Flood Control	\$0	\$540,000	\$360,000	\$900,000
Burleigh County	Missouri River Correctional Area Flood Control	\$0	\$501,834	\$334,556	\$836,390
Fargo	Permanent Flood Protection	\$22,000,000	\$102,000,000	\$102,000,000	\$226,000,000
Fort Ransom	Permanent Flood Protection	\$0	\$2,800,000	\$0	\$2,800,000
Grafton	Grafton Flood Control Project	\$28,350,000	\$455,000	\$2,780,000	\$31,585,000
Lisbon	Permanent Flood Protection	\$0	\$9,460,000	\$0	\$9,460,000
Lower Heart River WRD	Mandan Flood Levee	\$0	\$100,000	\$100,000	\$200,000
Maple River WRD	Upper Maple River Dam Design and Construction	\$0	\$4,000,000	\$2,250,000	\$6,250,000
Maple River WRD	General Retention Development	\$0	\$150,000	\$150,000	\$300,000
Mapleton	Levee Improvement	\$0	\$900,000	\$700,000	\$1,600,000
Minot, Ward, Souris Joint WRD	Mouse River Valley Flood Control Project	\$0	\$61,000,000	\$40,700,000	\$101,700,000
Pembina	Flood Protection System Recertification	\$0	\$1,200,000	\$800,000	\$2,000,000
Red River Retention Authority	Wetlands Reserve Program for Flood Damage Reduction	\$8,000,000	\$1,200,000	\$420,000	\$9,620,000
Richland County WRD	Richland County Drain #67-8 Water Retention	\$0	\$702,000	\$378,000	\$1,080,000
Richland County WRD	Richland County Drain #95 Water Retention	\$0	\$185,900	\$100,100	\$286,000
Sargent County WRD	Shortfoot Creek Retention Site	\$0	\$100,000	\$100,000	\$200,000
Southeast Cass WRD	Sheyenne Diversion Improvement	\$0	\$180,000	\$120,000	\$300,000
State of North Dakota	Devils Lake Outlet Mitigation	\$0	\$5,000,000	\$0	\$5,000,000
State of North Dakota	Devils Lake Outlet Operations	\$0	\$10,000,000	\$0	\$10,000,000
Valley City	University District Phase II Acquisitions	\$0	\$1,050,000	\$350,000	\$1,400,000
Valley City	Clay Levees and Flood Walls	\$0	\$10,250,000	\$0	\$10,250,000
Walsh County WRD	North Branch Park River Floodplain Management	\$0	\$750,000	\$750,000	\$1,500,000
<b>FLOOD CONTROL TOTAL</b>		<b>\$58,350,000</b>	<b>\$214,962,482</b>	<b>\$155,351,543</b>	<b>\$428,664,025</b>

## STUDIES AND PLANNING

LOCAL SPONSOR	PROJECT NAME	FEDERAL 2013-2015	STATE 2013-2015	LOCAL 2013-2015	TOTAL 2013-2015
North Cass WRD	Elm River Retention Study	\$0	\$75,000	\$75,000	\$150,000
Pembina County WRD	Hamilton-Bathgate-Carlisle Watershed Study	\$0	\$37,500	\$37,500	\$75,000
Ransom County WRD	Maple River Subwatersheds Detention Projects Study	\$0	\$15,000	\$15,000	\$30,000
Ransom County WRD	Wild Rice Watershed Detention Study	\$0	\$15,000	\$15,000	\$30,000
Sargent County WRD	Upper Wild Rice Retention Plan	\$0	\$65,000	\$65,000	\$130,000
Southeast Cass WRD	Wild Rice Comprehensive Retention Plan	\$0	\$100,000	\$100,000	\$200,000
Southeast Cass WRD	Wild Rice Retention Site Development (Mantador)	\$0	\$250,000	\$250,000	\$500,000
Southeast Cass WRD	Wild Rice Retention Site Development (Additional)	\$0	\$375,000	\$375,000	\$750,000
Southeast Cass WRD	Sheyenne River Retention Site Development	\$0	\$250,000	\$250,000	\$500,000
Traill County WRD	Garfield Dry Dam	\$0	\$125,000	\$125,000	\$250,000
Traill County WRD	Goose River Dry Dam	\$0	\$125,000	\$125,000	\$250,000
USGS and State of North Dakota	Water Monitoring Agreement	\$800,000	\$900,000	\$0	\$1,700,000
<b>STUDIES &amp; PLANNING TOTAL</b>		<b>\$800,000</b>	<b>\$2,332,500</b>	<b>\$1,432,500</b>	<b>\$4,565,000</b>

## DAM REPAIRS & RECONSTRUCTIONS

LOCAL SPONSOR	PROJECT NAME	FEDERAL 2013-2015	STATE 2013-2015	LOCAL 2013-2015	TOTAL 2013-2015
Mountrail County WRD	White Earth Dam Repair	\$0	\$11,000	\$10,000	\$21,000
Pembina County WRD	Renwick Dam Reconstruction	\$4,550,000	\$1,225,000	\$1,225,000	\$7,000,000
<b>DAM REPAIRS &amp; RECONSTRUCTIONS TOTAL</b>		<b>\$4,550,000</b>	<b>\$1,236,000</b>	<b>\$1,235,000</b>	<b>\$7,021,000</b>

## IRRIGATION

LOCAL SPONSOR	PROJECT NAME	FEDERAL 2013-2015	STATE 2013-2015	LOCAL 2013-2015	TOTAL 2013-2015
Dickey-Sargent Irrigation Dist.	Oakes Test Area Project	\$0	\$2,500,000	\$2,500,000	\$5,000,000
Garrison Diversion	McLean County Irrigation Development	\$0	\$2,500,000	\$2,500,000	\$5,000,000
Horse Head Irrigation Dist.	Pump Site Improvements	\$0	\$100,000	\$100,000	\$200,000
<b>IRRIGATION TOTAL</b>		<b>\$0</b>	<b>\$5,100,000</b>	<b>\$5,100,000</b>	<b>\$10,200,000</b>

## RURAL FLOOD CONTROL

LOCAL SPONSOR	PROJECT NAME	FEDERAL 2013-2015	STATE 2013-2015	LOCAL 2013-2015	TOTAL 2013-2015
Cavalier County WRD	Rose Lake Drain	\$0	\$72,000	\$88,000	\$160,000
Dickey-Sargent Joint WRD	Jackson Township Improvement District 1	\$0	\$500,000	\$1,568,000	\$2,068,000
Dickey-Sargent Joint WRD	Riverdale Township Improvement District 2	\$0	\$500,000	\$611,111	\$1,111,111
Maple River WRD	Cass Drain #14	\$0	\$405,000	\$495,000	\$900,000
Maple River WRD	Cass Drain #37	\$0	\$270,000	\$330,000	\$600,000
Maple River WRD	Cass Drain #39	\$0	\$270,000	\$330,000	\$600,000
North Cass WRD	Cass Drain #55	\$0	\$337,500	\$412,500	\$750,000
North Cass WRD	Cass Drain #32	\$0	\$405,000	\$495,000	\$900,000
North Cass WRD	Cass Drain #23	\$0	\$500,000	\$1,300,000	\$1,800,000
North Cass WRD	Cass Drain #13	\$0	\$180,000	\$220,000	\$400,000
Pembina County WRD	Pembina Drain #73	\$0	\$405,000	\$495,000	\$900,000
Pembina County WRD	Pembina Drain #78	\$0	\$337,500	\$412,500	\$750,000
Pembina County WRD	Pembina Drain #39	\$0	\$225,000	\$275,000	\$500,000
Pembina County WRD	Pembina Drain #4	\$0	\$189,000	\$231,000	\$420,000
Ransom County WRD	Tri-county Drain	\$0	\$22,500	\$27,500	\$50,000
Richland County WRD	Richland County Drain #2	\$0	\$200,000	\$300,000	\$500,000
Richland County WRD	Richland County Drain #7	\$0	\$160,000	\$240,000	\$400,000
Richland County WRD	Richland County Drain #14	\$0	\$120,000	\$180,000	\$300,000
Richland-Sargent Joint WRD	Richland-Sargent Drain #1	\$0	\$225,000	\$275,000	\$500,000
Sargent County WRD	Sargent Drain #9	\$0	\$270,000	\$330,000	\$600,000
Sargent County WRD	Sargent Drain #8	\$0	\$247,500	\$302,500	\$550,000
Southeast Cass WRD	Cass Drain #21C	\$0	\$450,000	\$550,000	\$1,000,000
Southeast Cass WRD	Cass Drain #50	\$0	\$112,500	\$137,500	\$250,000
Traill County WRD	Garfield Township Drain	\$0	\$300,000	\$700,000	\$1,000,000
Traill County WRD	Traill County Drain #23-40	\$0	\$500,000	\$700,000	\$1,200,000
Walsh County WRD	Walsh County Drain #67A	\$0	\$225,000	\$275,000	\$500,000
Walsh County WRD	Walsh County Drain #90	\$0	\$225,000	\$275,000	\$500,000
Walsh County WRD	Walsh County Drain #87 and McLeod Drain	\$0	\$225,000	\$275,000	\$500,000
<b>RURAL FLOOD CONTROL TOTAL</b>		<b>\$0</b>	<b>\$7,878,500</b>	<b>\$11,830,611</b>	<b>\$19,709,111</b>

