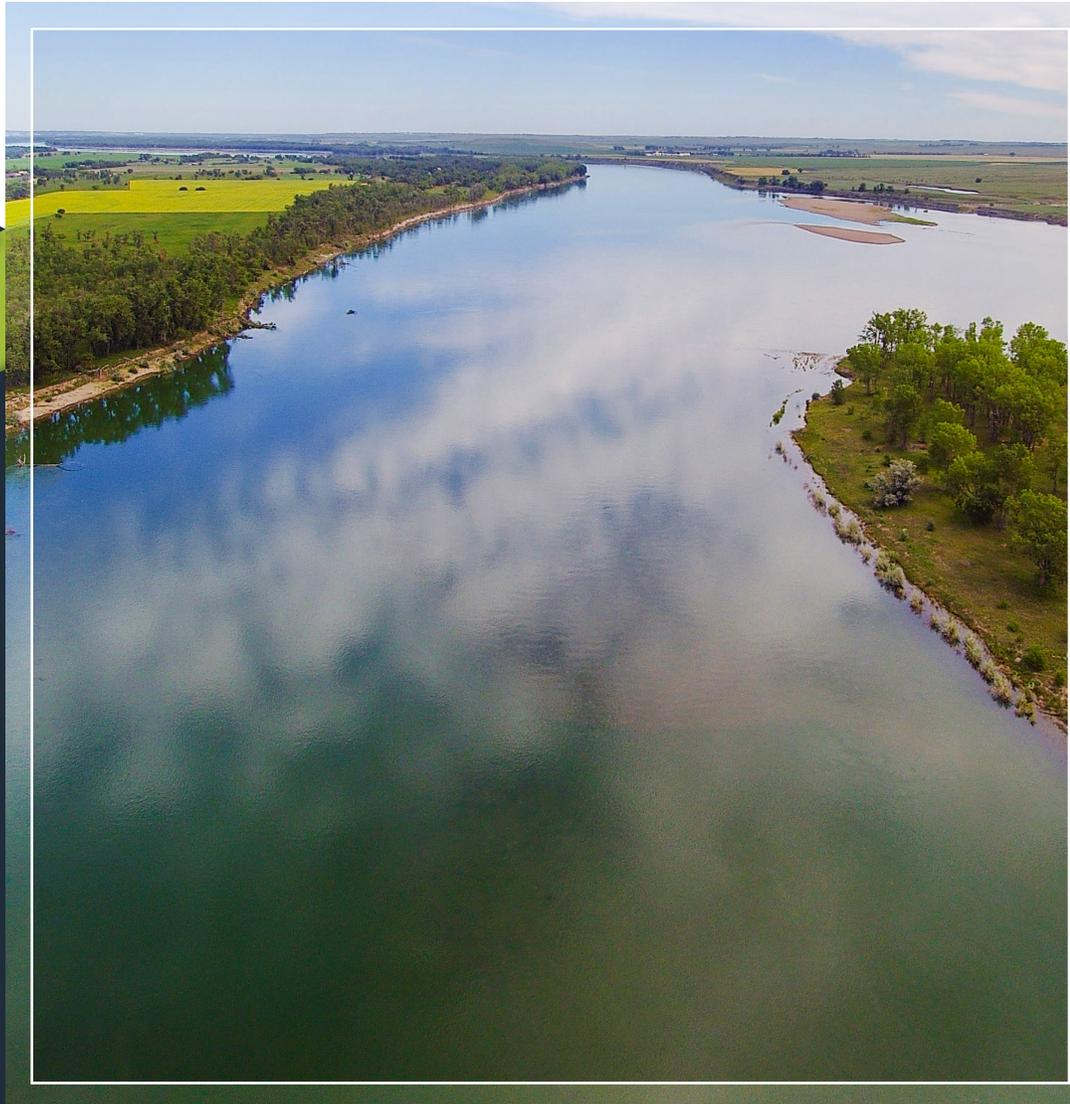


PLAN

North Dakota Water Development



20
19

NORTH
Dakota
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State Water Commission

A MESSAGE FROM ...

THE STATE ENGINEER & STATE WATER COMMISSION

We are pleased to present you with the 2019 North Dakota Water Development Plan.

Those involved in water project development know that existing projects evolve, and new projects are continuously being considered by local water managers. For that reason, it is necessary for the state to assemble updated water project information on a biennial basis, to coincide with the state's biennial budget cycles. This information then provides the agency and our elected officials with the most up-to-date project information possible to plan for, and support our state's highest water development priorities.

As you review the content of this report, there are a few fundamental concepts that we hope readers will take away. The first, is that the State of North Dakota has made unprecedented progress on water development projects in the last several biennia. From large-scale flood control and water supply projects, to smaller-scale general water management efforts, a lot has been accomplished. Second, there is a tremendous amount of interest among project sponsors across the state to pursue hundreds of new projects; but at the same time, the state is still in a position to continue its track record of supporting local project sponsors.

Another key element of this report is the focus on longer-term planning horizons. By estimating the potential financial needs of water-related infrastructure in ten years, and beyond, we will be better positioned to accomplish our goals in a future of increasing uncertainty.

And finally, through extensive project reviews, Commissioner and staff interactions with local sponsors, and careful consideration of the agency's revised Project Prioritization Guidance, we have also outlined our priorities for future water development efforts.

As we look ahead, continued success will require careful planning, coordination, and communication between North Dakota's water stakeholders. We believe that this document, the 2019 Water Development Plan, will serve as an important tool in achieving further successes. On behalf of North Dakota's Water Commission, I appreciate your interest and continued support of North Dakota's future water management and development endeavors.

Sincerely,



Garland Erbele, P.E., State Engineer, Chief Engineer-Secretary

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Dakota | State Water Commission
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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.”

This 2019 Water Development Plan was developed to serve as a pathway to achieve this vision in the 2019-2021 biennium and beyond.

ORGANIZATION AND BACKGROUND

North Dakota's Legislature established the Office of the State Engineer in 1905 to regulate the allocation of water, manage drainage, and promote irrigation. The State Water Commission (Water Commission or Commission) was established in 1937 to promote, plan, and build water development projects. Today, the State Water Commission and Office of the State Engineer coexist as a multi-purpose agency, with similar, yet distinctly different responsibilities.

The Water Commission is comprised of the Governor, the State Agriculture Commissioner, and seven members appointed by the Governor that represent each of the state's seven major drainage basins. North Dakota's State Engineer serves as Chief Engineer and Secretary to the State Water Commission. In a separate role, North Dakota's State Engineer is responsible for several regulatory functions and responsibilities, including allocation of the state's waters, dam safety, sovereign land management, and drainage.

Overall, both entities are responsible for the wise management and development of North Dakota's most precious resource – water.

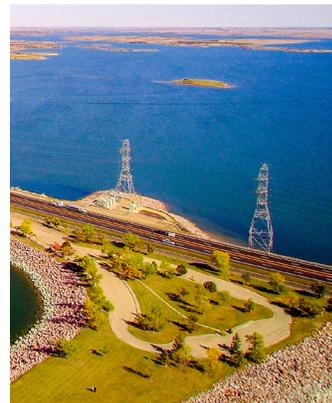
TARGET WATER DEVELOPMENT GOALS & PRIORITIES

Goal: Protect North Dakota's citizens and economy from flood-related impacts.

Priority Initiatives

- Address immediate flood or dam related threats to human life, primary residences, or emergency response efforts.
- Support advancement of federally authorized flood control projects.
- Support projects that protect primary residences or businesses from flooding in population centers or involve flood recovery property acquisitions.

**GOAL
PRIORITY**



PURPOSE OF THE 2019 WATER DEVELOPMENT PLAN

- Outline target water development goals and priorities;
- Outline the planning process;
- Provide a progress report on the state's priority water management and development efforts from the 2017-2019 biennium;
- Provide information regarding North Dakota's current and future water development project funding needs and priorities;
- Provide information regarding North Dakota's revenue sources for water development;
- Serve as a formal request for funding from the Resources Trust Fund;
- Outline the state's priority water development efforts for the 2019-2021 biennium; and
- Provide information regarding the State Water Commission's Cost-share Policy, and Water Project Prioritization Guidance.

TARGET WATER DEVELOPMENT GOALS & PRIORITIES

Goal: Provide safe and reliable water supplies for the health and prosperity of North Dakota's citizens and economy.

Priority Initiatives

- Address imminent water supply losses to existing multi-user systems, or emergency response efforts.
- Support advancement of federally authorized water supply projects.
- Correct violations of primary water quality conditions in water supply systems.
- Correct situations that involve a lack of water supply for a group of water users.
- Support connections of cities to regional and rural water supply systems.
- Support efforts that address severe or anticipated water supply shortages for domestic use in a service area or city with rapid population growth.

LS &
PRIORITIES



AUTHORITY

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 required to develop and maintain a comprehensive water development plan.

THE PLANNING PROCESS & COMMISSIONER-HOSTED MEETINGS

The 2019 water planning process began in January 2018. At that time, the State Water Commission sent letters of request to potential water project sponsors across the state, asking them for information regarding water projects and programs that could be considered for inclusion in the 2019 Water Development Plan.

Water projects and water management efforts are continually evolving and advancing, making it necessary to update project information on a biennial basis. Simultaneously, the Water Commission is charged with ensuring responsible stewardship of state funding in both the short- and long-term. For those reasons, the 2019 water planning process involved a request to project sponsors to forecast funding needs as far as three biennia into the future, and up to five biennia for the state's largest projects.

Longer-term water supply infrastructure surveys were also collected and compiled to estimate the state's overall needs several decades into the future. The information received from local project sponsors as part of this project inventory process ultimately becomes the foundation of the Commission's budget request to the Governor and Legislature. (The project inventory process is outlined in greater detail in the "State Water Development Program" section on page 37).

The other key element of the 2019 planning process was Water Commissioner-hosted basin meetings. To promote and encourage local project sponsor participation in water planning and in legislative and agency biennial budgeting efforts, the 2013 Legislative Assembly passed House Bill 1206 (NDCC 61-02-01.3), requiring the Water Commission to schedule Commissioner-hosted meetings within seven major drainage basins. The meetings are to be held in the lower and upper Red, James, Mouse, lower and upper Missouri River, and Devils Lake basins.

As part of the 2019 planning process, water management and development stakeholders, and project sponsors were invited and encouraged to attend a series of Water Commissioner-hosted meetings in July 2018.



Specific areas of focus for the meetings was to:

- Present an overview of the State Water Commission's ongoing cost-share and project prioritization policy update efforts;
- Outline progress on the development of Economic Analysis and Life Cycle Cost Analysis processes;
- Provide a summary of the 2019 water project inventory effort; and
- Encourage brief project summaries and updates from sponsors who submitted projects to the Commission as part of the 2019 water planning and budgeting process.

The presentations from sponsors regarding their projects were the primary focus of the meetings. The presentations gave local project sponsors an opportunity to have a discussion with Commission members and staff regarding their projects, and in some cases, to provide updated information from what was submitted during the project inventory process earlier in the year.

In addition to presentations from project sponsors, Water Commissioners and staff also heard from several stakeholders from around the state who had concerns about water management or development challenges in their respective drainage basins.

PARTNERSHIPS

North Dakota's water planning process strives to encourage collaboration between stakeholders and the formation of partnerships with numerous government entities at all levels of government, as well as with the Legislature. It is also important to recognize the unique relationships between the private sector and many of the state's local government entities and water managers. This important tie completes North Dakota's grass-roots approach to water management and development, where the state recognizes that many of the best solutions are forged at the local level.

The Water Commission has a long history of working together with all stakeholders, while encouraging partnerships to ensure the wise management and development of North Dakota's water resources for the benefit of future generations. As we look to the future, North Dakota faces many challenges in managing its water. But working together with all stakeholders will enable the state to move more efficiently toward effective development and management of the state's water resources.

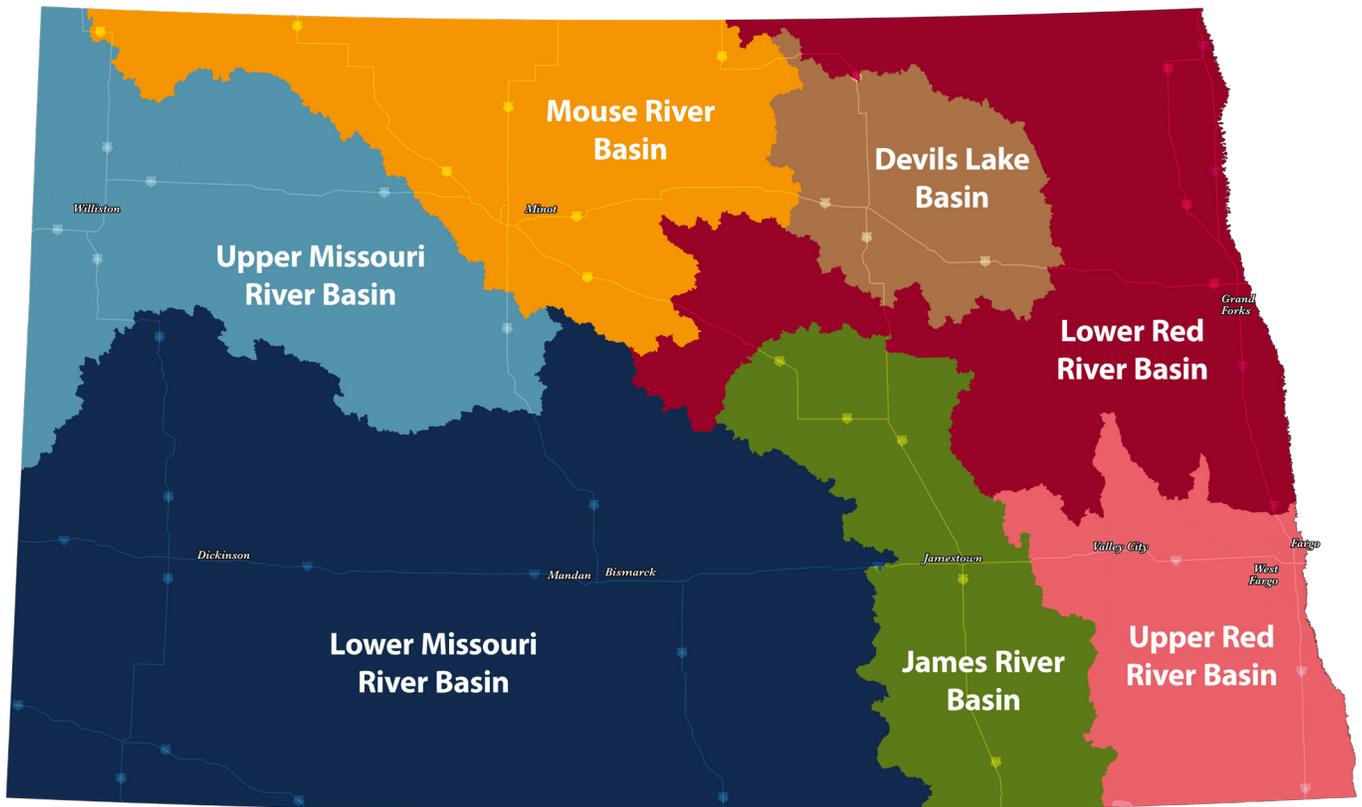


Figure 1 - North Dakota's seven major drainage basins.

2018 COMMISSIONER-HOSTED BASIN MEETINGS

- July 16 Devils Lake Basin: Hosted by Commissioner Richard Johnson in Devils Lake
- July 16 Lower Red River Basin: Hosted by Commissioner Michael Anderson in Grand Forks
- July 17 James River Basin: Hosted by Commissioner Katie Andersen in Jamestown
- July 17 Lower Missouri River Basin: Hosted by Commissioner Leander "Russ" McDonald in Bismarck
- July 23 Mouse River Basin: Hosted by Commissioner Jason Zimmerman in Minot
- July 24 Upper Missouri River Basin: Hosted by Commissioner Mark Owan in Williston
- July 25 Upper Red River Basin: Hosted by Commissioner Matt Pedersen in Valley City

DEVELOPING ND'S WATER RESOURCES: LEGISLATIVE UPDATES

Despite the volatility of North Dakota's oil industry over the course of the last several biennia, unprecedented revenues into the Resources Trust Fund have enabled the Commission and the water community to advance several water development priorities across the state. In preparing for the 2017-2019 biennium, a plan was forged through the cooperative efforts of the Water Commission, Governor's Office, Legislature, and the water community - through the concept of "Purpose Funding."

House Bill 1020 - The State Water Commission's Budget Bill

In the past, North Dakota's water development priorities have been outlined by project purpose on a much more limited basis, with it being more common for larger projects to be identified as priorities individually. As outlined in Table 1, North Dakota's Legislature passed House Bill 1020, identifying the Legislature's water development priorities for the 2017-2019 biennium.

The funding plan designated financial resources to four specific purposes, totaling \$298.8 million from state sources - mostly the Resources Trust Fund. In addition, of that total, \$75 million was made available to the Water Commission, if needed, from a Bank of North Dakota line of credit.

Project-related Legislative intent within House Bill 1020 provides:

- Up to \$193 million for Mouse River flood control projects within the City of Minot over the course of the next four biennia - through June 2025; and
- Up to \$30 million in the form of a grant during the 2017-2019 biennium for the Red River Valley Water Supply Project for planning, permitting, and construction related expenses.

House Bill 1020 also directed the State Engineer to develop an economic analysis process for water conveyance projects and flood-related projects expected to cost more than \$1 million, and a life cycle cost analysis process for municipal water supply projects. Results of these processes will be reviewed by the State Engineer and reported to the State Water Commission during future funding considerations - starting with the 2019-2021 biennium.

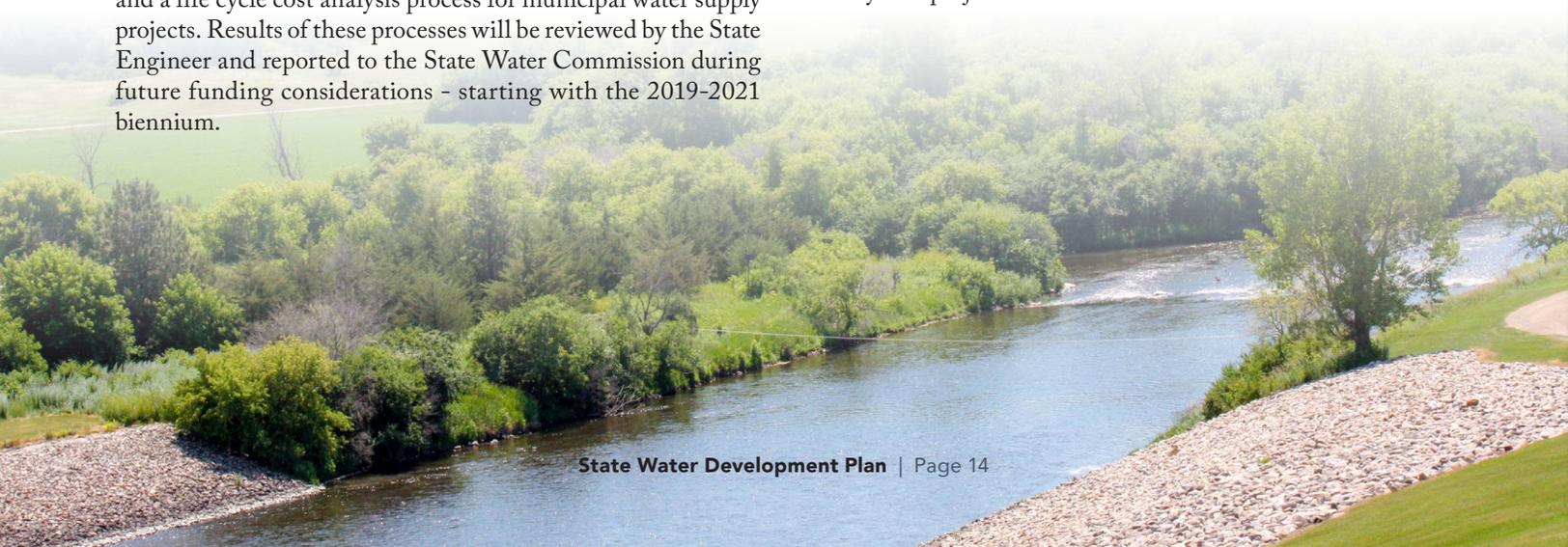
HOUSE BILL 1020 WATER PROJECT & PURPOSE FUNDING, 2017-2019 BIENNIUM

Funding Purpose	HB 1020
Water Supply	\$120,125,000
Rural Water Supply	\$27,000,000
Flood Control	\$136,000,000
General Water Management	\$15,750,000
Funding Total	\$298,875,000

Table 1 - House Bill 1020 Water Project & Purpose Funding, 2017-2019 Biennium.

House Bill 1374 - House Bill 1374 required project sponsors who have received cost-share from the State Water Commission to provide progress reports to the Commission at least every four years. If a progress report is not received, or if the Commission determines the project is not making sufficient progress, the Commission may terminate the cost-share agreement.

House Bill 1374 also requires that the Commission may not provide cost-share for operations and maintenance costs, including removal of vegetative materials and sediment of a water conveyance project.





PRIORITY PROJECT UPDATES

The following two-page features provide an overview of progress and efforts related to seven of the state's largest projects. Each of the seven projects received funding through House Bill 1020 during the 2017 Legislative Assembly, and are seeking substantial financial investment from the state not only in 2019-2021, but several biennia beyond. Bearing that in mind, a more in-depth look is provided. In addition to the seven larger projects, overviews of municipal and rural water supply development efforts are also included. These types of projects have, and will also be seeking large investments across the state.

FARGO-WEST FARGO FLOOD CONTROL

Project Area

Quick Facts

- In-Town Protection
- 100-Year Flood Protection
- \$2.75 Billion Total Cost
- Diversion Channel
 - 30 Miles Long
 - 1,500 Feet Wide

THE DIVERSION AUTHORITY AND LOCAL FUNDING SHARE

The communities of Fargo and Moorhead, along with Cass County, Clay County, and the Cass County Joint Water Resources District, have signed a joint powers agreement that forms a Flood Diversion Board of Authority (Diversion Authority). The Diversion Authority is led by thirteen board members from the stakeholder entities, and its purpose has been to work with the US Army Corps of Engineers to build and operate a flood diversion channel along the Red River of the North.

The Diversion Authority has developed a financial model for the project that assumes cost-share funding from federal and state grants. The local share of approximately \$1.3 billion is being funded via a Cass County and City of Fargo sales tax. Voters have approved three half-cent sales taxes to be extended through 2084 to cover the local share.

The Fargo-West Fargo Flood Control Project (Project or FWFFC) aims to reduce flood risk to the cities and townships that make up the metropolitan area of Fargo-Moorhead. The Project provides flood risk reduction from the Red River and its North Dakota tributaries, including the Wild Rice, Sheyenne, Maple, Rush, and Lower Rush Rivers. The diversion channel will require the excavation of approximately 50 million cubic yards of earth. Construction of the Project will also involve six interstate highway bridges, 12 county and township road bridges, four railroad bridges, three gated control structures, and two aqueduct structures (See Map Appendix).

The Project's original feasibility study was sponsored in 2008 by the cities of Fargo and Moorhead, and completed in July 2011. However, in 2013 a lawsuit was filed against the Project, and in September 2017 an injunction stopping construction was ordered. Through collaboration between the states of Minnesota and North Dakota, the project was altered in an attempt to conform with all applicable laws via a project change known as Plan B, explained below.



PLAN B EXPLAINED

Following the injunction mentioned above, major stakeholders began the process of additional listening and information gathering in order to move the project forward. Three groups representing a wide geographic area were important to this process: a Governor's task force, a technical advisory group, and a policy group. From this process came several compromises, including increased flow through Fargo-Moorhead, fewer staging acres in Minnesota, and reduced impacts to Richland and Wilkin counties. Currently, a Supplemental Environmental Impact Statement is being reviewed for adequacy - a process expected to be complete in 2018. A permit decision is expected soon thereafter.

2017-2019 FUNDING & PROGRESS

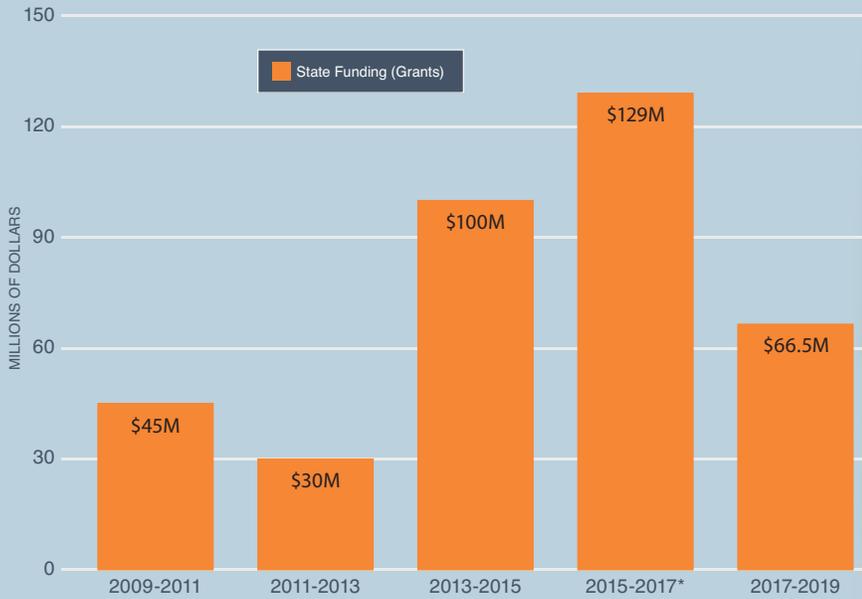
The Fargo-West Fargo Flood Control Project received a \$66.5 million allocation from the State Legislature for the 2017-2019 biennium. In previous biennia, the state had committed \$304 million to the project, bringing the state's funding total to \$370.5 million to date.

Despite various delays, progress during the 2017-2019 biennium continued where possible. The 2nd Street floodway project in downtown Fargo was completed in November 2016, which will allow 35 feet of water to flow safely through town during a 100-year flood event, and up to 40 feet during larger events. In April 2017, ground was broken on the diversion inlet and control structure south of Horace, ND, marking the southern end of the diversion channel.

In early 2018, the Diversion Authority sought and received approval from the State of Minnesota's Department of Natural Resources to continue construction on flood protection systems that have no impact on Minnesota's waterways. This approval allowed work to begin on a levee and lift station near downtown Fargo, and the continuation of infrastructure works in the City of Oxbow.

FARGO-WEST FARGO FLOOD CONTROL FUNDING DATA

HISTORIC STATE FUNDING FOR FWFFC



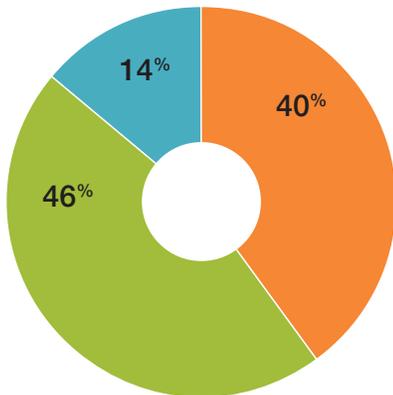
*\$60 Million of the 2015-2017 funding was designated for Fargo interior flood control only.

Figure 2 - Historic State Funding For FWFFC.

Figure 4 - FWFFC Forecasted Funding Needs.

HISTORIC FWFFC FUNDING SOURCES

Total Funding as of October 2018
\$926.5 Million

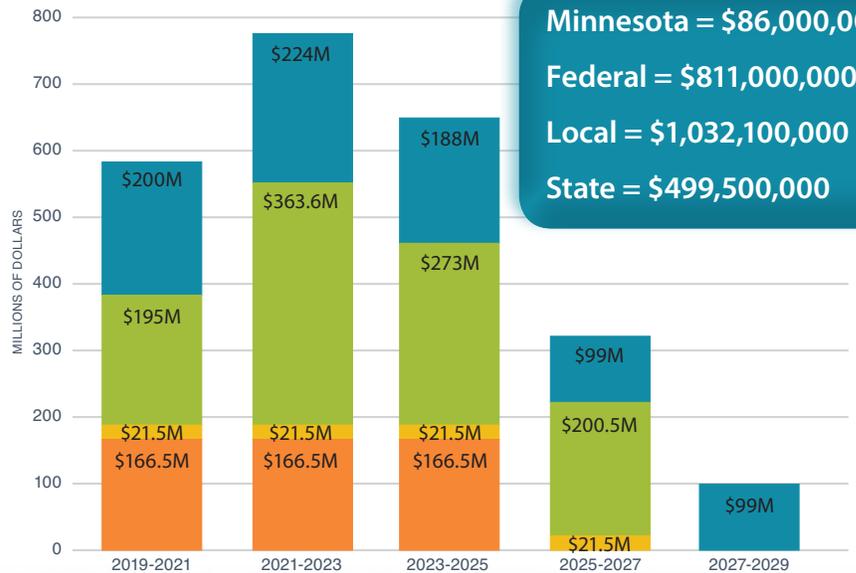


- State = \$370.5M
- Federal = \$127M
- Local = \$429M
- Minnesota = \$0

Figure 3 - Historic FWFFC Funding Sources.

LOOKING AHEAD

FWFFC FORECASTED FUNDING NEEDS



Minnesota = \$86,000,000
Federal = \$811,000,000
Local = \$1,032,100,000
State = \$499,500,000

MOUSE RIVER ENHANCED FLOOD PROTECTION PROJECT



The Mouse River Enhanced Flood Protection Project (MREFPP) is designed to provide flood relief to Mouse River Valley residents - both urban and rural (See Map Appendix). The project was originally initiated by the State Water Commission in response to a request from the Souris River Joint Water Resource Board (SRJB) following the record-setting Mouse River flood of June 2011. The initial phases of the MREFPP involved developing flood risk solutions, first to the urbanized portions of the basin, and then for the rural reaches.

The current focus is on implementation of those solutions, with multiple phases through the city of Minot permitted and under construction. Of particular interest to Minot residents is FEMA's regulatory floodplain, which will carry a mandatory purchase requirement for flood insurance on homes with a mortgage loan. Following the construction of the initial phases of the MREFPP, the regulatory floodplain will be amended, removing approximately 60 percent of the homes affected in Minot.

Quick Facts

- 4 Counties
- 26 Combined Projects
- \$1 Billion Project Cost
- Implementation Plan Through 2039

2017-2019 FUNDING & PROGRESS

To date, the MREFPP has been supported mostly by state and local funds. Funding through the State Water Commission has been provided in the form of 75 percent cost-share for property buy-outs, and 65 percent cost-share for other work. The MREFPP requested \$127 million in state funding for the 2017-2019 biennium. House bill 1020, the Water Commission's funding bill passed by the Legislature in 2017, provided Legislative intent that the MREFPP receive no more than \$193 million in state funding for work in Minot through the 2023-2025 biennium. As of October 2018, a total of \$63.9 million has been committed to the project during the 2017-2019 biennium.

The city of Minot remains the primary source for the local funding share. Presently, Minot is collecting a 0.9 percent sales tax for flood control, which is generating approximately \$9 million per year. Discussions are ongoing to examine the possibilities associated with increasing revenues through additional sales taxes, property taxes, or other fees. In addition, the city has received Disaster Recovery Assistance from the US Department of Housing and Urban Development (HUD). The city has elected to utilize those funds for flood control acquisitions, as HUD funds may not be used for the construction of flood control features.

Marking a major milestone for the overall MREFPP, Minot's floodwall protecting the water treatment plant was completed in fall 2017. This project was identified as the first priority in the development of the MREFPP.

The Souris River Joint Board and the US Army Corps of Engineers have been working jointly on a feasibility study to determine the extent of federal interest in construction of the MREFPP. Based on the most recent information from the study, it appears there will be federal interest in the Maple Diversion and a tieback in the city of Minot. The project includes features expected to cost approximately \$85 million. The feasibility study is scheduled to be delivered to Congress by December 2018.

Phases I, II, and III of the urban portion of the MREFPP have commenced, with construction beginning in early 2018. The 4th Avenue North Floodwall (Phase I) includes levees, approximately 2,250 feet of floodwalls, a major pump station, and two removable closure structures. Phases II and III (bid as one contract) in Minot involve flood protection along Napa Valley and Forest Road, respectively. The predominant features of these segments are earthen levees. The three construction phases will likely take two-to-three construction seasons to complete.

In addition to the works located in Minot, a number of projects in rural portions of the Mouse River Basin are moving forward. A portion of the flood protection in the city of Burlington is being fast-tracked, with the Colton Avenue Bridge ready for bid in early 2019. Similarly, design has begun on bridges in Renville, Ward, and McHenry Counties. The design of these bridges began in summer 2018 and are currently scheduled to be completed in summer 2019. Construction is dependent upon funding, but is projected to begin in spring 2020.

MOUSE RIVER ENHANCED FLOOD PROTECTION PROJECT FUNDING DATA

HISTORIC STATE FUNDING FOR MOUSE RIVER ENHANCED FLOOD PROTECTION PROJECT



Figure 5 - Historic State Funding For Mouse River Enhanced Flood Protection Project.



SOURIS RIVER JOINT WATER RESOURCES BOARD

The Souris River Joint Water Resources Board (SRJB) oversees activities related to the Mouse/Souris River in North Dakota. The board is made up of one representative from each of the four member county water boards (Bottineau, McHenry, Renville, and Ward), and one representative from the City of Minot.

HISTORIC MREFPP FUNDING SOURCES

Total Funding as of October 2018
\$324.2 Million

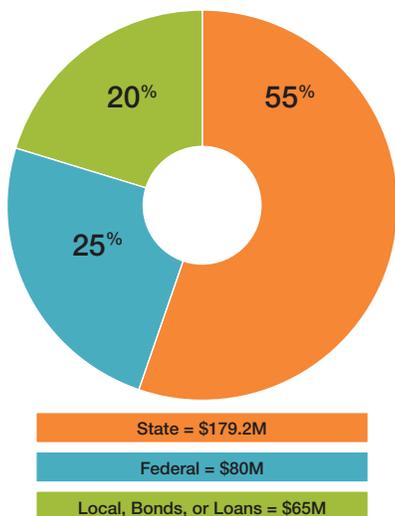
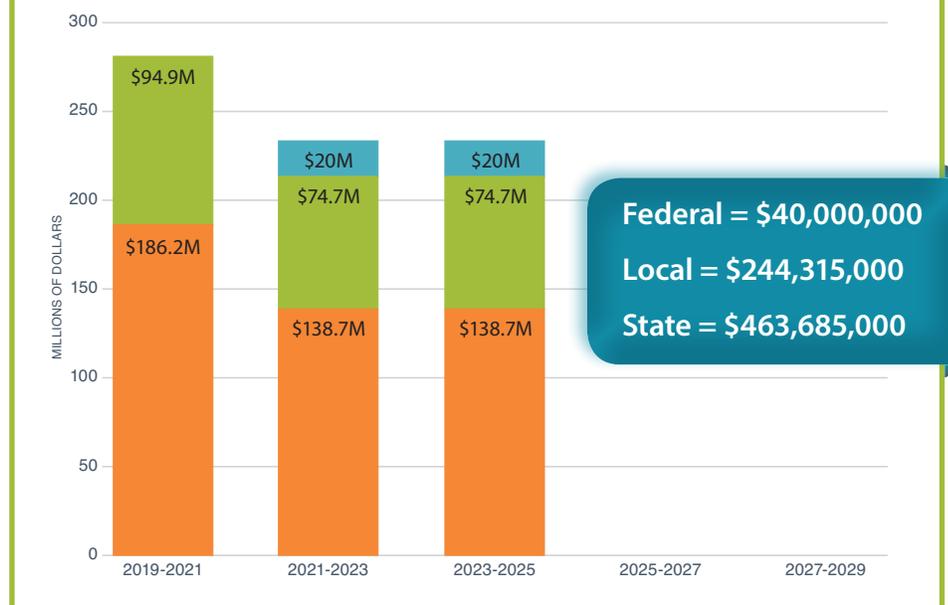


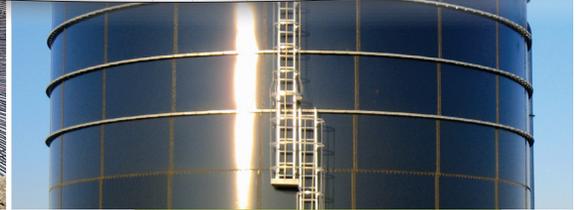
Figure 6 - Historic MREFPP Funding Sources.

LOOKING AHEAD MREFPP FORECASTED FUNDING NEEDS

Figure 7 - MREFPP Forecasted Funding Needs.



NORTHWEST AREA WATER SUPPLY



Owned by the State of North Dakota and overseen by a 9-member advisory committee, Northwest Area Water Supply's (NAWS) purpose is to deliver Missouri River water to residents in north central North Dakota. Under the preferred alternative identified through the NEPA process, NAWS will be of sufficient size to deliver a maximum daily flow of 27 million gallons per day to approximately 81,000 people.

NAWS was authorized by the federal government through the Garrison Diversion Reformulation Act of 1986 and the Dakota Water Resources Act of 2000. In 1991, the North Dakota Legislature created the NAWS Advisory Committee and authorized the State Water Commission to pursue the project. Since 2002, lawsuits and funding uncertainty have slowed construction of NAWS, creating the need for an interim water supply from the city of Minot. However, court approval has allowed 45 miles of transmission line to be built from Lake Sakakawea to Minot, along with 185 miles of bulk distribution pipeline for the surrounding service area.

Quick Facts

- 9 Communities
- 3 Rural Water Systems
- Minot Air Force Base
- 230 Miles Of Pipe
- 2 Ground Storage Reservoirs
- 4 Booster Pump Stations



Figure 8 - Northwest Area Water Supply Project Area.

LEGAL CHALLENGES

After more than a decade of legal proceedings filed by the Canadian Province of Manitoba and the State of Missouri against the US Bureau of Reclamation (Bureau) and State of North Dakota, NAWS received a favorable ruling in August 2017. The District of Columbia District Court ruled in favor of NAWS, allowing the State of North Dakota to move forward with construction of the project. Additionally, in June of 2018, the Bureau and State of North Dakota reached a settlement with Manitoba, ending its appeal of the US District Court's August 2017 ruling. The settlement has resolved Manitoba's appeal, and summary judgement has been granted in favor of NAWS.

2017-2019 FUNDING & PROGRESS

NAWS requested \$55 million for the 2017-2019 biennium. While NAWS is a high priority of the state, it was understood that during the 2017-2019 biennium, progress would remain primarily dependent on court decisions. As of October 2018, \$14.6 million had been committed to the project.

While a settlement was reached with Manitoba, an appeal remains from the State of Missouri based on their standing in the case.

Construction has begun on the Phase II improvements to the Minot Water Treatment Plant, which is expected to be completed in early 2020. Design work has been initiated for the biota water treatment plant, to be constructed near Max, ND. Design of the intake modifications at Snake Creek Pumping Station to supply a raw water intake for NAWS will be initiated in late 2018 or early 2019. Construction of two of the last four finished water distribution pipelines, starting at Glenburn and extending toward Bottineau, is expected to begin in 2019.

NORTHWEST AREA WATER SUPPLY PROJECT FUNDING DATA

HISTORIC STATE EXPENDITURES FOR NORTHWEST AREA WATER SUPPLY

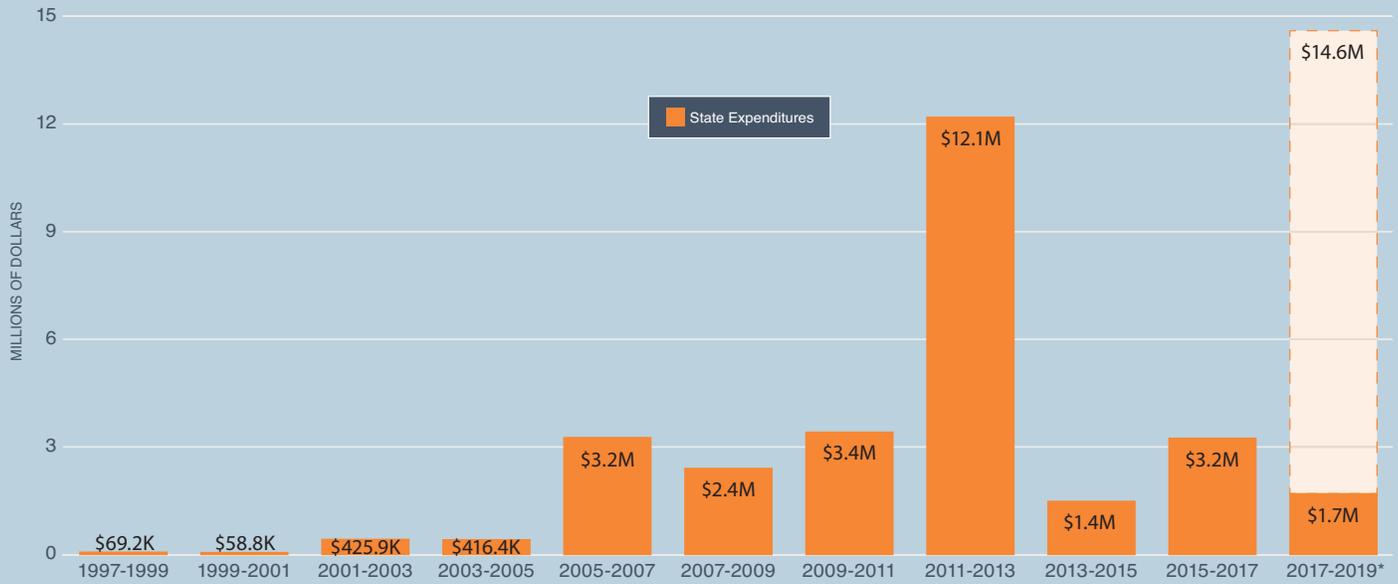


Figure 9 - Historic State Funding For Northwest Area Water Supply.

*During the 2017-2019 biennium, the Water Commission approved \$14.6 million for NAWS.

PURPOSE AND NEED

Prior to the NAWS project, communities within the project area were supplied by groundwater, were constrained by water quality and quantity issues, and did not meet secondary drinking water standards. Since 2008, the city of Minot has been providing water from the city's groundwater wells to the communities of Berthold, Burlington, Kenmare, Sherwood, and Mohall, and to rural water systems including West River, All Seasons, Upper Souris, and North Prairie to temporarily alleviate some of the area's most severe problems. However, this water supply plan is not sustainable long-term, further reinforcing the need for the NAWS Project.

HISTORIC NAWS FUNDING SOURCES

Total Funding as of October 2018
\$138.1 Million

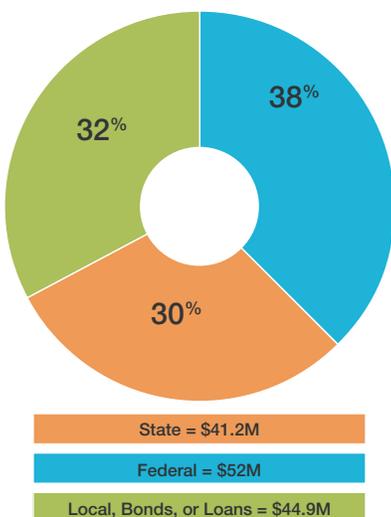


Figure 10 - Historic NAWS Funding Sources.

LOOKING AHEAD NAWS FORECASTED FUNDING NEEDS

Figure 11 - NAWS Forecasted Funding Needs.



* It is anticipated that a portion of the state's funding share will be reimbursed by the federal government.

** The State share during the 2019-2021 biennium is larger than normal to match local contributions from previous biennia.

RED RIVER VALLEY WATER SUPPLY PROJECT

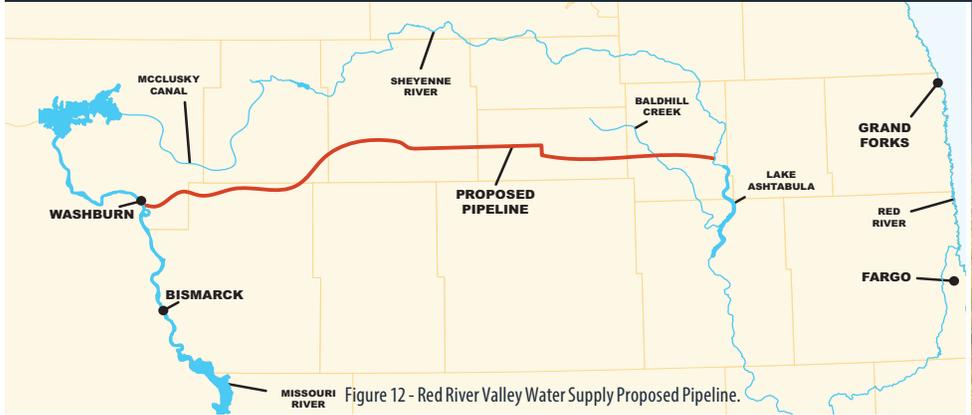


Figure 12 - Red River Valley Water Supply Proposed Pipeline.



The Red River Valley Water Supply Project (RRVWSP) was first initiated as a collaborative federal, state, and local project. The Dakota Water Resources Act of 2000 authorized the RRVWSP in order to provide a reliable supply of quality drinking water to the Red River Valley. A federal Environmental Impact Statement (EIS) was released for the original project in 2007, but a record of decision was never signed. By 2013 it was apparent the project would not receive federal authorization, so a new plan had to be pursued.

The current version of the project is a state- and locally-sponsored option that proposes to transport Missouri River water to central and eastern North Dakota. The water will be carried via pipeline from an intake site near Washburn, and then east along Highway 200 to the Sheyenne River, just north of Valley City. When developed, the RRVWSP will be owned by the Lake Agassiz Water Authority (LAWA) and Garrison Diversion Conservancy District (Garrison Diversion). Operation will be the responsibility of Garrison Diversion.

Quick Facts

- 165 Miles Of 72" Main Transmission Line
- Max Flow of 165 cfs
- 20 Cities & 15 Rural Systems
- Supplemental Water Supply During Times Of Drought
- Potentially Serve 50% Of ND Population

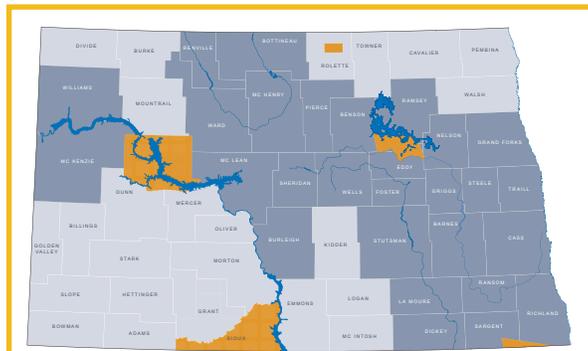


Figure 13 - Garrison Diversion Conservancy District Member Counties

LAKE AGASSIZ WATER AUTHORITY

In 2003, the North Dakota Legislature created the Lake Agassiz Water Authority (LAWA) to collaborate on a plan to meet future water supply needs in the Red River Valley. The Legislature further directed LAWA to develop a reliable supply of drinking water to central and eastern North Dakota. LAWA currently serves as the representative for water users, and is a cooperating entity with the Garrison Diversion Conservancy District on the RRVWSP.

2017-2019 FUNDING & PROGRESS

The RRVWSP received a \$30 million allocation from the State Legislature for the 2017-2019 biennium, of which \$17 million is to be used for planning and permitting, and \$13 million to initiate construction. One of RRVWSP's major goals for the 2017-2019 biennium is to initiate construction in order to ensure coverage under current regulatory policies. A key regulatory obstacle facing RRVWSP is known as Waters of the United States (WOTUS). Currently, the future status of WOTUS is unclear.

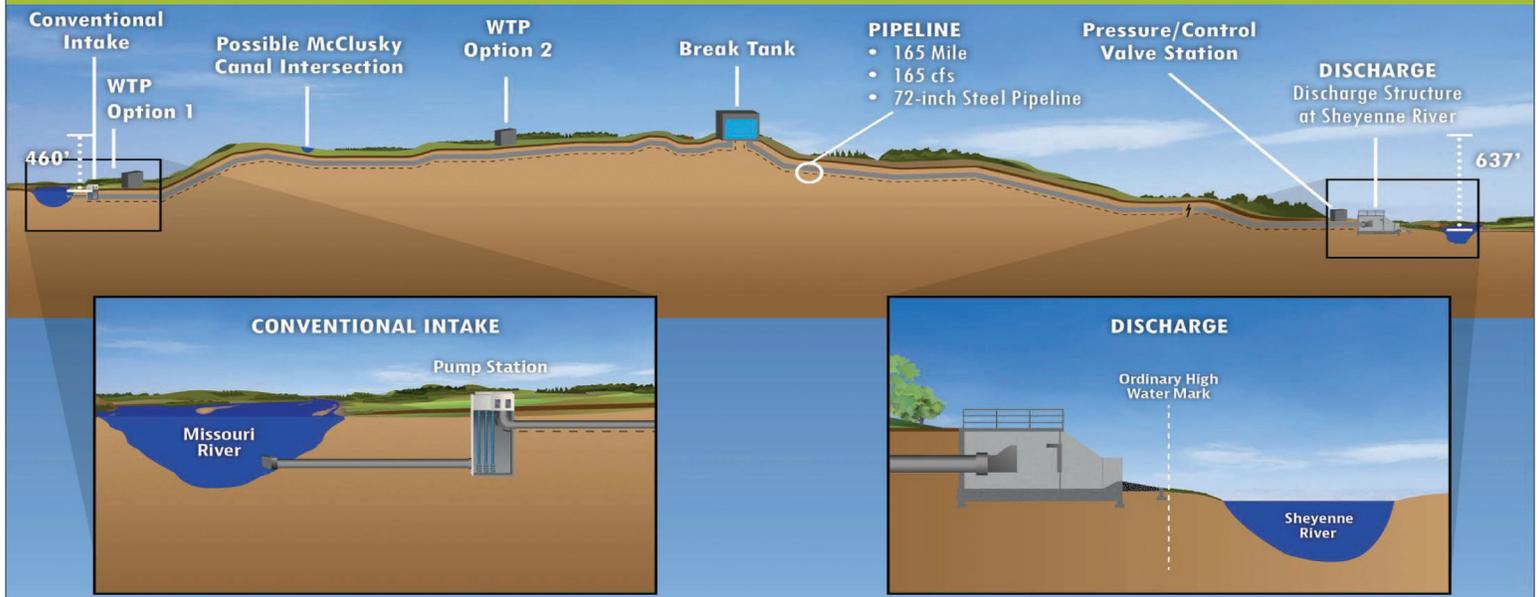
RRVWSP is on track to fully utilize the \$30 million appropriation, with \$17 million committed as of October 2018. Currently, 35 cities and water systems have committed to the project's development phases, nominating for 159.23 cubic feet per second of water from the RRVWSP. Final designs of the pipeline, discharge structure, and intake are underway. The process of securing or reaffirming existing easements began in fall 2018, with strategic construction forecast to begin in mid-2019.

GARRISON DIVERSION CONSERVANCY DISTRICT

The Garrison Diversion Conservancy District (Garrison Diversion) is made up of 28 member counties who each elect a citizen every four years to serve on the Garrison Diversion board of directors. Garrison Diversion is headquartered in Carrington, ND with offices in McClusky, New Rockford, and Oakes, employing a total of 39 people. Their principal mission is to provide a reliable, high quality, and affordable water supply to benefit the people of North Dakota.

PROPOSED PROJECT FEATURES

Figure 14 - Proposed RRVWSP Features.



PROJECT DESIGN

The intake on the Missouri River will be a conventional design using a pump station, while the discharge into Lake Ashtabula will be similar in design to the Devils Lake outlets. Water will be treated to the appropriate level in accordance with North Dakota Department of Health permit requirements. Three different water treatment options are currently being considered.

LOOKING AHEAD: RRVWSP FORECASTED STATE FUNDING NEEDS THROUGH 2029

The current estimated total project cost is \$1.1 billion. Garrison Diversion and LAWA have requested \$50 million from the state for the 2019-2021 biennium. This level of funding would be used for continued easement acquisition, environmental compliance, permitting, and other pre-construction costs. Substantial construction costs will include progress on a Missouri River intake, the discharge structure at the Sheyenne River, and various pipeline contracts.

RED RIVER VALLEY WATER SUPPLY PROJECT FUNDING DATA

POTENTIAL RRVWSP FUNDING SOURCES

\$1.114 Billion

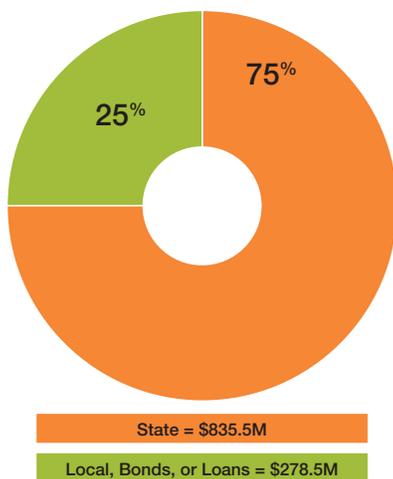
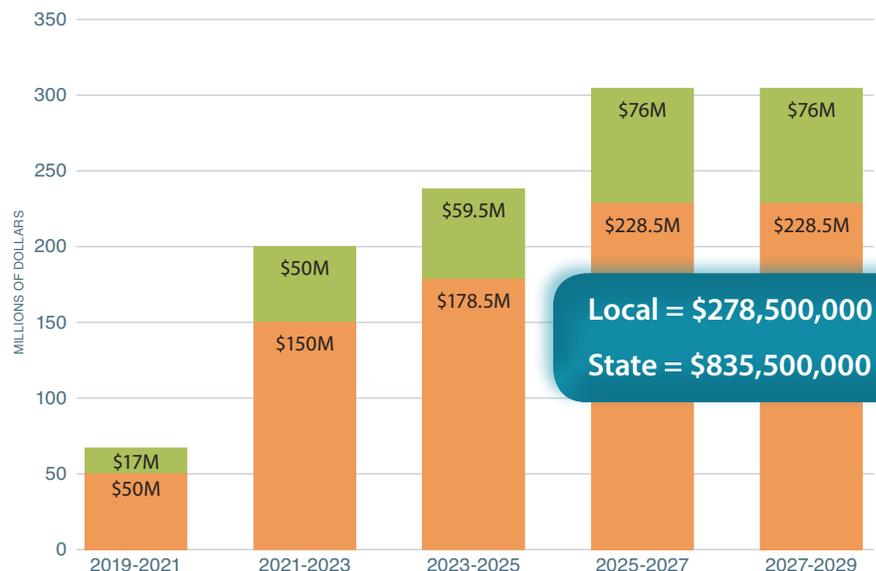


Figure 15 - Potential RRVWSP Funding Sources.

LOOKING AHEAD RRVWSP FORECASTED FUNDING NEEDS

Figure 16 - RRVWSP Forecasted Funding Needs.



Local funding sources include the Garrison Diversion Conservancy District and local water systems.

SHEYENNE RIVER VALLEY FLOOD PROTECTION



A major tributary of the Red River of the North, the Sheyenne River flows roughly 591 miles from central North Dakota, eventually meandering its way east to Fargo. Valley City and Lisbon sit along the Sheyenne River, downstream of Baldhill Dam, which forms Lake Ashtabula. During a typical spring each year, the river swells from snow melt with water levels peaking around March and April, often creating flooding conditions. After experiencing major flooding in 2009, 2010, and 2011, the cities of Valley City and Lisbon each decided to pursue permanent flood protection from Sheyenne River flooding.

While each city has identified its own unique solutions to combat flooding problems, the projects have become collectively known as Sheyenne River Valley Flood Protection (SRVFP). Through the State Water Commission's Cost-Share Program, both Valley City and Lisbon are receiving an 80 percent grant to fund their flood protection projects. The cities are receiving an elevated cost-share percentage due to past and potential future impacts caused by water releases from the Devils Lake outlets, which empty into the Sheyenne River.

Quick Facts

- Federal & State Property Acquisitions
- Nearly 1,000 Total Structures Removed From Floodplain
- Additional Impacts From Devils Lake Outlets
- Earthen Levees & Flood Walls

2017-2019 FUNDING & PROGRESS

During the 2017-2019 biennium, funding approved by the State Water Commission for Valley City totaled \$2.7 million in grants, while Lisbon was approved for \$900,000 in loans.

LISBON

After the 2011 flood, Lisbon city leaders worked toward protecting its residents and infrastructure from the 2.5 miles of Sheyenne River banks stretching through the city. Through a cooperative effort with a local engineering consultant, a series of levees were designed to be strategically placed along the river. As part of Phase I, the first permanent levee was constructed in 2014, and the final levee will be completed before the end of 2018 (See Map Appendix). Once complete, the project will remove over 1,000 parcels of land and 400 structures from the 100-year floodplain. Furthermore, the city is currently considering an additional phase of the project that would provide flood protection in another portion of Lisbon.

VALLEY CITY

Valley City's plan is outlined in approximately eight phases. While Phase I has been completed, Phase II was funded in the 2015-2017 biennium and is currently under construction. Phase III construction dollars were approved in October 2018, and Phase IV is in the design phase (See Map Appendix). The scope of work moving forward includes permanent concrete flood walls, removable flood walls, clay levees, and even bioengineered stream bank restoration projects. Unique to this project is Valley City State University, which helped Valley City secure additional funding from the State Higher Education Department for flood protection around the university's campus, as well as adjacent properties.

SHEYENNE RIVER VALLEY FLOOD PROTECTION FUNDING DATA

HISTORIC STATE FUNDING FOR SHEYENNE RIVER VALLEY FLOOD PROTECTION

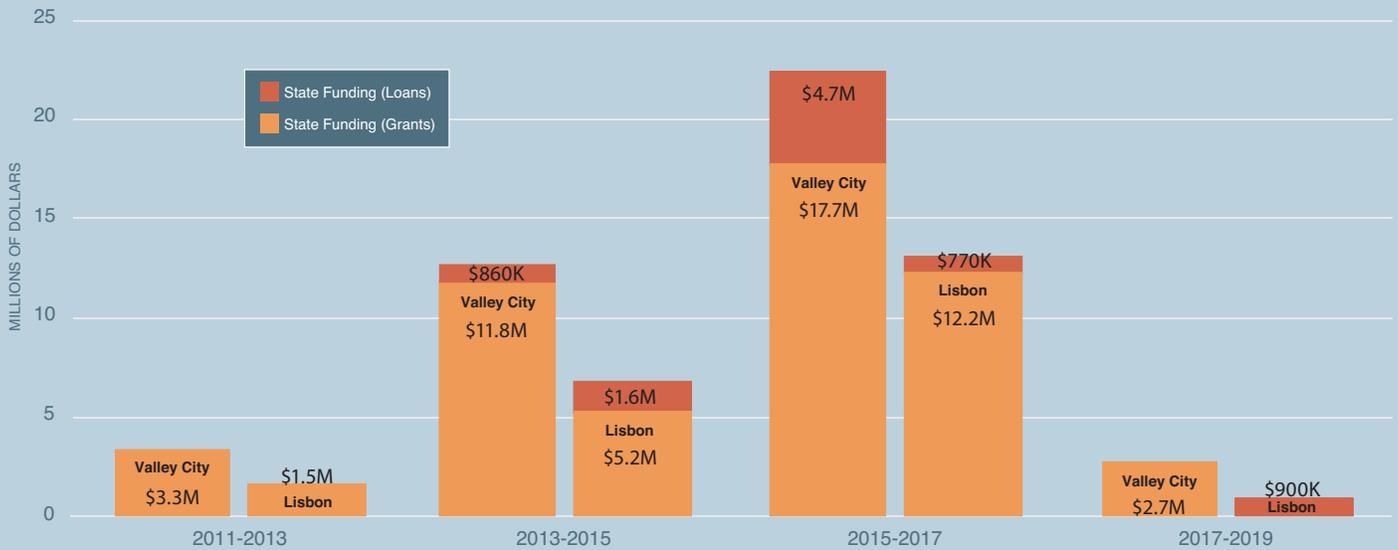


Figure 17 - Historic State Funding For Sheyenne River Valley Flood Protection.

HISTORIC SRVFP FUNDING SOURCES

Total Funding as of October 2018
\$65.8 Million

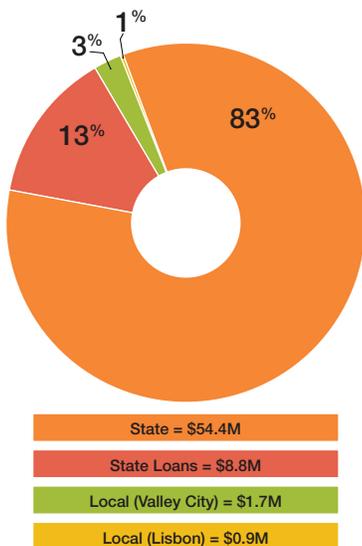


Figure 18 - Historic SRVFP Funding Sources.

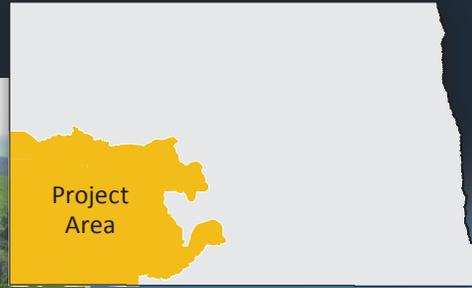
LOOKING AHEAD SRVFP FORECASTED FUNDING NEEDS

Figure 19 - SRVFP Forecasted Funding Needs.



SOUTHWEST PIPELINE PROJECT

Pipeline being laid for the SWPP.



Authorized by the North Dakota Legislature in 1981, the Southwest Pipeline Project (SWPP) transports raw water from Lake Sakakawea to Dickinson or Zap where it is treated and delivered to the Project's customers in southwest North Dakota and Perkins County, South Dakota. Since construction began in 1986, the Project now includes three water treatment plants, 35 pumping stations, 29 water storage reservoirs, and over 5,000 miles of pipe.

The SWPP is owned by the state of North Dakota and administered through the Water Commission. In 1996, the operation and maintenance of the SWPP was transferred to the Southwest Water Authority (SWA), a political subdivision established by the State Legislature. The SWA is governed by a 15-member, publicly elected board of directors, representing jurisdictions throughout the SWPP service area.

Quick Facts

- 56,000 Water Users
- 33 Communities
- 23 Contract Customers
- 21 Raw Water Customers
- 2 Rural Water Systems
- 7,130 Rural Customers



RETURN ON INVESTMENT (REPAYMENT)

Capital repayment is a portion of the water rate charged by SWA to pay back the cost of construction of the Project. While the SWPP has been a substantial investment for the State of North Dakota, the Project has started to pay dividends back to the state. These capital repayments will be made in perpetuity. As of June, 2018, North Dakota's return on investment (ROI) in the SWPP is approximately \$60 million, or 24 percent ROI for the state, factoring in state grants and bonds.

THE REPLACEMENT & EXTRAORDINARY MAINTENANCE (REM) FUND

The REM fund was created to cover costs of an extraordinary nature or to replace parts as they reach their life expectancy. A portion of the rate charged to SWPP's users goes into the REM fund. Originally, the rate was set at \$0.30 per thousand gallons of water sold, and has gradually increased to \$0.70 in 2018. Currently, over \$18 million is available in the fund for REM purposes. Disbursements from the REM fund must be approved by the Commission and SWA Board of Directors.

2017-2019 FUNDING & PROGRESS

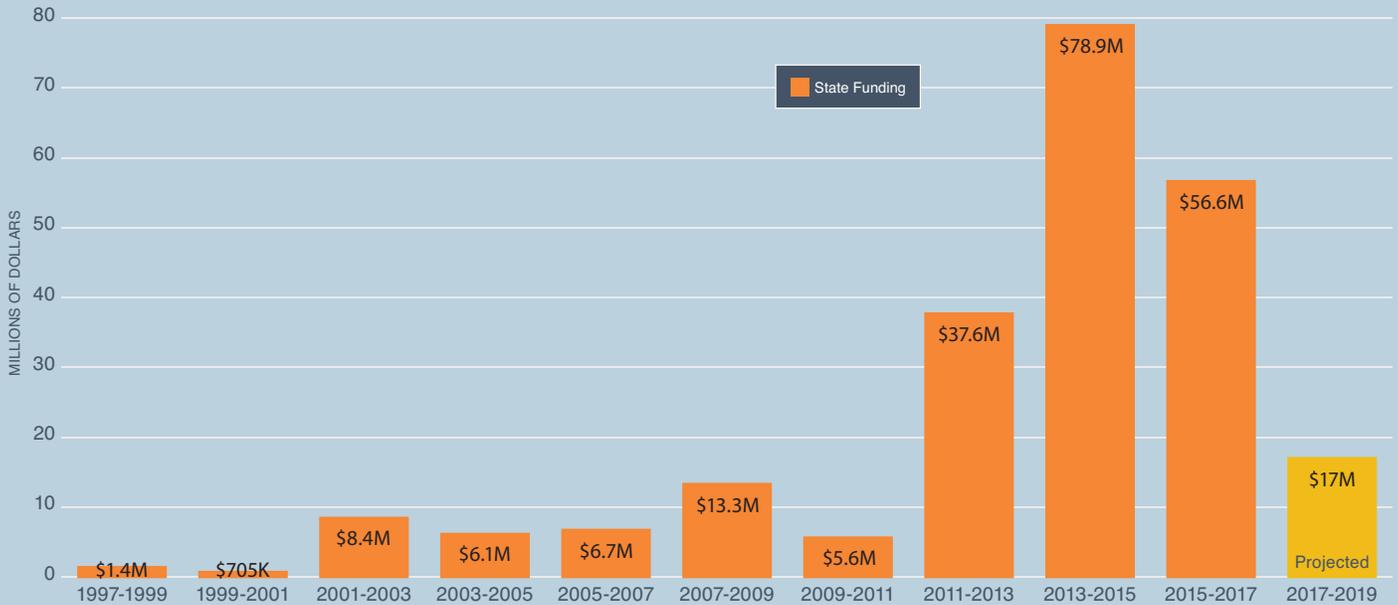
SWA requested \$84 million for the 2017-19 biennium. The request was based on several projects SWA hoped to complete depending on funding, including Dodge and Richardton pump station upgrades, a supplemental intake pump station at Lake Sakakawea, Ray Christensen Pump Station upgrades, and various alignments of parallel pipelines. As of October 2018, a total of \$13.5 million had been committed to the project during the 2017-2019 biennium.

Progress on the SWPP during the 2017-2019 biennium continues to move forward. A supplemental raw water intake is under construction at Renner Bay, Lake Sakakawea. The secondary intake will increase capacity for the entire project. The construction of the supplemental water treatment plant (Southwest Water Treatment Plant) in Dickinson is mostly complete. The plant started producing finished water in February 2018. The residual handling facility, which would process the lime sludge from the existing water treatment plant and Southwest Water Treatment Plant, is under construction with most of the concrete work completed.

Construction of second raw water reservoirs, at both Dickinson and Richardton, are mostly complete with both tanks expected to be operational in 2018. Construction of the first phase of paralleling the raw water transmission pipeline from the intake to Zap to increase transmission capacity is also mostly complete. The contract for pump station upgrades at the Dodge and Richardton pump station is currently advertised for bids, with construction expected to be completed in spring 2020.