## MULTI-PURPOSE

LOCAL SPONSOR	PROJECT NAME	FEDERAL 2013-2015	STATE 2013-2015	LOCAL 2013-2015	TOTAL 2013-2015
Atmospheric Resource Board	Atmospheric Resource Board Projects	\$1,500,000	\$1,000,000	\$2,800,000	\$5,300,000
<b>MULTI-PURPOSE TOTAL</b>		<b>\$1,500,000</b>	<b>\$1,000,000</b>	<b>\$2,800,000</b>	<b>\$5,300,000</b>

## MUNICIPAL, RURAL, & REGIONAL WATER SUPPLY

LOCAL SPONSOR	PROJECT NAME	FEDERAL 2013-2015	STATE 2013-2015	LOCAL 2013-2015	TOTAL 2013-2015
All Seasons Water Users	Bottineau County Expansion Project	\$0	\$675,000	\$225,000	\$900,000
Barnes Rural Water	System Improvement and Treatment Plant	\$0	\$2,000,000	\$2,000,000	\$4,000,000
Cass Rural Water District	Phase II Water Treatment Plant Expansion	\$0	\$500,000	\$500,000	\$1,000,000
Central Plains Water District	Treatment Plant Improvements	\$0	\$2,500,000	\$2,500,000	\$5,000,000
Central Plains Water District	Additional Storage and Emergency Power	\$0	\$900,000	\$300,000	\$1,200,000
Crosby	Water Tower and Main Upsizing	\$0	\$1,965,750	\$655,250	\$2,621,000
Fargo	Treatment Plant Improvements	\$0	\$15,000,000	\$15,252,000	\$30,252,000
Fort Berthold Rural Water	Twin Buttes Expansion	\$0	\$1,662,100	\$1,662,100	\$3,324,200
Fort Berthold Rural Water	Twin Buttes Water Treatment Plant	\$0	\$3,000,005	\$3,000,005	\$6,000,010
Grafton	Phase III Treatment Plant Rehabilitation	\$2,022,350	\$2,603,825	\$2,603,825	\$7,230,000
Grand Forks	Regional Water Treatment Plant	\$0	\$4,992,791	\$4,992,791	\$9,985,582
Grand Forks Trail Water District	Regional System Expansion - Phase II	\$0	\$4,338,750	\$1,446,250	\$5,785,000
Greater Ramsey Water District	Southwest Nelson and North Benson County Exp.	\$0	\$3,000,000	\$1,000,000	\$4,000,000
Lake Agassiz Water Authority	Red River Valley Water Supply	\$0	\$9,000,000	\$500,000	\$9,500,000
Langdon Rural Water District	Regional Water Supply Project	\$0	\$9,750,000	\$3,250,000	\$13,000,000
Langdon Rural Water District	Adams City Reservoir	\$0	\$303,750	\$101,250	\$405,000
Langdon Rural Water District	ABM Pipeline Replacement	\$0	\$1,562,100	\$520,700	\$2,082,800
Langdon Rural Water District	ABM/Nekoma Pump Station Improvements	\$0	\$362,222	\$120,740	\$482,962
Mandan	New Raw Water Intake	\$0	\$1,902,099	\$634,033	\$2,536,132
Mandan	Treatment Plant Improvements	\$0	\$189,512	\$63,171	\$252,683
McLean Sheridan Rural Water	Blue and Brush Lakes Expansion	\$0	\$800,000	\$800,000	\$1,600,000
McLean Sheridan Rural Water	Mine Reclamation Area Expansion	\$0	\$250,000	\$250,000	\$500,000
McLean Sheridan Rural Water	Wolf Creek Area Expansion	\$0	\$280,000	\$280,000	\$560,000
Missouri West Water System	South Mandan System Improvements	\$0	\$600,000	\$200,000	\$800,000
North Central Rural Water	City of Plaza	\$0	\$250,000	\$250,000	\$500,000
North Central Rural Water	Granville-Deering Rural Water Project	\$0	\$3,300,000	\$1,100,000	\$4,400,000
North Central Rural Water	Mountrail Phase II	\$0	\$3,675,000	\$1,225,000	\$4,900,000

North Central Rural Water	Berhold/Carpio Phase II	\$0	\$1,732,500	\$577,500	\$2,310,000
North Valley Water District	93rd St. Pipeline Improvements	\$0	\$1,931,250	\$643,750	\$2,575,000
North Valley Water District	ABM Corridor Pipeline Replacement Phase I	\$0	\$843,954	\$281,318	\$1,125,272
Park River	Water Tower	\$0	\$1,875,000	\$625,000	\$2,500,000
South Central Regional Water	Kidder County Expansion	\$0	\$3,750,000	\$1,250,000	\$5,000,000
Southeast Water Users	West Membrane Softening Plant	\$0	\$250,000	\$250,000	\$500,000
Southwest Water Authority	Southwest Pipeline Project	\$0	\$90,000,000	\$0	\$90,000,000
Spirit Lake Rural Water District	Tokio Service Area Expansion	\$0	\$1,750,000	\$1,750,000	\$3,500,000
Spirit Lake Rural Water District	Warwick Service Area Expansion	\$0	\$1,750,000	\$1,750,000	\$3,500,000
Standing Rock Rural Water District	Selfridge Service Area	\$0	\$4,050,000	\$4,050,000	\$8,100,000
State of North Dakota and Minot	Northwest Area Water Supply	\$0	\$14,000,000	\$7,538,461	\$21,538,461
Stutsman Rural Water District	Phase II-B and Phase III	\$0	\$10,000,000	\$3,600,000	\$13,600,000
Surrey	Water Supply Improvements	\$0	\$2,046,108	\$682,037	\$2,728,145
Tri County Water District	Treatment Plant Improvements	\$0	\$520,000	\$520,000	\$1,040,000
Turtle Mountain Band of Chippewa	Phase II of Hwy 43 Expansion	\$0	\$1,350,000	\$1,350,000	\$2,700,000
Walsh Rural Water District	Ground Storage Expansion	\$0	\$1,026,225	\$342,075	\$1,368,300
Washburn	Horizontal Collector Well	\$0	\$2,700,000	\$900,000	\$3,600,000
Western Area Water Supply Authority	Western Area Water Supply	\$0	\$79,000,000	\$41,000,000	\$120,000,000
<b>MUNICIPAL, RURAL, &amp; REGIONAL WATER SUPPLY TOTAL</b>		<b>\$2,022,350</b>	<b>\$293,937,941</b>	<b>\$112,542,256</b>	<b>\$408,502,547</b>

<b>SNAGGING AND CLEARING</b>					
<b>LOCAL SPONSOR</b>	<b>PROJECT NAME</b>	<b>FEDERAL 2013-2015</b>	<b>STATE 2013-2015</b>	<b>LOCAL 2013-2015</b>	<b>TOTAL 2013-2015</b>
Richland County WRD	Antelope Creek Snag and Clear	\$0	\$25,000	\$25,000	\$50,000
Richland County WRD	Wild Rice River Snag and Clear	\$0	\$50,000	\$50,000	\$100,000
Richland County WRD	Sheyenne River Snag and Clear	\$0	\$50,000	\$50,000	\$100,000
Southeast Cass WRD	Wild Rice and Sheyenne River Snag and Clear	\$0	\$250,000	\$250,000	\$500,000
Traill County WRD	Buffalo Coulee Snag and Clear	\$0	\$27,650	\$27,650	\$55,300
Traill County WRD	Goose River Snag and Clear	\$0	\$97,014	\$102,986	\$200,000
Walsh County WRD	Park River South and Main Branch Snag and Clear	\$0	\$500,000	\$500,000	\$1,000,000
<b>SNAGGING AND CLEARING TOTAL</b>		<b>\$0</b>	<b>\$999,664</b>	<b>\$1,005,636</b>	<b>\$2,005,300</b>



Table 3 Cont.: Summary of Water Development Needs, 2013-2015 Biennium

PROJECT CATEGORY	FEDERAL COST	STATE COST	LOCAL COST	TOTAL COST
Flood Control	\$58,350,000	\$214,962,482	\$155,351,543	\$428,664,025
Studies & Planning	\$800,000	\$2,332,500	\$1,432,500	\$4,565,000
Dam Repairs & Reconstructions	\$4,550,000	\$1,236,000	\$1,235,000	\$7,021,000
Irrigation	\$0	\$5,100,000	\$5,100,000	\$10,200,000
Rural Flood Control	\$0	\$7,878,500	\$11,830,611	\$19,709,111
Multi-purpose	\$1,500,000	\$1,000,000	\$2,800,000	\$5,300,000
Municipal, Rural, & Regional Water Supply	\$2,022,350	\$293,937,941	\$112,542,256	\$408,502,547
Snagging and Clearing	\$0	\$999,664	\$1,005,636	\$2,005,300
<b>TOTAL</b>	<b>\$67,222,350</b>	<b>\$527,447,087</b>	<b>\$291,297,546</b>	<b>\$885,966,983</b>

# WATER DEVELOPMENT Funding Needs Beyond 2013-2015

Many of North Dakota's largest water projects cannot be completed in one or even two biennia, but rather, require longer-term financial planning. This is particularly the case for some of North Dakota's larger water project funding priorities, like flood control and water supply efforts. For that reason, project funding needs for future biennia are also requested from project sponsors – beyond the 2013-2015 biennium.