SOUTHWEST PIPELINE PROJECT FUNDING DATA

HISTORIC STATE FUNDING FOR SOUTHWEST PIPELINE PROJECT



Note: SWPP received \$28.38 million in state funding prior to 1997.

Figure 20 - Historic State Funding For Southwest Pipeline Project.

HISTORIC SWPP FUNDING SOURCES

Total Funding as of October 2018
\$406.8 Million

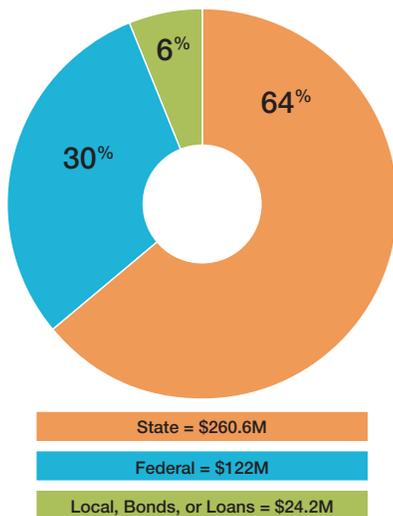
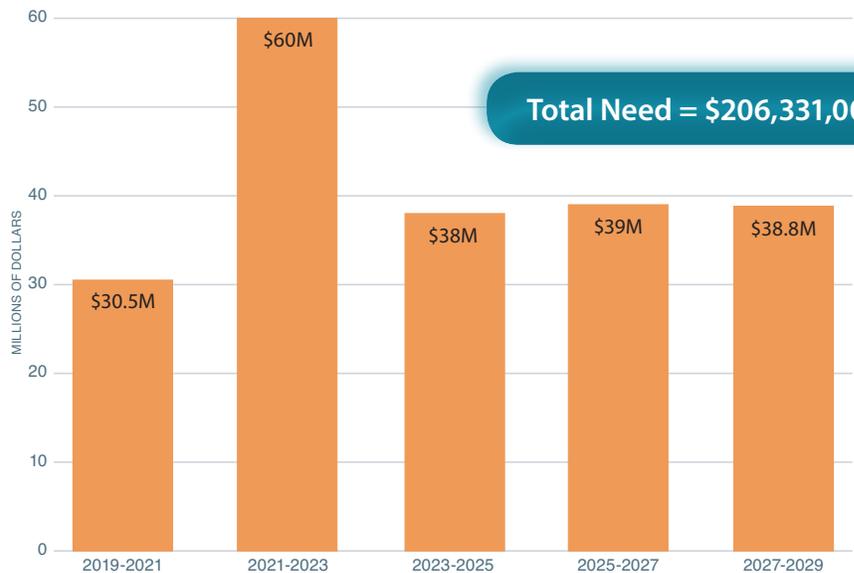


Figure 21 - Historic SWPP Funding Sources.

Figure 22 - SWPP Forecasted Funding Needs.

LOOKING AHEAD SWPP FORECASTED FUNDING NEEDS



WESTERN AREA WATER SUPPLY

WAWS pipe being placed near Crosby, ND.



Owned and operated by the Western Area Water Supply Authority (WAWSA), the Western Area Water Supply (WAWS) project utilizes a combination of Missouri River water treated at the Williston Regional Water Treatment Plant and groundwater treated by the R&T Water Supply Commerce Authority's Water Treatment Plant in Ray. As originally planned after the 2011 Legislative Assembly, the financial model for WAWS was to take advantage of the extensive regional growth that was taking place as a result of oil production, and fund the majority of the project by selling excess water to the energy industry. Since that time, a slow-down in oil activity caused WAWSA and the state to revisit the funding model. The passage of House Bill 1020 during the 2017 Legislative Assembly allows for the refinancing of WAWSA debt.

Quick Facts

- 70,000 Water Users
- 11 Communities
- 4,000 Rural Connections
- 8 Industrial Depots
- 38 Fill Ports



WESTERN AREA WATER SUPPLY AUTHORITY

In 2011, the North Dakota Legislature created the Western Area Water Supply Authority (WAWSA) with the goal to develop the WAWS project to treat, store, and distribute water to northwestern North Dakota. WAWSA is administratively made up of a 10-member board of directors, two each from the five major water supply entities in the region: Northwest Rural Water District (formerly Williams Rural Water District), McKenzie County Water Resource District, the City of Williston, Burke-Divide-Williams (BDW) Water System Association, and Ray and Tioga (R&T) Water Supply Association.

2017-2019 FUNDING & PROGRESS

During the 2017-2019 biennium, WAWSA was approved for \$10 million from the State Water Commission, and a \$10 million loan from the Drinking Water State Revolving Fund. As of October 2018, the full \$20 million had been committed to the project.

Nearly two-dozen projects have been completed on WAWS during the 2017-2019 biennium. McKenzie County Water Resource District completed rural distribution to Watford City and Tobacco Gardens, a bypass transmission main south of Watford City, and a Spring Creek expansion. Northwest Rural Water District completed two transmission mains, associated facilities, and rural distribution to Blacktail Dam.

R&T Water Supply Association finished work on transmission mains in the cities of Ray, Tioga, and Stanley, as well as various rural distribution works. BDW Water Systems Association was able to install rural distribution to the Crosby area. As reported in a previous Water Development Plan, the City of Williston completed a water treatment plant expansion at the end of 2016, along with associated pretreatment chemical works.



WESTERN AREA WATER SUPPLY FUNDING DATA

HISTORIC STATE FUNDING FOR WESTERN AREA WATER SUPPLY



Figure 24 - Historic State Funding For Western Area Water Supply.

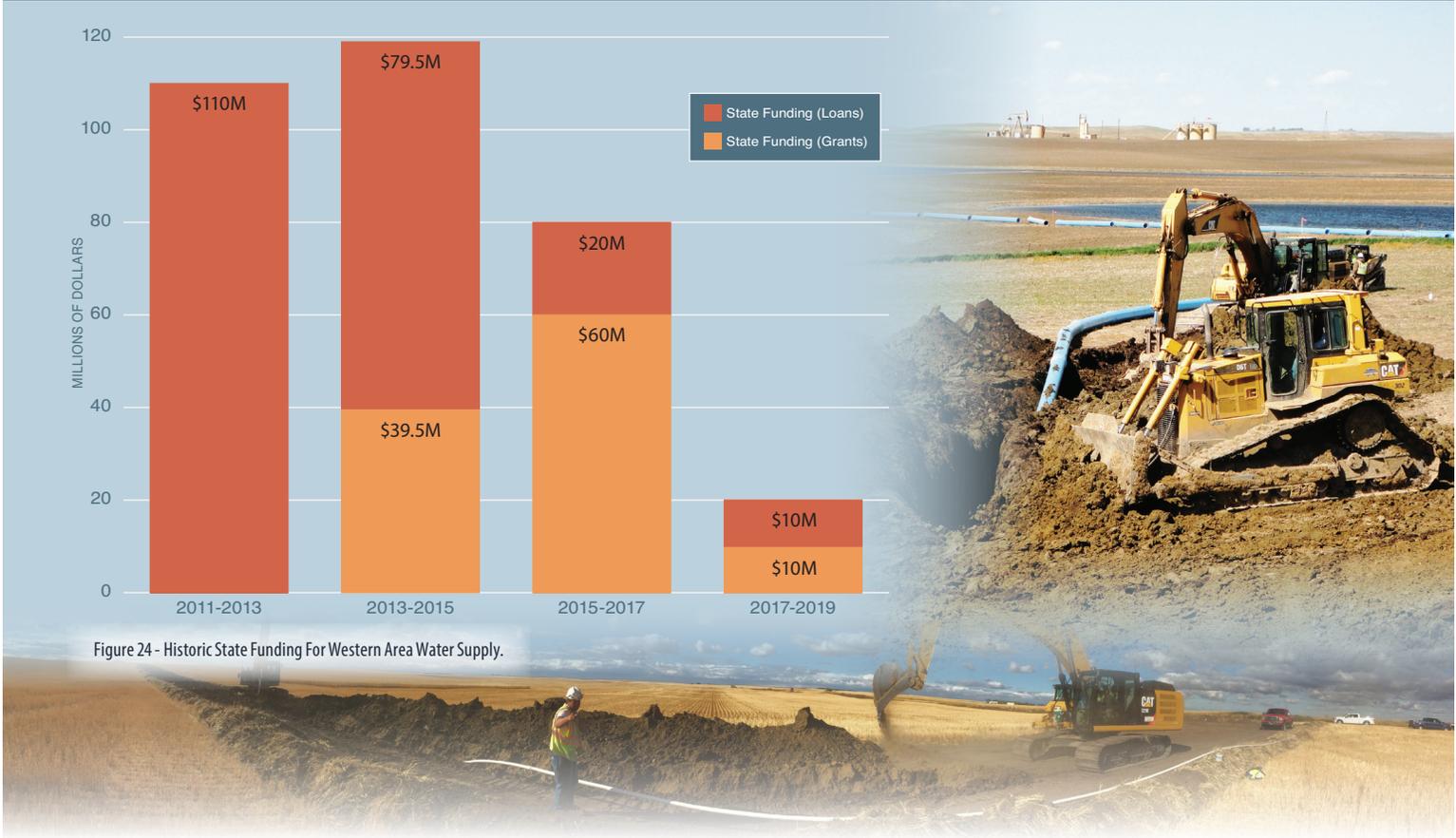


Figure 26 - WAWS Forecasted Funding Needs.

HISTORIC WAWS FUNDING SOURCES

Total Funding as of October 2018
\$329 Million

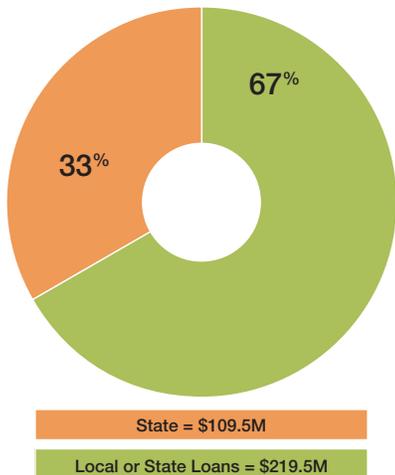


Figure 25 - Historic WAWS Funding Sources.

LOOKING AHEAD WAWS FORECASTED FUNDING NEEDS



Local = \$52,500,000
State = \$157,500,000

MUNICIPAL WATER SUPPLY PROJECTS

Cities in North Dakota face a wide variety of water infrastructure challenges ranging from small, rural cities struggling to create enough revenue to maintain aging infrastructure, to larger, rapidly-expanding cities that are trying to keep up with growth. With such diverse issues to consider across the state, responsible and efficient use of funding is a key focus of the State Water Commission, and is a challenging consideration for the state as a whole.

Section 5 of House Bill 1020 included an appropriation of \$120,125,000 for water supply projects. In addition to municipal projects, this appropriation was intended to fund regional water supply projects, which have been highlighted on previous pages. From that appropriation, several municipal water supply projects were supported and advanced. Table 2 represents the municipal water supply projects that received Water Commission approval during the 2017-2019 biennium, as of October 2018.

PROJECT SPONSOR	PROJECT NAME	FUNDING APPROVED
City of Grand Forks	Regional Water Treatment Plant	\$30,000,000
City of Lincoln	Water Supply Main	\$1,130,000
City of Mandan	Sunset Reservoir Transmission Line	\$3,135,000
City of Mercer	McLean Sheridan Connection	\$166,950
City of New Town	New Water Tower	\$1,940,000
City of West Fargo	Brooks Harbor Water Tower	\$1,950,000
City of West Fargo	North Loop Connection	\$510,000
City of West Fargo	West Loop Connection	\$1,110,000
City of Williston	US HWY 2 Water Main	\$434,400
City of Williston	9 th Avenue East Watermain	\$246,000
City of Williston	18 th Street Water Main	\$2,090,000
City of Wing	Water Tower Repairs	\$72,000
TOTAL APPROVED		\$42,784,350

Table 2 - Municipal water supply projects funded by the Water Commission during 2017-2019 biennium (as of October 2018).

GRAND FORKS REGIONAL WATER TREATMENT PLANT

The City of Grand Forks began construction on a 20 million gallon per day Regional Water Treatment Plant in December 2016. The plant is situated on the western edge of Grand Forks in an effort to optimize water supply regionalization opportunities. Since the 2013-2015 biennium, this project has progressed under a 50/50 cost-share with the Water Commission. To date, \$65 million in state funding has been appropriated to the project, and the city has requested an additional \$9.9 million in state funding to complete the project, with an anticipated completion date of June, 2020. The total cost of this project is estimated to be \$150 million.

LOOKING AHEAD - MUNICIPAL WATER INFRASTRUCTURE SURVEY

The State Water Commission partnered with the North Dakota League of Cities to inventory aging municipal water supply infrastructure across the state, and to forecast a longer-term outlook of future municipal funding needs. Survey results yielded a ten year total funding needs estimate of approximately \$1.1 billion for municipal water supply infrastructure, with approximately \$660 million potentially eligible for state cost-share. Longer-term water supply infrastructure needs are summarized beginning on page 76.

RURAL WATER SUPPLY PROJECTS

In rural North Dakota, water used for domestic, municipal, and livestock needs is often of insufficient quantity or quality. And often, residents of small communities and rural areas are negatively impacted due to a lack of clean, safe water. Rather than relying on water available from private wells, rural water systems can help deliver a stable supply of quality water to cities and rural areas alike.

Today there are 31 rural water systems in North Dakota, including four Tribal systems, made up of approximately 40,000 miles of pipe. These systems provide water to parts of all 53 counties in North Dakota, supporting 75 percent of the state’s incorporated cities. When incorporated cities and rural areas are combined, more than 250,000 people are served by rural water systems.

Section 5 of House Bill 1020 included an appropriation of \$27 million for rural water supply projects. Specific projects and project types were then designated funding under this purpose. Table 3 represents the rural water supply projects that received Water Commission funding during the 2017-2019 biennium, as of October 2018.

PROJECT SPONSOR	PROJECT NAME	FUNDING APPROVED
East Central Regional Water	Grand Forks/Trail System	\$5,546,880
East Central Regional Water	Phase 3 Agassiz WUD	\$232,795
Northeast / East Central Regional Water	Northeast Area Master Plan	\$107,000
Greater Ramsey Water District	Devils Lake Regionalization	\$599,000
North Prairie Rural Water District	Mountrail County	\$6,516,000
Southeast Water User District	System Wide Expansion	\$2,749,000
Stutsman Rural Water District	Phase 6 Pettibone	\$2,100,000
Walsh Rural Water District	System Improvements	\$1,300,000
North Prairie Rural Water District	Silver Spring Surrey	\$133,380
North Prairie Rural Water District	Reservoir 9	\$1,114,620
Cass Rural Water User District	Horace Tank	\$1,846,000
McLean-Sheridan Rural Water	Turtle Lake Tower	\$2,378,450
Tri-County Rural Water District	McVile Connection	\$2,803,250
TOTAL APPROVED		\$27,426,375*

Table 3 - Rural water supply projects funded by the Water Commission during 2017-2019 biennium (as of October 2018). *Includes reallocation of turn back funds from previous biennia.



LOOKING AHEAD - RURAL WATER INFRASTRUCTURE SURVEY

The State Water Commission also partnered with the North Dakota Rural Water Systems Association to inventory aging rural water supply infrastructure across the state, and to forecast potential funding needs. The survey results yielded a ten year total funding needs estimate of approximately \$320 million for rural water supply infrastructure, with approximately \$240 million potentially eligible for state cost-share. Longer-term water supply infrastructure needs are summarized beginning on page 76.

OTHER PROJECT UPDATES

DEVILS LAKE OUTLET OPERATIONS

During the 2017-2019 biennium, the state continued to implement a multi-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.

The maximum total discharge of the West and East Devils Lake outlets is now 600 cfs (See Map Appendix), and the 2018 operating season marked the thirteenth year of operation for the West Outlet and the seventh year for the East Outlet. The total cumulative discharge from the outlets for 2018 was 118,357 acre-feet. Without the operation of the outlets, it is estimated that Devils Lake would be approximately five feet higher than its current elevation.

Outlet operations have been made possible through a collaboration of stakeholders throughout eastern North Dakota, Minnesota, and the Canadian Province of Manitoba. Careful management of downstream impacts related to water quality and quantity in the Red and Sheyenne Rivers remains a key consideration of outlet operations.

The Water Commission has also continued to manage operational efforts associated with the Tolna Coulee Control Structure, which was constructed in 2012 to reduce the risk of a catastrophic natural overflow of Devils Lake. The control structure was developed in cooperation with the US Army Corps of Engineers and is now owned and operated by the Water Commission.

GRAFTON FLOOD CONTROL

Grafton's comprehensive flood risk reduction project will involve the construction of 12.5 miles of levees and a 3.2 mile bypass channel. When completed, the project will provide Grafton with protection from a 100-year flood event.

The project was bid in December 2017, and a contract was awarded in January 2018. Construction officially began in April 2018, with a forecasted completion date of October 2019. A majority of the trenching, levee and outlet construction, and a portion of the channel excavation will be completed during the 2018 construction season. Additionally, coordination is ongoing with FEMA to obtain beneficial flood map changes in the future.

As of October 2018, the Water Commission has committed \$33.9 million in grants, or 71 percent of the project's estimated \$47.4 million total cost. In addition, \$3.3 million was committed in the form of a loan, bringing the Water Commission's contribution to 75 percent of the total cost.

GENERAL WATER MANAGEMENT

General water management projects include non-conveyance rural flood control, recreational projects, dam repairs, planning efforts, special studies, and mitigation for operation of the Devils Lake outlets. House bill 1020 designated \$15.75 million for general water management projects during the 2017-2019 biennium. A summary of general water management projects and studies that were approved for Water Commission cost-share is included in Table 7 in the following "Purpose Funding Summary" section.



2017-2019 WATER COMMISSION PROJECT BUDGET: PURPOSE FUNDING SUMMARIES

As previously mentioned, House Bill 1020 outlined four purposes for the Water Commission’s 2017-2019 water development project funding. Specific funding amounts were designated for each purpose, and Tables 4 through 7 summarize the projects that have been supported out of each purpose funding category.

RURAL WATER SUPPLY PURPOSE FUNDING: 2017-2019 BIENNIUM		
PURPOSE FUNDING TOTAL		\$27,000,000
Obligated This Biennium	East Central Regional Water District - Grand Forks System	\$4,150,000
	East Central Regional Water District - Traill System	\$1,396,880
	East Central Regional Water District - Phase 3 Agassiz WUD	\$232,795
	Northeast / East Central Regional Water District - Northeast Area Master Plan	\$107,000
	Greater Ramsey Water District - Devils Lake Regionalization	\$599,000
	North Prairie Rural Water District - Mountrail County	\$6,516,000
	Southeast Water User District - System Wide Expansion	\$2,749,000
	Stutsman Rural Water District - Phase 6 Pettibone	\$2,100,000
	Walsh Rural Water District - System Improvements	\$1,300,000
	North Prairie Rural Water District - Silver Spring Surrey	\$133,380
	North Prairie Rural Water District - Reservoir 9	\$1,114,620
	Cass Rural Water User District	\$1,846,000
	McLean-Sheridan Rural Water District - Turtle Lake Tower	\$2,378,450
	Tri-County Rural Water District - McVille Connection	\$2,803,250
	TOTAL APPROVED	
FUNDING TURNED BACK FROM PREVIOUS BIENNIA		\$952,515
REMAINING BALANCE (OCTOBER 2018)		\$526,140

Table 4 - Rural Water Supply Purpose Funding, 2017-2019 Biennium.



WATER SUPPLY PURPOSE FUNDING: 2017-2019 BIENNIUM

PURPOSE FUNDING TOTAL		\$120,125,000	
Obligated This Biennium	Grand Forks - Water Treatment Plant	\$30,000,000	
	Lake Agassiz Water Authority - Red River Valley Water Supply	\$17,000,000	
	Lincoln - Water Supply Main	\$1,130,000	
	Mandan - Sunset Reservoir Transmission Line	\$3,135,000	
	Mercer - McLean-Sheridan Connection	\$166,950	
	Minot - Northwest Area Water Supply	\$14,600,000	
	New Town - Water Tower	\$1,940,000	
	State Water Commission - Southwest Pipeline Project	\$13,500,000	
	West Fargo - Brooks Harbor Water Tower	\$1,950,000	
	West Fargo - North Loop Connection	\$510,000	
	West Fargo - West Loop Connection	\$1,110,000	
	Western Area Water Supply - Phase 5	\$20,000,000	
	Williston - US Highway 2 Water Main	\$434,400	
	Williston - 9th Avenue E Water Main	\$246,000	
	Williston - 18th Street Water Main	\$2,090,000	
	Wing - Water Tower	\$72,000	
	TOTAL APPROVED		\$107,884,350
	FUNDING TURNED BACK FROM PREVIOUS BIENNIA		\$767,521
REMAINING BALANCE (OCTOBER 2018)		\$13,008,171	

Table 5 - Water Supply Purpose Funding, 2017-2019 Biennium.



FLOOD CONTROL PURPOSE FUNDING: 2017-2019 BIENNIUM

PURPOSE FUNDING TOTAL		\$136,000,000
Obligated This Biennium	Mouse River Flood Control	\$64,295,217
	Valley City Flood Control	\$3,958,104
	Maple River WRD - Davenport Flood Risk Reduction	\$35,000
	Pembina County WRD - Drain #81	\$56,000
	Southeast Cass WRD - Raymond-Mapleton Township Imp. District #76	\$3,043
	Bottineau County WRD - Baumann Legal Drain	\$41,427
	Traill County WRD - Norway Drain #38	\$61,917
	Mapleton Re-Certification	\$213,670
	Michigan Spillway Flood Assessment	\$42,053
	Logan County WRD - Lake McKenna	\$72,167
	Cass County Joint WRD - Sheldon Subdivision Levee	\$370,200
	Walsh County Drain 30-02	\$328,042
	Lower Heart River WRD - Mandan Flood Control	\$280,000
	TOTAL APPROVED	
FUNDING TURNED BACK FROM PREVIOUS BIENNIA		\$1,117,229
REMAINING BALANCE (OCTOBER 2018)		\$67,360,389

Table 6 - Flood Control Purpose Funding, 2017-2019 Biennium.



GENERAL WATER MANAGEMENT PURPOSE FUNDING: 2017-2019 BIENNIUM

PURPOSE FUNDING TOTAL		\$15,750,000
Obligated This Biennium	Garrison Diversion Unit - Mile 42 Irrigation	\$937,207
	Drought Disaster Livestock Water Supply	\$1,775,000
	Barnes County Water Resource District - Kathryn Dam	\$754,875
	McLean County Water Resource District - Painted Woods Lake	\$284,768
	Valley City Water Treatment Plant	\$586,350
	AEM - Survey Funding	\$425,000
	Walsh County Water Resource District - Matacjek Dam	\$267,150
	USGS Cooperative Hydrologic Monitoring	\$553,790
	Sargent County Water Resource District - Brummond-Lubke Dam	\$317,111
	PMP Update	\$600,000
	NPS Pollution - Department of Health	\$200,000
	Red River Basin Commission	\$200,000
	Assiniboine River Basin Commission	\$100,000
	State Engineer Approvals	\$804,686
	Wildlife Services - ND Department of Agriculture	\$125,000
	Yellowstone Irrigation District	\$692,500
	TOTAL APPROVED	\$8,623,437
FUNDING TURNED BACK FROM PREVIOUS BIENNIA	\$244,612	
REMAINING BALANCE (OCTOBER 2018)	\$7,371,175	

Table 7 - General Water Management Purpose Funding, 2017-2019 Biennium.



STATE WATER DEVELOPMENT PROGRAM: WORKING WITH PROJECT SPONSORS

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

WATER PROJECT INVENTORY PROCESS

As part of the Water Commission’s water planning efforts, the agency biennially solicits project and program information from potential project sponsors. The results provide the Commission with an updated inventory of water projects and programs that could come forward for state cost-share in the upcoming 2019–2021 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 Commission invited water boards, joint water boards, the North Dakota Irrigation Association, communities, rural and regional water supply systems, and government agencies with an interest in water development projects and programs to complete an electronic project planning and information form. Information requested on the forms included general project descriptions, location, cost estimates, permit information, and identification of potential obstacles, among other basic aspects of the projects.

Most importantly, sponsors were asked to assign the most realistic start dates possible to projects they expected to present to the Commission for cost-share consideration – particularly during the 2019–2021 and later biennia. As part of that effort, project sponsors needed to take into consideration when a funding commitment from the Commission would be needed for projects or programs to proceed.

As the electronic project information forms were received by the Commission, they were automatically placed into a water project database, helping to ensure receipt and accurate inventory of

projects. This provides the Commission with updated project information for older projects and an accounting of new projects that have developed since the last inventory process, during the 2017–2019 biennium. Of course, circumstances change, and so do project costs over time. Therefore, the database is updated regularly leading up to the Legislative Assembly.

When the deadline for project submittal was reached, each project was reviewed by a Water Commission subcommittee with Commission staff assistance to determine if portions of the project were eligible for cost-share, and if the proposed time-frames for project advancement were reasonable and justified by supporting information.

In addition, the agency worked 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 Commissioner-hosted meetings were also helpful for the agency and project sponsors to discuss projects and update information accordingly.

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 Commission, the Office of Management and Budget, the Governor’s Office, and the Legislature.





WATER DEVELOPMENT FUNDING NEEDS, 2019-2021 BIENNIUM

The following Water Development Funding Needs table contains projects that could move forward and request State Water Commission cost-share in the 2019–2021 biennium and beyond (Table 8). *This accounting of projects simply represents a list of needs as submitted by project sponsors. It does not guarantee, in any way, that all of the projects listed will receive funding or the amounts listed. In addition, upon further review of the projects and any notices of changes to the projects, the state’s potential cost-share contribution may change based on the agency’s cost-share policy and requirements for eligible items.*

In consideration of the State Water Commission Project Prioritization Guidance policy, projects were also identified with their priority ranking, and by major drainage basin where they are located.

The inventory is organized into six project purposes including: flood control, municipal water supply, rural water supply, regional water supply, conveyance, and general water management. The total financial need to implement all of the projects in the 2019–2021 inventory is about \$1.7 billion. The state’s share of that total could be about \$902 million. However, those estimates will evolve pending closer analyses of cost-share requirements once a request for funding has been made to the Commission. The federal government and local project sponsors would be responsible to make up the balance.



The 2019–2021 totals do not account for projects that may receive additional funding in the current 2017–2019 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 presented here.

TRIBAL PROJECT FUNDING

Water projects submitted by tribal governments could be included in the inventory if partnered with eligible local sponsors per NDCC 61-02-24 and NDCC 61-02-24.1.

FLOOD CONTROL

PLEASE NOTE: This inventory of financial needs is for planning and budgeting purposes only. It does not guarantee, in any way, that projects listed will receive funding from the state. In addition, the estimated financial needs from the state (grant or loan) may change based on further review of the projects in accordance with cost-share program eligibility requirements.

LOCAL SPONSOR	PROJECT NAME	PRIORITY	BASIN	FEDERAL FUNDING 2019-2021	POTENTIAL SWC COST - SHARE 2019-2021	LOCAL FUNDING 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
Burleigh County WRD	Sibley Island Flood Control Project	High	Lower Missouri	\$-	\$201,148	\$134,098	\$-	\$335,246
Cass County Joint WRD	Sheldon Subdivision Flood Protection	High	Upper Red	\$-	\$390,000	\$260,000	\$-	\$650,000
Cass County Joint WRD, Rush River WRD & Amenia	City of Amenia Flood Protection	High	Upper Red	\$-	\$2,400,000	\$1,600,000	\$-	\$4,000,000
City of Beulah	West Tributary Flood Mitigation	High	Upper Missouri	\$-	\$120,000	\$80,000	\$-	\$200,000
City of Fargo, Cass County, Cass County Joint WRD	Fargo-West Fargo Flood Control	High	Lower Red	\$200,000,000	\$166,500,000	\$195,000,000	\$21,500,000	\$583,000,000
City of Jamestown & Stutsman County WRD	Southwest Planning Area Storm Water Sewer - System 1	High	James	\$-	\$1,800,000	\$1,200,000	\$-	\$3,000,000
City of LaMoure	LaMoure Flood Control Project	High	James	\$-	\$2,400,000	\$1,600,000	\$-	\$4,000,000
City of Lisbon	Sheyenne River Flood Control	High	Upper Red	\$-	\$7,080,000	\$1,770,000	\$-	\$8,850,000
City of Minot	Minot Levee Erosion Repair	High	Mouse	\$-	\$1,080,000	\$800,000	\$-	\$1,880,000

Table 8 - Water Project Funding Needs, 2019-2021 Biennium.

FLOOD CONTROL (continued)

PLEASE NOTE: This inventory of financial needs is for planning and budgeting purposes only. It does not guarantee, in any way, that projects listed will receive funding from the state. In addition, the estimated financial needs from the state (grant or loan) may change based on further review of the projects in accordance with cost-share program eligibility requirements.

LOCAL SPONSOR	PROJECT NAME	PRIORITY	BASIN	FEDERAL FUNDING 2019-2021	POTENTIAL SWC COST - SHARE 2019-2021	LOCAL FUNDING 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
City of Neche	Neché Levee Certification Project, Design & Certification	High	Lower Red	\$-	\$750,000	\$500,000	\$-	\$1,250,000
Valley City	Valley City Permanent Flood Protection	High	Upper Red	\$-	\$11,240,000	\$2,810,000	\$-	\$14,050,000
Grand Forks County WRD	Village of Arvill Flood Control	High	Lower Red	\$-	\$480,000	\$70,000	\$250,000	\$800,000
Lower Heart River WRD	Lower Heart River Flood Risk Reduction Project	High	Lower Missouri	\$-	\$21,000,000	\$14,000,000	\$-	\$35,000,000
Maple River WRD & City of Davenport	City of Davenport Flood Protection	High	Upper Red	\$-	\$3,000,000	\$2,000,000	\$-	\$5,000,000
Park Joint WRD	North Branch Park River Flood Control - Crystal	High	Lower Red	\$-	\$2,400,000	\$1,600,000	\$-	\$4,000,000
Souris River Joint Board	Mouse River Enhanced Flood Protection	High	Mouse	\$-	\$186,200,000	\$94,900,000	\$-	\$281,100,000
Southeast Cass WRD	Sheyenne-Maple Flood Control Project #2 Improvements	High	Upper Red	\$-	\$600,000	\$400,000	\$-	\$1,000,000

FLOOD CONTROL (continued)

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LOCAL SPONSOR	PROJECT NAME	PRIORITY	BASIN	FEDERAL FUNDING 2019-2021	POTENTIAL SWC COST - SHARE 2019-2021	LOCAL FUNDING 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
State of North Dakota	Devils Lake Outlet Operation	High	Devils Lake	\$-	\$10,000,000	\$-	\$-	\$10,000,000
Ward County WRD	Des Lacs River Diversion Channels	High	Mouse	\$25,000	\$650,000	\$800,000	\$25,000	\$1,500,000
Ward County WRD	Puppy Dog Coulee High Flow Bypass Channel	High	Mouse	\$-	\$1,800,000	\$1,200,000	\$-	\$3,000,000
Barnes County WRD	Eckelson Lake Outlet Improvement	Moderate	Upper Red	\$-	\$1,500,000	\$1,000,000	\$-	\$2,500,000
Cass County Joint WRD	Upper Maple River Watershed Detention - Site #1	Moderate	Upper Red	\$2,500,000	\$5,000,000	\$5,000,000	\$-	\$12,500,000
Cass County Joint WRD	Upper Maple River Watershed Detention Site #2	Moderate	Upper Red	\$2,500,000	\$5,000,000	\$5,000,000	\$-	\$12,500,000
Forest River Joint WRD	Forest River Flood Control	Moderate	Lower Red	\$-	\$4,860,000	\$5,940,000	\$-	\$10,800,000
Forest River Joint WRD	Forest River Floodwater (Detention)	Moderate	Lower Red	\$-	\$2,415,000	\$3,485,000	\$-	\$5,900,000

FLOOD CONTROL (continued)

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LOCAL SPONSOR	PROJECT NAME	PRIORITY	BASIN	FEDERAL FUNDING 2019-2021	POTENTIAL SWC COST - SHARE 2019-2021	LOCAL FUNDING 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
Logan County WRD	McKenna Lake & Napoleon Aquifer Drainage & Improvement Project - Construction Permit & Construction	Moderate	Lower Missouri	\$-	\$1,000,000	\$900,000	\$100,000	\$2,000,000
McLean County WRD	Lower Buffalo Creek Flood Mitigation	Moderate	Upper Missouri	\$-	\$270,000	\$30,000	\$300,000	\$600,000
McLean County WRD	Painted Woods Lake Flood Control - High Flow Channel Phase 2	Moderate	Upper Missouri	\$-	\$900,000	\$1,100,000	\$600,000	\$2,600,000
McLean County WRD	Turtle Creek Rural Flood Control	Moderate	Upper Missouri	\$-	\$900,000	\$500,000	\$600,000	\$2,000,000
Park Joint WRD	North Branch Park River Detention	Moderate	Lower Red	\$-	\$15,000,000	\$10,000,000	\$-	\$25,000,000
Pembina County WRD	Tongue River Retention	Moderate	Lower Red	\$-	\$6,000,000	\$4,000,000	\$-	\$10,000,000
Sargent County WRD	Shortfoot Creek Detention	Moderate	Upper Red	\$-	\$5,400,000	\$3,600,000	\$-	\$9,000,000
Steele County WRD	Lake Tobiason Improvement	Moderate	Upper Red	\$-	\$112,500	\$37,500	\$-	\$150,000

FLOOD CONTROL (continued)

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LOCAL SPONSOR	PROJECT NAME	PRIORITY	BASIN	FEDERAL FUNDING 2019-2021	POTENTIAL SWC COST - SHARE 2019-2021	LOCAL FUNDING 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
Ward County WRD	Makoti Lake Stabilization	Moderate	Mouse	\$-	\$900,000	\$1,100,000	\$-	\$2,000,000
City of LaMoure	Permanent Flood Protection Feasibility Study	Moderate	James	\$-	\$35,000	\$65,000	\$-	\$100,000
City of Williston	Water Resource Recovery Facility Flood Scenario Planning	Low	Upper Missouri	\$-	\$61,250	\$113,750	\$-	\$175,000
Grand Forks County WRD	Hazen Brook Detention Site - Study	Low	Lower Red	\$-	\$20,475	\$18,525	\$19,500	\$58,500
Grand Forks County WRD	Johnstown Detention Site - Study	Low	Lower Red	\$-	\$40,000	\$40,000	\$40,000	\$120,000
Logan County WRD	McKenna Lake & Napoleon Aquifer Drainage & Improvement Project - Engineering Design & Development	Low	Lower Missouri	\$-	\$35,000	\$65,000	\$-	\$100,000
Steele County WRD	Golden Lakes Improvement	Low	Upper Red	\$-	\$198,000	\$297,000	\$-	\$495,000
Walsh County WRD	Oslo Area Flood Control Project	Low	Lower Red	\$-	\$234,000	\$286,000	\$-	\$520,000

FLOOD CONTROL (continued)

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LOCAL SPONSOR	PROJECT NAME	PRIORITY	BASIN	FEDERAL FUNDING 2019-2021	POTENTIAL SWC COST - SHARE 2019-2021	LOCAL FUNDING 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
LOW PRIORITY FLOOD CONTROL TOTAL				\$-	\$623,725	\$885,275	\$59,500	\$1,568,500
MODERATE PRIORITY FLOOD CONTROL TOTAL				\$5,000,000	\$49,257,500	\$41,692,500	\$1,600,000	\$97,550,000
HIGH PRIORITY FLOOD CONTROL TOTAL				\$200,025,000	\$420,091,148	\$320,724,098	\$21,775,000	\$962,615,246
FLOOD CONTROL TOTAL				\$205,025,000	\$469,972,373	\$363,301,873	\$23,434,500	\$1,061,733,746



MUNICIPAL WATER SUPPLY

PLEASE NOTE: This inventory of financial needs is for planning and budgeting purposes only. It does not guarantee, in any way, that projects listed will receive funding from the state. In addition, the estimated financial needs from the state (grant or loan) may change based on further review of the projects in accordance with cost-share program eligibility requirements.