The potential funding reported by project sponsors beyond the 2013-2015 biennium, through 2021, likely will approach \$5 billion dollars in total project costs, with a large share attributed to water supply and flood control projects. According to information provided by flood control and water supply project sponsors, they have indicated potential funding needs from the state of \$938 million and \$640 million, respectively – for those two project categories through 2021. Taking into consideration the fact that project costs increase over time, and the likelihood of additional projects coming forward, funding needs beyond 2013-2015 will most certainly increase.



# Water Project Funding

*North Dakota funds a majority of its water projects through the SWC. Funding that is funneled through the SWC for water development has come from several sources, including: the state's General Fund; the Dakota Water Resources Act, the federal Municipal, Rural, and Industrial (MR&I) Water Supply Program; the Resources Trust Fund; and the Water Development Trust Fund. In addition to these sources, the SWC is also authorized to issue revenue bonds for water projects, and the SWC has shared control of the Drinking Water State Revolving Loan Fund. There are also other federal funding sources that will be briefly discussed.*

## **General Fund**

The proposed SWC budget includes almost \$16.6 million in general fund dollars for agency operations. This is significant for statewide water development efforts because it frees-up other trust fund revenue for projects.

## **Municipal, Rural, and Industrial Water Supply Program**

A major source of grant funding for water supply development in North Dakota in previous biennia has been through the federal MR&I Water Supply Program. Funding of this program was

authorized by Congress through the 1986 Garrison Diversion Unit Reformulation Act, and it is jointly administered by the Garrison Diversion Conservancy District, and SWC.

The 1986 Garrison Reformulation Act authorized a federal MR&I grant program of \$200 million. All of that funding has been expended. Additional federal funding authorization for the MR&I program resulted from the passage of the Dakota Water Resources Act of 2000. An additional \$600 million, indexed for inflation, was authorized; which includes a \$200 million grant for state MR&I, a \$200

million grant for North Dakota Tribal MR&I, and a \$200 million loan for a Red River Valley Water Supply Project. The act provides resources for general MR&I projects, the Northwest Area Water Supply Project, the Southwest Pipeline Project, and a project to address water supply issues in the Red River Valley.

Annual MR&I funding is dependent upon U.S. Congressional appropriation. As of October 2012, \$270 million in federal funds had been approved for North Dakota's MR&I program with \$19.3 million for federal fiscal years 2011 and 2012 (Table 4).

## Resources Trust Fund

Section 57-51.1-07.1 (2) of North Dakota Century Code requires that every legislative bill appropriating monies from the Resources Trust Fund (RTF), pursuant to subsection one, must be accompanied by a SWC report. This Water Development Plan satisfies that requirement for requesting funding from the RTF for the 2013-2015 biennium.

The RTF is funded with 20 percent of the revenues from the oil extraction tax. A percentage of the RTF has been designated by the Legislature to be used for water-related projects and energy conservation. The SWC budgets for cost-share based on a forecast of oil extraction tax revenue for the biennium, which is provided by the Office of Management and Budget.

Revenues into the RTF for the 2011-2013 biennium are expected to total \$392.3 million. When combined with the fund's 2011 beginning balance of \$148.1 million, less the estimated expenditures of \$275.2 million, the balance in the RTF at the

beginning of the 2013-2015 biennium could be \$265.2 million. Of that amount, \$139.3 million has not been committed to projects.

Because revenues from the oil extraction tax are highly dependent on world oil prices and production, it is very difficult to predict future funding levels. With that in mind, the September 2012 forecast includes \$547 million for the 2013-2015 biennium from oil extraction. Additional revenue into the RTF will come from Southwest Pipeline Project reimbursements, State Water Commission water supply program loan repayments (which amount to \$0.8 million per biennium through 2017), interest, and oil royalties. These are estimated to total an additional \$9.9 million (Table 5).

## Water Development Trust Fund

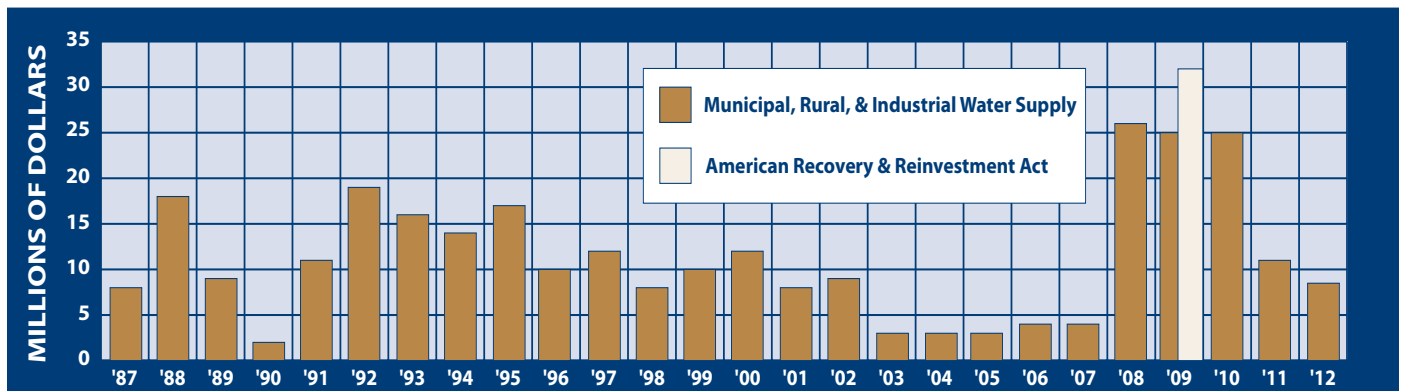
Senate Bill 2188 (1999) set up the Water Development Trust Fund as a primary means of repaying the bonds it authorized. House Bill 1475 allocated 45 percent of

the funds received by the state from the 1998 tobacco settlement into the Water Development Trust Fund.

Revenues into the Water Development Trust Fund for the 2011-2013 biennium are expected to total about \$18 million. The Office of Management and Budget estimates revenues of \$18 million for the 2013-2015 biennium (Table 6).

The passage of Measure 3 in 2008 by North Dakota voters redirects a portion of the tobacco settlement, known as the Strategic Contribution Fund (SCF), toward a statewide tobacco prevention program. The SCF portion of the settlement is North Dakota's compensation for work done by the state's Attorney General in finalizing the national tobacco settlement agreement. It is this increase in the settlement amount that is used for the tobacco prevention program. Reductions in revenue into the Water Development Trust Fund from Measure 3 have been factored into the aforementioned projections.

Table 4: Federal MR&I Water Supply Program Dollars Received, 1987-2012





Payments into the fund are scheduled through 2025 at a level based on inflation and tobacco consumption.

## Bonding

The SWC has bonding authority (NDCC 61-02-46) to issue revenue bonds of up to \$2 million per project. The Legislature must authorize revenue bond authority beyond \$2 million per project. In 1991, the Legislature authorized full revenue bond authority for the Northwest Area Water Supply Project, in 1997 it authorized \$15 million of revenue bonds for the Southwest Pipeline, and in 2001 it raised the Southwest Pipeline authority to \$25 million. As of June 30, 2012, the SWC had outstanding bonds totaling \$19.8 million for the Southwest Pipeline Project. There are no outstanding bonds for the Northwest Area Water Supply project.

In 1999, the SWC was authorized to issue up to \$84.8 million in appropriation bonds under

provisions of Senate Bill 2188. The Legislature's intent was to partially fund flood control projects at Grand Forks, Devils Lake, Wahpeton, and Grafton, and to continue funding for the Southwest Pipeline. In March 2000, the SWC issued bonds generating \$27.5 million, thus reducing available bonding authority to \$57.3 million. Recognizing the need for water development projects in addition to those identified in SB 2188, the 2003 Legislature allowed authority for the unissued \$57.3 million to expire, but then authorized \$60 million of bonding authority for statewide water development projects. In June 2005, the SWC did issue bonds generating \$60 million. As of June 30, 2012, the SWC had outstanding bonds totaling \$68.9 million for other statewide water projects.