LOCAL SPONSOR	PROJECT NAME	PRIORITY	BASIN	FEDERAL FUNDING 2019-2021	POTENTIAL SWC COST - SHARE 2019-2021	LOCAL FUNDING 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
City of Bismarck	Zone 4 Lockport Water Pump Station	Moderate	Lower Missouri	\$-	\$1,980,000	\$1,320,000	\$-	\$3,300,000
City of Burlington & North Prairie Rural Water	Burlington South Water Tower	Moderate	Mouse	\$-	\$936,000	\$624,000	\$-	\$1,560,000
City of Columbus	Water Main Improvements - Phase I	Moderate	Mouse	\$-	\$365,400	\$243,600	\$-	\$609,000
City of Columbus	Water Main Improvements - Phase II	Moderate	Mouse	\$-	\$346,710	\$231,140	\$-	\$577,850
City of Columbus	Water Main Improvements - Phase III	Moderate	Mouse	\$260,890	\$234,801	\$156,534	\$-	\$652,225
City of Dickinson	Water Supply Improvements (6th St, 7th St, Sims St.)	Moderate	Lower Missouri	\$-	\$1,980,000	\$1,320,000	\$-	\$3,300,000
City of Dickinson	North Side Water Storage Tank	Moderate	Lower Missouri	\$-	\$60,000	\$40,000	\$-	\$100,000
City of Garrison	Water Supply & Treatment Expansion	Moderate	Upper Missouri	\$-	\$2,700,000	\$1,800,000	\$-	\$4,500,000

MUNICIPAL WATER SUPPLY (continued)

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LOCAL SPONSOR	PROJECT NAME	PRIORITY	BASIN	FEDERAL FUNDING 2019-2021	POTENTIAL SWC COST - SHARE 2019-2021	LOCAL FUNDING 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
City of Garrison	Water Transmission & Supply Line	Moderate	Upper Missouri	\$-	\$720,000	\$480,000	\$-	\$1,200,000
City of Grand Forks	Regional WTP	Moderate	Lower Red	\$-	\$9,875,000	\$9,875,000	\$-	\$19,750,000
City of Killdeer	HWBL Water	Moderate	Lower Missouri	\$-	\$294,000	\$196,000	\$-	\$490,000
City of Killdeer	Southwest Utility Extension and Lift Station	Moderate	Lower Missouri	\$-	\$216,720	\$144,480	\$-	\$361,200
City of Larimore	Install New Water Main & Appurtenances	Moderate	Lower Red	\$-	\$231,750	\$154,500	\$-	\$386,250
City of Mapleton	Mapleton Water Storage Tank	Moderate	Upper Red	\$-	\$705,000	\$695,000	\$-	\$1,400,000
City of Minot	SW Elevated Water Tank	Moderate	Mouse	\$-	\$2,760,000	\$1,840,000	\$-	\$4,600,000
Watford City	12th St NE (Between HWY 23 and 17th Ave N)	Moderate	Upper Missouri	\$-	\$390,000	\$260,000	\$-	\$650,000

MUNICIPAL WATER SUPPLY (continued)

PLEASE NOTE: This inventory of financial needs is for planning and budgeting purposes only. It does not guarantee, in any way, that projects listed will receive funding from the state. In addition, the estimated financial needs from the state (grant or loan) may change based on further review of the projects in accordance with cost-share program eligibility requirements.

LOCAL SPONSOR	PROJECT NAME	PRIORITY	BASIN	FEDERAL FUNDING 2019-2021	POTENTIAL SWC COST - SHARE 2019-2021	LOCAL FUNDING 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
Watford City	14th St NW (Between 10th Ave NW and 17th Ave NW)	Moderate	Upper Missouri	\$-	\$240,000	\$160,000	\$-	\$400,000
Watford City	17th Ave NE (Between Pheasant Ridge & 12 St NE)	Moderate	Upper Missouri	\$-	\$282,000	\$188,000	\$-	\$470,000
Watford City	17th Ave NW (Between Main St & 14th St NW)	Moderate	Upper Missouri	\$-	\$510,000	\$340,000	\$-	\$850,000
City of West Fargo	9th St NW Water Main Looping	Moderate	Upper Red	\$-	\$150,000	\$100,000	\$-	\$250,000
City of Benedict	Water Main Replacement	Low	Lower Missouri	\$-	\$921,043	\$614,029	\$-	\$1,535,072
City of Beulah	Water & Waste Water Main Rehabilitation Project	Low	Upper Missouri	\$2,000,000	\$500,000	\$600,000	\$-	\$3,100,000
City of Bowbells	Water Main Improvements	Low	Mouse	\$-	\$79,200	\$52,800	\$-	\$132,000
City of Bowman	Water Tank Rehabilitation	Low	Lower Missouri	\$-	\$447,000	\$298,000	\$-	\$745,000

MUNICIPAL WATER SUPPLY (continued)

PLEASE NOTE: This inventory of financial needs is for planning and budgeting purposes only. It does not guarantee, in any way, that projects listed will receive funding from the state. In addition, the estimated financial needs from the state (grant or loan) may change based on further review of the projects in accordance with cost-share program eligibility requirements.

LOCAL SPONSOR	PROJECT NAME	PRIORITY	BASIN	FEDERAL FUNDING 2019-2021	POTENTIAL SWC COST - SHARE 2019-2021	LOCAL FUNDING 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
City of Cavalier	Water Tower & Ground Storage Reservoir	Low	Upper Red	\$-	\$1,620,000	\$1,080,000	\$-	\$2,700,000
City of Center	Street & Utility Improvements	Low	Lower Missouri	\$-	\$70,800	\$47,200	\$-	\$118,000
City of Colfax	Water Supply Looping Project	Low	Lower Red	\$-	\$286,800	\$191,200	\$-	\$478,000
City of Davenport	Water Storage, Booster Station & Transmission Lines	Low	Upper Red	\$-	\$429,600	\$286,400	\$-	\$716,000
City of Dickinson	Water Utility Master Plan Update	Low	Lower Missouri	\$-	\$35,000	\$65,000	\$-	\$100,000
City of Drayton	Water Treatment Plant Improvements	Low	Upper Red	\$-	\$2,163,000	\$1,442,000	\$-	\$3,605,000
City of Drayton	Clearwell Replacement	Low	Upper Red	\$-	\$540,750	\$360,500	\$-	\$901,250
City of Elgin	ACP Replacement	Low	Lower Missouri	\$1,800,000	\$264,000	\$176,000	\$-	\$2,240,000

MUNICIPAL WATER SUPPLY (continued)

PLEASE NOTE: This inventory of financial needs is for planning and budgeting purposes only. It does not guarantee, in any way, that projects listed will receive funding from the state. In addition, the estimated financial needs from the state (grant or loan) may change based on further review of the projects in accordance with cost-share program eligibility requirements.

LOCAL SPONSOR	PROJECT NAME	PRIORITY	BASIN	FEDERAL FUNDING 2019-2021	POTENTIAL SWC COST - SHARE 2019-2021	LOCAL FUNDING 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
City of Enderlin	New Lime Softening WTP	Low	Upper Red	\$-	\$4,839,000	\$3,226,000	\$-	\$8,065,000
City of Enderlin	New Wells	Low	Upper Red	\$-	\$442,200	\$294,800	\$-	\$737,000
City of Enderlin	Transmission Line	Low	Upper Red	\$-	\$330,000	\$220,000	\$-	\$550,000
City of Enderlin	Water Tower Replacement	Low	Upper Red	\$-	\$1,173,000	\$782,000	\$-	\$1,955,000
City of Fargo	New Downtown Elevated Storage	Low	Lower Red	\$-	\$1,725,000	\$1,725,000	\$-	\$3,450,000
City of Fargo	Ozone AOP Improvements	Low	Lower Red	\$-	\$2,125,000	\$2,125,000	\$-	\$4,250,000
City of Fargo	Water Treatment Plant Facility Plan - Phase II Existing Facility Upgrades	Low	Lower Red	\$-	\$1,927,500	\$1,927,500	\$-	\$3,855,000
City of Fargo	Water Treatment Plant Residuals Facility	Low	Lower Red	\$-	\$8,000,000	\$8,000,000	\$-	\$16,000,000

MUNICIPAL WATER SUPPLY (continued)

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LOCAL SPONSOR	PROJECT NAME	PRIORITY	BASIN	FEDERAL FUNDING 2019-2021	POTENTIAL SWC COST - SHARE 2019-2021	LOCAL FUNDING 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
City of Flaxton	Water Quality Treatment	Low	Mouse	\$-	\$150,000	\$100,000		\$250,000
City of Grenora	Water Tower Replacement	Low	Upper Missouri	\$-	\$2,220,000	\$1,480,000	\$-	\$3,700,000
City of Harvey	Water Supply & Treatment Upgrades	Low	Lower Red	\$-	\$420,000	\$280,000	\$-	\$700,000
City of Harwood	Water Main Looping	Low	Upper Red	\$-	\$17,500	\$32,500	\$-	\$50,000
City of Hazen	New Water Tower/ Storage System Expansion	Low	Lower Missouri	\$-	\$885,000	\$615,000	\$-	\$1,500,000
City of Hebron	80,000 Gallon Water Tower	Low	Lower Missouri	\$-	\$480,000	\$320,000	\$-	\$800,000
City of Horace	Water Treatment Plant Upgrades	Low	Upper Red	\$-	\$1,218,000	\$812,000	\$-	\$2,030,000
City of Horace	Elevated Tank Improvements	Low	Upper Red	\$-	\$115,200	\$76,800	\$-	\$192,000

MUNICIPAL WATER SUPPLY (continued)

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LOCAL SPONSOR	PROJECT NAME	PRIORITY	BASIN	FEDERAL FUNDING 2019-2021	POTENTIAL SWC COST - SHARE 2019-2021	LOCAL FUNDING 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
City of Killdeer	South Water Storage Reservoir	Low	Lower Missouri	\$-	\$270,000	\$180,000	\$-	\$450,000
City of Kindred	Newport Ridge - Water Main Looping	Low	Upper Red	\$-	\$115,000	\$125,000	\$-	\$240,000
City of Larimore	City-Wide Water System Replacement	Low	Lower Red	\$-	\$1,500,000	\$1,000,000	\$-	\$2,500,000
City of Lincoln	Water Tank Replacement	Low	Lower Missouri	\$-	\$810,000	\$540,000	\$-	\$1,350,000
City of Lisbon	New Well Field & Raw Water Transmission Line	Low	Upper Red	\$-	\$336,000	\$224,000	\$-	\$560,000
City of Lisbon	Water Main Looping	Low	Upper Red	\$-	\$246,000	\$164,000	\$-	\$410,000
City of Lisbon	WTP Rehabilitation	Low	Upper Red	\$-	\$300,000	\$200,000	\$-	\$500,000
City of Makoti	New Wells & Transmission Line	Low	Upper Missouri	\$-	\$360,000	\$240,000	\$-	\$600,000

MUNICIPAL WATER SUPPLY (continued)

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City of Mandan	New Raw Water Intake	Low	Lower Missouri	\$-	\$9,955,200	\$6,636,800	\$-	\$16,592,000
City of Mayville	New/Replacement Transmission Lines & Related Works	Low	Lower Red	\$-	\$90,000	\$60,000	\$-	\$150,000
City of Mayville	Water Treatment Plant Upgrades - Joint Project With Traill Rural	Low	Lower Red	\$-	\$180,000	\$120,000	\$-	\$300,000
City of McVie	Water Treatment Plant Upgrades - Joint Project With Tri-County Rural	Low	Lower Red	\$-	\$270,000	\$180,000	\$-	\$450,000
City of Michigan	Water Tower Replacement	Low	Lower Red	\$-	\$300,000	\$200,000	\$-	\$500,000
City of Minto	Stoltman's Addition Water Main Replacement	Low	Lower Red	\$-	\$418,200	\$278,800	\$-	\$697,000
City of Mohall	Water Main Looping	Low	Mouse	\$-	\$216,000	\$144,000	\$-	\$360,000
City of Mooreton	Replace Gate Valves	Low	Upper Red	\$-	\$120,000	\$80,000	\$-	\$200,000

MUNICIPAL WATER SUPPLY (continued)

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LOCAL SPONSOR	PROJECT NAME	PRIORITY	BASIN	FEDERAL FUNDING 2019-2021	POTENTIAL SWC COST - SHARE 2019-2021	LOCAL FUNDING 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
City of Noonan	Water Main Replace	Low	Mouse	\$-	\$317,856	\$211,904	\$-	\$529,760
City of Oakes	New Well, Transmission Line, & Water Treatment Plant Expansion	Low	James	\$-	\$1,200,000	\$800,000	\$-	\$2,000,000
City of Oberon	Well Installation	Low	Lower Red	\$-	\$159,500	\$140,500	\$-	\$300,000
City of Park River	Water Main Update	Low	Upper Red	\$-	\$924,405	\$771,835	\$-	\$1,696,240
City of Parshall	Parshall Water Tower	Low	Upper Missouri	\$-	\$1,200,000	\$800,000	\$-	\$2,000,000
City of Rhame	Water Main Replacements	Low	Lower Missouri	\$-	\$266,900	\$177,960	\$-	\$444,860
City of Richardton	Water Main Replacements	Low	Lower Missouri	\$-	\$1,116,093	\$744,062	\$-	\$1,860,155
City of Riverdale	Water Storage Improvements	Low	Lower Missouri	\$-	\$1,000,000	\$160,155	\$700,000	\$1,860,155

MUNICIPAL WATER SUPPLY (continued)

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City of Sherwood	Water Supply Improvements	Low	Mouse	\$-	\$367,750	\$260,250	\$-	\$628,000
City of Souris	Transmission Line Replacement	Low	Mouse	\$-	\$105,000	\$70,000	\$-	\$175,000
City of Streeter	Well Installation	Low	Lower Missouri	\$-	\$354,075	\$275,925	\$-	\$630,000
City of Sykeston	Water System Improvements	Low	James	\$-	\$800,000	\$270,000	\$-	\$1,070,000
Valley City	Water Improvements (NW & NE Quadrants)	Low	Upper Red	\$-	\$900,000	\$600,000	\$-	\$1,500,000
City of West Fargo	2nd St. E. Water Main Replacement	Low	Upper Red	\$-	\$300,000	\$200,000	\$-	\$500,000
City of West Fargo	2nd St. W. Water Main Replacement	Low	Upper Red	\$-	\$300,000	\$200,000	\$-	\$500,000
City of Westhope	Water Main Improvements	Low	Mouse	\$-	\$360,000	\$240,000	\$-	\$600,000

MUNICIPAL WATER SUPPLY (continued)

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City of Williston	16th Avenue Water Main	Low	Upper Missouri	\$-	\$621,000	\$414,000	\$-	\$1,035,000
City of Williston	42nd Street Water Main	Low	Upper Missouri	\$-	\$791,400	\$527,600	\$-	\$1,319,000
City of Williston	Borsheim Addition	Low	Upper Missouri	\$-	\$1,320,000	\$880,000	\$-	\$2,200,000
City of Williston	Front Street & Reiger Driv Water Main	Low	Upper Missouri	\$-	\$869,400	\$579,600	\$-	\$1,449,000
City of Williston	Sunset - Kettler Subdivisions	Low	Upper Missouri	\$-	\$1,050,000	\$700,000	\$-	\$1,750,000
City of Williston	47th Street Water Main	Low	Upper Missouri	\$-	\$414,000	\$276,000	\$-	\$690,000
City of Wilton	2019 Utility Improvements	Low	Lower Missouri	\$489,260	\$97,852	\$65,234	\$-	\$652,346
City of Wing	Refurbishing Water Tower	Low	Lower Missouri	\$-	\$630,000	\$420,000	\$-	\$1,050,000

MUNICIPAL WATER SUPPLY (continued)

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LOCAL SPONSOR	PROJECT NAME	PRIORITY	BASIN	FEDERAL FUNDING 2019-2021	POTENTIAL SWC COST - SHARE 2019-2021	LOCAL FUNDING 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
City of Wyndmere	Distribution System Replacement	Low	Upper Red	\$-	\$9,300,000	\$6,200,000	\$-	\$15,500,000
LOW PRIORITY MUNICIPAL WATER SUPPLY TOTAL				\$4,289,260	\$73,676,223	\$53,587,354	\$700,000	\$132,252,838
MODERATE PRIORITY MUNICIPAL WATER SUPPLY TOTAL				\$260,890	\$24,977,381	\$20,168,254	\$-	\$45,406,525
HIGH PRIORITY MUNICIPAL WATER SUPPLY TOTAL				\$-	\$-	\$-	\$-	\$-
MUNICIPAL WATER SUPPLY TOTAL				\$4,550,150	\$98,653,605	\$73,755,608	\$700,000	\$177,659,363



RURAL WATER SUPPLY

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LOCAL SPONSOR	PROJECT NAME	PRIORITY	BASIN	FEDERAL FUNDING 2019-2021	POTENTIAL SWC COST - SHARE 2019-2021	LOCAL FUNDING 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
Stutsman Rural Water District	Water Supply To Streeter	High	James	\$-	\$378,000	\$126,000	\$-	\$504,000
Walsh Rural Water District	Water Supply To Drayton	High	Lower Red	\$-	\$5,684,240	\$1,894,747	\$-	\$7,578,987
Agassiz Water Users District	AWUD System Expansion & Interconnect	Moderate	Upper Red	\$-	\$3,375,000	\$1,125,000	\$-	\$4,500,000
All Seasons Water Users District	System 1 Expansion Project	Moderate	Mouse	\$-	\$5,409,000	\$1,803,000	\$-	\$7,212,000
Dakota Rural Water District	User Expansion	Moderate	Upper Red	\$-	\$6,832,500	\$2,277,500	\$-	\$9,110,000
East Central Regional Water District	Transmission Expansion, Well Expansion & District Interconnect	Moderate	Upper Red	\$-	\$4,650,000	\$1,550,000	\$-	\$6,200,000
Greater Ramsey Water District	Expansion Project - Oswald Bay	Moderate	Devils Lake	\$-	\$937,500	\$312,500	\$-	\$1,250,000
McLean-Sheridan Rural Water District	System Wide Improvements/ Expansion Project	Moderate	Lower Missouri	\$-	\$12,141,000	\$4,047,000	\$-	\$16,188,000

RURAL WATER SUPPLY (continued)

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Missouri West Water System	Harmon Lake Area Expansion Project	Moderate	Lower Missouri	\$-	\$637,500	\$212,500	\$-	\$850,000
Missouri West Water System	North Mandan/ Highway 25 Project	Moderate	Lower Missouri	\$-	\$600,000	\$600,000	\$-	\$1,200,000
Missouri West Water System	HWY 1806 - Huff & Fort Rice Expansion	Moderate	Lower Missouri	\$-	\$1,125,000	\$375,000	\$-	\$1,500,000
Northeast Regional Water District	User Expansion Phase II	Moderate	Devils Lake	\$-	\$2,250,000	\$750,000	\$-	\$3,000,000
Northeast Regional Water District	City of Devils Lake Phase II	Moderate	Devils Lake	\$-	\$1,500,000	\$500,000	\$-	\$2,000,000
Southeast Water Users District	System Wide Expansion	Moderate	Multi-Basin	\$-	\$900,000	\$300,000	\$-	\$1,200,000
Tri-County Water District	Rural Distribution Pipeline Expansion	Moderate	Devils Lake	\$-	\$738,750	\$246,250	\$-	\$985,000
Walsh Rural Water District	Transmission Pipeline Expansion Phase II	Moderate	Upper Red	\$-	\$1,875,000	\$625,000	\$-	\$2,500,000

RURAL WATER SUPPLY (continued)

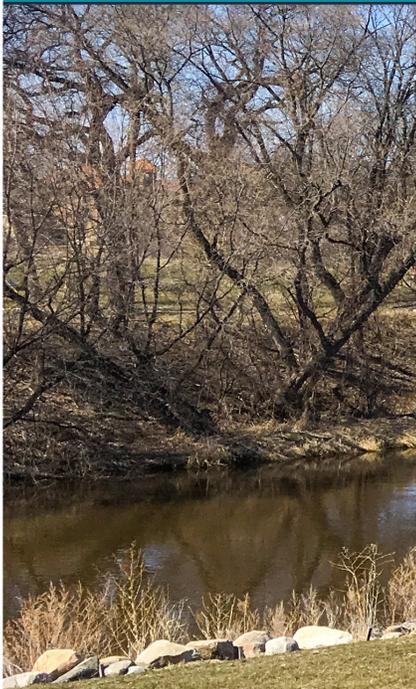
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LOCAL SPONSOR	PROJECT NAME	PRIORITY	BASIN	FEDERAL FUNDING 2019-2021	POTENTIAL SWC COST - SHARE 2019-2021	LOCAL FUNDING 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
North Central Regional Water District	Water Distribution System	Low	Upper Missouri	\$-	\$270,000	\$180,000	\$-	\$450,000
North Prairie Rural Water District	Minot To Velva Hwy 52 Project	Low	Mouse	\$-	\$2,640,000	\$1,760,000	\$-	\$4,400,000
North Prairie Rural Water District	Satellite Water Treatment Plant - NAWs Supply	Low	Mouse	\$-	\$1,950,000	\$1,300,000	\$-	\$3,250,000
Northeast Regional Water District	Water Loss Infrastructure	Low	Devils Lake	\$-	\$600,000	\$400,000	\$-	\$1,000,000
South Central Regional Water District	North Burleigh Water Treatment Plant Pretreatment Improvements	Low	Lower Missouri	\$-	\$1,250,400	\$833,600	\$-	\$2,084,000
Southeast Water Users District	Regionalization of West Water Treatment Plant	Low	James	\$-	\$4,800,000	\$3,200,000	\$-	\$8,000,000
Southeast Water Users District	Replacement of 1.5" Glued Pipe	Low	Lower Red	\$-	\$930,000	\$620,000	\$-	\$1,550,000
Southeast Water Users District	Automatic Meter Reading Improvements	Low	Multi-Basin	\$-	\$1,794,000	\$1,196,000	\$-	\$2,990,000

RURAL WATER SUPPLY (continued)

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Stutsman Rural Water District	SRWD Phase 7 Water Supply	Low	James	\$-	\$1,800,000	\$1,200,000	\$-	\$3,000,000
West River Water District	Water Service Replacement	Low	Mouse	\$-	\$393,600	\$262,400	\$-	\$656,000
North Dakota Rural Water Systems Association	Water Supply System Sustainability Circuit Rider Program	Low	Multi-Basin	\$-	TBD	\$230,000	\$-	\$230,000
LOW PRIORITY RURAL WATER SUPPLY TOTAL				\$-	\$16,428,000	\$11,182,000	\$-	\$27,610,000
MODERATE PRIORITY RURAL WATER SUPPLY TOTAL				\$-	\$42,971,250	\$14,723,750	\$-	\$57,695,000
HIGH PRIORITY RURAL WATER SUPPLY TOTAL				\$-	\$6,062,240	\$2,020,746	\$-	\$8,082,987
RURAL WATER SUPPLY TOTAL				\$-	\$65,461,490	\$27,926,497	\$-	\$93,387,987



REGIONAL WATER SUPPLY

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LOCAL SPONSOR	PROJECT NAME	PRIORITY	BASIN	FEDERAL FUNDING 2019-2021	POTENTIAL SWC COST - SHARE 2019-2021	LOCAL FUNDING 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
Garrison Diversion & Lake Agassiz Water Authority	Red River Valley Water Supply	High	Multi-Basin	\$-	\$50,000,000	\$16,666,666	\$-	\$66,666,666
State of North Dakota & Southwest Water Authority	Southwest Pipeline Project	High	Lower Missouri	\$-	\$30,500,000	\$-	\$-	\$30,500,000
State of North Dakota & City of Minot	Northwest Area Water Supply Project	High	Mouse	\$-	\$82,000,000	\$2,000,000	\$-	\$84,000,000
Western Area Water Supply Authority	Improvements/ Expansions	High	Upper Missouri	\$-	\$37,500,000	\$12,500,000	\$-	\$50,000,000
LOW PRIORITY REGIONAL WATER SUPPLY TOTAL				\$-	\$-	\$-	\$-	\$-
MODERATE PRIORITY REGIONAL WATER SUPPLY TOTAL				\$-	\$-	\$-	\$-	\$-
HIGH PRIORITY REGIONAL WATER SUPPLY TOTAL				\$-	\$200,000,000	\$31,166,666	\$-	\$231,166,666
REGIONAL WATER SUPPLY TOTAL				\$-	\$200,000,000	\$31,166,666	\$-	\$231,166,666



CONVEYANCE

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Barnes County WRD	10 Mile Lake Outlet Improvement	Moderate	Upper Red	\$-	\$900,000	\$1,100,000	\$-	\$2,000,000
Bottineau County WRD	Baumann Drain	Moderate	Mouse	\$-	\$445,000	\$545,000	\$600,000	\$1,590,000
Bottineau County WRD	Landa Project	Moderate	Mouse	\$-	\$855,000	\$1,045,000	\$-	\$1,900,000
Bottineau County WRD	Russell Drain	Moderate	Mouse	\$-	\$315,000	\$385,000	\$-	\$700,000
Bottineau County WRD	Stone Cr. Lateral A	Moderate	Mouse	\$-	\$58,000	\$72,000	\$-	\$130,000
Bottineau County WRD	Zahn International Drain	Moderate	Mouse	\$-	\$20,000	\$50,000	\$-	\$70,000
City of Fargo	New Drainage Improvement District - Proposed Channel	Moderate	Upper Red	\$-	\$675,000	\$825,000	\$-	\$1,500,000
Dickey County WRD	Drain No. Channel Improvement	Moderate	James	\$-	\$1,012,500	\$1,237,500	\$-	\$2,250,000

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Maple River WRD	FM Metro Diversion Impacts On Legal Drains - Maple River WRD	Moderate	Upper Red	\$-	\$450,000	\$550,000	\$-	\$1,000,000
Maple River WRD	Tower Township Improvement District No. 77	Moderate	Upper Red	\$-	\$3,465,000	\$4,235,000	\$-	\$7,700,000
Pembina County WRD	Drain No. 82	Moderate	Lower Red	\$-	\$540,000	\$700,000	\$-	\$1,240,000
Pembina County WRD	Drain No. 80 Establishment	Moderate	Upper Red	\$-	\$1,485,000	\$1,815,000	\$-	\$3,300,000
Renville County WRD	Renville County Assessment Drain	Moderate	Mouse	\$-	\$2,700,000	\$3,300,000	\$-	\$6,000,000
Rush River WRD	FM Metro Diversion Impacts On Legal Drains - Rush River WRD	Moderate	Upper Red	\$-	\$450,000	\$550,000	\$-	\$1,000,000
Sargent County WRD	Drain No. 2 Extension	Moderate	Upper Red	\$-	\$225,000	\$275,000	\$-	\$500,000
Traill County WRD	Camrud Drain No. 79	Moderate	Lower Red	\$-	\$675,000	\$825,000	\$-	\$1,500,000

CONVEYANCE (continued)

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Traill County WRD	Thompson Drain No. 71 - New Channel Construction	Moderate	Lower Red	\$-	\$450,000	\$550,000	\$-	\$1,000,000
Walsh County WRD	Establishment of Drain No. 30-2	Moderate	Lower Red	\$-	\$320,041	\$8,733	\$497,372	\$826,146
Barnes County WRD	Drain No. 40 Channel Improvement	Low	Upper Red	\$-	\$675,000	\$825,000	\$-	\$1,500,000
Barnes-Griggs Joint WRD	Reconstruction of Silver Creek	Low	Upper Red	\$-	\$315,000	\$385,000	\$-	\$700,000
Barnes-Griggs Joint WRD	Drain No. 53 Channel Improvement	Low	Upper Red	\$-	\$900,000	\$1,100,000	\$-	\$2,000,000
Bottineau County WRD	Kane/Tacoma Outlet Channel	Low	Mouse	\$-	\$94,000	\$116,000	\$-	\$210,000
Bottineau County WRD	Drain No. 11 Channel Improvement	Low	Upper Red	\$-	\$450,000	\$550,000	\$-	\$1,000,000
Bottineau County WRD	Drain No. 12 Channel Improvement	Low	Upper Red	\$-	\$405,000	\$495,000	\$-	\$900,000

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Bottineau County WRD	Drain No. 3 Channel Improvement	Low	Upper Red	\$-	\$225,000	\$275,000	\$-	\$500,000
Bottineau County WRD	Drain No. 4 Channel Improvement	Low	Upper Red	\$-	\$562,500	\$687,500	\$-	\$1,250,000
Bottineau County WRD	Drain No. 6 Channel Improvement	Low	Upper Red	\$-	\$405,000	\$495,000	\$-	\$900,000
Bottineau County WRD	Drain No. 8 Channel Improvement	Low	Upper Red	\$-	\$405,000	\$495,000	\$-	\$900,000
City of Fargo	Drain No. 27 Improvements	Low	Lower Red	\$-	\$1,350,000	\$1,650,000	\$-	\$3,000,000
City of Harwood	Morgan Drain No. 36 Channel Improvement	Low	Lower Red	\$-	\$900,000	\$1,100,000	\$-	\$2,000,000
City of Harwood	Preston Floodway Improvement	Low	Lower Red	\$-	\$562,500	\$687,500	\$-	\$1,250,000
Grand Forks County WRD	Legal Drain No. 13 - Improvement	Low	Lower Red	\$-	\$54,000	\$66,000	\$-	\$120,000

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Grand Forks County WRD	Legal Drain No. 19 - Improvement	Low	Lower Red	\$-	\$99,000	\$121,000	\$-	\$220,000
Grand Forks County WRD	Legal Drain No. 23 - Improvement	Low	Lower Red	\$-	\$45,000	\$55,000	\$-	\$100,000
Grand Forks County WRD	Legal Drain No. 59	Low	Lower Red	\$-	\$1,000,000	\$1,350,000	\$-	\$2,350,000
Grand Forks County WRD	Legal Drain No. 9 - Improvement	Low	Lower Red	\$-	\$250,000	\$350,000	\$-	\$600,000
Maple River WRD	Drain 46 Channel Improvement	Low	Upper Red	\$-	\$337,500	\$412,500	\$-	\$750,000
Maple River WRD	Drain No. 1 (MR-1) Channel Improvement - Phase II	Low	Upper Red	\$-	\$450,000	\$550,000	\$-	\$1,000,000
Maple River WRD	Drain No. 2 (MR-2) Channel Improvement - Phase II	Low	Upper Red	\$-	\$900,000	\$1,100,000	\$-	\$2,000,000
Maple River WRD	Buffalo-Lynchburg Channel Improvement - Phase II	Low	Upper Red	\$-	\$675,000	\$825,000	\$-	\$1,500,000

CONVEYANCE (continued)

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LOCAL SPONSOR	PROJECT NAME	PRIORITY	BASIN	FEDERAL FUNDING 2019-2021	POTENTIAL SWC COST - SHARE 2019-2021	LOCAL FUNDING 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
North Cass WRD	Drain No. 18 Channel Improvement (NC-1) - Phase II	Low	Upper Red	\$-	\$450,000	\$550,000	\$-	\$1,000,000
North Cass WRD	Drain No. 26 Channel Improvement	Low	Upper Red	\$-	\$315,000	\$385,000	\$-	\$700,000
North Cass WRD	Drain No. 18 Channel Improvement (NC-1) - Phase I	Low	Upper Red	\$-	\$450,000	\$550,000	\$-	\$1,000,000
Pembina County WRD	Drain No. 81	Low	Lower Red	\$-	\$720,000	\$900,000	\$-	\$1,620,000
Pembina County WRD	Drain No. 66-1 Supplemental Outlet	Low	Lower Red	\$-	\$945,000	\$1,155,000	\$-	\$2,100,000
Richland County WRD	Drain No. 3 Reconstruction	Low	Upper Red	\$-	\$500,000	\$750,000	\$-	\$1,250,000
Sargent County WRD	Drain No. 11 Channel Improvement	Low	Upper Red	\$-	\$1,125,000	\$1,375,000	\$-	\$2,500,000
Sargent County WRD	Drain No. 12 Channel Improvement	Low	Upper Red	\$-	\$225,000	\$275,000	\$-	\$500,000

CONVEYANCE (continued)

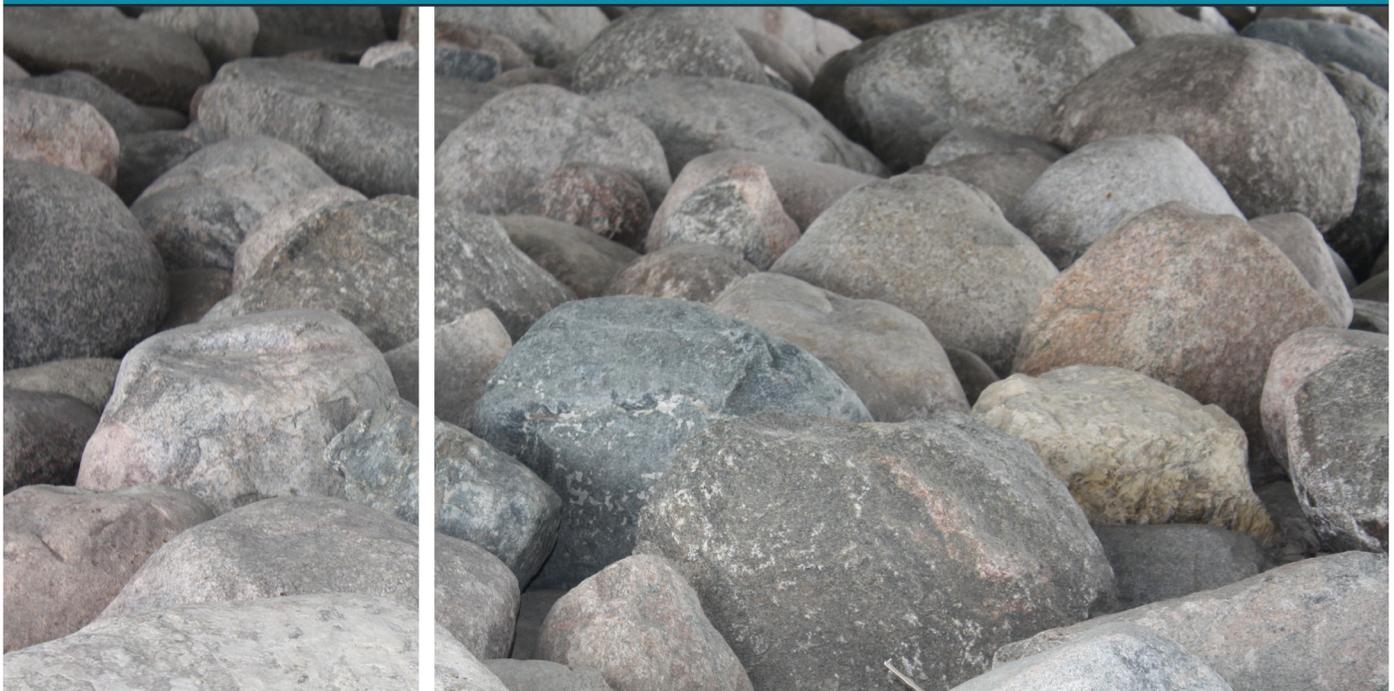
PLEASE NOTE: This inventory of financial needs is for planning and budgeting purposes only. It does not guarantee, in any way, that projects listed will receive funding from the state. In addition, the estimated financial needs from the state (grant or loan) may change based on further review of the projects in accordance with cost-share program eligibility requirements.