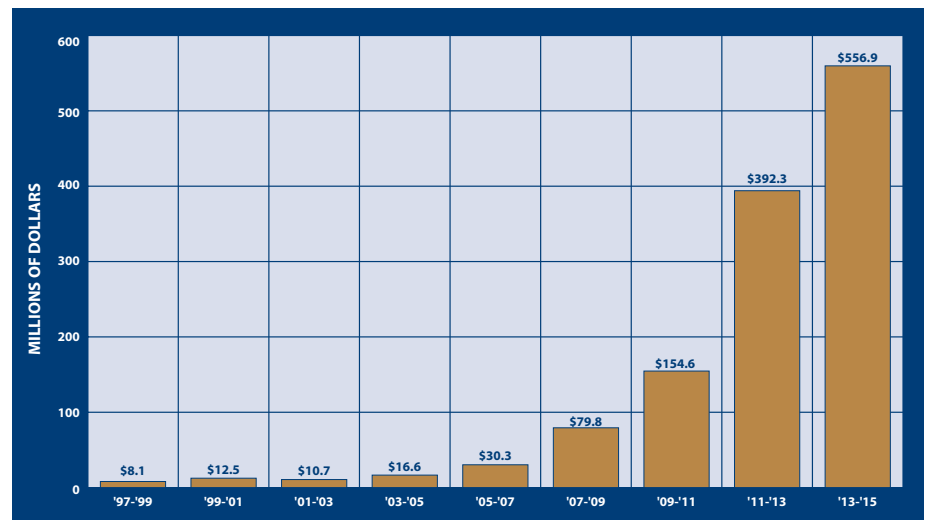
Because the tobacco settlement dollars were not projected to remain uniform each year, the SWC set up a repayment schedule

to correspond with the projected tobacco receipts. Although the repayment amounts are based on the projected receipts, the scheduled repayments must be made regardless of the actual receipts. Scheduled payments for existing water development bonds will be \$16.9 million for the 2013-2015 biennium; however it is the SWC's intent to retire the bonds early. The Commission's 2013-2015 budget contains \$75.3 million to retire all of the outstanding bonds.

## Drinking Water State Revolving Loan Fund

An additional source of funding for water supply development projects is the Drinking Water State Revolving Loan Fund (DWSRLF). Funding is distributed in the form of a loan program through the Environmental Protection Agency and administered by the North Dakota Department of Health. The DWSRLF provides below market-rate interest loans

Table 5: Resources Trust Fund Revenues, 1997-2015





of 2.5 percent to public water systems for capital improvements aimed at increasing public health protection and compliance under the federal Safe Drinking Water Act.

The SWC’s involvement with the DWSRLF is two-fold. First, the Department of Health must

administer and disburse funds with the approval of the SWC. Second, the Department of Health must establish assistance priorities and expend grant funds pursuant to the priority list for the DWSRLF, after consulting with, and obtaining SWC approval.

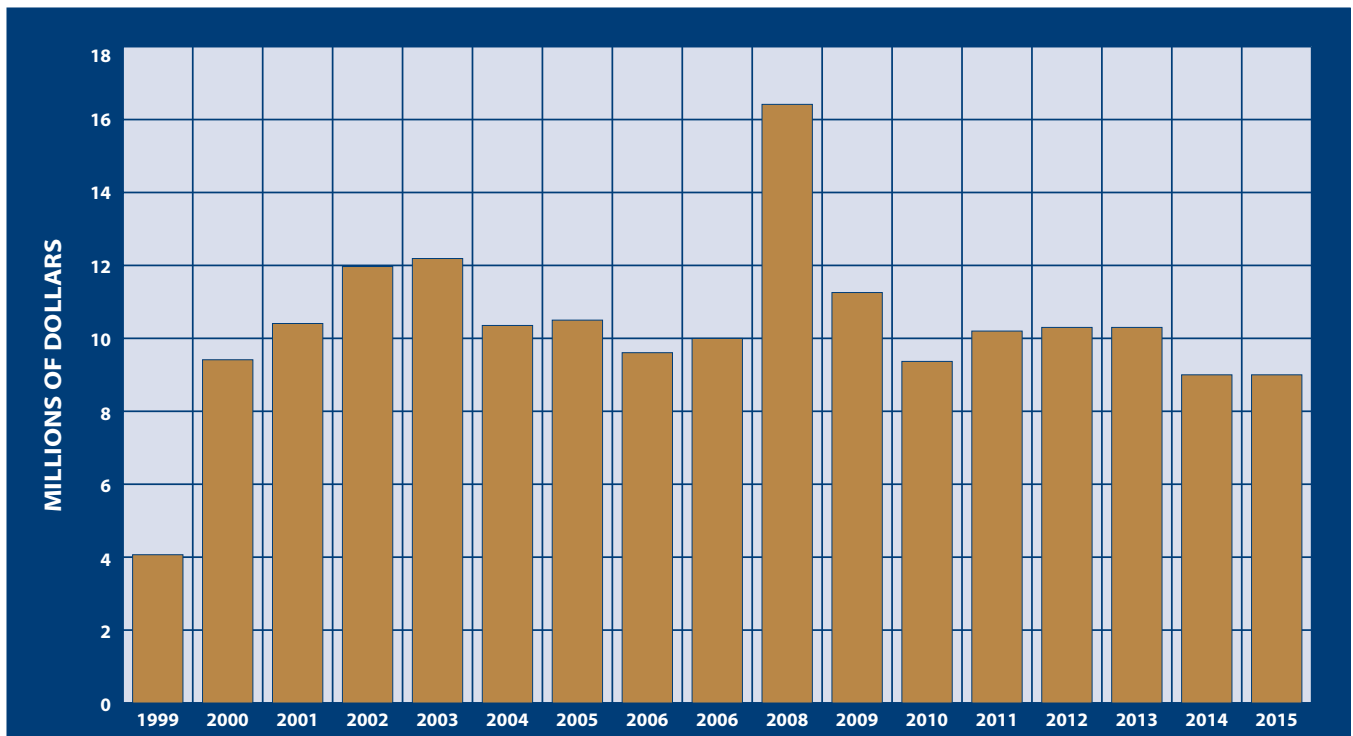
The process of prioritizing new or modified projects is completed on an annual basis. Each year, the Department of Health provides an Intended Use Plan, which contains a comprehensive project priority list and a fundable project list. The 2013 comprehensive project priority list includes 172 projects with a cumulative total project funding need of \$690 million. The funded list of 164 projects includes \$154 million in loans from federal grants of \$320 million

for fiscal years 1997 through 2013. Available funding for the DWSRLF program for 2013 is anticipated to be approximately \$20 million.

### Other Federal Funding

With regard to other federal funding, the U.S. Army Corps of Engineers provides significant assistance to North Dakota for flood control and water supply projects. The Environmental Protection Agency, U.S. Bureau of Reclamation, U.S. Geological Survey, U.S. Army Corps of Engineers, and the Natural Resources Conservation Service also contribute to the state’s water development efforts in many different ways, including studies, project design, and construction.

Table 6: Water Development Trust Fund Revenues. 1999-2015







# Project Funding Priorities: 2013-2015 Biennium

*This section discusses the state's priority water development efforts and funding for the 2013-2015 biennium. It includes one course of action for water development in North Dakota that is subject to change during the 63rd Legislative Assembly, further review of SWC cost-share requirements and eligibility, and other unforeseen events that may occur during the biennium.*

*The Water Commission's prioritized water development new funding needs totaling \$515 million are listed by project or project category in Table 7, and they are summarized hereafter.*

## **Community Water Facility Revolving Loan Fund**

The SWC has budgeted \$15 million for the Community Water Facility Revolving Loan Fund (CWFRLF). Monies transferred to this fund are used primarily for supplemental financing in conjunction with the U.S. Department of Agriculture's Rural Development program for community water projects. The CWFRLF is administered by the Bank of North Dakota.

The CWFRLF was established to provide financing for community water projects when the project is above the maximum loan limits set by the Rural Development program. It is also the intent of this program to provide supplemental financing for federal loan programs associated with community water projects. Loans from this fund are made in accordance with N.D.C.C. 6-09.5.

## **Devils Lake Outlet Operations**

The state's west end Devils Lake outlet was initially completed in 2005 with an operational capacity of 100 cubic feet per second (cfs). In the summer of 2010, an expansion was completed, increasing the outlet's capacity to 250 cfs.

During the summer of 2012, the SWC completed an additional outlet from East Devils Lake. This outlet has a maximum operating capacity of 350 cfs. Together, the combined operating capacity of the west end and East Devils Lake outlets is 600 cfs.

The SWC has budgeted \$10 million for costs related to the operation and maintenance required to keep both outlets operating to the maximum extent allowable during the 2013-2015 biennium.

## **Fargo Flood Control**

After narrowly escaping extensive damages during the major floods of 1997, 2009, 2010, and 2011, the city of Fargo and Cass County have been working diligently toward the development of permanent flood control projects that would protect Fargo and the greater metro area from future flood events.