LOCAL SPONSOR	PROJECT NAME	PRIORITY	BASIN	FEDERAL FUNDING 2019-2021	POTENTIAL SWC COST - SHARE 2019-2021	LOCAL FUNDING 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
Sargent County WRD	Drain No. 7 Channel Improvement (Downstream Reach From Milnor) Phase II	Low	Upper Red	\$-	\$450,000	\$550,000	\$-	\$1,000,000
Traill County WRD	Roseville Drain No. 19 Channel Improvement	Low	Lower Red	\$-	\$900,000	\$1,100,000	\$-	\$2,000,000
Traill County WRD	Norway Drain No. 38	Low	Lower Red	\$-	\$337,500	\$412,500	\$-	\$750,000
Traill County WRD	Paulson Drain No. 7	Low	Lower Red	\$-	\$450,000	\$550,000	\$-	\$1,000,000
Traill County WRD	Hatton Drain No. 45 Channel Improvement	Low	Lower Red	\$-	\$337,500	\$412,500	\$-	\$750,000
Traill County WRD	Hillsboro Drain No. 26 Channel Improvement	Low	Lower Red	\$-	\$337,500	\$412,500	\$-	\$750,000
Traill County WRD	Drain No. 23-40 Channel Improvement (Blanchard Norman)	Low	Lower Red	\$-	\$675,000	\$825,000	\$-	\$1,500,000
Tri-County Joint WRD	Drain No. 6 Reconstruction - Phase II	Low	Upper Red	\$-	\$735,000	\$910,000	\$-	\$1,645,000

CONVEYANCE (continued)

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LOCAL SPONSOR	PROJECT NAME	PRIORITY	BASIN	FEDERAL FUNDING 2019-2021	POTENTIAL SWC COST - SHARE 2019-2021	LOCAL FUNDING 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
Walsh County WRD	Drain No. 31 Improvements	Low	Lower Red	\$-	\$350,000	\$630,000	\$-	\$980,000
Walsh County WRD	Drain No. 50 Improvements	Low	Lower Red	\$-	\$656,200	\$984,300	\$-	\$1,640,500
Walsh County WRD	Drain No. 90 Improvement	Low	Lower Red	\$-	\$4,500,000	\$7,700,000	\$-	\$12,200,000
LOW PRIORITY CONVEYANCE TOTAL				\$-	\$25,518,200	\$34,117,300	\$-	\$59,635,500
MODERATE PRIORITY CONVEYANCE TOTAL				\$-	\$15,040,541	\$18,068,233	\$1,097,372	\$34,206,146
HIGH PRIORITY CONVEYANCE TOTAL				\$-	\$-	\$-	\$-	\$-
CONVEYANCE TOTAL				\$-	\$40,558,741	\$52,185,533	\$1,097,372	\$93,841,646



GENERAL WATER MANAGEMENT

PLEASE NOTE: This inventory of financial needs is for planning and budgeting purposes only. It does not guarantee, in any way, that projects listed will receive funding from the state. In addition, the estimated financial needs from the state (grant or loan) may change based on further review of the projects in accordance with cost-share program eligibility requirements.

LOCAL SPONSOR	PROJECT NAME	PRIORITY	BASIN	FEDERAL FUNDING 2019-2021	POTENTIAL SWC COST - SHARE 2019-2021	LOCAL FUNDING 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
Adams County WRD	Orange Dam Rehabilitation	Moderate	Lower Missouri	\$-	\$900,000	\$150,000	\$150,000	\$1,200,000
Barnes County WRD	Brown Dam Repurposing/ Repair	Moderate	Upper Red	\$-	\$28,000	\$52,000	\$-	\$80,000
Barnes County WRD	Little Dam Repurposing	Moderate	Upper Red	\$-	\$975,000	\$325,000	\$-	\$1,300,000
Benson County WRD	Bouret Dam Rehabilitation	Moderate	Devils Lake	\$-	\$900,000	\$150,000	\$150,000	\$1,200,000
Burke County WRD	Burke Dam Rehabilitation	Moderate	Mouse	\$270,000	\$1,147,500	\$282,500	\$100,000	\$1,800,000
Valley City	Mill Dam Rehabilitation Project	Moderate	Upper Red	\$200,000	\$800,000	\$270,000	\$-	\$1,270,000
Dickey-Sargent Irrigation District	Oakes Test Area Supplemental Water Supply	Moderate	James	\$-	\$2,500,000	\$2,500,000	\$-	\$5,000,000
Elm River Joint WRD	Elm River Dam #1 Spillway Improvements	Moderate	Upper Red	\$-	\$1,125,000	\$375,000	\$-	\$1,500,000

GENERAL WATER MANAGEMENT (continued)

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LOCAL SPONSOR	PROJECT NAME	PRIORITY	BASIN	FEDERAL FUNDING 2019-2021	POTENTIAL SWC COST - SHARE 2019-2021	LOCAL FUNDING 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
Garrison Diversion CD	McClusky Canal Irrigation	Moderate	Multi-Basin	\$-	\$2,500,000	\$3,000,000	\$-	\$5,500,000
Golden Valley County WRD	Odland Dam Rehabilitation	Moderate	Upper Missouri	\$-	\$562,500	\$187,500	\$-	\$750,000
Hettinger County WRD	Karey Dam Rehabilitation Project	Moderate	Lower Missouri	\$-	\$900,000	\$150,000	\$150,000	\$1,200,000
Hettinger County WRD	Blickensderfer Dam Repair	Moderate	Lower Missouri	\$-	\$31,500	\$10,500	\$-	\$42,000
LaMoure County WRD	LaMoure City Dam Removal/ Rehabilitation	Moderate	James	\$-	\$750,000	\$100,000	\$150,000	\$1,000,000
LaMoure County WRD	Memorial Park Dam Removal/ Rehabilitation	Moderate	James	\$-	\$750,000	\$100,000	\$150,000	\$1,000,000
Logan County WRD	Beaver Lake Dam Rehabilitation	Moderate	Lower Missouri	\$-	\$1,050,000	\$100,000	\$250,000	\$1,400,000
Logan County WRD	Sperle Dam Removal Project	Moderate	James	\$-	\$225,000	\$15,000	\$60,000	\$300,000

GENERAL WATER MANAGEMENT (continued)

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LOCAL SPONSOR	PROJECT NAME	PRIORITY	BASIN	FEDERAL FUNDING 2019-2021	POTENTIAL SWC COST - SHARE 2019-2021	LOCAL FUNDING 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
McLean County WRD	Katz Dam & Lost Lake Dam Repurposing	Moderate	Upper Missouri	\$100,000	\$1,200,000	\$400,000	\$300,000	\$2,000,000
ND Game & Fish Dept.	Baukol-Noonan Dam Repair	Moderate	Mouse	\$-	\$112,500	\$37,500	\$-	\$150,000
ND Game & Fish Dept.	Camels Hump Dam Spillway Repair	Moderate	Upper Missouri	\$-	\$225,000	\$75,000	\$-	\$300,000
ND Game & Fish Dept.	Indian Creek Dam	Moderate	Lower Missouri	\$-	\$22,500	\$7,500	\$-	\$30,000
Nelson County WRD & City of McVille	McVille Dam Spillway Improvements	Moderate	Lower Red	\$-	\$750,000	\$250,000	\$-	\$1,000,000
Pembina County & Cavalier County	Tongue River Watershed Dam Safety Repairs	Moderate	Lower Red	\$-	\$1,050,000	\$350,000	\$-	\$1,400,000
Sargent County WRD	Gwinner Dam Improvements	Moderate	Upper Red	\$-	\$600,000	\$400,000	\$-	\$1,000,000
Sargent County WRD	Silver Lake Dam Repairs/ Embankment Seepage	Moderate	Upper Red	\$-	\$150,000	\$50,000	\$-	\$200,000

GENERAL WATER MANAGEMENT (continued)

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LOCAL SPONSOR	PROJECT NAME	PRIORITY	BASIN	FEDERAL FUNDING 2019-2021	POTENTIAL SWC COST - SHARE 2019-2021	LOCAL FUNDING 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
Upper Sheyenne River Joint WRD	Sheyenne River Riparian Corridor Management Projects	Moderate	Upper Red	\$2,620,000	\$171,000	\$109,000	\$100,000	\$3,000,000
Walsh County WRD	Matecjek Dam Rehabilitation	Moderate	Lower Red	\$16,250,000	\$6,562,500	\$2,187,500	\$-	\$25,000,000
Burke County WRD	Watershed Studies & General Water Management	Low	Mouse	\$-	\$175,000	\$175,000	\$150,000	\$500,000
Burleigh County WRD	McDowell Dam Supplemental Water Supply	Low	Lower Missouri	\$-	\$348,000	\$522,000	\$-	\$870,000
Grand Forks County WRD	Upper Turtle River Dam Site No. 10 - Study	Low	Lower Red	\$-	\$14,700	\$27,300	\$-	\$42,000
Pembina County WRD	Herzog Dam Assessment	Low	Lower Red	\$-	\$700,000	\$975,000	\$325,000	\$2,000,000
Assiniboine River Basin Initiative	Framework Plan Implementation	Low	Mouse	\$-	\$200,000	\$80,000	\$-	\$280,000
Red River Basin Comm.	Base Funding & NRFP Implementation	Low	Upper Red	\$-	\$300,000	\$-	\$450,000	\$750,000

GENERAL WATER MANAGEMENT (continued)

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LOCAL SPONSOR	PROJECT NAME	PRIORITY	BASIN	FEDERAL FUNDING 2019-2021	POTENTIAL SWC COST - SHARE 2019-2021	LOCAL FUNDING 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
	LOW PRIORITY GENERAL WATER MANAGEMENT TOTAL			\$-	\$1,737,700	\$1,779,300	\$925,000	\$4,442,000
	MODERATE PRIORITY GENERAL WATER MANAGEMENT TOTAL			\$19,440,000	\$25,988,000	\$11,634,000	\$1,560,000	\$58,622,000
	HIGH PRIORITY GENERAL WATER MANAGEMENT TOTAL			\$-	\$-	\$-	\$-	\$-
	GENERAL WATER MANAGEMENT TOTAL			\$19,440,000	\$27,725,700	\$13,413,300	\$2,485,000	\$63,064,000

SUMMARY OF WATER DEVELOPMENT NEEDS

PROJECT PURPOSES	FEDERAL 2019-2021	POTENTIAL SWC GRANT 2019-2021	LOCAL 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
Flood Control Total	\$205,025,000	\$469,972,373	\$363,301,873	\$23,434,500	\$1,061,733,746
Municipal Water Supply Total	\$4,550,150	\$98,653,605	\$73,755,608	\$700,000	\$177,659,363
Rural Water Supply Total	\$0	\$65,461,490	\$27,926,497	\$0	\$93,387,987
Regional Water Supply Total	\$0*	\$200,000,000	\$31,166,666	\$0	\$231,166,666
Conveyance Total	\$0	\$40,558,741	\$52,185,533	\$1,097,372	\$93,841,646
General Water Management Total	\$19,440,000	\$27,725,700	\$13,413,300	\$2,485,000	\$63,064,000
TOTAL	\$229,015,150	\$902,371,909	\$561,749,477	\$27,716,872	\$1,720,853,408

Table 9 - Summary Of Water Development Needs, 2019-2021 Biennium.

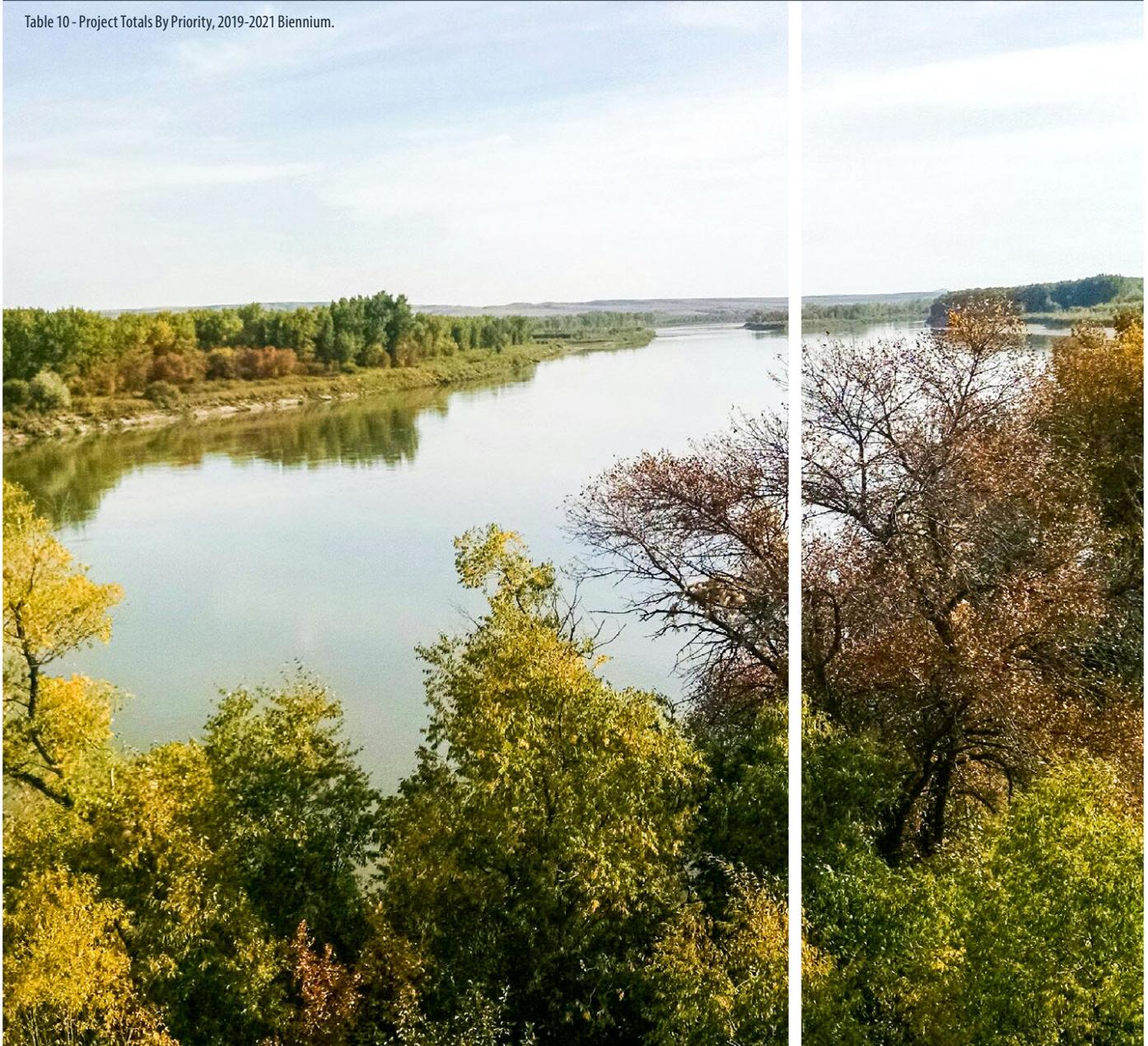
*It is anticipated that a portion of the state's funding share for NAWS will be reimbursed by the federal government.

PROJECT TOTALS BY PRIORITY

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	FEDERAL FUNDING 2019-2021	POTENTIAL SWC COST - SHARE 2019-2021	LOCAL FUNDING 2019-2021	OTHER FUNDING 2019-2021	TOTAL 2019-2021
LOW PRIORITY TOTAL	\$4,289,260	\$117,983,849	\$101,551,229	\$1,684,500	\$225,508,838
MODERATE PRIORITY TOTAL	\$24,700,890	\$158,234,672	\$106,286,737	\$4,257,372	\$293,479,671
HIGH PRIORITY TOTAL	\$200,025,000	\$626,153,388	\$353,911,511	\$21,775,000	\$1,201,864,899
ALL PROJECTS TOTAL	\$229,015,150	\$902,371,909	\$561,749,477	\$27,716,872	\$1,720,853,408

Table 10 - Project Totals By Priority, 2019-2021 Biennium.



LONG-TERM (10 & 20 YEAR) WATER DEVELOPMENT INFRASTRUCTURE FUNDING NEED ESTIMATES

Many of North Dakota’s largest water projects cannot be completed in one or even two biennia, and therefore, require longer-term planning. This is particularly the case for some of North Dakota’s larger water project funding priorities. In addition, North Dakota, along with most other states, has existing water supply infrastructure that has been aging for decades. This is becoming a greater financial challenge at the local and state level as that infrastructure reaches, or in many cases has already exceeded, its useful life. With those issues in mind, it is worthwhile to recognize and plan for future commitments that may be needed to support critical water infrastructure in future biennia – for decades to come.

Therefore, in addition to the detailed project funding needs that have been outlined for the 2019-2021 biennium, longer-term funding needs have also been estimated by the State Water Commission for 10- and 20-year planning horizons. Fifty-year estimates for major water supply infrastructure repairs, rehabilitations, and new projects in municipal and rural systems are also presented – addressing questions about the nature and extent of aging infrastructure in those systems.

Table 22 and Table 23 summarize and estimate North Dakota’s potential 10- and 20-year funding needs for water development. They also provide a projection of potential project budget shortfalls over 10- and 20-year horizons, based on multiple revenue ranges. The following sections outline the basis for those estimates – including close cooperation with project sponsors, the water project inventory, and municipal and rural water supply system infrastructure survey results.

ONGOING PRIORITY PROJECTS

The State Water Commission worked closely with the state’s seven large-scale water development priority projects to identify their estimated long-term funding needs. Those projects include some that currently exist and are expanding/improving – like Southwest Pipeline Project and Western Area Water Supply. And others that are in beginning, or more recent stages of development – like the Fargo-West Fargo Flood Control Project, Mouse River Enhanced Flood Protection, Northwest Area Water Supply, Red River Valley Water Supply, and Sheyenne River Flood Control.

The long-term funding need estimates for these projects were provided by the project sponsors themselves. In many cases, they represent remaining costs to complete all known planned

project components for the foreseeable future. It is possible with adequate funding that all of the foreseeable costs for these projects could be completed over the course of the next ten years, as outlined in Table 22. However, because of the potential uncertainties associated with water project development, (i.e. funding, permitting, environmental compliance), it is unlikely that all of these projects will be completed within a 10-year timeframe. Therefore, the financial needs estimated for the 20-year timeframe is the same as that of the 10-year timeframe for most of the aforementioned seven large-scale priority projects. This is also the case for the Lower Heart Flood Risk Reduction Project, which is in very early stages of development.





MUNICIPAL WATER SUPPLY INFRASTRUCTURE

In the spring of 2018, a survey was initiated through a cooperative effort involving the North Dakota League of Cities and the State Water Commission. The purpose of the survey was to gain a better understanding of North Dakota's existing and future municipal water supply infrastructure needs. More specifically, cities were asked to provide water supply replacement, rehabilitation, and new infrastructure information related to their: storage, distribution/supply lines, wells and intakes, and water treatment plants – over the course of the next 50 years.

Of the state's 357 cities, 105 responded to the survey. However, in terms of making statewide estimates based on sample size, the number of responding cities is less important than the population represented within those communities. Using population of the cities responding appropriately resulted in a much larger representative sample size. Percentages of the state's total municipal population represented in the responses ranged from 79 percent to 66 percent, depending on the type of infrastructure.

In addition, it is also important to recognize that the amount and type of infrastructure will vary, depending on the size of a community. For that reason, cities were separated into three population categories for the sake of making statewide estimates. The three population breaks included in the analysis were cities with: populations greater than 5,000, populations between 4,999 and 1,000, and populations less than 1,000.

To provide statewide estimates, the percentage of the population represented in the surveys was then used to establish a multiplier, which then was applied to the sample to make estimates for the entire state municipal population – by infrastructure type, and city size range.

The following tables summarize the results of the municipal infrastructure survey, based on type of infrastructure, and city size.

STORAGE INFRASTRUCTURE SUMMARY FOR CITIES

CITIES WITH POPULATION > 5,000

	POPULATION REPRESENTED	AVERAGE AGE STORAGE (YEARS)	FUNDING NEEDS (MIL. \$)		
			10 YEAR	20 YEAR	50+ YEAR
Responding Cities	86%	40	\$74	\$83	\$205
State of ND Estimate			\$86	\$97	\$238

CITIES WITH POPULATION 4,999 - 1,000

	POPULATION REPRESENTED	AVERAGE AGE STORAGE (YEARS)	FUNDING NEEDS (MIL. \$)		
			10 YEAR	20 YEAR	50+ YEAR
Responding Cities	73%	37	\$30	\$35	\$79
State of ND Estimate			\$41	\$48	\$108

CITIES WITH POPULATION < 1,000

	POPULATION REPRESENTED	AVERAGE AGE STORAGE (YEARS)	FUNDING NEEDS (MIL. \$)		
			10 YEAR	20 YEAR	50+ YEAR
Responding Cities	33%	54	\$41	\$59	\$80
State of ND Estimate			\$124	\$179	\$242

EST. ND TOTALS	79%		\$251	\$324	\$588
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Table 11 - Municipal Water Supply Storage Infrastructure Needs.

WATER LINE INFRASTRUCTURE SUMMARY FOR CITIES

CITIES WITH POPULATION > 5,000

	POPULATION REPRESENTED	LINEAR FEET NEEDS			FUNDING NEEDS (MIL. \$)		
		10 YEAR	20 YEAR	50+ YEAR	10 YEAR	20 YEAR	50+ YEAR
Responding Cities	85%	689,107	1,552,533	4,090,491	\$81	\$241	\$718
State of ND Estimate		810,714	1,826,509	4,812,342	\$95	\$284	\$844

CITIES WITH POPULATION 4,999 - 1,000

	POPULATION REPRESENTED	LINEAR FEET NEEDS			FUNDING NEEDS (MIL. \$)		
		10 YEAR	20 YEAR	50+ YEAR	10 YEAR	20 YEAR	50+ YEAR
Responding Cities	68%	308,311	427,599	1,330,648	\$57	\$68	\$239
State of ND Estimate		453,398	628,822	1,956,835	\$84	\$100	\$351

CITIES WITH POPULATION < 1,000

	POPULATION REPRESENTED	LINEAR FEET NEEDS			FUNDING NEEDS (MIL. \$)		
		10 YEAR	20 YEAR	50+ YEAR	10 YEAR	20 YEAR	50+ YEAR
Responding Cities	30%	223,711	452,590	1,015,358	\$69	\$127	\$229
State of ND Estimate		745,703	1,508,633	3,384,526	\$230	\$423	\$763

EST. ND TOTALS	76%	2,009,815	3,963,964	10,153,703	\$409	\$807	\$1,958
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Table 12 - Municipal Water Line Infrastructure Needs.

WELL/INTAKE INFRASTRUCTURE SUMMARY FOR CITIES

CITIES WITH POPULATION > 5,000

	POPULATION REPRESENTED	AVERAGE AGE WELL/INTAKE (YEARS)	FUNDING NEEDS (MIL. \$)		
			10 YEAR	20 YEAR	50+ YEAR
Responding Cities	78%	40	\$34	\$57	\$108
State of ND Estimate			\$44	\$73	\$138

CITIES WITH POPULATION 4,999 - 1,000

	POPULATION REPRESENTED	AVERAGE AGE WELL/INTAKE (YEARS)	FUNDING NEEDS (MIL. \$)		
			10 YEAR	20 YEAR	50+ YEAR
Responding Cities	39%	35	\$5	\$5	\$7
State of ND Estimate			\$13	\$13	\$18

CITIES WITH POPULATION < 1,000

	POPULATION REPRESENTED	AVERAGE AGE WELL/INTAKE (YEARS)	FUNDING NEEDS (MIL. \$)		
			10 YEAR	20 YEAR	50+ YEAR
Responding Cities	11%	30	\$3	\$4	\$9
State of ND Estimate			\$27	\$36	\$82

EST. ND TOTALS	66%	\$84	\$122	\$238
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Table 13 - Municipal Water Intake/Well Infrastructure Needs.

WATER TREATMENT INFRASTRUCTURE (WTI) SUMMARY FOR CITIES

CITIES WITH POPULATION > 5,000

	POPULATION REPRESENTED	AVERAGE AGE WTI (YEARS)	FUNDING NEEDS (MIL. \$)		
			10 YEAR	20 YEAR	50+ YEAR
Responding Cities	87%	33	\$137	\$195	\$524
State of ND Estimate			\$157	\$224	\$602

CITIES WITH POPULATION 4,999 - 1,000

	POPULATION REPRESENTED	AVERAGE AGE WTI (YEARS)	FUNDING NEEDS (MIL. \$)		
			10 YEAR	20 YEAR	50+ YEAR
Responding Cities	55%	24	\$15	\$33	\$67
State of ND Estimate			\$27	\$60	\$122

CITIES WITH POPULATION < 1,000

	POPULATION REPRESENTED	AVERAGE AGE WTI (YEARS)	FUNDING NEEDS (MIL. \$)		
			10 YEAR	20 YEAR	50+ YEAR
Responding Cities	24%	28	\$41	\$19	\$80
State of ND Estimate			\$171	\$79	\$333

EST. ND TOTALS	75%	\$356	\$363	\$1,057
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Table 14 - Municipal Water Treatment Plant Infrastructure Needs.

MUNICIPAL WATER SUPPLY INFRASTRUCTURE NEED SUMMARY

STATE OF NORTH DAKOTA

	FUNDING NEEDS (MIL. \$)		
	10 YEAR	20 YEAR	50+ YEAR
Storage Infrastructure	\$251	\$324	\$588
Water Line Infrastructure	\$409	\$807	\$1,958
Water Intake/Well Infrastructure	\$84	\$122	\$238
Treatment Plant Infrastructure	\$356	\$363	\$1,057
ESTIMATED ND TOTALS	\$1,100	\$1,616	\$3,841

Table 15 - Municipal Water Supply Infrastructure Need Summary.

RURAL WATER SUPPLY INFRASTRUCTURE

Also in the spring of 2018, a survey was initiated through a cooperative effort involving the North Dakota Rural Water Systems Association and the State Water Commission. Like the municipal survey, the purpose of this similar survey was to gain a better understanding of North Dakota’s existing and future rural water supply infrastructure needs. More specifically, rural water systems were asked to provide water supply replacement, rehabilitation, and new infrastructure information related to their: storage, distribution/supply lines, wells and intakes, and water treatment plants – covering the next 50 years.

Of the state’s 27 rural water systems (not counting the state’s four large regional systems), 16 responded to the survey. In terms of percentages of the state’s total rural water users represented in the responses, they ranged from 76 percent to 67 percent, depending on the type of infrastructure.

To provide statewide estimates, the percentage of the state’s rural water users represented in the surveys was then used to establish a multiplier, which then was used to make estimates for all of the rural water systems in the state – by infrastructure type. However, it is important to note that in some cases, rural systems will count a single farmstead as a “water user,” while also counting a city of 500 people that receives bulk service as a “water user.” Therefore, the statewide estimates for all rural water systems based on the number of users in the survey sample should be used with some caution. But, based on available data, and without participation in the survey by all rural water systems, this is the most reasonable approach.

The following tables summarize the results of the rural water system infrastructure survey, based on type of infrastructure.



STORAGE INFRASTRUCTURE SUMMARY FOR RURAL SYSTEMS

RURAL SYSTEMS

	RESPONDING/ REPRESENTED	AVERAGE AGE STORAGE (YEARS)	FUNDING NEEDS (MIL. \$)		
			10 YEAR	20 YEAR	50+ YEAR
Responding Systems	16 of 27	29	\$17	\$38	\$134
Users Represented	76%				
EST. ND TOTALS			\$23	\$50	\$176

Table 16 - Rural Water Supply Storage Infrastructure Needs.

WATER SUPPLY LINE INFRASTRUCTURE SUMMARY FOR RURAL SYSTEMS

RURAL SYSTEMS

	RESPONDING/ REPRESENTED	MILES OF WATER LINE NEEDS			FUNDING NEEDS (MIL. \$)		
		10 YEAR	20 YEAR	50+ YEAR	10 YEAR	20 YEAR	50+ YEAR
Responding Systems	15 of 27	3,291	6,039	14,693	\$184	\$290	\$703
Users Represented	69%						
EST. ND TOTALS		4,770	8,753	21,294	\$267	\$420	\$1,019

Table 17 - Rural Water Supply Line Infrastructure Needs.

WATER WELL/INTAKE INFRASTRUCTURE SUMMARY FOR RURAL SYSTEMS

RURAL SYSTEMS

	RESPONDING/ REPRESENTED	AVERAGE AGE WELL/INTAKE (YEARS)	FUNDING NEEDS (MIL. \$)		
			10 YEAR	20 YEAR	50+ YEAR
Responding Systems	12 of 27	27	\$9	\$11	\$13
Users Represented	74%				
EST. ND TOTALS			\$12	\$15	\$18

Table 18 - Rural Water Supply Intake/Well Infrastructure Needs.

WATER TREATMENT INFRASTRUCTURE SUMMARY FOR RURAL SYSTEMS

RURAL SYSTEMS

	RESPONDING/ REPRESENTED	AVERAGE AGE WTI (YEARS)	FUNDING NEEDS (MIL. \$)		
			10 YEAR	20 YEAR	50+ YEAR
Responding Systems	14 of 21*	25	\$12	\$88	\$152
Users Represented	67%				
EST. ND TOTALS			\$18	\$131	\$227

Table 19 - Rural Water Supply Treatment Plant Infrastructure Needs.

*21 systems with their own WTP

RURAL WATER SUPPLY SYSTEMS INFRASTRUCTURE NEED SUMMARY

RESPONDING RURAL WATER SUPPLY SYSTEMS

INFRASTRUCTURE	SYSTEMS REPRESENTED	FUNDING NEEDS (MIL. \$)		
		10 YEAR	20 YEAR	50+ YEAR
Storage	16 of 27	\$17	\$38	\$134
Water Lines	15 of 27	\$184	\$290	\$703
Wells & Intakes	12 of 27	\$9	\$11	\$13
Treatment*	13 of 21	\$12	\$88	\$152
RESPONDING SYSTEMS TOTAL		\$222	\$427	\$1,002

Table 20 - Summary Of Responding Rural Water Supply Systems Infrastructure Needs.

*21 Systems With Their Own WTP

STATE OF ND RURAL WATER SUPPLY SYSTEMS

INFRASTRUCTURE	SYSTEMS REPRESENTED	FUNDING NEEDS (MIL. \$)		
		10 YEAR	20 YEAR	50+ YEAR
Storage	State of ND Estimate	\$23	\$50	\$176
Water Lines	State of ND Estimate	\$267	\$420	\$1,019
Wells & Intakes	State of ND Estimate	\$12	\$15	\$18
Treatment*	State of ND Estimate	\$18	\$131	\$227
EST. ND TOTAL		\$320	\$616	\$1,440

Table 21 - Summary Of Rural Water Supply Systems Infrastructure Needs (Statewide).

*21 Systems With Their Own WTP

GENERAL WATER, IRRIGATION, OTHER FLOOD CONTROL, & WATER CONVEYANCE INFRASTRUCTURE

Estimates were also developed for general water, irrigation, other flood control, and water conveyance infrastructure covering 10- and 20-year planning horizons. These longer-term projections were primarily based on information provided during the 2019 Water Development Plan inventory process, which included input from project sponsors.

AGENCY OPERATIONS

For the last several biennia, the State Water Commission's operational budget has been covered using revenues from the Resources Trust Fund. As such, it was deemed necessary to account for those operational expenses over the 10- and 20-year projection timeframes, as those expenses impact revenue available for project funding. Devils Lake Outlet operations are also an ongoing agency operational expense, and are therefore included in projections as well.



ESTIMATED 10-YEAR WATER PROJECT FUNDING NEEDS (2018 DOLLARS) & REVENUE COMPARISONS

10-YEAR OUTLOOK

PROJECT	STATE	LOCAL	FEDERAL	TOTAL COST	NOTES
Agency Operations	\$135,000,000	\$-	\$-	\$135,000,000	Based on current operational budget estimates.
Water Supply	\$2,280,200,000	\$875,100,000	\$-	\$3,155,300,000	
Southwest Pipeline Project	\$206,300,000	\$-	\$-	\$206,300,000	Based on input provided by project sponsor to complete all known foreseeable project components.
Red River Valley Water Supply Project	\$835,500,000	\$278,500,000	\$-	\$1,114,000,000	Estimate based on 75/25 cost-share per SWC policy, and on input provided by project sponsor to complete all known foreseeable project components.
Western Area Water Supply	\$157,500,000	\$52,500,000	\$-	\$210,000,000	Based on input provided by project sponsor to complete all known foreseeable project components.
Northwest Area Water Supply	\$180,900,000	\$24,100,000	TBD	\$205,000,000	Based on input provided by project sponsor to complete all known foreseeable project components. A portion of the state share is expected to be federal.
Municipal Water	\$660,000,000	\$440,000,000	\$-	\$1,100,000,000	Based on results of municipal water supply system surveys, and 2019 project inventory information collection efforts.
Rural Water	\$240,000,000	\$80,000,000	\$-	\$320,000,000	Based on results of rural water supply system surveys, and 2019 project inventory information collection efforts.
Flood Control	\$1,126,345,000	\$1,312,955,000	\$851,000,000	\$3,290,300,000	
Devils Lake Outlet Operations	\$50,000,000	\$-	\$-	\$50,000,000	Based on current operational budget estimates.
Mouse River Enhanced Flood Protection	\$463,685,000	\$244,315,000	\$40,000,000	\$748,000,000	Based on input provided by project sponsor to complete all known foreseeable project components.
Valley City	\$78,000,000	\$19,000,000	\$-	\$97,000,000	Based on input provided by project sponsor to complete all known foreseeable project components.
Lisbon	\$14,160,000	\$3,540,000	\$-	\$17,700,000	Based on input provided by project sponsor to complete all known foreseeable project components.
Fargo-West Fargo Flood Control Project	\$499,500,000	\$1,032,100,000	\$811,000,000	\$2,342,600,000	Based on input provided by project sponsor to complete all known foreseeable project components. An additional \$86 million is anticipated from Minnesota.
Lower Heart (Mandan) Flood Risk Reduction	\$21,000,000	\$14,000,000	\$-	\$35,000,000	Based on input provided by project sponsor to complete all known foreseeable project components.
Irrigation	\$5,000,000	\$5,000,000	\$-	\$10,000,000	Based on 2011-2021 trends.
Other Flood Control & Conveyance	\$108,500,000	\$106,700,000	\$5,000,000	\$220,200,000	Based on 2019-2021 needs, and 10-years to implement all known projects.
General Water	\$15,000,000	\$15,000,000	\$-	\$30,000,000	Based on 2011-2021 trends.
TOTALS	\$3,670,045,000	\$2,314,755,000	\$856,000,000	\$6,840,800,000	

CORRESPONDING REVENUE & NEEDS COMPARISON ESTIMATES

AT \$300 MILLION PER BIENNIUM FROM RESOURCES TRUST FUND		AT \$400 MILLION PER BIENNIUM FROM RESOURCES TRUST FUND		AT \$500 MILLION PER BIENNIUM FROM RESOURCES TRUST FUND	
Resources Trust Fund At \$300M/Biennium	\$1,500,000,000	Resources Trust Fund At \$400M/Biennium	\$2,000,000,000	Resources Trust Fund At \$500M/Biennium	\$2,500,000,000
Water Development Trust Fund At \$18M/Biennium	\$90,000,000	Water Development Trust Fund At \$18M/Biennium	\$90,000,000	Water Development Trust Fund At \$18M/Biennium	\$90,000,000
REVENUE TOTAL	\$1,590,000,000	REVENUE TOTAL	\$2,090,000,000	REVENUE TOTAL	\$2,590,000,000
STATE SHORTFALL	\$(2,080,045,000)	STATE SHORTFALL	\$(1,580,045,000)	STATE SHORTFALL	\$(1,080,045,000)

Table 22 - Estimated 10-Year Water Project Funding Needs (2018 \$) And Revenue Comparisons.

ESTIMATED 20-YEAR WATER PROJECT FUNDING NEEDS (2018 DOLLARS) & REVENUE COMPARISONS

20-YEAR OUTLOOK

PROJECT	STATE	LOCAL	FEDERAL	TOTAL COST	NOTES
Agency Operations	\$270,000,000	\$-	\$-	\$270,000,000	Based on current operational budget estimates.
Water Supply	\$3,043,500,000	\$1,155,500,000	\$-	\$4,199,000,000	
Southwest Pipeline Project	\$438,000,000	\$-	\$-	\$438,000,000	Based on input provided by project sponsor to complete all known foreseeable project components, and infrastructure survey results.
Red River Valley Water Supply Project	\$835,500,000	\$278,500,000	\$-	\$1,114,000,000	Estimate based on 75/25 cost-share per SWC policy, and input provided by project sponsor to complete all known foreseeable project components.
Western Area Water Supply	\$157,500,000	\$52,500,000	\$-	\$210,000,000	Based on input provided by project sponsor to complete all known foreseeable project components.
Northwest Area Water Supply	\$180,900,000	\$24,100,000	TBD	\$205,000,000	Based on input provided by project sponsor to complete all known foreseeable project components. A portion of the state share is expected to be federal.
Municipal Water	\$969,600,000	\$646,400,000	\$-	\$1,616,000,000	Based on results of municipal water supply system surveys.
Rural Water	\$462,000,000	\$154,000,000	\$-	\$616,000,000	Based on results of rural water supply system surveys.
Flood Control	\$1,176,345,000	\$1,312,955,000	\$851,000,000	\$3,340,300,000	
Devils Lake Outlet Operations	\$100,000,000	\$-	\$-	\$100,000,000	Based on current operational budget estimates.
Mouse River Enhanced Flood Protection	\$463,685,000	\$244,315,000	\$40,000,000	\$748,000,000	Based on input provided by project sponsor to complete all known foreseeable project components.
Valley City	\$78,000,000	\$19,000,000	\$-	\$97,000,000	Based on input provided by project sponsor to complete all known foreseeable project components.
Lisbon	\$14,160,000	\$3,540,000	\$-	\$17,700,000	Based on input provided by project sponsor to complete all known foreseeable project components.
Fargo-West Fargo Flood Control Project	\$499,500,000	\$1,032,100,000	\$811,000,000	\$2,342,600,000	Based on input provided by project sponsor to complete all known foreseeable project components. An additional \$86 million is anticipated from Minnesota.
Lower Heart (Mandan) Flood Risk Reduction	\$21,000,000	\$14,000,000	\$-	\$35,000,000	Based on input provided by project sponsor to complete all known foreseeable project components.
Irrigation	\$10,000,000	\$10,000,000	\$-	\$20,000,000	Based on 10-year assumptions over a 20-year timeframe.
Other Flood Control & Conveyance	\$217,000,000	\$213,400,000	\$10,000,000	\$440,400,000	Based on 10-year assumptions over a 20-year timeframe.
General Water	\$30,000,000	\$30,000,000	\$-	\$60,000,000	Based on 10-year assumptions over a 20-year timeframe.
TOTALS	\$4,746,845,000	\$2,721,855,000	\$861,000,000	\$8,329,700,000	

CORRESPONDING REVENUE & NEEDS COMPARISON ESTIMATES

AT \$300 MILLION PER BIENNIUM FROM RESOURCES TRUST FUND		AT \$400 MILLION PER BIENNIUM FROM RESOURCES TRUST FUND		AT \$500 MILLION PER BIENNIUM FROM RESOURCES TRUST FUND	
Resources Trust Fund At \$300M/Biennium	\$3,000,000,000	Resources Trust Fund At \$400M/Biennium	\$4,000,000,000	Resources Trust Fund At \$500M/Biennium	\$5,000,000,000
Water Development Trust Fund At \$18M/Biennium	\$180,000,000	Water Development Trust Fund At \$18M/Biennium	\$180,000,000	Water Development Trust Fund At \$18M/Biennium	\$180,000,000
REVENUE TOTAL	\$3,180,000,000	REVENUE TOTAL	\$4,180,000,000	REVENUE TOTAL	\$5,180,000,000
STATE SHORTFALL	\$(1,566,845,000)	STATE SHORTFALL	\$(566,845,000)	STATE SURPLUS	\$433,155,000

Table 23 - Estimated 20-Year Water Project Funding Needs (2018 \$) And Revenue Comparisons.

WATER PROJECT FUNDING & REVENUE SOURCES

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

GENERAL FUND

The proposed State Water Commission budget does not include any revenue from the state's General Fund. Since the 2013 Legislative Assembly, the agency's operational functions were funded entirely through the Resources Trust Fund.

RESOURCES TRUST FUND

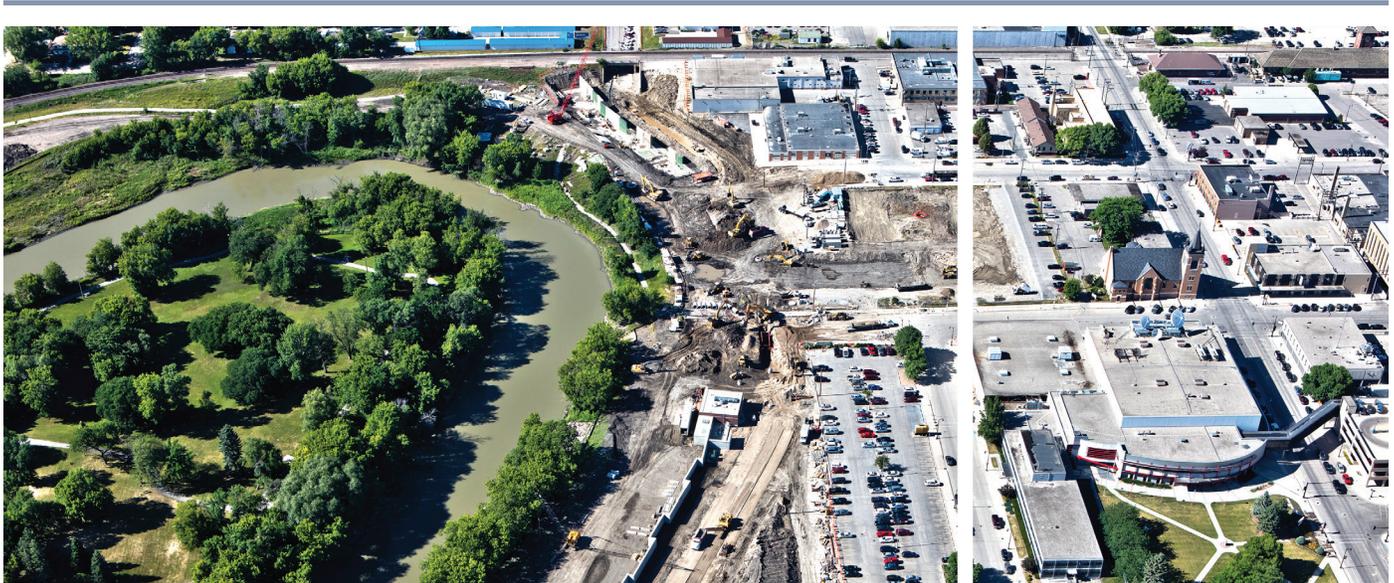
Section 57-51.1-07.1 (2) of North Dakota Century Code requires that every legislative bill appropriating monies from the Resources Trust Fund (RTF), pursuant to subsection one, must be accompanied by a State Water Commission report. This 2019 Water Development Plan, satisfies that requirement for requesting funding from the RTF for the 2019-2021 budget cycle.

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 Water Commission 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 2017-2019 biennium are expected to total \$374 million. When combined with the fund's 2017 beginning balance of \$306.4 million, less the estimated expenditures of \$348.8 million, the balance in the RTF at the beginning of the 2019-2021 biennium could be \$331.6 million. \$293.7 million of the estimated \$331.6 million beginning balance will have been committed to projects that are anticipated to be carried into the next biennium.

Because revenues from the oil extraction tax are highly dependent on oil prices and production, it is very difficult to predict future funding levels (Figure 27). With that in mind, the December 2018 forecast includes \$370 million for the 2019-2021 biennium from oil extraction.

Additional revenue into the RTF will come from Southwest Pipeline Project reimbursements, State Water Commission water supply program loan repayments, interest earnings, and oil royalties. These are estimated to total an additional \$15.5 million. Historic and estimated RTF revenues are outlined in Figure 28.



NORTH DAKOTA OIL PRODUCTION & RESOURCES TRUST FUND REVENUES

JULY 1999 - NOVEMBER 2018

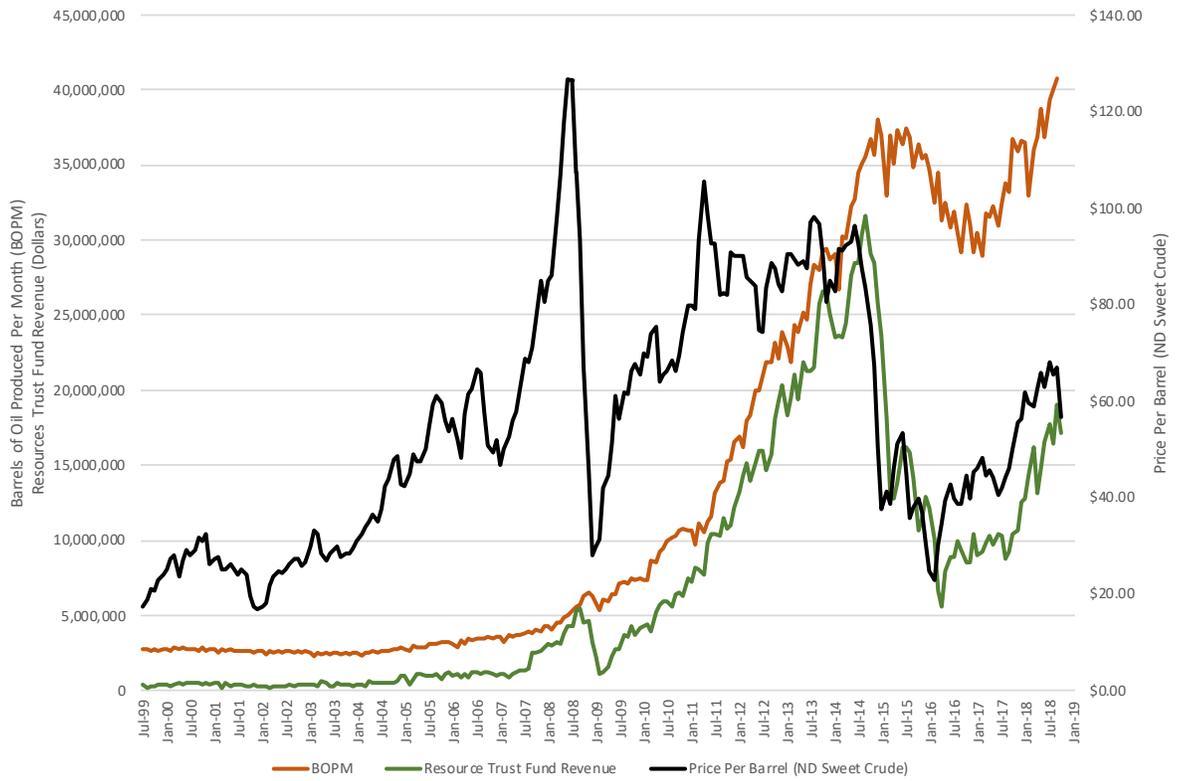


Figure 27 - North Dakota Oil Production And Resources Trust Fund Revenues.

RESOURCES TRUST FUND REVENUES

1997-2021

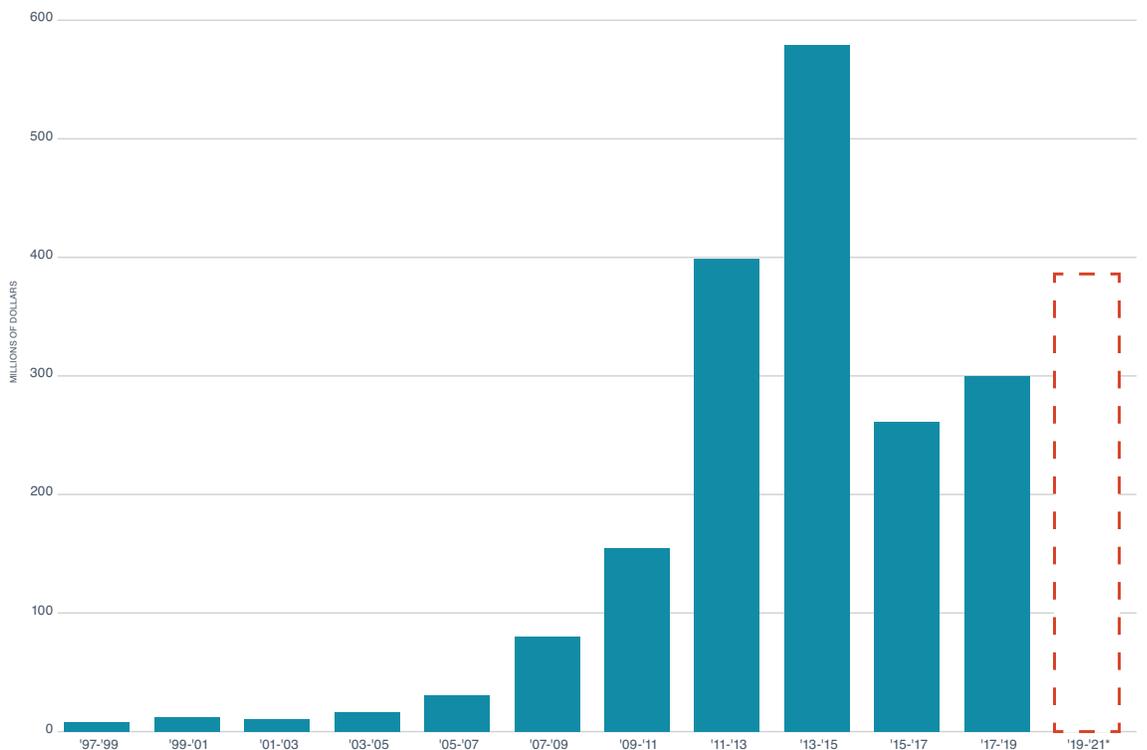


Figure 28 - Resources Trust Fund Revenues, 1997-2021.

*Projected

WATER DEVELOPMENT TRUST FUND REVENUES

1999-2020

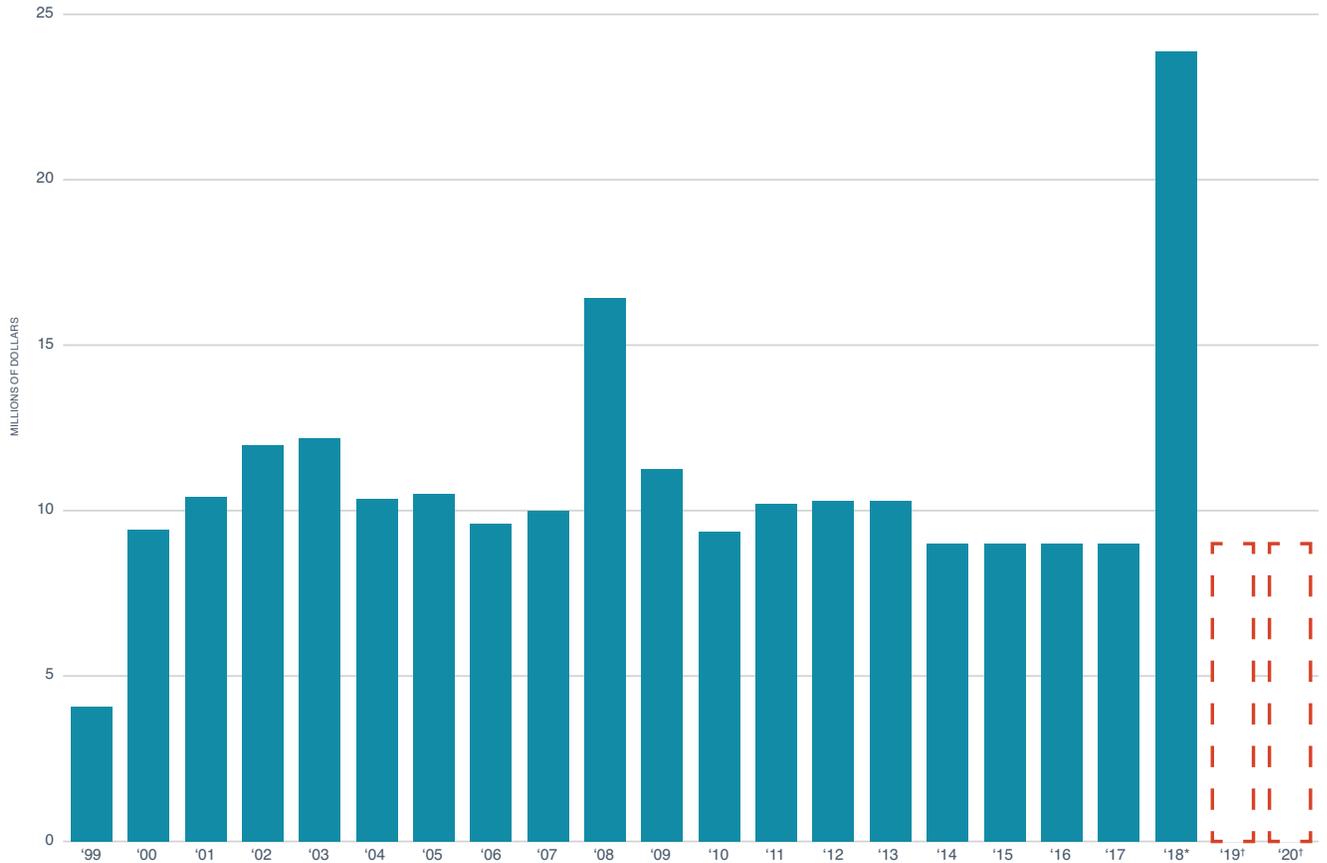


Figure 29 - Water Development Trust Fund Revenues, 1999-2020. †Projected. *In 2018, the WDTF received a one-time payment due to a settlement agreement between the state and tobacco companies over enforcement of the 1998 Tobacco Master Settlement Agreement.

WATER DEVELOPMENT TRUST FUND

Senate Bill 2188 (1999) set up the Water Development Trust Fund as a primary means of repaying bonds it authorized. House Bill 1475 (1999) 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 2017-2019 biennium are expected to total about \$32.8 million. The Office of Management and Budget estimates revenues of \$16 million for the 2019-2021 biennium (Figure 29).

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



BONDING

The Water Commission 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. The Water Commission has no outstanding bonds at this time.

INFRASTRUCTURE REVOLVING LOAN FUND

An Infrastructure Revolving Loan Fund (IRLF) was established during the 2013 Legislative Assembly. NDCC 61-02-78 requires that a fund be established as of January 1, 2015, within the RTF to provide loans for water supply, flood protection, or other water development and management projects. Funding for the IRLF comes from ten percent of oil extraction revenue deposited in the RTF.

The Water Commission approves projects and loans from the IRLF, and the Bank of North Dakota manages and administers the loans. Specific requirements and terms are established and approved by the Water Commission for each loan.

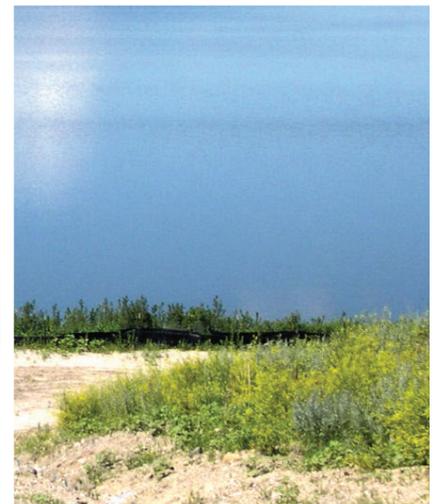
Section 25 of House Bill 1020 included a cap on the Infrastructure Revolving Loan Fund, stating that any oil extraction moneys exceeding \$26 million will be deposited into the Resources Trust Fund. Western Area Water Supply, North Prairie Rural Water, Northeast Rural Water, Walsh Rural Water, Barnes Rural Water, North Central Rural Water, Stutsman Rural Water, and the cities of Beulah, Lisbon, Valley City, and Grafton all secured loans from this funding source as of October 2018.

DRINKING WATER STATE REVOLVING FUND

An additional source of funding for water supply development projects is the Drinking Water State Revolving Fund (DWSRF). 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 DWSRF provides loans to public water systems for capital improvements aimed at increasing public health protection and compliance under the federal Safe Drinking Water Act.

The Water Commission's involvement with the DWSRF is two-fold. First, the Department of Health must administer and disburse funds with the approval of the Commission. Second, the Department of Health must establish assistance priorities and expend grant funds pursuant to the priority list for the DWSRF, after consulting with, and obtaining Commission 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 2018 comprehensive project priority list includes 246 projects with a cumulative total project funding need of \$586 million.



FEDERAL MUNICIPAL, RURAL, AND INDUSTRIAL (MR&I) 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 Water Commission.

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 South-

west 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 September 2018, \$378.2 million in federal funds had been approved for North Dakota's MR&I program, with \$9 million and \$12 million for federal fiscal years 2017 and 2018 (Figure 30).

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, 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.

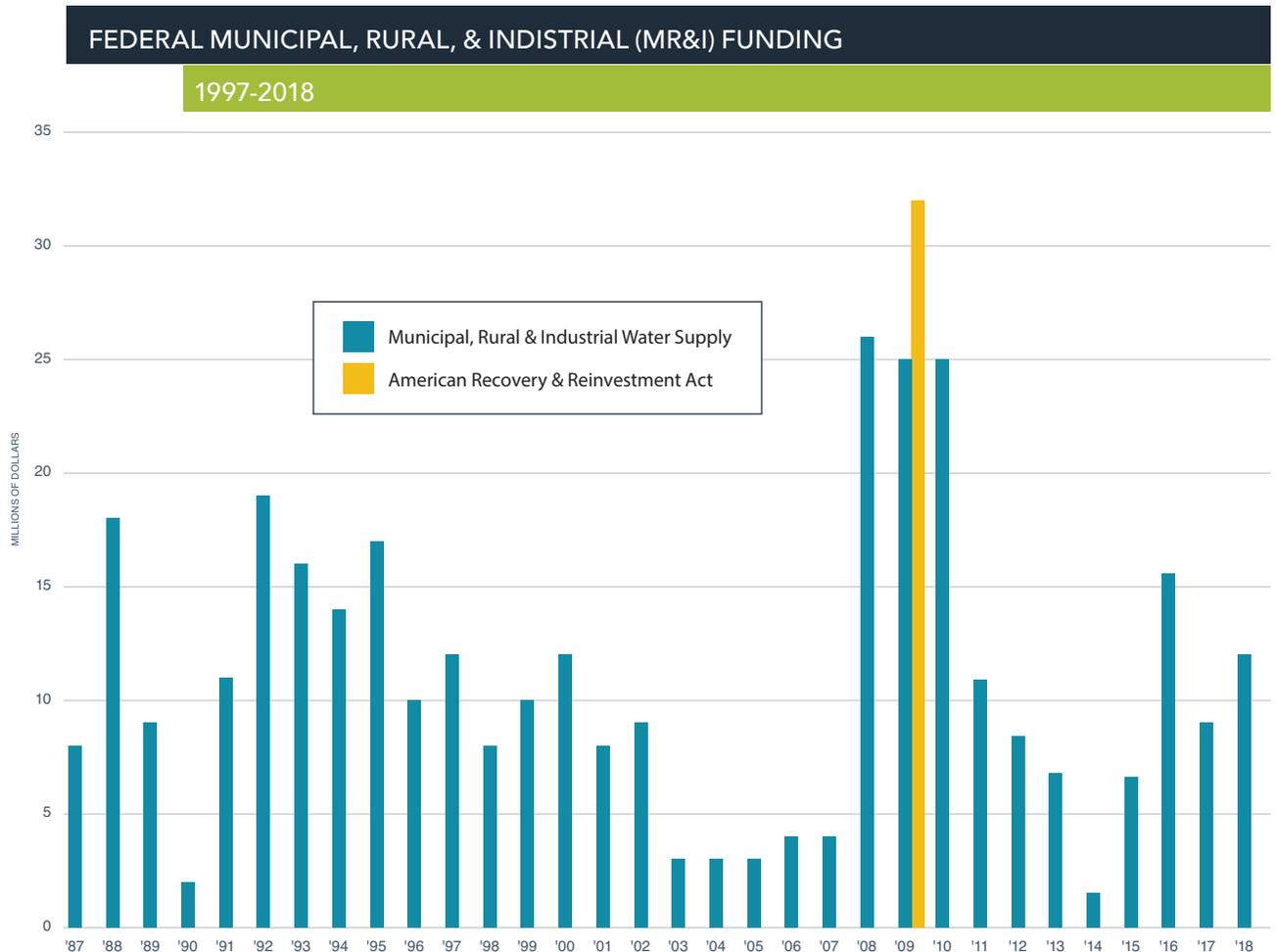


Figure 30 - Federal Municipal, Rural, and Industrial (MR&I) Funding, 1997-2018.

STATE WATER COMMISSION FUNDING RECOMMENDATIONS, & PRIORITIES: 2019-2021 BIENNIUM

This section discusses the Water Commission’s priority water development efforts and funding recommendations for the 2019-2021 biennium. It includes one course of action for water development in North Dakota that is subject to change during the 66th Legislative Assembly, further review of SWC cost-share requirements and eligibility, and other unforeseen events that may occur during the biennium.

The following priorities were established as a result of extensive project reviews, face-to-face interactions with sponsors at Commissioner-hosted basin meetings, and through careful consideration of the agency’s revised Project Prioritization Guidance Policy.

2019-2021 STATE WATER COMMISSION FUNDING PRIORITIES	
PROJECTS	\$478M FUNDING SCENARIO
Devils Lake Outlet Operations	\$8.0
Fargo-West Fargo Area Flood Control	\$166.5
General Water Management	\$10.0
Mouse River Flood Control	\$70.0
Municipal Water Supply	\$20.0
Northwest Area Water Supply	\$75.0*
Other Flood Control & Conveyance	\$6.0
Red River Valley Water Supply	\$30.0
Rural Water Supply	\$30.0
Sheyenne River Flood Control	\$11.0
Southwest Pipeline Project	\$16.5
Western Area Water Supply	\$35.0
PROJECTS TOTAL	\$478.0

Table 24 - SWC Purpose Funding Recommendations, 2019-2021 Biennium.

*Represents a line of credit.

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 summer 2010, an expansion was completed, increasing the outlet's capacity to 250 cfs.

During summer 2012, the Water Commission completed an additional outlet from East Devils Lake (See Map Appendix). 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.

Until Devils Lake ceases to be a threat to human safety and infrastructure, the State Water Commission will continue to operate both outlets within the confines of permit requirements, and in consideration of the state's Devils Lake Outlet Operation Plans.

The Water Commission's funding recommendation for this project during the 2019-2021 biennium is \$8 million.