Initially, the project that the city of Fargo pursued following the 1997 flood was the Southside Red River and Wild Rice River Levee Alternative, which was primarily designed to protect areas in south Fargo. But after the flood of 2009, it became apparent that a larger-scale flood control project would better serve both Fargo and Moorhead, and the greater metro area. Since that time, the U.S. Army Corps of Engineers, in cooperation with Fargo, Moorhead (MN), Cass

County, and Clay County (MN) worked jointly to complete an EIS to assess potential measures to reduce the entire metro area's flood risk. The EIS was completed in late 2011, and the Record of Decision was signed by the Assistant Secretary of the Army in April 2012.

The preferred alternative is a 20,000 cfs diversion channel on the North Dakota side of the Red River that will be approximately 35 miles in length. The project is also expected to have a 50,000 acre-foot storage area within the diversion, and a 150,000 acre-foot staging area upstream of the southern-most portion of the diversion.

The U.S. Army Corps of Engineers and local sponsors are moving forward with the design phase, and with the National Environmental Policy Act (NEPA) process scheduled for completion in 2013, construction could proceed that same year.

Fargo is planning to devote over \$390 million (from all sources) to the project during the 2013-2015 biennium, with emphasis on design, land acquisitions, and construction of upstream levees, in-town levees, bridges, and north channels.

In previous biennia, the SWC has budgeted and approved \$75 million for Fargo flood control. In the 2013-2015 biennium, the

SWC has budgeted \$102 million toward the project. The total project cost is estimated at \$1.8 billion.

## Mouse River Flood Protection

On June 25, 2011, Mouse River flood flows peaked in Minot at 27,400 cfs. This was more than five times greater than the city's existing flood control channels and levees had been designed to handle, and almost nine times greater than any documented flood since the construction of major upstream storage reservoirs decades before.

The record breaking flooding of 2011 overwhelmed most

Table 7: Water Development Priorities, 2013-2015 Biennium

PROJECTS	2013-2015 FUNDING PRIORITIES (Millions)
Community Water Facility Revolving Loan Fund	\$15
Devils Lake Flood Control	\$10
Fargo Flood Control	\$102
Mouse River Flood Control	\$61
Sheyenne River Flood Control <sup>1</sup>	\$21
General Water Management <sup>2</sup>	\$33
Irrigation	\$5
Fargo Water Supply	\$15
Northwest Area Water Supply	\$14
Red River Valley Water Supply	\$9
Southwest Pipeline Project <sup>1</sup>	\$79
Water Supply Program	\$71
Western Area Water Supply <sup>3</sup>	\$79
Weather Modification	\$1
<b>TOTAL</b>	<b>\$515</b>

<sup>1</sup> A portion of the project funding identified as a priority will be provided in the form of a loan or a capital repayment plan.

<sup>2</sup> General water management includes rural flood control; other flood control; dam safety, repairs and reconstructions; snagging and clearing; studies and planning; and Devils Lake outlet downstream mitigation.

<sup>3</sup> Of the \$79 million budgeted for WAWS, anticipate half will be provided in the form of a loan.





flood fighting efforts along the entire reach of the Mouse River in North Dakota, causing unprecedented damages to homes, businesses, public facilities, infrastructure, and rural areas. The U.S. Army Corps of Engineers estimates that 4,700 commercial, public, and residential structures in Ward and McHenry counties sustained structural and content damages totaling almost \$700 million. Had no emergency flood fighting measures been implemented, it is estimated that number could have totaled about \$900 million.

A SWC-sponsored Mouse River Enhanced Flood Protection Project Preliminary Engineering Report (PER) was completed in early 2012. Phase I of the PER, which focused on flooded communities (from Mouse River Park to Velva), was completed on a rapid timetable in order to satisfy the desperate need of displaced residents for relevant information as quickly as possible. It was funded 100 percent by the

SWC, and provided preliminary engineering information, project footprints, and key project data, while allowing for community input. Phase I of the PER, which focused on a protection level to a 2011 flood event (or 27,400 cfs), consists of levees, floodwalls, river diversions and closure features, transportation closure structures, interior pump stations, and 2011 flood buyouts. Levees comprise about 90 percent of the alignment – totaling 21.6 miles.

The engineering team was also asked to provide cost estimates to scale the 27,400 cfs project down to a level of protection of 20,000, 15,000, and 10,000 cfs. However, the cost savings to construct the project to a 10,000 cfs level of protection versus 27,400 cfs would only yield a cost savings of about \$15 million.

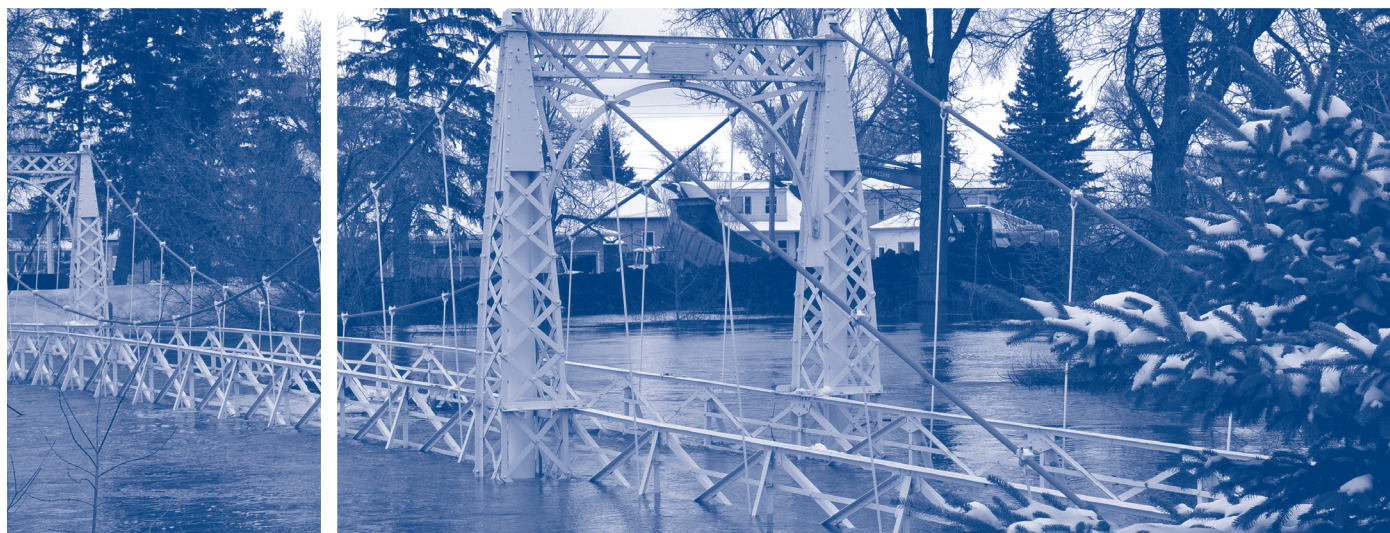
Phases II and III are currently underway, and will extend preliminary engineering to the rural regions of the Mouse River.

In addition to these efforts, the Souris River Joint Board has made a request to the U.S. Army Corps to conduct a reconnaissance study to determine the potential for federal involvement in Mouse River Flood control.

The SWC has budgeted \$61 million to advance various elements of the Mouse River Enhanced Flood Protection Project. During the 2013-2015 biennium, project efforts will be focused on planning, engineering and design, acquisitions, corridor preparation, and advanced construction.

## Sheyenne River Flood Control

Flood events along the Sheyenne River in recent years have severely impacted and tested communities like Valley City, Lisbon, and Fort Ransom. For that reason, each of those communities is working to implement more permanent flood protection.



With several property acquisitions already in the works, Valley City is looking ahead to Phase II of their permanent flood protection plan in the 2013-2015 biennium. Phase II will involve additional property acquisitions; a series of flood walls, with four emergency road closures; and permanent clay levees that will protect Valley City State University campus.

Lisbon has broken their permanent flood protection project into two phases – beyond the current acquisition efforts that are underway in the 2011-2013 biennium. Phase I, which they intend to pursue in the 2013-2015 biennium, involves 25 property acquisitions, bank stabilizations, earthen levees, flood walls, road closure structures, and sewer modifications.

In Fort Ransom, their permanent flood control project will involve acquisitions and levees, in addition to a diversion channel.

Recognizing the need for improved flood control efforts along the Sheyenne River, the SWC has budgeted \$21 million to advance projects in those communities. It is expected that a portion of the budgeted amount

will be provided in the form of loans to address SWC cost-share policy requirements for local match.

### **General Water Management**

General water management projects include rural flood control, small-scale flood control, snagging and clearing, channel improvements, recreational projects, dam repairs, planning efforts, special studies, and downstream mitigation for operation of the Devils Lake outlets.

The \$33 million that is budgeted for general water management projects will be used to fund a portion of the state's general projects that are ready to proceed during the 2013-2015 biennium.

### **Irrigation**

The Dakota Water Resources Act of 2000 authorized 23,700 acres of irrigation along the McClusky Canal, and 5,000 acres in the Oakes Test Area (OTA).

Irrigation efforts planned for the 2013-2015 biennium include an OTA project, and McLean County irrigation development. The OTA project, which is part

of the Dickey-Sargent Irrigation District, is authorized to irrigate 5,000 acres. However, a reliable water supply is currently not available. The SWC has budgeted \$5 million for irrigation, with half of that amount potentially available for the OTA project to develop a more reliable water supply.

Along the McClusky Canal in McLean County, it has been determined that in order to develop more of the authorized acres, central supply works must be constructed to deliver water beyond the immediate reaches of the canal. The other half of the \$5 million budgeted by the SWC for irrigation could be used to construct those central supply works – making it economical for growers to deliver water up to ten miles from the canal.

### **Fargo Water Supply**

In response to Devils Lake outlet operations, Fargo is moving forward with upgrades to their water treatment plant to address increased sulfate levels in the Sheyenne River. The SWC has budgeted \$15 million in the 2013-2015 biennium for this purpose.

The Fargo Water Treatment Plant sulfate treatment improvements





are vital to Fargo’s ability to continue to provide high quality drinking water to its growing user base, which includes the city of Fargo and outside users in the Cass Rural Water Users District. The water treatment plant upgrade project is also expected to help facilitate service discussions with other surrounding communities and water users, like West Fargo.

Fargo has completed two sulfate treatment pilot scenarios, and will conduct two additional piloting efforts during the winter of 2012-2013, with completion later that spring. It is expected that the city will make a decision on their preferred method for sulfate treatment at that time, and will proceed with design and construction. Preliminary design for pre-treatment and reverse osmosis elements of the treatment plant upgrade have already been completed.

### **Northwest Area Water Supply**

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 Northwest Area Water Supply (NAWS) project is a regional water supply project that will eventually supply much of a ten county area in northwestern North Dakota. The SWC began construction on NAWS 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 and the Minot Air Force Base). NAWS is getting an interim water supply through a 10-year contract with Minot, which expires in 2018.

State funding of \$14 million for the NAWS project has been budgeted to: complete construction of the pipeline between Glenburn and Renville Corner; upgrade and rehabilitate the softening basins and affiliated facilities at the Minot Water Treatment Plant; assist the

Bureau of Reclamation with preparation of a Supplemental EIS to address the court’s May 2009 order; complete court filings to lift the injunction; initiate design work on the raw water supply facilities; and develop plans and manuals as required by EIS commitments.

### **Red River Valley Water Supply**

With most of the Red River Valley’s population relying on the Red River and its tributaries as their sole source of water, the impacts of a prolonged drought would be devastating to that region. And, as the population and economy of the Red River Valley continues to grow, the need for a more reliable source of quality water has become more important than ever before.

The Final EIS has been completed for the Red River Valley Water Supply Project (RRVWSP), and the U.S. Bureau of Reclamation and the State of North Dakota have identified the Garrison Diversion Unit to Sheyenne River alternative as the preferred alternative. This alternative would supplement existing water supplies to meet future water needs with a combination of Red River, other North Dakota



in-basin sources, and imported Missouri River water. The primary feature of this alternative will be a 125-mile, 66-inch (122 cfs) pipeline from the McClusky Canal to Lake Ashtabula.

As mentioned previously, the RRVWSP is awaiting a record of decision from the Secretary of the Interior, and Congressional authorization to use federal works.

To advance the RRVWSP, the SWC has budgeted \$9 million.

### **Southwest Pipeline**

NDCC, Section 61-24.3 declares necessary that the Southwest Pipeline Project "...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.

Today, the Southwest Pipeline Project is a regional water supply system that draws water from Lake Sakakawea. Since the beginning of the 2011-2013 biennium when Southwest Pipeline Project was serving 35,000 people, they are now serving 13,000 additional people, for a total of 48,000. Included in that total are 31 communities

and 4,300 rural hookups. With unprecedented growth continuing in that portion of the state, the need for reliable water supplies to support that growth has never been greater.

The \$79 million budgeted for the Southwest Pipeline Project will be used to: move forward with the construction of transmission facilities in the Dunn County, Center Service Area, and Dunn Service areas rural distribution pipelines; continue design and construction to upgrade the Dickinson Water Treatment Plant, and the supplemental intake facility; and begin design to expand the raw water transmission capacity to the Dickinson Water Treatment Plant.

### **Water Supply Program**

Because of North Dakota's municipal, rural, and industrial (MR&I) water supply 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 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.

In previous biennia, a large share of funding directed toward water supply projects came from the federally funded MR&I

program. However, substantial reductions in federal funding have required the state to make up the difference. With only \$19.3 million available through the federal MR&I program in federal fiscal years 2011 and 2012, the SWC has budgeted \$71 million for municipal, rural, and regional water supply projects that are not covered under other specifically listed priorities.

### **Western Area Water Supply**

As the oil industry continues to grow in the northwest portion of North Dakota, so does the need for water development projects to support that growth – both for drilling processes, and a growing workforce.

Even with current drilling activity in the region, existing water supplies are being stretched to their limits. And, with future drilling expected to expand substantially in the coming years, the strain on water supplies is only expected to intensify. This is particularly true of areas that are relying heavily on ground water resources. For that reason, development of water supply systems that utilize abundant Missouri River water have become a priority in the region.

The Western Area Water Supply project has involved a collaborative effort between the city of Williston, Williams Rural Water District, McKenzie Water Resource District, and R&T Water Supply Association (including the communities of

Ray, Tioga, and Stanley). The focus of this collaborative effort has been to develop a regional water supply system that will deliver Missouri River water from the Williston Regional Water Treatment Plant to areas throughout the northwest, oil producing region of the state.

In 2011, the North Dakota Legislature passed House Bill 1206, that provided \$110 million in loans from the state to the Western Area Water Supply Authority to advance Phases I and II of the project – which are currently under construction.

More recently, the Western Area Water Supply Authority has been canvassing the project service area in 2012 to better identify water supply needs and demands. The result of the canvassing effort has been the identification of water needs far exceeding projected demands in the business plan. It was once estimated that WAWS would serve as many as 35,000, but that number is now estimated to be about 90,000 people by 2025. Currently, WAWS has over 15,000 water service requests for residential, commercial, rural, and temporary housing. And, they are increasing the long-

term projected water demands of municipal water systems throughout the service area. Because of this unprecedented growth, project expansion beyond the original \$110 million investment is needed to address overwhelming water supply needs in that region of the state.

In response to this increased demand for water service and the associated planning efforts that have been completed, the WAWS Authority board of directors has requested funding for Phase III during the 2013-2015 biennium - totaling \$120 million. To meet this goal, WAWS has requested \$79 million in funding from the Resources Trust Fund, and they have indicated they will seek a \$40 million loan from another source.

More specifically, during the 2013-2015 biennium, the WAWS Authority will: expand the Williston Water Treatment Plant from 14 million gallons per day (MGD) to 21 MGD at a cost of \$27 million; construct various primary regional transmission lines, pump stations, and reservoirs for communities, rural developments, and rural service areas at a cost of \$49 million; and construct distribution

pipelines for rural water service throughout the WAWS service area at a cost of \$44 million.

The SWC has budgeted \$79 million for WAWS in the 2013-2015 biennium. It is expected that half of that amount will be provided in the form of a loan.

## **Weather Modification**

State funding in the amount of \$1 million is budgeted for operational cloud seeding costs with counties participating in the North Dakota Cloud Modification Project. The Atmospheric Resource Board currently cost-shares approximately 35 percent of operational costs, with participating counties paying the remaining 65 percent. This funding level will allow the program to continue its current level of capability for the 2013-2015 biennium.