FARGO-WEST FARGO FLOOD CONTROL

After the flood of 2009, it became apparent that a large-scale flood control project was needed to better serve both Fargo and Moorhead, and the greater metro area. Since that time, the U.S. Army Corps of Engineers, in cooperation with Flood Diversion Board of Authority members (Fargo and West Fargo, ND; Moorhead, MN; Cass County, ND; Clay County, MN; and the Cass County Joint Water Resources District) 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 a Record of Decision was signed by the Assistant Secretary of the Army in April 2012. In 2014, President Obama signed the Water Resource Reform and Development Act (WRRDA), which authorized the Fargo-Moorhead area diversion project. The signing of WRRDA allows the federal government to appropriate funding for construction.

Meanwhile, a lawsuit filed against the Project in 2013 eventually led to an injunction in September 2017, halting construction completely. In order to move the project forward, Governor Doug Burgum of North Dakota and Governor Mark Dayton of Minnesota created a joint Task Force to propose a framework that would be acceptable for all stakeholders impacted by the project. The result of the Task Force is a project change known as Plan B, which is currently being reviewed in the form of a Supplemental Environmental Impact Statement. The review process is expected to be complete in late 2018. A permit decision is expected soon thereafter.

The diversion project is a 30-mile long, 1,500-foot wide diversion channel on the North Dakota side of the Red River that will divert water around the Fargo-Moorhead metro area. The project also includes 28,000 acres (132,000 acre-feet) of upstream floodwater staging (See Map Appendix).

In addition to the diversion project, Fargo is also working to complete in-town flood protection projects that work directly with the diversion.

The state's current total commitment for this project is capped at \$570 million – as directed by the passage of Senate Bill 2020 during the 2015 Legislative Assembly. Of that total commitment, \$450 million is for the diversion project, and \$120 million is for Fargo interior flood control efforts.

The Water Commission's funding recommendation for this project during the 2019-2021 biennium is \$166.5 million.

GENERAL WATER MANAGEMENT

General water management projects include, recreational projects, dam repairs, irrigation, planning efforts, and special studies.

As part of the Water Development Plan project inventory process, the Water Commission identified about \$63 million in general water management project needs. Of that amount, approximately \$27.7 million could potentially be eligible for cost-share from the state.

The Water Commission's funding recommendation for this project purpose during the 2019-2021 biennium is \$10 million.

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 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, Renville, 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.

Immediately following the devastating flood events in summer 2011, stakeholder workshops were held in late 2011 and early 2012. Preliminary engineering reports and basin-wide erosion, sedimentation, and hydrologic modeling were completed a year later. And in summer 2013, the Rural Reaches Alternatives Report and final Mouse River Reconnaissance Study were issued. The result of these efforts is a Mouse River Enhanced Flood Protection Project (MREFPP) that is designed to provide flood relief to Mouse River valley residents – both urban and rural (See Map Appendix).

Implementation of the MREFPP continued to move forward during the 2017-2019 biennium. These efforts are ongoing and will continue into the 2019-2021 biennium and beyond. The Souris River Joint Water Resource Board (SRJB) has developed a long-range capital improvements program through 2039. According to the SRJB, the MREFPP could be completed in as little as seven years, dependent on the availability of funding.

The SRJB has estimated a total financial need of about \$281 million for the MREFPP through the end of fiscal year 2021. At traditional cost-share levels, approximately \$186 million could be eligible for state cost-share assistance. Costs at that level would include new construction on Phases IV and V in the city of Minot, flood protection in the cities of Burlington, Sawyer, and Velva, and additional work in Renville and Ward Counties. The funding would also allow design and permitting to begin on Phases VI and VII in the city of Minot, and levees in rural Ward County.

As directed by the 65th Legislative Assembly in 2017 within House Bill 1020, the MREFPP will receive no more than \$193 million in state funding within the city limits of Minot through the 2023-2025 biennium.

The Water Commission's funding recommendation for this project during the 2019-2021 biennium is \$70 million.

MUNICIPAL WATER SUPPLIES

During the 2019 Water Development Plan project inventory process, the Water Commission received 106 projects from cities around the state. Projects include new water supply trunk lines, water towers, new water treatment plants and plant improvements, supply line improvements, and new water supply source developments, as a few examples.

While no high priority municipal water supply projects were received, the Water Commission identified about \$45 million in moderate priority municipal water supply project needs for the 2019-2021 biennium. Of that amount, approximately \$25 million could potentially be eligible for cost-share grants from the state.

The Water Commission's funding recommendation for this project purpose during the 2019-2021 biennium is \$20 million.

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 Water Commission to construct, operate, and manage a project to deliver water throughout northwestern North Dakota.

The Water Commission began construction on the Northwest Area Water Supply (NAWS) project in April 2002 (See Map Appendix). The first four contracts involving 45 miles of pipeline between the Missouri River and Minot were completed in the spring of 2009. However, additional work will be required in the future to fill existing gaps in the pipeline. NAWS is currently providing water service to Minot, Berthold, Burlington, Kenmare, Sherwood, Des Lacs, Mohall, West River Rural Water, All Seasons Rural Water, Upper Souris Rural Water, North Prairie Rural Water, and the Minot Air Force Base through an agreement with Minot.

In 2010 the US Bureau of Reclamation began work on a SEIS as remanded by the courts as part of an ongoing lawsuit. A draft was completed in 2014, with the final completed in 2015. A Record of Decision was signed in August 2015, and court briefings took place during the first half of 2016. In August 2017, NAWS received a favorable ruling when the District of Columbia District Court ruled in favor of NAWS, allowing the State of North Dakota to move forward with construction of the project. An appeal remains from the State of Missouri based on their standing in the case.

NAWS has estimated a total financial need of \$83 million for the 2019-2021 biennium. Of that total, approximately \$81 million could be eligible for cost-share assistance from the Water Commission, due to previous local contributions.

NAWS continues to be a very high priority of the state, and progress on this project during the 2019-2021 biennium appears to be free of litigation-related delays for the first time in over a decade. The Water Commission's funding recommendation for NAWS during the 2019-2021 biennium is \$75 million.

OTHER FLOOD CONTROL & CONVEYANCE

During the 2019 Water Plan project inventory process, the Water Commission received 37 flood control projects from around the state – this number excludes the large flood control projects mentioned separately in this section. Projects include levees, bypass channels, detention sites, and flood walls.

Of those 37 projects, 16 were identified as high priority with an approximate financial need of \$66 million. Of that amount, approximately \$39 million could be potentially eligible for cost-share grants from the state.

Also during the 2019 Water Plan project inventory process, the Water Commission received 62 water conveyance projects from around the state. Projects almost exclusively include drains.

Although no conveyance projects were identified as high priority, 18 of the projects were classified as moderate priority per the Commission's Project Prioritization Guidance Policy. Approximately \$34 million in total financial needs were identified for moderate priority projects. Of that amount, approximately \$15 million could be eligible for cost-share grants from the state.

The Water Commission's funding recommendation for other flood control and conveyance projects during the 2019-2021 biennium is \$6 million.

RED RIVER VALLEY WATER SUPPLY

Over the years, various projects have been proposed to supply Missouri River water to eastern North Dakota. More recently, between 2000 and 2007, the U.S. Bureau of Reclamation and Garrison Diversion Conservancy District developed plans for a Red River Valley Water Supply Project (RRVWSP). This effort culminated in an EIS and preferred alternative, but the Secretary of the Interior never signed a Record of Decision – a requirement to move that federal project forward. In 2013, when it became apparent that a Record of Decision would not be signed, the State Water Commission, in cooperation with the Lake Agassiz Water Authority and Garrison Diversion Conservancy District began pursuit of a state and local project.

The general purpose of the project would be to deliver water via pipeline from a conventional intake in the Missouri River, or horizontal groundwater collector wells adjacent to the river near Washburn, to Baldhill Creek or the Sheyenne River in the Red River Valley (See Map Appendix). This project would provide a supplemental water supply to users in central and eastern North Dakota. To avoid concerns with transboundary diversion of water, the water would be treated before crossing the divide.

In 2016, project conceptual engineering was completed – covering conventional and horizontal collector well intakes, pipeline alignments, and a discharge structure at Baldhill Creek. A preliminary design report on the intake and pipeline alignments from Washburn to Baldhill Creek was completed in February 2018 to identify potential future water users of the project. The process of securing or reaffirming existing easements began in summer 2018, and strategic construction is forecast to begin in mid-2019.

The proposed work plan for the RRVWSP during the 2019-2021 biennium currently includes: a Missouri River intake pumping wetwell, preliminary design of a biota water plant, a discharge structure on the Sheyenne River, land acquisitions, and some pipeline placement.

The RRVWSP received Legislative intent for \$30 million in the 2017-2019 biennium, and have estimated a total financial need of \$66.7 million in the 2019-2021 biennium. Of that total, approximately \$50 million could be eligible for cost-share assistance from the Water Commission. In addition, RRVWSP has \$13 million remaining in legislative intent from the 2017 Legislative Session for construction costs.

The Water Commission's funding recommendation for this project during the 2019-2021 biennium is \$30 million.

RURAL WATER SUPPLIES

During the 2019 Water Plan project inventory process, the Water Commission received 28 projects from rural water systems around the state. Projects include expansions, storage, and various types of other system improvements.

Of the rural water supply project needs submitted to the State Water Commission, two of the projects were classified as high priority, and 12 of the projects were classified as moderate priority per the Commission's Project Prioritization Guidance Policy. Approximately \$8 million and \$57 million in total financial needs were identified for high and moderate priority projects, respectively. Of those amounts, approximately \$6 million for high priority projects, and \$43 million for moderate priority projects, could potentially be eligible for cost-share grants from the state.

The Water Commission's funding recommendation for this project purpose during the 2019-2021 biennium is \$30 million.

SHEYENNE RIVER FLOOD CONTROL

Flood events along the Sheyenne River in recent years have severely impacted and tested communities like Valley City and Lisbon. For that reason, both communities are working to implement more permanent flood protection.

Valley City has initiated a multi-phased approach to developing permanent flood protection. As outlined earlier in this report, Phase I was completed in 2016. The Phase II project is currently under construction, and will protect portions of downtown Valley City, including Main Street and a power transfer station.

Phase III of Valley City’s flood control project is in the final phases of design and will be bid for construction in 2019. Phase III will include a continuation of property acquisitions; construction of flood walls and levees; erosion mitigation; street, water main, sanitary sewer, and utility adjustments; and storm sewer modifications. Phase IV is also in the design phase.

Valley City has estimated a total financial need of approximately \$14 million in the 2019-2021 biennium, including a combination of grants and loans from the state. This level of funding would be primarily used for Phase IV levees.

Like Valley City, Lisbon is moving forward with a multi-phased approach to permanent flood protection. Lisbon’s Phase I involves five separate levee locations, with two on the west side of the Sheyenne River, and three on the east side. Of those five Phase I levee alignments, all but one will be completed before the end of 2018.

Phase II involves additional flood protection in the south portion of Lisbon. However, Lisbon has indicated that Phase II can wait until a time when funding is more certain.

The Water Commission’s funding recommendation for these projects during the 2019-2021 biennium is \$11 million.

SOUTHWEST PIPELINE PROJECT

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 Water Commission has been working to develop the Southwest Pipeline ever since – with construction beginning in 1986. (NDCC 61-24.5 authorizes the Commission and Southwest Water Authority to construct, operate, and maintain the project.)

Southwest Pipeline is currently serving about 56,000 residents, including more than 7,100 rural customers, 33 communities, and 21 raw water customers (See Map Appendix).

The Southwest Water Authority provided the Water Commission with a list of projects for the 2019-2021 biennium with a total cost of about \$30.5 million. Projects included in that



amount of financial need are: a supplemental intake pump station at Lake Sakakawea; reservoirs/tanks at Davis Buttes and Belfield; Ray Christensen Pump Station upgrades; and various alignments of parallel pipelines. At a minimum funding level, the Southwest Water Authority would like to complete its highest priority projects, including: intake pump station work, a second Davis Buttes reservoir, a second Belfield Reservoir, and rural distribution upgrades.

The Water Commission's funding recommendation for this project during the 2019-2021 biennium is \$16.5 million.

WESTERN AREA WATER SUPPLY

Western Area Water Supply (WAWS) project has involved a collaborative effort between the city of Williston, Northwest Rural Water District (formerly Williams Rural Water District), McKenzie Water Resource District, Burke-Divide-Williams Rural Water, and R&T Water Supply Association (including the cities of Ray, Tioga, and Stanley).

WAWS utilizes a combination of Missouri River water treated at the Williston Regional Water Treatment Plant and groundwater treated by the R&T Water Supply Commerce Author-

ity's Water Treatment Plant in Ray. The overall purpose of this project is to meet the water supply needs of municipal, rural, and industrial users in the five northwestern North Dakota counties of Burke, Divide, McKenzie, Mountrail, and Williams. (See Map Appendix).

In response to continuing demand for water service and the associated planning efforts that have been completed, the WAWS Authority board of directors has requested funding to complete several projects during the 2019-2021 biennium - totaling about \$50 million. Of that total, a maximum of up to approximately \$37.5 million could be eligible for cost-share grants from the Water Commission. Specific projects that could be advanced at that funding level would include: part two of a McKenzie County system expansion; R&T system Stanley, White Earth, and Powers Lake rural distributions; and Williams Rural north and 29-mile rural distribution efforts.

The Water Commission's funding recommendation for this project during the 2019-2021 biennium is \$35 million.





APPENDIX

NORTH DAKOTA STATE WATER COMMISSION

PROJECT FUNDING POLICY, PROCEDURE, AND GENERAL REQUIREMENTS

The State Water Commission has adopted this policy to support local sponsors in development of sustainable water related projects in North Dakota. This policy reflects the State Water Commission's cost-share priorities and provides basic requirements for all projects considered for prioritization during the agency's budgeting process. Projects and studies that receive 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 assure on-the-ground support for projects and prudent expenditure of funding for evaluations and project construction. It is the policy of the State Water Commission that only the items described in this document will be eligible for cost-share upon approval by the State Water Commission, unless specifically authorized by State Water Commission action.

I. DEFINITIONS

- A. CONSTRUCTION COSTS** include earthwork, concrete, mobilization and demobilization, dewatering, materials, seeding, rip-rap, crop damages, re-routing electrical transmission lines, moving storm and sanitary sewer system and other underground utilities and conveyance systems affected by construction, mitigation required by law related to the construction contract, water supply works, irrigation supply works, and other items and services provided by the contractor. Construction costs are only eligible for cost-share if incurred after State Water Commission approval and if the local sponsor has complied with North Dakota Century Code (N.D.C.C.) in soliciting and awarding bids and contracts, and complied with all applicable federal, state, and local laws.
- B. COST-SHARE** means funds appropriated by the legislative assembly or otherwise transferred by the Commission to a local entity under commission policy as reimbursement for a percentage of the total approved cost of a project approved by the Commission.
- C. GRANT** means a one-time sum of money appropriated by the legislative assembly and transferred by the commission to a local entity for a particular purpose. A grant is not dependent on the local entity providing a particular percentage of the cost of the project.
- D. LOAN** means an amount of money lent to a sponsor of a project approved by the commission to assist with funding approved project components. A loan may be stand-alone financial assistance.
- E. WATER CONVEYANCE PROJECT** means any surface or subsurface drainage works, bank stabilization, or snagging and clearing of water bodies.

- F. ENGINEERING SERVICES** include pre-construction and construction engineering. Pre-construction engineering is the engineering necessary to develop plans and specifications for permitting and construction of a project including preliminary and final design, material testing, flood insurance studies, hydraulic models, and geotechnical investigations. Construction engineering is the engineering necessary to build the project designed in the pre-construction phase including construction contract management, and construction observation. Administrative and support services not specific to the approved project are not engineering services. Engineering services are eligible costs if incurred after State Water Commission approval. If the total anticipated engineering costs are greater than the threshold stipulated in NDCC 54-44.7-04, then the local sponsor must follow the engineering selection process provided in NDCC 54-44.7 and provide a copy of the selection committee report to the Chief Engineer. The local sponsor will be considered to have complied with this requirement if they have completed a selection process for a general engineering services agreement at least once every three years and have formally assigned work to a firm or firms under an agreement. The local sponsor must inform the Chief Engineer of any change in the provider of general engineering services.
- G. IMPROVEMENTS** are construction related projects that upgrade a facility to provide increased efficiency, capacity, or redundancy. Improvements do not include any activities that are maintenance, replacement, or reconstruction.
- H. EXPANSIONS** are construction related projects that increase the project area or users served. Expansions do not include maintenance, replacement, or reconstruction activities.
- I. LOCAL SPONSOR** is the entity submitting a cost-share application and must be a political subdivision, state entity, or commission legislatively granted North Dakota recognition that applies the necessary local share of funding to match State Water Commission cost-share. They provide direction for studies and projects, public point of contact for communication on public benefits and local concerns, and acquire necessary permits and rights-of-way.
- J. REGULAR MAINTENANCE COSTS** include normal repairs and general upkeep of facilities to allow facilities to continue proper operation and function. These maintenance items occur on a regular or annual basis. Regular maintenance activities simply help ensure the asset will remain serviceable throughout its originally predicted useful life.
- K. EXTRAORDINARY MAINTENANCE COSTS** include the repair or replacement of portions of facilities or components that extends the overall life of the system or components that are above and beyond regular or normal maintenance. Extraordinary maintenance activities extend the asset's useful life beyond its originally predicted useful life.

- L. **SUSTAINABLE OPERATION, MAINTENANCE, AND REPLACEMENT PLAN** is a description of the anticipated operation, maintenance, and replacement costs with a statement that the operation, maintenance, and replacement of the project will be sustainable by the local sponsor. For water supply projects, a summary of the project sponsor's Capital Improvement Fund must also be included.
- M. **CAPITAL IMPROVEMENT FUND** is money set aside using a portion of user fees for future asset replacement and a cost share application shall include documentation of the following:
 - 1. Current capital improvement fund balance
 - 2. Existing and new assets
 - 3. Replacement cost of assets
 - 4. Average life of assets
 - 5. Current and future monthly reserve per user

II. INELIGIBLE ITEMS excluded from cost-share include:

- 1 Administrative costs, including salaries for local sponsor members and employees as well as consultant services that are not project specific and other incidental costs incurred by the sponsor;
- 2 Property and easement acquisition costs paid to the landowner unless specifically identified as eligible within the Flood Recovery Property Acquisition Program, the Flood Protection Program, or the Water Retention Projects;
- 3 Work and costs incurred prior to a cost-share approval date, except for emergencies as determined by the Chief Engineer;
- 4 Project related operation and regular maintenance costs;
- 5 Funding contributions provided by federal, other state, or other North Dakota state entities that supplant costs;
- 6 Work incurred outside the scope of the approved study or project;
- 7 The removal of vegetative material and sediment for water conveyance projects.
- 8 Local requirements imposed beyond State and Federal requirements for the project may be ineligible.

III. COST-SHARE APPLICATION AND APPROVAL PROCEDURES

The State Water Commission will not consider any cost-share applications unless the local sponsor first makes an application to the Chief Engineer. No funds will be used in violation of Article X, § 18 of the North Dakota Constitution (Anti-Gift Clause).

A. APPLICATION REQUIRED. An application for cost-share is required in all cases and must be submitted by the local sponsor on the State Water Commission Cost-Share Application form. Applications for cost-share are accepted at any time. Applications received less than 45 days before a State Water Commission meeting will not be considered at that meeting and will be held for consideration at a future meeting unless specifically exempted by the Chief Engineer. The application form is maintained and updated by the Chief Engineer. A completed application must include the following:

- 1 Category of cost-share activity
- 2 Location of the proposed project or study area shown on a map
- 3 Description, purpose, goal, objective, narrative of the proposed activities
- 4 Delineation of costs
- 5 Anticipated timeline of project from preliminary study through final closeout
- 6 Potential federal, other state, or other North Dakota state entity participation
- 7 Documentation of an engineering selection process if engineering costs are anticipated to be greater than the threshold provided in NDCC 54-44.7-04
- 8 Engineering plans, if applicable
- 9 Status of required permitting
- 10 Potential territorial service area conflicts or service area agreements, if applicable
- 11 Sustainable operation, maintenance, and replacement plan for projects
- 12 Additional information as deemed appropriate by the Chief Engineer

Applications for cost-share are separate and distinct from the State Water Commission biennial project information collection effort that is part of the budgeting process and published as the State Water Plan. All local sponsors are encouraged to submit project financial needs for the State Water Plan. Projects not submitted as part of the State Water Plan development process may be held until action can be taken on those that were included during budgeting, unless determined to be an emergency that directly impacts human health and safety or that are a direct result of a natural disaster.

B. PRE-APPLICATION. A pre-application process is allowed for cost-share of assessment projects. This process will require the local sponsor to submit a brief narrative of the project, preliminary designs, and a delineation of costs. The Chief Engineer will then review the material presented, make a determination of project eligibility, and estimate the cost-share funding the project may anticipate receiving. A project eligibility letter will then be sent to the local sponsor noting the percent of cost-share assistance that may be expected on eligible items as well as listing those items that are not considered to be eligible costs. In addition, the project eligibility letter will state that the Chief Engineer will recommend approval when all cost-share requirements are addressed. The local sponsor may use the project eligibility letter to develop a project budget for use in the assessment voting process. Upon completion of the assessment vote and all other requirements an application for cost-share can be submitted.

C. REVIEW. Upon receiving an application for cost-share, the Chief Engineer will review the application and accompanying information. If the Chief Engineer is satisfied that the proposal meets all requirements, the local sponsor will be asked to present the application, and the Chief Engineer will provide a recommendation to the State Water Commission for its action. The Chief Engineer's review of the application will include the following items and any other considerations that the Chief Engineer deems necessary and appropriate.

- 1 Applicable engineering plans;
- 2 Field inspection, if deemed necessary by the Chief Engineer;
- 3 The percent and limit of proposed cost-share determined by category of cost-share activity and eligible expenses;
- 4 Assurance of sustainable operation, maintenance, and replacement of project facilities by the local sponsor;
- 5 Status of permitting and service area agreements;
- 6 Available funding in the State Water Commission budget, if in the State Water Plan, and a priority ranking when appropriate.

For cost-share applications over \$100 million, additional information requested by the State Water Commission will be used to determine cost-share.

The Chief Engineer is authorized to approve cost-share up to \$75,000 and also approve cost overruns up to \$75,000 without State Water Commission action. The Chief Engineer will respond to such requests within 60 days of receipt of the request. A final decision may be deferred if warranted by funding or regulatory consideration.

D. NOTICE. The Chief Engineer will give a 10-day notice to local sponsors when their application for cost-share is placed on the tentative agenda of the State Water Commission's next meeting.

E. AGREEMENT AND DISTRIBUTION OF FUNDS. No funds will be disbursed until the State Water Commission and local sponsor have entered into an agreement for cost-share participation. No agreement for construction funding will be entered into until all required State Engineer permits have been acquired.

For construction projects, the agreement will address indemnification and vicarious liability language. The local sponsor must require that the local sponsor and the state be made an additional insured on the contractor's commercial general liability policy including any excess policies, to the extent applicable. The levels and types of insurance required in any contract must be reviewed and agreed to by the Chief Engineer. The local sponsor may not agree to any provision that indemnifies or limits the liability of a contractor.

For any property acquisition, the agreement will specify that if the property is later sold, the local sponsor is required to reimburse the Commission the percent of sale price equal to the percent of original cost-share.

The Chief Engineer may make partial payment of cost-sharing funds as deemed appropriate. Upon notice by the local sponsor that all work or construction has been

completed, the Chief Engineer may conduct a final field inspection. If the Chief Engineer is satisfied that the work has been completed in accordance with the agreement, the final payment will be disbursed to the local sponsor, less any partial payment previously made.

The project sponsor must provide a progress report to the Commission at least once every four years if the term of the project exceeds four years. If a progress report is not received in a timely fashion or, if after a review of the progress report the Commission determines the project has not made sufficient progress, the Commission may terminate the agreement for project funding. The project sponsor may submit a new application to the Commission for funding for a project for which the Commission previously terminated funding.

- F. LITIGATION.** If a project submitted for cost-share is the subject of litigation, the application may be deferred until the litigation is resolved. If a project approved for cost-share becomes the subject of litigation before all funds have been disbursed, the Chief Engineer may withhold funds until the litigation is resolved. Litigation for this policy is defined as legal action that would materially affect the ability of the local sponsor to construct the project; that would delay construction such that the authorized funds could not be spent; or is between political subdivisions related to the project.

IV. COST-SHARE CATEGORIES

The State Water Commission supports the following categories of projects for cost-share. Engineering expenses related to construction are cost-shared at the same percent as the construction costs when approved by the State Water Commission.

- A. PRE-CONSTRUCTION EXPENSES.** The State Water Commission supports local sponsor development of feasibility studies, engineering designs, and mapping as part of pre-construction activities to develop support for projects within this cost-share policy. The following projects and studies are eligible.
- 1** Feasibility studies to identify water related problems, evaluate options to solve or alleviate the problems based on technical and financial feasibility, and provide recommendation and cost estimate, of the best option to pursue.
 - 2** Engineering design to develop plans and specifications for permitting and construction of a project, including associated cultural resource and archeological studies.
 - 3** Mapping and surveying to gather data for a specific task such as flood insurance studies and flood plain mapping, LiDAR acquisition, and flood imagery attainment, which are valuable to managing water resources.

Copies of the deliverables must be provided to the Chief Engineer upon completion. The Chief Engineer will determine the payment schedule and interim progress report requirements.

B. WATER SUPPLY

- 1 RURAL AND MUNICIPAL WATER SUPPLY PROJECTS.** The State Water Commission supports water supply efforts. The local sponsor may apply for funding, and the application will be reviewed to determine project priority. Debt per capita, water rates and financial need may be considered by the Commission when determining an appropriate cost share percentage. The Commission reserves flexibility to adjust percentages on a case by case basis, but generally:

Up to 75% cost-share may be provided for:

- Rural Water System Expansions and Improvements
- Connection of communities to a regional system
- Improvements required to meet primary drinking water standards

Up to 60% cost-share may be provided for:

- Municipal Water Supply Expansions and Improvements
- Connection of new rural water customers located within extraterritorial areas of a municipality

Water Depots for industrial use receiving water from facilities constructed using State Water Commission funding or loans have the following additional requirements:

- a) Domestic water supply has priority over industrial water supply in times of shortage. This must be explicit in the water service contracts with industrial users.
- b) If industrial water service will be contracted, public notice of availability of water service contracts is required when the depot becomes operational.
- c) Public access to water on a non-contracted basis must be provided at all depots.

- 2 FEDERAL MUNICIPAL, RURAL, AND INDUSTRIAL WATER SUPPLY PROGRAM.** The Municipal, Rural, and Industrial Water Supply Program, which uses federal funds, is administered according to North Dakota Administrative Code Article 89-12.

- 3 DROUGHT DISASTER LIVESTOCK WATER SUPPLY PROJECT ASSISTANCE PROGRAM.** This program is to provide assistance with water supply for livestock impacted during drought declarations and is administered according to North Dakota Administrative Code Article 89-11.

- C. FLOOD CONTROL.** The State Water Commission may provide cost-share for eligible items of flood control projects protecting communities from flooding and may include the repair of dams that provide a flood control benefit.

- 1 FLOOD RECOVERY PROPERTY ACQUISITION PROGRAM.** This program is used to assist local sponsors with flood recovery expenses that provide long term flood damage reduction benefits through purchase and removal of structures in areas where flood damage has occurred. All contracted costs directly associated with the acquisition will be considered eligible for cost-share. Contracted costs may include: appraisals, legal fees (title and abstract search or update, etc.), property survey, closing costs, hazardous materials abatement needs (asbestos, lead paint, etc.), and site restoration.

The State Water Commission may provide cost-share of the eligible costs of approved flood recovery expenses that provide long term flood reduction benefits based on the following criteria and priority order:

- a) Local Sponsor has flood damage and property may be needed for construction of temporary or long-term flood control projects, may be cost-shared up to 75 percent.
- b) Local Sponsor has flood damage and property would increase conveyance or provide other flood control benefits, may be cost-shared up to 60 percent.

Prior to applying for assistance, the local sponsor must adopt and provide to the Chief Engineer an acquisition plan (similar to plans required by Hazard Mitigation Grant Program (HMGP)) that includes the description and map of properties to be acquired, the estimated cost of property acquisition including contract costs, removal of structures, the benefit of acquiring the properties, and information regarding the ineligibility for HMGP funding. Property eligible for HMGP funding is not eligible for this program. The acquisition plan must also include a description of how the local sponsor will insure there is not a duplication of benefits.

Over the long-term development of a flood control project following a voluntary acquisition program, the local sponsor's governing body must officially adopt a flood risk reduction plan or proposal including the flow to be mitigated. The flow used to develop the flood risk reduction plan must be included in zoning discussions to limit new development on other flood-prone property. An excerpt of the meeting minutes documenting the local sponsor's official action must be provided to the Chief Engineer.

Local sponsor must fund the local share for acquisitions; this requirement will not be waived. Federal funds are considered "local" for this program if they are entirely under the authority and control of the local sponsor.

The local sponsor must include a perpetual restrictive covenant similar to the restrictions required by the federal HMGP funding with the additional exceptions being that the property may be utilized for flood control structures and related infrastructure, paved surfaces, and bridges. These covenants must be recorded either in the deed or in a restrictive covenant that would apply to multiple deeds.

The local sponsor must provide justification, acceptable to the Chief Engineer, describing the property's ineligibility to receive federal HMGP funding. This is not meant to require submission and rejection by the federal government, but rather an explanation of why the property would not be eligible for federal funding. Example explanations include: permanent flood control structures may be built on the property; project will not achieve required benefit-cost analysis to support HMGP eligibility; or lack of available HMGP funding. If inability to receive federal funding is not shown to the satisfaction of the Chief Engineer, following consultation with the North Dakota Department of Emergency Services, the cost-share application will be returned to the local sponsor for submittal for federal funding prior to use of these funds.

- 2 FLOOD PROTECTION PROGRAM.** This program supports local sponsor efforts to prevent future property damage due to flood events. The State Water Commission may provide cost-share up to 60 percent of eligible costs. For projects with federal participation, the cost-share may be up to 50 percent of eligible non-federal costs. The State Water Commission may consider a greater level of cost participation for projects involving a total cost greater than \$100 million and having a basin wide or regional benefit.

Local share must be provided on a timely basis. The State Water Commission may lend a portion of the local share based on demonstrated financial need.

Property acquisition costs limited to the purchase price of the property that is not eligible for HMGP funding and within the footprint of a project may be eligible under this program. The local sponsor must include a perpetual restrictive covenant on any properties purchased under this program similar to the restrictions required by the federal HMGP funding with the additional exceptions being that the property may be utilized for flood control structures and related infrastructure, paved surfaces, and bridges. These covenants must be recorded either in the deed or in a restrictive covenant that would apply to multiple deeds.

Costs for property acquired, by easement or fee title, to preserve the existing conveyance of a breakout corridor recognized as essential to FEMA system accreditation may be eligible under this program.

The cost-share application must include the return interval or design flow for which the structure will provide protection. The Commission will calculate the amount of its financial assistance, based on the needs for protection against:

1. One-hundred year flood event as determined by a federal agency;
2. The national economic development alternative; or
3. The local sponsor's preferred alternative if the Commission first determines the historical flood prevention costs and flood damages and the risk of future flood prevention costs and flood damages, warrant protection to the level of the local sponsor's preferred alternative.

Storm water management is not an eligible cost-share category. In order to differentiate between a flood control project and storm water management, the Commission may reduce the cost-share provided by the percentage of the contributing watershed that is located within the community's corporate limits as calculated on an acreage basis

- 3 FEMA LEVEE SYSTEM ACCREDITATION PROGRAM.** The State Water Commission may provide cost-share up to 60 percent for eligible services for FEMA 44 CFR 65.10 flood control or reduction levee system certification analysis. The analysis is required for FEMA to accredit the levee system for flood insurance mapping purposes. Typical eligible costs include site visits and field surveys to include travel expenses, hydraulic evaluations, closure evaluations, geotechnical evaluations, embankment protection, soils investigations, interior drainage evaluations, internal drainage hydrology and hydraulic reports, system modifications, break-out flows and all other engineering services required by FEMA. The analysis will result in a comprehensive report to be submitted to FEMA and the Chief Engineer.

Administrative costs to gather existing information or to recreate required documents, maintenance and operations plans and updates, and emergency warning systems implementation are not eligible.

- 4 DAM SAFETY AND EMERGENCY ACTION PLANS.** The State Water Commission supports dam safety including repairs and removals, as well as emergency action plans. The State Water Commission may provide cost-share for up to 75 percent of the eligible items for dam safety repair projects and dam breach or removal projects. Dam safety repair projects that are funded with federal or other agency funds may be cost-shared up to 75 percent of the eligible non-federal costs. The intent of these projects is to return the dam to a state of being safe from the condition of failure, damage, error, accidents, harm or other events that are considered a threat to public safety. The State Water Commission may lend a portion of the local share based on demonstrated financial need.

The State Water Commission may provide cost-share up to 80 percent, for emergency action plans (EAPs) of each dam classified as high or medium/significant hazard. The cost of a dam break model is only eligible for reimbursement for dams classified as a high hazard.

- 5 WATER RETENTION PROJECTS.** The goal of water retention projects is to reduce flood damages by storing floodwater upstream of areas prone to flood damage. The State Water Commission may provide cost-share up to 60 percent of eligible costs for water retention projects including purchase price of the property. For projects with federal participation, the cost-share may be up to 50 percent. Water retention structures constructed with State Water Commission cost-share must meet state dam safety requirements, including the potential of cascade failure. A hydrologic analysis including an operation plan and a quantification of the flood reduction benefits for 25, 50, and 100-year events must be submitted with the cost-share application.

- 6 **INDIVIDUAL RURAL AND FARMSTEAD RING DIKE PROGRAM.** This program is intended to protect individual rural homes and farmsteads through ring dike programs established by water resource districts. All ring dikes within the program are subject to the Commission's Individual Rural and Farmstead Ring Dike Criteria provided in Attachment A. Protection of a city, community or development area does not fall under this program but may be eligible for the flood control program. The State Water Commission may provide up to 60 percent cost-share of eligible items for ring dikes up to a limit of \$55,000 per ring dike.