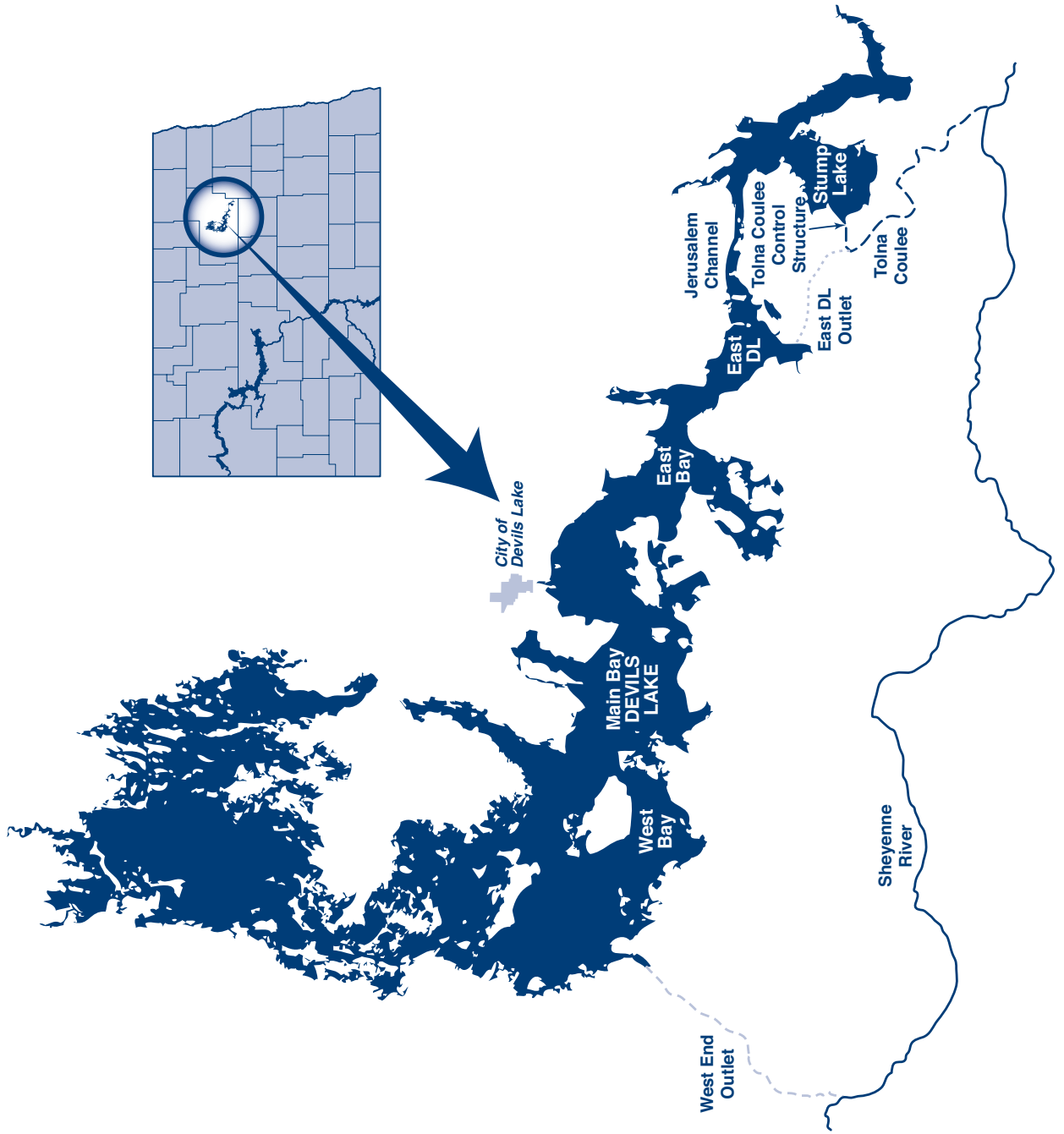
The most recent independent evaluations of the program indicate a 45 percent reduction in crop-hail losses, a six percent increase in wheat yields, and up to a 10 percent increase in rainfall.