Landowners enrolled in the Natural Resource Conservation Service's (NRCS) Environmental Quality Incentive Program (EQIP) who intend to construct rural or farmstead ring dikes that meet the State Water Commission's elevation design criteria are eligible for a cost-share reimbursement of 20 percent of the NRCS construction payment, limited to a combined NRCS and State Water Commission contribution of 80 percent of project costs.

D. WATER CONVEYANCE.

- 1 **RURAL FLOOD CONTROL.** These projects are intended to improve the drainage and management of runoff from agricultural sources. The State Water Commission may provide cost-share up to 45 percent of the eligible items for the construction of drains, channels, or diversion ditches. Construction costs for public road crossings that are integral to the project are eligible for cost-share as defined in N.D.C.C. § 61-21-31 and 61-21-32. If an assessment-based rural flood control project involves multiple districts, each district involved must join in the cost-share application.

Cost-share applications for rural assessment drains will only be processed after the assessment vote has passed, the final design is complete, and a drain permit has been obtained. If the local sponsor wishes to submit a cost-share application prior to completion of the aforementioned steps, a pre-application process will be followed.

A sediment analysis must be provided with any application for cost-share assistance for reconstruction of an existing drain. The analysis must be completed by a qualified professional engineer and must clearly indicate the percentage volume of sediment removal involved in the project. The cost of that removal must be deducted from the total for which cost-share assistance is being requested.

- 2 **BANK STABILIZATION.** The State Water Commission may provide cost-share up to 50 percent of eligible items for bank stabilization projects on public lands or those lands under easement by federal, state, or political subdivisions. Bank stabilization projects are intended to stabilize the banks of lakes or watercourses, as defined in N.D.C.C § 61-01-06, with the purpose of protecting public facilities. Drop structures and outlets are not considered for funding as bank stabilization projects, but may be eligible under other cost-share program categories. Bank stabilization projects typically consist of a rock or vegetative design and are



intended to prevent damage to public facilities including utilities, roads, or buildings adjacent to a lake or watercourse

3 SNAGGING AND CLEARING. These projects are ineligible for State Water Commission funding.

E. RECREATION. The State Water Commission may provide cost-share up to 40 percent for projects intended to provide water-based recreation. Typical projects provide or complement water-based recreation associated with dams.

F. IRRIGATION. The State Water Commission may provide cost-share for up to 50 percent of the eligible items for irrigation projects. The items eligible for cost-share are those associated with the off-farm portion of new central supply works, including water storage facilities, intake structures, wells, pumps, power units, primary water conveyance facilities, and electrical transmission and control facilities. The Commission will only enter into cost share agreements with political subdivisions, including irrigation districts, and not with individual producers.

SWC PROJECT PRIORITIZATION GUIDANCE

Projects submitted during the project planning inventory process¹ that meet SWC cost-share eligibility requirements will be considered for prioritization. In the interest of strategically investing in the state's highest water development priorities, the Water Commission will give funding preference to projects designated as higher priorities for the first 12 months of each budget cycle.

ESSENTIAL PROJECTS *(No Priority Ranking)*

Agency operational expenses.

An imminent water supply loss to an existing multi-user system, an immediate flood or dam related threat to human life or primary residences, or emergency response efforts.

Existing agency debt obligations.

SWC project mitigation.

HIGH PRIORITY PROJECTS

Federally authorized water supply or flood control projects with a federal funding appropriation.

Federally authorized water supply or flood control projects that do not have a federal appropriation.

Corrects a lack of water supply for a group of water users or connects a city to a regional/rural system.

Corrects a violation of a primary water quality condition in a water supply system.

Addresses severe or anticipated water supply shortages for domestic use in a service area or city with rapid population growth.

Protects primary residences or businesses from flooding in population centers or involves flood recovery property acquisitions.

MODERATE PRIORITY PROJECTS

Dam safety repairs and emergency action plans.

Expansion of an existing water supply system.

Levee system accreditations, water retention, or flood protection property acquisitions.

Irrigation system construction.

New rural flood control projects.

Bank stabilization.

LOW PRIORITY PROJECTS

Studies, reports, analyses, surveys, models, evaluations, mapping projects, or engineering designs.¹¹

Improvement or extraordinary maintenance of a water supply system.

Improvement or extraordinary maintenance of rural flood control projects.

Recreation projects.

Individual rural and farmstead ring dike constructions.

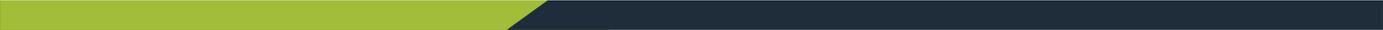
Footnotes

I. All local sponsors are encouraged to submit project financial needs during the budgeting process. Projects not submitted as part of the project information collection effort may be held until action can be taken on those that were included during budgeting, unless determined to be an emergency that directly impacts human health and safety or that are a direct result of a natural disaster.

II. May be considered as a higher priority if the related project is of higher priority.

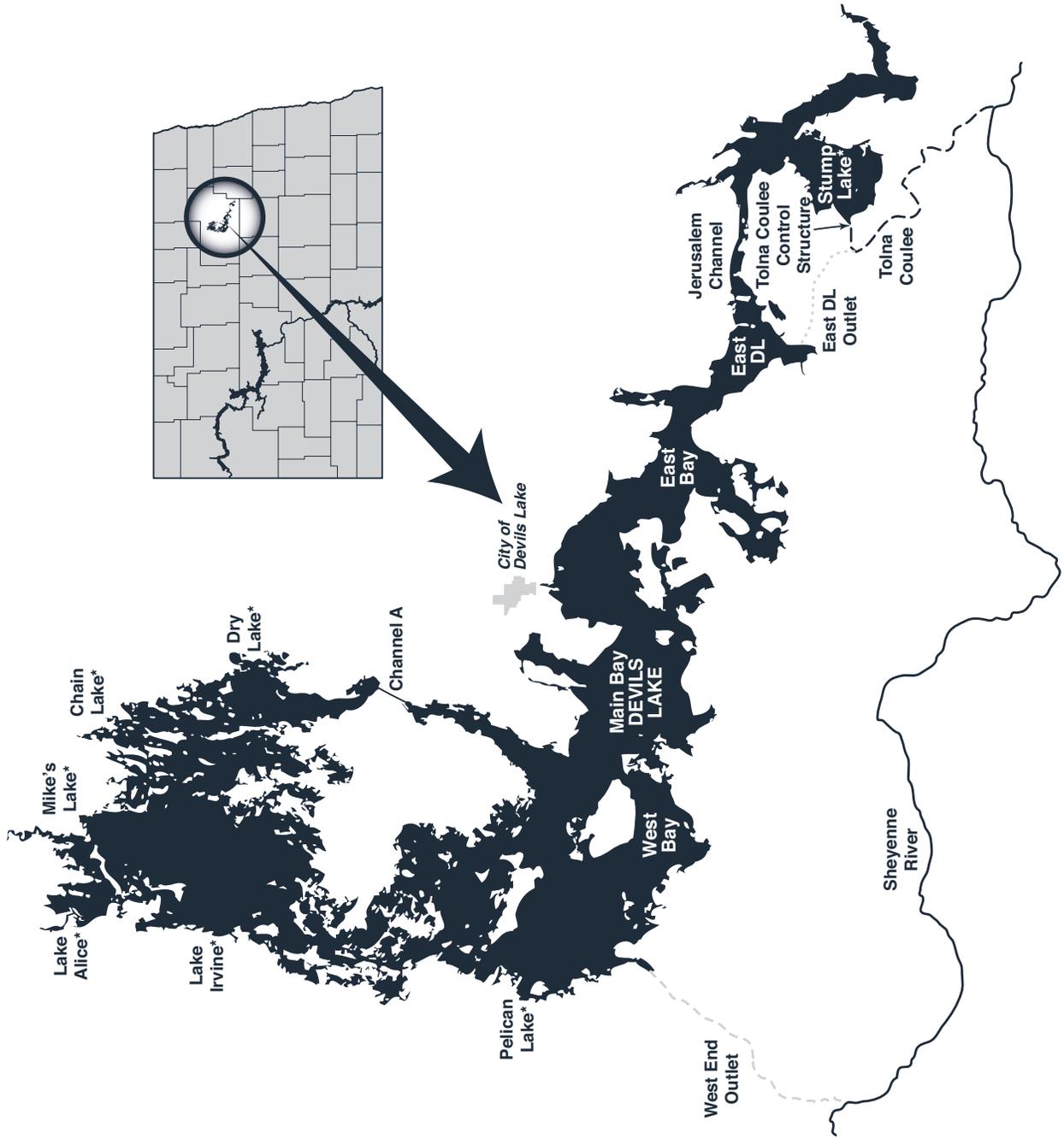
Disclaimer

This process is meant to provide guidance for prioritizing water projects during the budgeting process that may be eligible for cost-share assistance through the State Water Commission. Interpretation and deviations from the process are within the discretion of the state as authorized by the State Water Commission or Legislature.



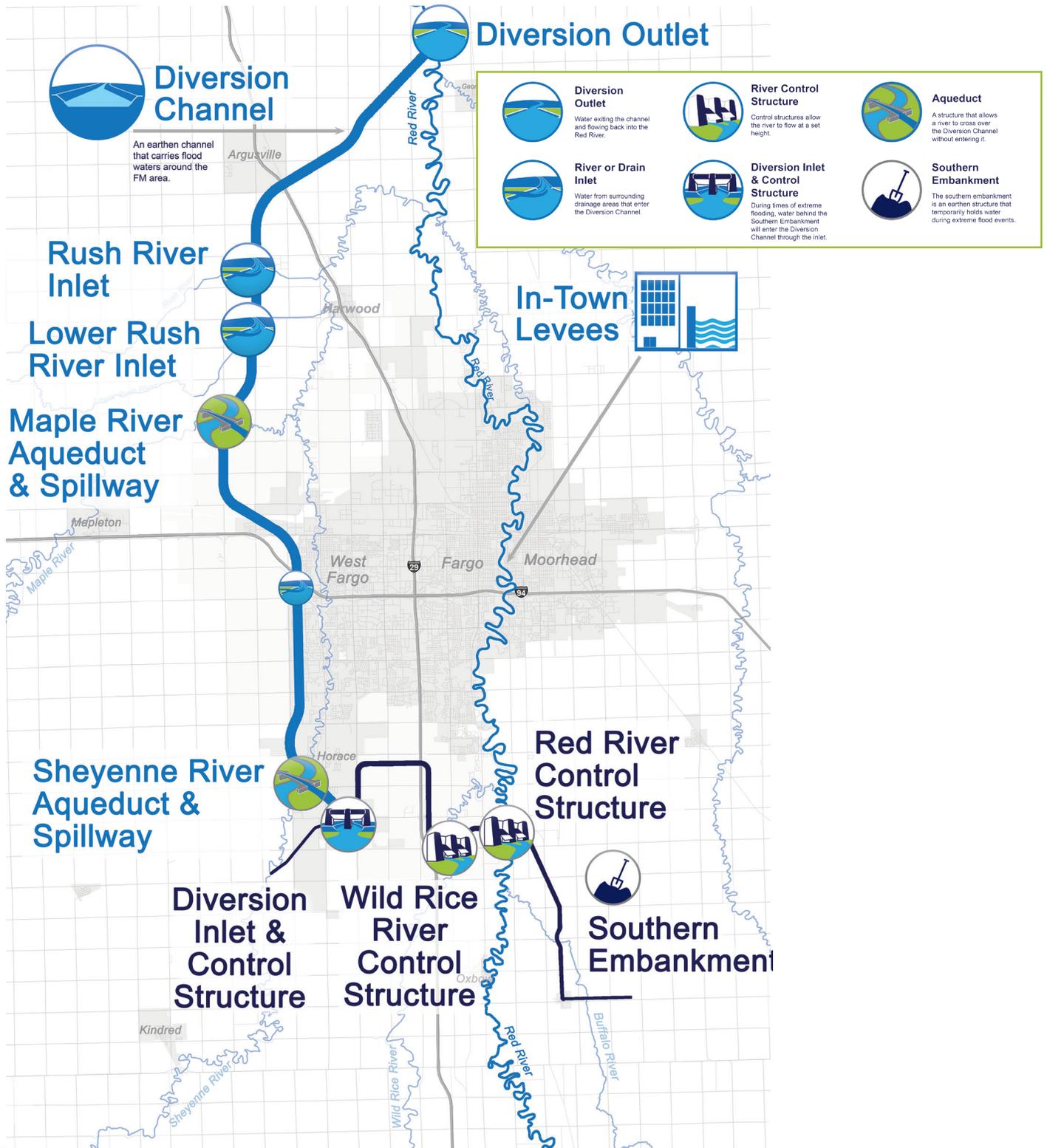
MAP APPENDIX

DEVILS LAKE OUTLETS



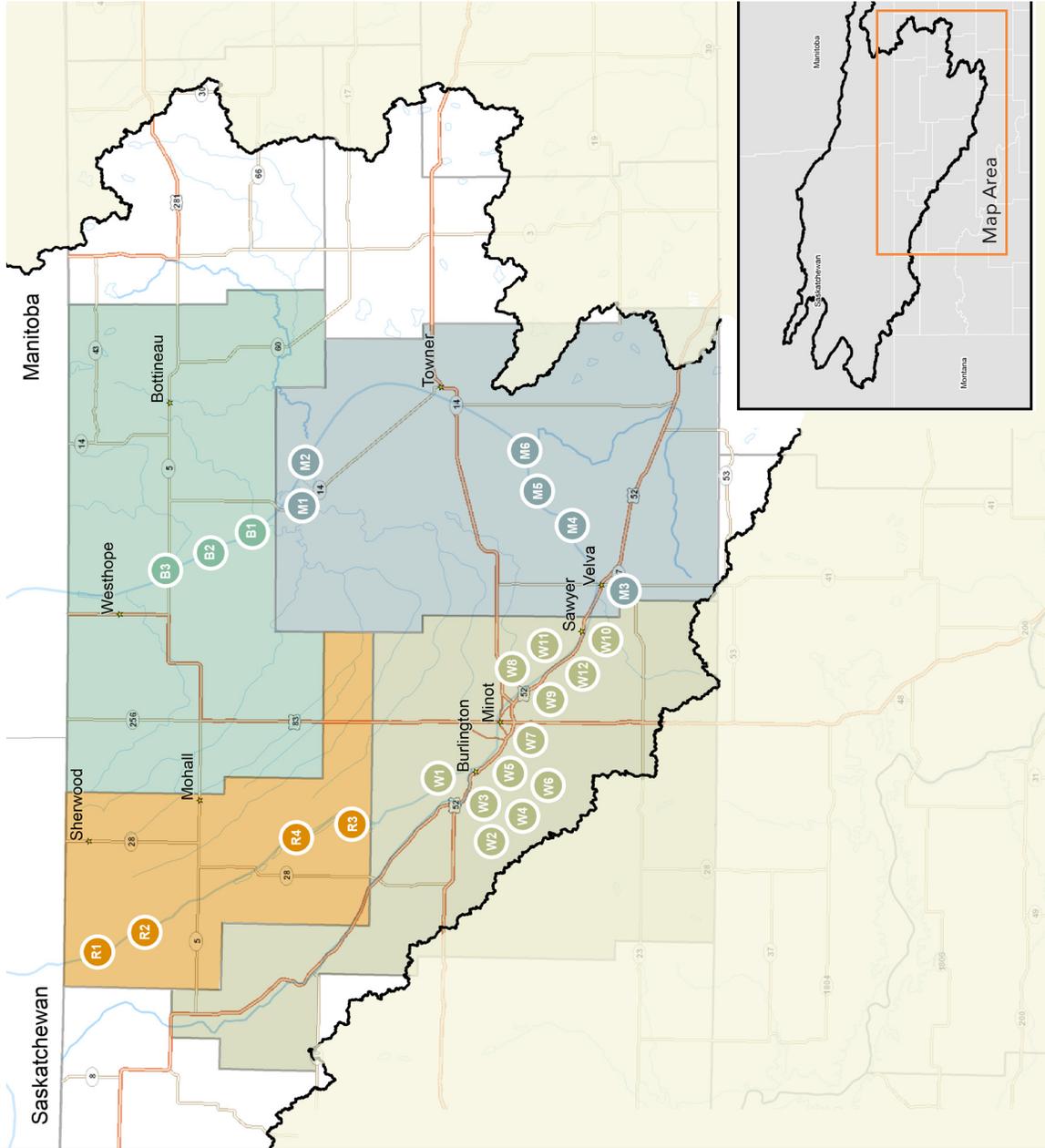
*As the Lake has risen, a series of smaller lakes have been absorbed by Devils Lake.

FARGO-WEST FARGO FLOOD PROTECTION

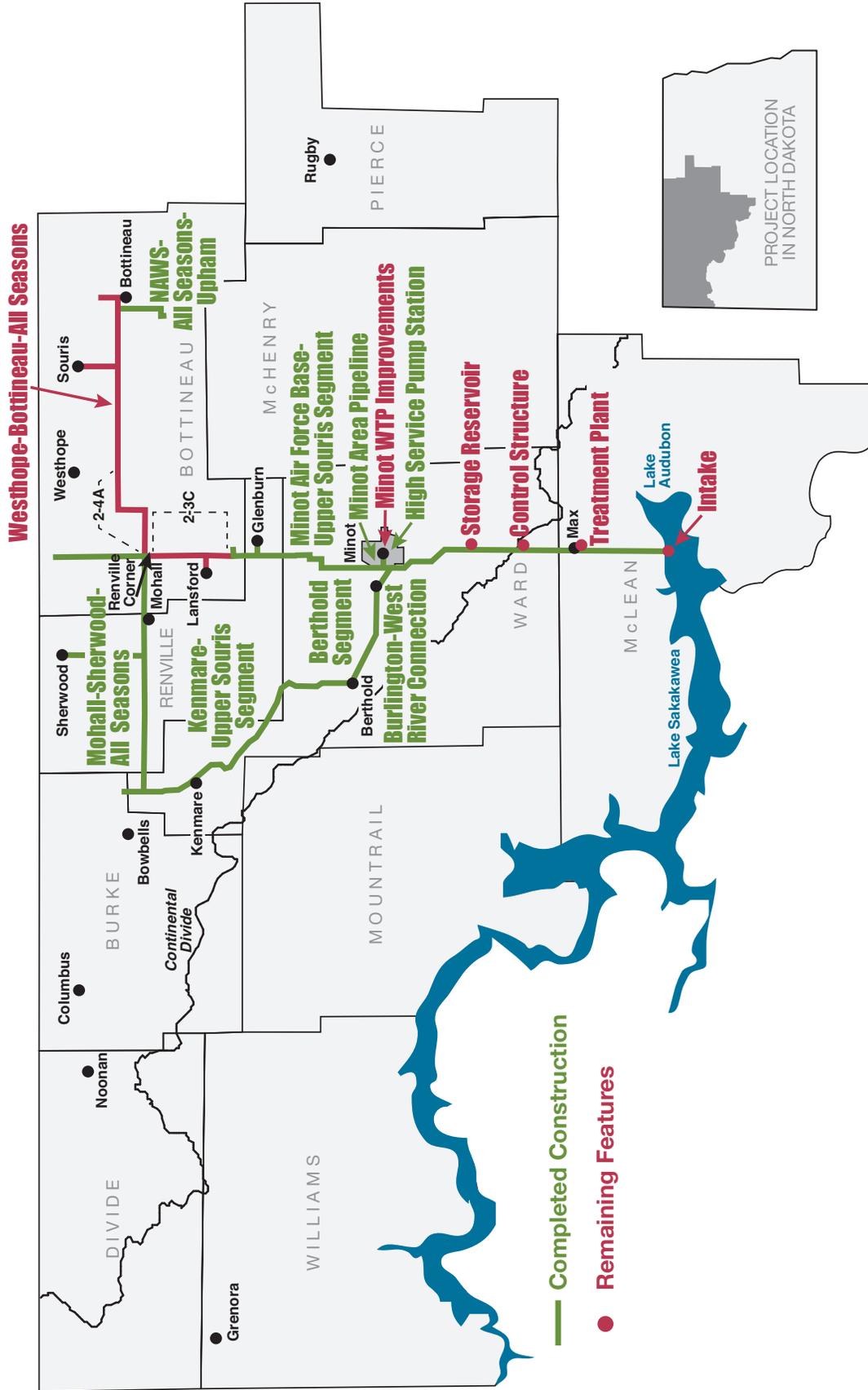


MOUSE RIVER ENHANCED FLOOD PROTECTION PROJECT

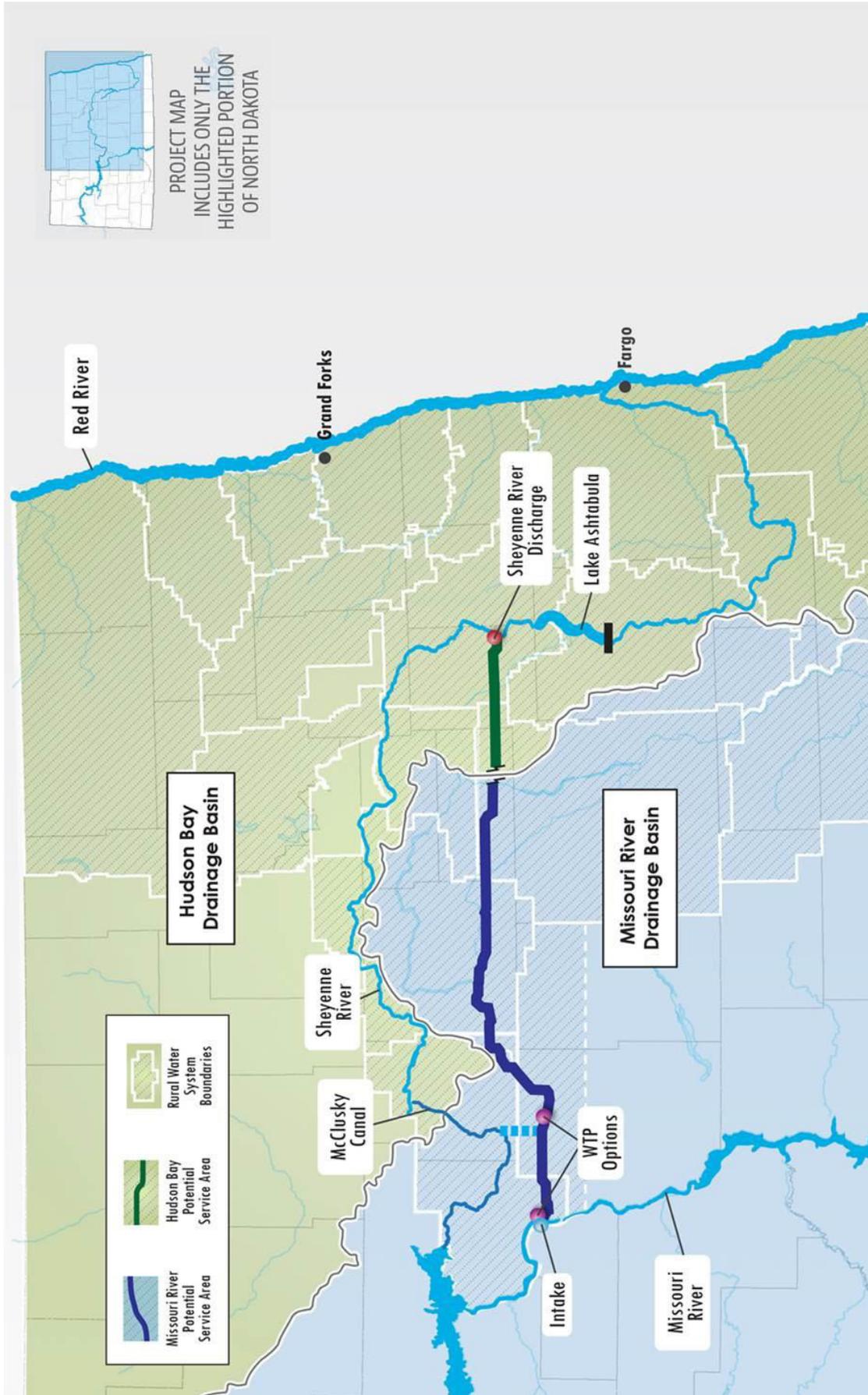
Renville County Projects (Thru 2039)		
Rural Structure Acquisition, Relocation or Ring Dike		\$2 M
Mouse River Park Levee Improvements		\$21 M
Lake Darling Dam Operational Modifications		\$3 M
Rural Bridge / Road Modifications		\$13 M
Remove Trapped Water		\$1 M
Renville County Subtotal		\$40 M
Ward County Projects (Thru 2039)		
Rural Structure Acquisition, Relocation or Ring Dike		\$25 M
Burlington Levee System		\$36 M
Robinwood / Brooks Addition Levee System		\$59 M
Talbott's Levee System		\$7 M
King's Court Levee System		\$17 M
Tierracita Vallejo Levee System		\$17 M
Minot Levee System		\$564 M
Apple Grove Levee System		\$25 M
Eastside Estates Levee System		\$13 M
Sawyer Levee System		\$28 M
Rural Bridge / Road Modifications		\$40 M
Remove Trapped Water		\$1 M
Ward County Subtotal		\$832 M
McHenry County Projects (Thru 2039)		
J. Clark Salyer Structure Modifications		\$21 M
Rural Structure Acquisition, Relocation or Ring Dike		\$5 M
Velva Levee System		\$21 M
Rural Channel Modifications		\$15 M
Rural Bridge / Road Modifications		\$21 M
Remove Trapped Water		\$3 M
McHenry County Subtotal		\$86 M
Bottineau County Projects (Thru 2039)		
J. Clark Salyer Structure Modifications		\$32 M
Rural Channel Modifications		\$17 M
Rural Bridge / Road Modifications		\$21 M
Bottineau County Subtotal		\$70 M



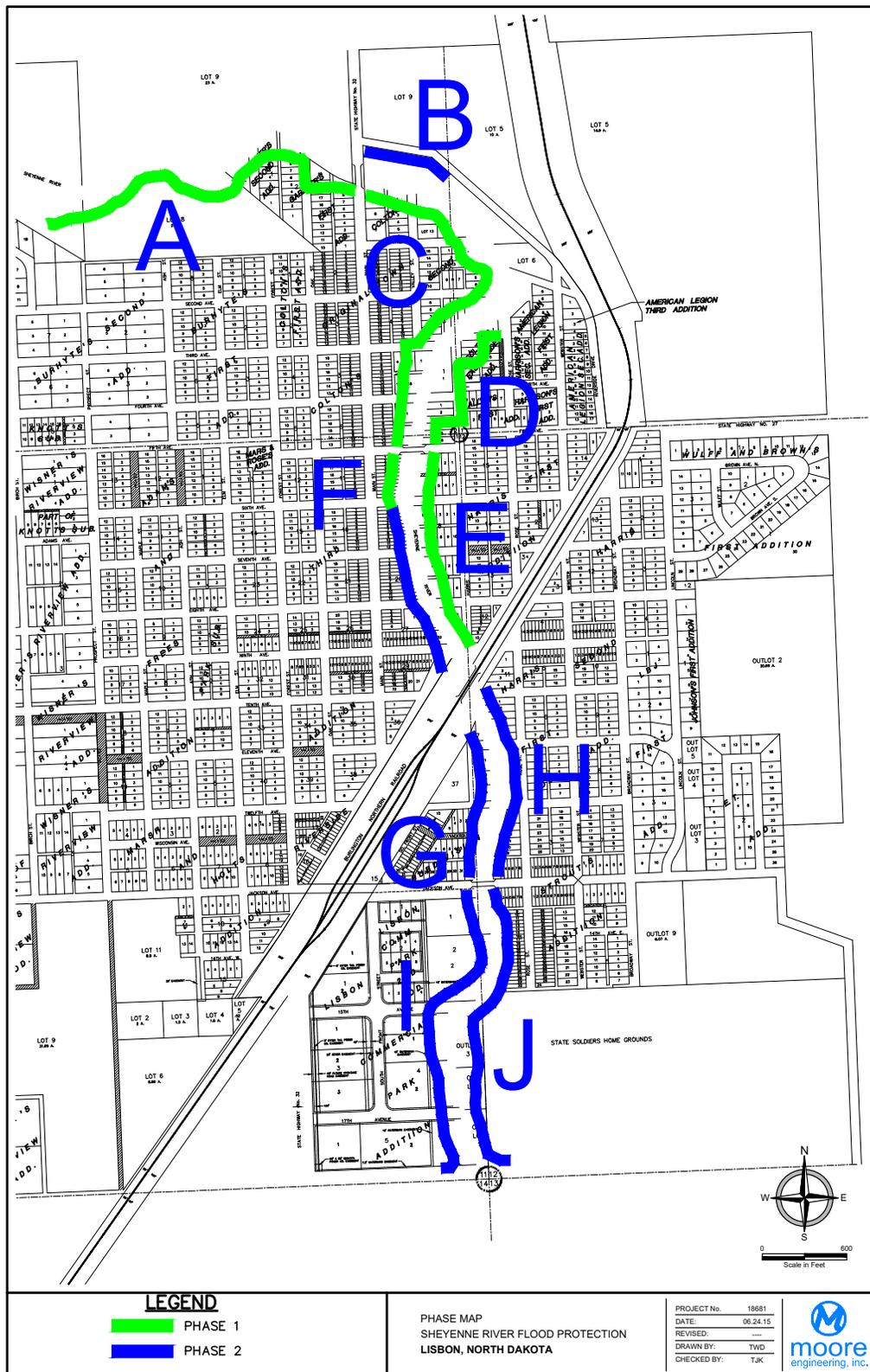
NORTHWEST AREA WATER SUPPLY



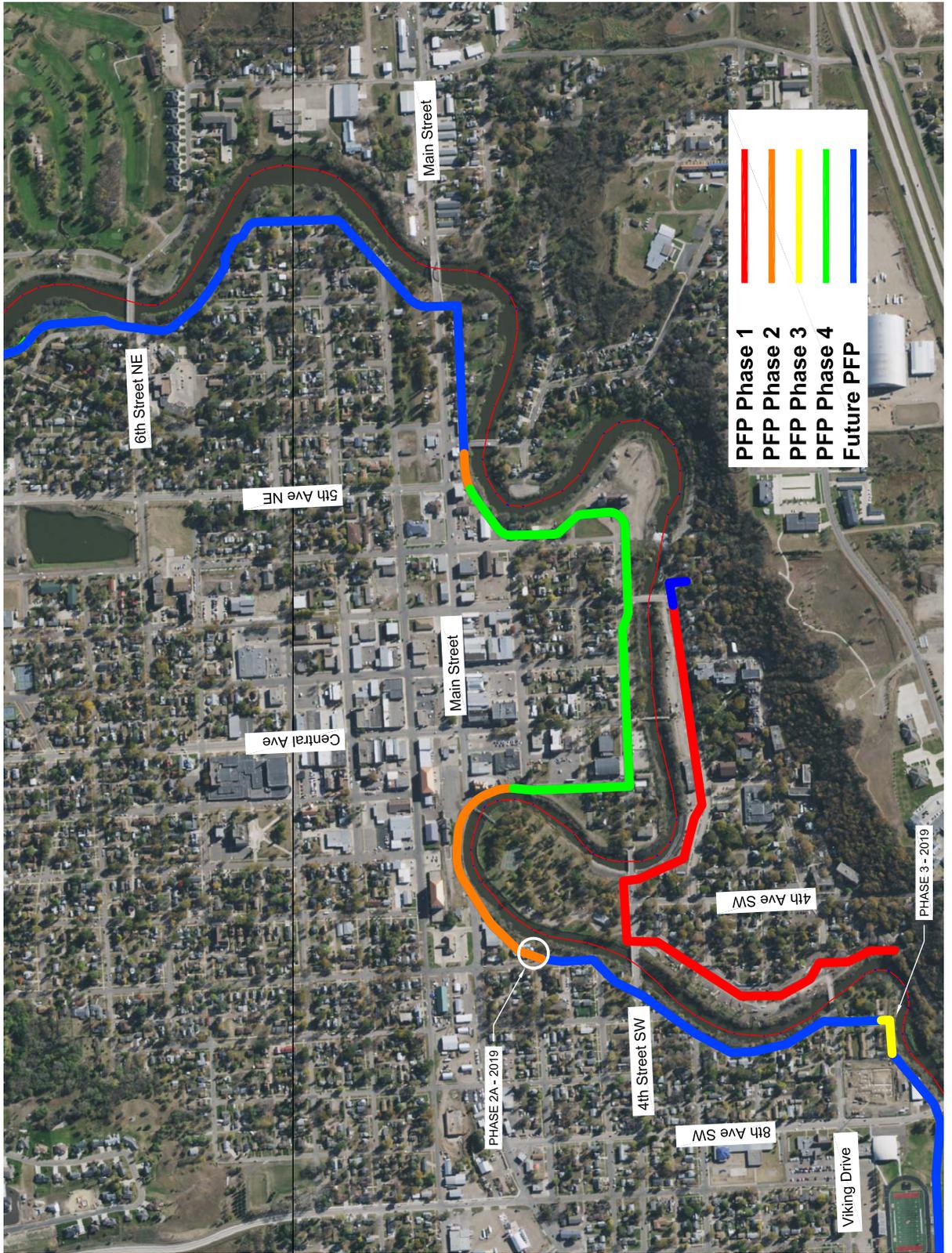
RED RIVER VALLEY WATER SUPPLY



SHEYENNE RIVER FLOOD PROTECTION (LISBON)



SHEYENNE RIVER FLOOD PROTECTION (VALLEY CITY)



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