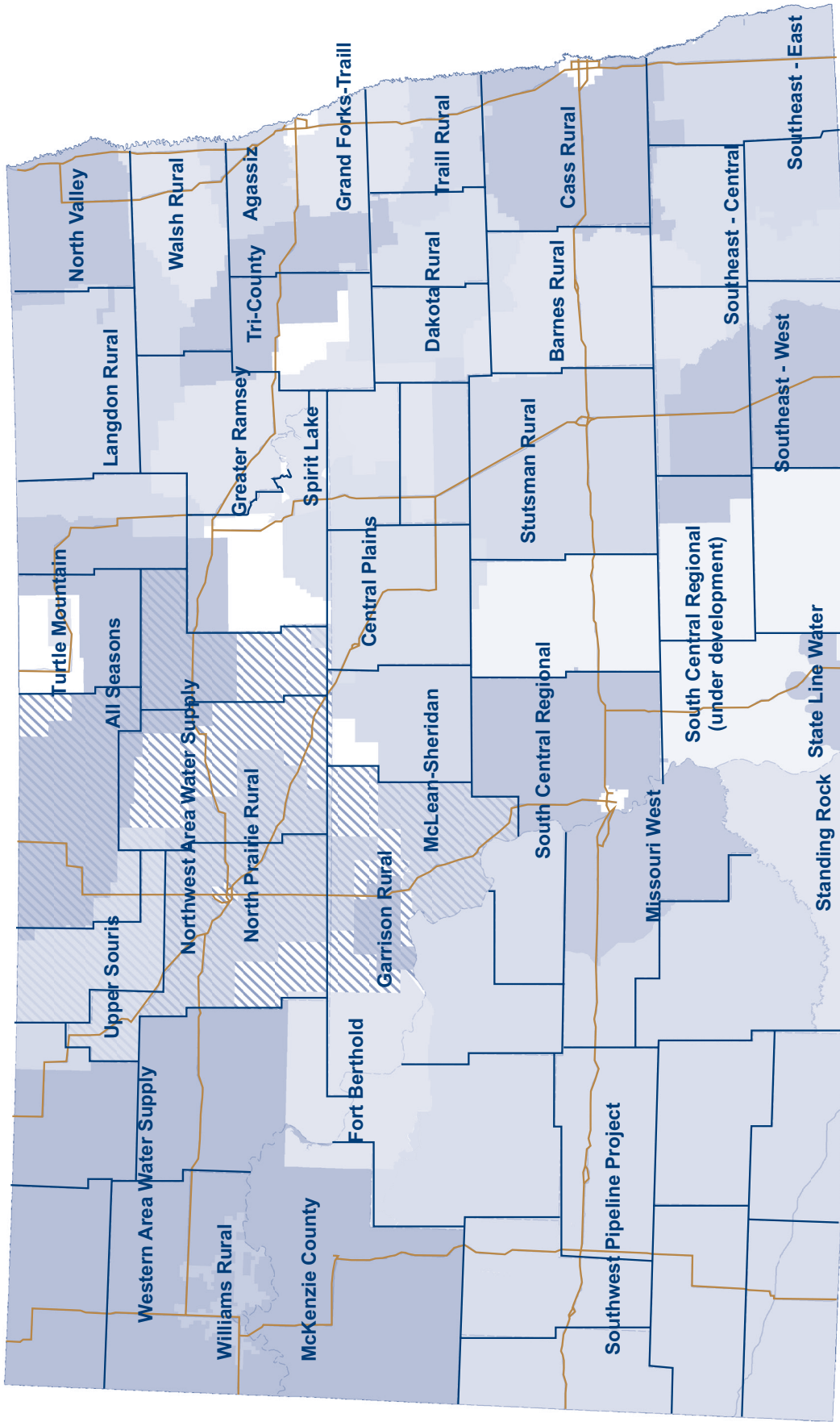


# Map Appendix

# Devils Lake Outlets

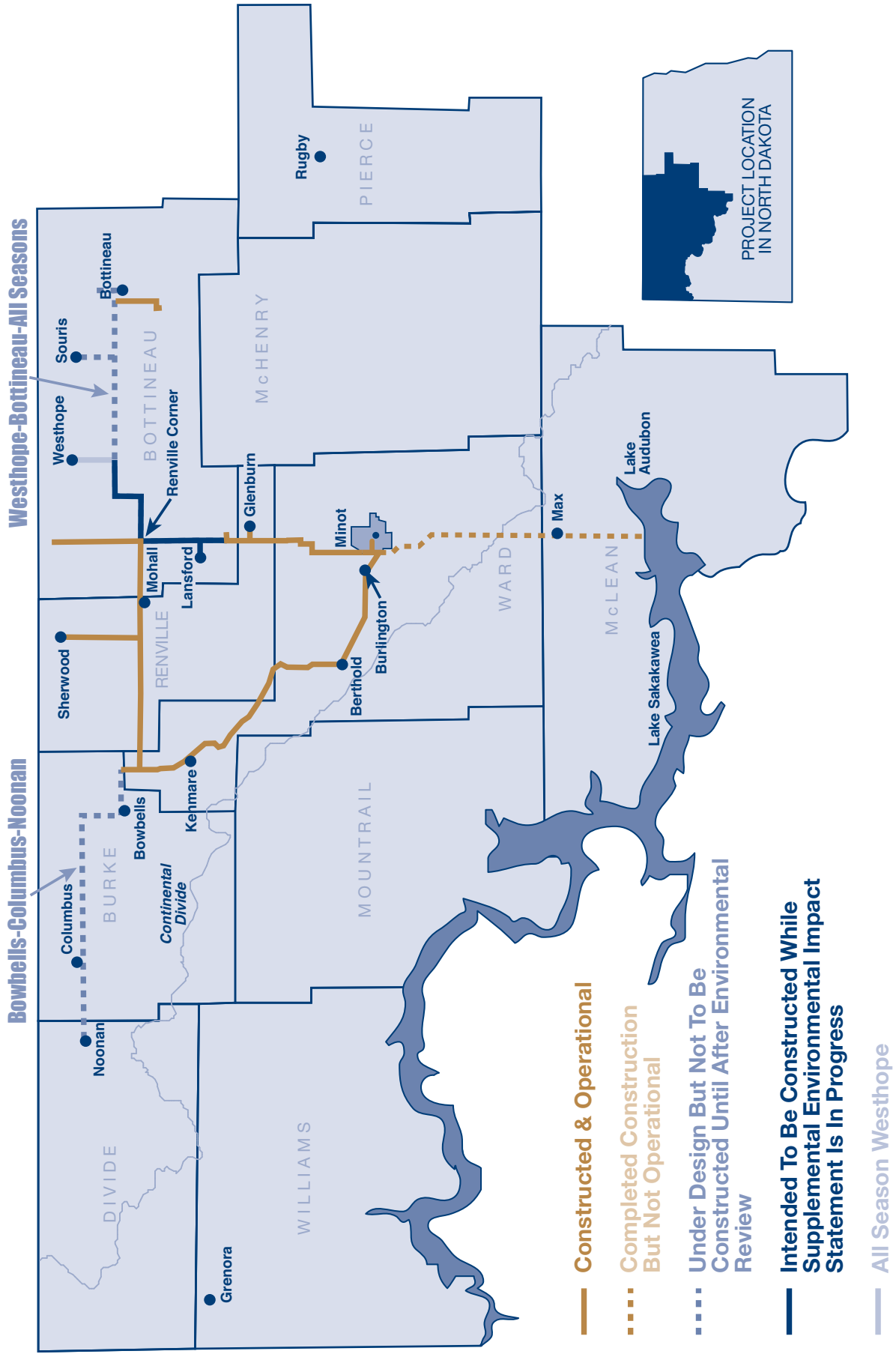


# Rural & Regional Water Supply Systems

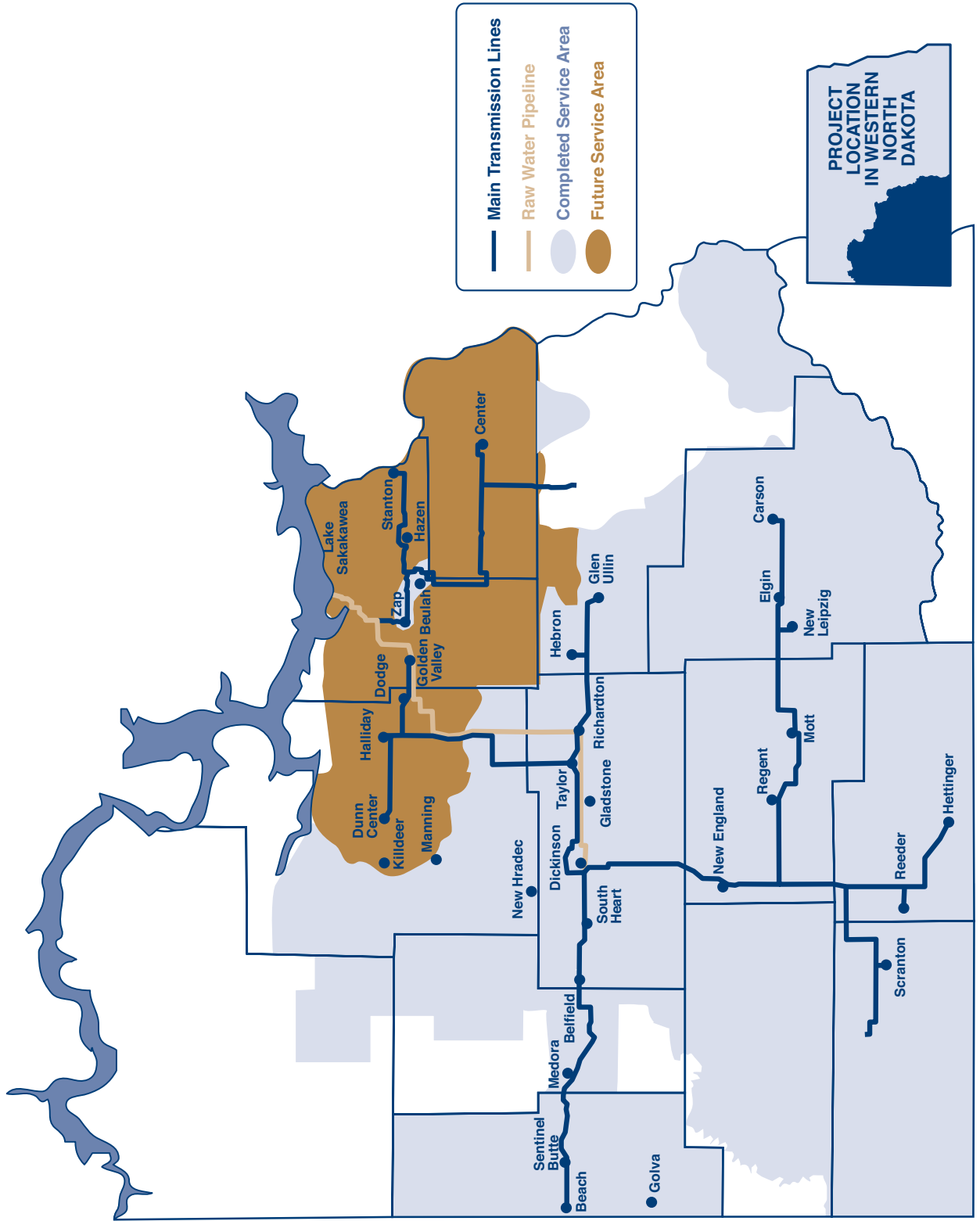




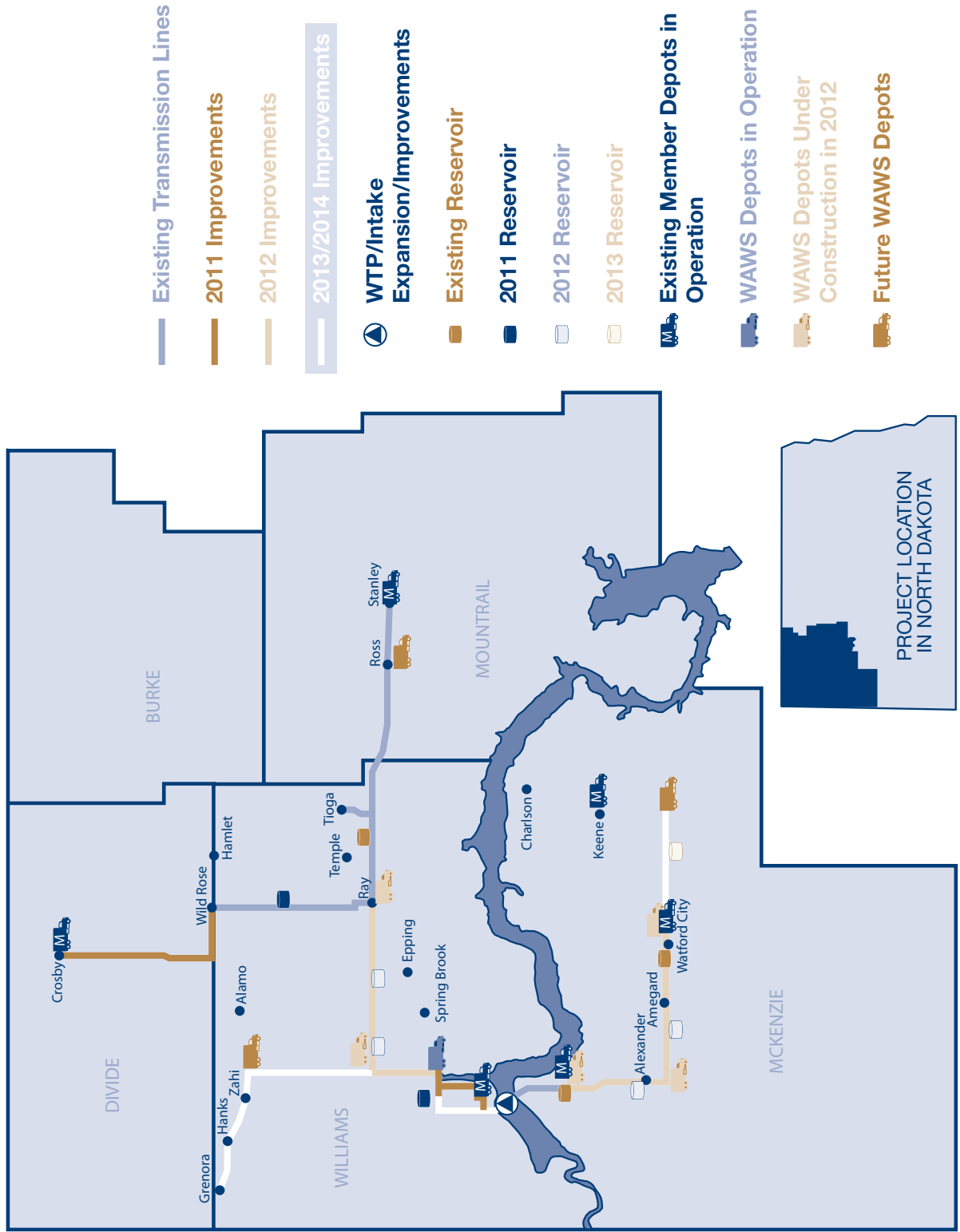
# Northwest Area Water Supply



# Southwest Pipeline Project



# Western Area Water Supply











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